

**A Contemporary Examination of the *A Fortiori* Argument  
Involving Jewish Traditions**

by

Allen Conan Wiseman

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I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions as accepted by my examiners.

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## Abstract

This study proposes to clarify the *a fortiori* argument's components, structure, definitions, formulations, and logical status, as well as the specific conditions under which it is to be employed, both generally and in a Jewish context. Typically, the argument claims this: if a lesser (or greater) case has a feature, a correspondingly greater (or lesser) case has that feature too. While evident in ancient thought, the argument is often central to Jewish deliberations that may continue for centuries; so this Jewish use forms the main context and material of this study. However, as general reasoning employs the argument, tracing its common forms helps to delineate its terms and relations. While the argument aspires to be true and it can be deductively valid in those cases where heritable properties recur, it is more likely to be inductively probable. In any case, the thesis presents a number of deductive formalizations, while more complex treatments are left to the appendix or further study. Inasmuch as the *a fortiori* is claimed to be a type of analogy, both its likenesses and its differences are set out and exemplified in a number of comparative mathematical, practical, legal, and other formats. Once the conclusion's feature is deductively valid or inductively likely, the amount that one accords to the feature in the new case needs to be determined. Logically, the *a fortiori's* conclusion can be either limited to the same feature given in one of its premises or else proportioned to it in a way that suits both premises. Mathematically, the same outcome is just one possible ratio. However, the early Jewish stand of the *Mishnah* usually retains the same tradition or least onerous result as sufficient (the *dayo*) for the new case. A detailed analysis covers this and later Rabbinic use, and especially Maccoby's recent claim that the same given alone is correct, which I show to be extreme, for even in a Jewish context it generates several problems. When one includes sensible *a fortiori* proportions and the possibility of mercy, good moral reasoning can be reconciled with true religious values and traditional precedents. In all, the conclusion's amount, particularly in practical issues, involves an extra decision procedure that considers the relevant factors of the actual case. Once the *a fortiori's* informal and formal aspects are dealt with adequately and its fallacious uses avoided, the argument's overall reasonableness is better appreciated.

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## Introduction Thesis

This thesis intends to investigate a largely neglected argument in critical thinking, the *a fortiori*, a common form of reasoning. Within traditional Jewish debates it is known as *Qal VaChomer* (light and heavy), where it plays a significant role.<sup>1</sup> In general, this argument claims that some property linked to one case can also occur in a respectively stronger or weaker case. Characteristic of the *a fortiori* is its emphatic term, “surely so” or “all the more so,” that signals the conclusion. While it seems to claim the conclusion confidently, this is not always true. Although in some clearly defined cases the *a fortiori* argument is deductively valid, in that it is impossible for the premises to be true and the conclusion false, in other cases it can fail. When applied in wider fields, as in most scientific studies or in the way people reason ordinarily, the *a fortiori*'s conclusion is typically less certain, although still probable or more likely true than not. Since the *a fortiori* argument is used extensively in Jewish thought, it serves as a productive domain for analysis in this dissertation. Yet within this religious tradition, reasoning may either play a subservient role or else be a more active partner. The majority position of the *Mishnah* supports prior traditions, deemed true, while for the minority, the *a fortiori* can extend reason's scope. A contemporary writer Maccoby claims that the conclusion of the argument cannot logically go beyond the given premise. Under this view, the signaling expression “surely so” serves only to strengthen the transfer of the same given in the comparative argument; in other words, it does not allow for any proportional change. I disagree with this overly strong claim and shall show that the conclusion may bear either the same feature or one scaled to it. This is more than just an issue about traditional, Jewish interpretations, assumed to be consistent with Divine revelation, but also a theoretical concern for truth. I shall also argue that the *a fortiori* argument is an important object of study in that it: 1) is common to most societies and cultures, 2) is used (implicitly) in decision-making, 3) is a sensible way to deal with the likelihoods of natural phenomena, and 4) can be expressed in various mathematical and logical

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<sup>1</sup> Most Jewish authors take the *Qal VaChomer* (light to heavy = QC) to be the same as an *a fortiori* argument (a given in a less serious case can be attributed to the more serious). This can include the argument in the opposite direction (from the given in the more serious case to the less serious), although technically a *Chomer V'Qal* (CQ).

forms. I shall trace its uses in argumentation, both general and Jewish, as well as resolve some of its problems in both realms. In sum, the overall purpose of the thesis is to advance the *a fortiori*'s place as an acceptable reasoning method.

This introduction will present the following elements in a rudimentary way to be developed in the body of the thesis:

- a) The general form of the *a fortiori* and its components;
- b) The typical argument illustrated by a few simple examples;
- c) The premises that serve as preliminaries, viewable as i) principles, and as ii) preferences;
- d) The argument as a common form of reasoning (surviving due to its overall, successful use);
- e) Its place within various models of thought, with their strengths and weaknesses;
- f) A brief history of Jewish sources and the view that seeks to limit the conclusion to the given;
- g) Some *Mishnaic* and *Amoraic*, historical and theological issues;
- h) Subsequent developments, general and Jewish; possible conclusions: same, a ratio, or false;
- i) The argument's value as an object of study, due to its general and Jewish uses, available treatment methods, and current neglect.

#### **a) General *A Fortiori* Argument Form and its Components**

Let us begin with what makes the *a fortiori* argument unique by setting out more specifically its basic form, after which will follow some examples and various concerns about its dependability.

In standard form, the *a fortiori* argument has three components, noted as two premises and a conclusion. One premise has a superlative relation of one thing to another (for instance, premise 1 {P1}: *A is greater than B*); another premise contains a specific, given feature (for premise 2 {P2}: *B has f*); and then the conclusion claims the feature as the same or proportioned to the degree of difference (*C: A has f\* too*).<sup>2</sup> Regarding the superlative relation of these mutually compared cases (*A to B*), we note that one is ranked higher while the other lower along a continuum within some common category, whether it is obvious, assumed, or deliberately constructed. Because both cases are within a common group, the key operation takes the extra feature or property associated with the one case and applies it to the other in the conclusion. Typically, the close relationship between the two cases makes the argument work, although there is no universal guarantee that the conclusion will be infallibly true. For an easily identifiable example: *Bowl A is larger than B; B holds ¼ liter; so surely, A will hold as much or more.*

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<sup>2</sup> The f\* here may be the **same** as or **proportional** to f, an important distinction to be noted throughout the paper.

Part of the thesis sets out to determine how reasonably strong this move is that takes the givens of the premises to draw the conclusion, whether assuredly (as a deductive argument), only probably (as an induction), less confidently (as somewhat likely), or at all (when unreasonable and untrue). For the moment, if the argument works in most cases, we can accept it as reasonable. Still, we need to examine the amount of the conclusion, if it is to be equal or scaled to the given feature. In order to familiarize ourselves with the *a fortiori* argument in ordinary usage, a few more simple examples will help.

### **b) Some Ordinary Examples**

My untuned engine gets 8 km/liter on average; so if tuned, it should get more, all things being equal. If a ripe apple slakes my hunger, surely a muffin with it will satisfy me more. If \$30/hr is good, \$50/hr is better. A higher interest on an investment is preferable to a lower rate, while on a loan, the opposite is the case. In general, more of a good feature is better than less of it.<sup>3</sup> One can illustrate undesirable consequents too: e.g., if a situation is bad, a deteriorated state is worse.<sup>4</sup> As *a fortiori* claims, these will suffice for now, even if not in a standard, argument form of two premises and a conclusion, because they show that such thinking is common, recognizable, and often sensible.

Not only do we frequently argue in this way, but also we are surprised to find such expectations false or our experiences not so describable. Moreover, we soon learn to distinguish between the regular occurrences of similar features in new cases and those that fail, whether usually or unusually. In many comparable situations, therefore, it is not unreasonable to continue to expect similar or proportional results to prior ones, even if some cases are presently unpredictable or occasionally do not follow.<sup>5</sup>

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<sup>3</sup> Of course, for some goods, qualitatively understood, no upper limit exists, quantitatively. After a very high figure, one can also lose track of the significance, psychologically and physically. Goods may be valued less with their ease of acquisition or abundance. Yet one cannot preserve perishables perfectly. For many things too, there may or may not be limits: even before a possible upper or lower limit, such as for sweetness (or bitterness as a negative), things can turn out to be distastefully insufferable. Sound, noise, dimness, and brightness have perceptible and tolerable ranges, sometimes with undefinable limits. Much of these are psychological responses, although not wholly so. There is both a relation and a disparity between quantitative and qualitative valuations.

<sup>4</sup> Simplified, the sayings, “the greater of two goods” or “the lesser of two evils,” can be construed as conclusions that gain their force from the recognition of premises where the ranked things share a common characteristic.

<sup>5</sup> Induction depends on a fundamental or large regularity in nature, to yield what are probable rather than always necessary conclusions, although at times a false conclusion may invalidate a particular claim.

### **c) 1. Premises as Preliminary Principles**

As background, a discussion of the argument's premises is in order. Where we perceive things as closely related, we tend to rank them along some mutually comparable scale(s), in terms of quality, quantity, specific difference, or preference. We can call this process the *comparative ranking principle*. Aside from the comparative differences of more and less between the cases, a feature(s) of interest is borne by one. We can call this given feature the *specific detail principle*. These related ranking and detail feature(s) together constitute the *a fortiori* argument's premises. As preliminary aspects, the ranking and the detail(s) are so quickly thought of that we easily miss them as principles that underlie the transition to the *a fortiori* itself. As an *a fortiori*, *since items A and B clearly relate (in some way), with A greater (or lesser) than B, the feature that B has, A likely (or surely) has too*. At times, one can know or verify that the feature obtains.<sup>6</sup> Yet we also argue the point hypothetically.

This reasoning process makes the *a fortiori* a composition of (a) comparatively ranked things (judgements or preferences) that are typically well-known, (b) one of which has a feature, so that (c) it is then claimed "all the more so" for the other, although not necessarily as a deduction. The specific feature is thought to transfer to the *a fortiori*'s conclusion with a high degree of assurance, sometimes known by experience, although the result may turn out to be false. True premises with a false result would make such an argument deductively invalid; or as an inductive argument, the claim would be uninstantiated. However, occasional invalidity or failure in reality does not make it an inappropriate or wholly unreliable argument form. We just need to realize its limitations.

### **c) 2. Preference, Choice, and Dominance**

In line with comparative ranking, we can extend this to matters of preference, choice, or dominance. Here we take one item to be preferable or superior to another, or else stronger or more capable in a way

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<sup>6</sup> Of course, if two items already possess the feature, it obviates the argument, although one might still not know the amount of the feature in the sought after case, which, if possible, may need to be calculated.

that is crucial in the current context. These ideas relate to the *a fortiori* argument either as a motive for its use or as an additional consequence that one can draw from it. Briefly, let us explore these ideas.

When making comparisons, we often express a *preference rule* somewhat like this: if under some consideration we deem item *A* to have a more positive or beneficial feature than that of *B*, then *A* is preferable to *B*, *ceteris paribus*.<sup>7</sup> In terms of preferability, not only do we apply this to the compared items in the premises, but also between arguments when one is better than another (actual or possible).

Moreover, we need not deal only with human concepts of the good, better, preferred, or deliberately chosen, but with various natural phenomena. Take, for instance, animal behaviour. A fox “decides” that catching the scrawny little bunny is better than going hungry, for it is less likely to catch its fatter but faster mummy. It is a “sensible” choice of some sort on the animal’s part, although it is more a heuristic procedure or technique.<sup>8</sup> Yet some purely natural processes are simpler than a heuristic goal, technique, decision, or achievement. The greater item or force dominates or has more influence on the result than the weaker. In physical systems, more water naturally flows through a larger than a smaller hole, due to its greater capacity; likewise, a greater mass exerts more gravitational force over a smaller one. As such, inanimate nature and animals, not just humans, display the determining feature of one case over another.

Again in the animal example, since the larger parent is food, so too, the smaller bunny is food. Yet, in this case, we see two features in competition that require a tradeoff. Generally, being “easier to acquire” would likely offset the fact of “lesser food value.” Since it is easier to catch the smaller, less able juvenile than the speedier and cleverer, larger parent, the fox more often goes after the surer catch.<sup>9</sup>

The heuristic principle of aiming for the readily achievable and thus preferable over the more difficult or

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<sup>7</sup> I will normally use the English term, “all things being equal,” which as a condition may not always be stated, but should most often be assumed. I am talking of basically equivalent conditions, other than the special factor being sought as an increase or decrease. For the examples earlier, one assumes that taxes on a prize will not be so onerous as to make a higher gift end up worse or that one makes less careful decisions by receiving easy money. For an investment too, one wants a higher interest, hopefully, without causing greater harms to people or the environment. Preferences should be for what is truly good, although people prefer what is deemed more desirable, even when it may prove to be worse in the long term. The idea of the preferable remains in any case.

<sup>8</sup> A heuristic technique searches the alternate actions for the most effective means to a goal. Douglas N. Walton, *Abductive Reasoning* (Tuscaloosa, AL: University of Alabama Press, 2004), 50, taken from Pearl, *Heuristics*, 1984. For animals, a choice may be too strong a term; it is both an instinctual process and a learned behaviour.

<sup>9</sup> One could argue for some ecological “wisdom” in nature, for the mummy can provide many more baby bunnies. But this is due more to the fact that the babies are slower and less experienced in escaping, which the fox learns.

doubtful makes the inductive *a fortiori* claim work. Similarly, in the physical case, outlet *A* is larger than *B*; and while *B* allows some amount to pass through, surely *A* can do more (all things being equal). Of course, one acknowledges that this natural truth, also discovered by observation, is based on geometry and known physics; but put into the form of an argument it is a deductive *a fortiori*.

These examples show that the *a fortiori* principle of *A* over *B* (the stronger over the weaker) is a reasonably acceptable, pragmatic truth about existence. Thus, if *A* is greater than *B* in some relation, *A* typically wins out (even if modified to *A\** in the process).<sup>10</sup> This is because *A* has what *B* has and may be better, more desirable or obtainable, or dominant in force, power, or competition. In a similar way, the notion of preference or dominance occurs in terms of theory replacement, when one scientific theory replaces another, because it explains things better, more easily, more simply, or over a larger scope.

The fact that such events happen in nature vindicates the principle of ranking one thing over another. At the same time, we recognize that a larger quantity is not the same as a better quality. A new context or different culture may switch what one grades as the valuationally greater, better, or best item.<sup>11</sup> Nonetheless, the ideas of a greater item and the principle of preference remain.<sup>12</sup> To accept the preference principle (of a better or best) is to realize that we so prefer, think, rank, judge, and act, hoping for the better of two choices or the best of all (in an *a fortiori* sense), whether or not it really happens in this instance, or that our current choice gets superceded later under differing criteria.

#### **d) Common Thinking Process**

Comparisons, rankings, and preferences form the background that lead to *a fortiori*, analogical reasoning. Indeed, the *a fortiori* argument crops up in almost all societies. Doubtless too, the *a fortiori*'s

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<sup>10</sup> For humans, although one chooses *A*, it may or may not be morally the best. Determining what is truly better may take some adopted wisdom or learning by experience. Experiential learning also makes it a testable thing over the long term, weeding out the “bads,” if actually harmful, and lesser “goods” in favour of their betters. In all this, the truly greater good in the present and future is what will be, or should be, held highest, ideally or really.

<sup>11</sup> See Steven Toulmin, Richard Rieke, and Allan Janik, *An Introduction to Reasoning* (New York/London: Collier Macmillan, 1979), 33, 120, 132-35, 264-65. Evolution too claims its “fittest” survivors that displace the less functional. A linchpin of Darwin is that since humans can breed types of plants and animals to a limited extent, nature does it over much more time and to a greater extent by natural selection—a natural, *a fortiori* argument.

<sup>12</sup> While the best may fluctuate with people or groups, independent criteria make it potentially knowable and employable to differing degrees. Yet, the idea of the best is aspired to by most people and so indisputable.

indicator terms, such as “surely so” or “much more,” reflect similar, human modes of expression, if not also some cultural cross-fertilization. Because the most ancient part of the Jewish Scriptures (Genesis) displays the argument, the *a fortiori* reflects a very early form of thought.<sup>13</sup> Several cases follow in the *Tanach*. Given Biblical and ordinary use, there arises an almost habitual weaving of the argument in Jewish religious traditions, debates, and study. Philosophically, Plato uses the argument style (as in the *Crito*, 51A) and Aristotle discusses it as an induction that is close to analogy (e.g., in his *Topica*, from 114b37ff; *Rhetoric*, 1393a-b, B20). It is also evident among Greek rhetoricians and in Roman law. Since the argument occurs in the *Tanach* and the New Testament, Christian scholars incorporated it into their thinking. Yet because the *a fortiori*'s formal qualities were not understood, it was not easily assimilated into argument patterns, in marked contrast to Aristotle's categorical syllogism, other than to informally follow Biblical examples. In any case, the argument has a long, interesting history. Given its natural patterns and wide human practices, both its informal and formal structures are worth exploring.

### **e) 1. Various Argument Methods and Strengths**

In general, arguments guarantee their results or they do not. Those that do are sound deductions. Those that do not may still be probably true, as inductions, given past evidence and critical tests. While in the main, good, inductive inferences are often true, some will fail. Some *a fortiori* arguments too can be deductively true and certain or inductively reasonable and likely. I shall develop the wide spectrum of *a fortiori* forms, in Chapter 2. For now, how acceptable is the *a fortiori* argument overall?

### **e) 2. Argument Justification and Acceptability**

As mentioned, the *a fortiori* argument can be justified by common experience in practical situations when it has proved to be mostly correct. If it did not work most of the time, we would reject the argument as largely unreliable and fallacious. As long as one uses it properly to yield better than

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<sup>13</sup> As a source for ancient uses, the *Tanach* (Jewish Bible=Christian Old Testament) is replete with examples of the Qal VaChomer. (*Qal VaChomer* = *a fortiori* = QC = minor to major = *if the lesser has it, surely the greater case has it too*, although this also covers the opposite direction, as noted earlier and to be expanded later.)

average results, it remains a reasonably reliable guide.<sup>14</sup> (Without a good memory of success and failure, our fox could not focus on its more likely catches, but be distracted by anything within its immediate purview, and be unable to answer its needs in a repeatedly useful way.) Overall, we can accept the argument in that it often has a true conclusion, although this is not guaranteed.

Yet the operative term “surely” in the *a fortiori* argument can easily lend itself to rhetorical attempts at mere persuasion. Without good reasons or evidence, the *a fortiori* can mislead, be inaccurate or false. Thus, while the conclusion is stated with apparent confidence, because it can disappoint, due caution is required. We need not trust the *a fortiori* completely or assume utter infallibility, but can question it. As such, the term, “surely” (“all the more so” or “especially”), is reasonably appropriate only when the conclusion is indeed correct, or obviously the fact, or very likely so; otherwise, it is merely hopeful and speculative. Realistically, then, we expect a range of results with differing strengths of acceptability, according to each type (deductive or inductive) best suited to the subject under study.

We can also rank one argument as better than another based on various criteria such as the validity of its conclusion, the soundness of the argument, or the greatest general inclusiveness. For a validly true conclusion, deductive, logical necessity is preferable to an inductive probability of it being true. As well, for any two inductive cases, the one with a higher probability is better, for it is more often true. So too, an objective, criterion-based or factually high probability of being true is preferable to one dependent upon the vagaries of human valuations and desires. An expert consensus is even better. Yet human choices are seldom wholly arbitrary, particularly if based upon the best-case scenario under the circumstances or by an appeal to *the principle of the best*.<sup>15</sup> In total, logical soundness (a valid form with true facts) is stronger than logical validity alone. Yet, if one accepts an argument as valid despite flimsy, irrelevant, or even false supports, it is that much more plausible when better reasons or relevantly true

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<sup>14</sup> One can move to other closely connected things. If the feature is absent, closeness is limited – itself an advance in knowledge. As practical reasoning, we have arguments from classes and degrees (Toulmin, 2d ed., 233).

<sup>15</sup> See for instance, Nicholas Rescher, *Rationality* (Oxford: Clarendon Press, 1988), 28. He distinguishes between an ideal (“the optimal pure and simple”) and the pragmatically practical (“optimal as best we can manage to tell”).



evidence back up the claim.<sup>16</sup> Affirmed facts are rationally more commendable than questionable or poor ones. However, since not every practical matter lends itself to deductive certainty or soundness, we are satisfied if it has a good probability of being true, with its conclusion sufficiently dependable.<sup>17</sup> In terms of the breadth of acceptable arguments, the inductive form covers more areas than the deductive. Without some theoretical criteria, heritable property, known facts, experimental data, or good reasons to bolster an *a fortiori* argument, it may be unconvincing, weak, or inadequate, even if formally valid.

Let us turn now to Jewish understandings of the argument to study some likenesses and differences.

### **f) 1. Specific Jewish Uses**

Since Jewish and *Talmudic* studies have a long history of utilizing and analyzing *a fortiori* arguments, they fill a gap in current reasoning methods and form the backdrop to a number of its complications. In early Jewish texts and commentaries the *a fortiori* argument, called the *Qal VaChomer* (QC), is explicitly recognized as a key rule of Biblical interpretation.<sup>18</sup> The specific issues raised by *Mishnaic*,<sup>19</sup> Rabbinic use of the *Qal VaChomer* (QC) are not only peculiar to Jewish claims, but also generally applicable when trying to resolve issues that call for the same answer.

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<sup>16</sup> Each person's level of what is credible varies. Either the case works or fails, partly or wholly. Argument acceptability involving humans should have an objective component that reduces the arbitrary subjectivity.

<sup>17</sup> Add to that the comments of L. Jonathan Cohen, *An Introduction to the Philosophy of Induction and Probability* (Oxford: Clarendon Press, 1988): "Deducibility must be seen as a limiting case of inducibility..." (176), and "inductive reasoning is a matter of degree, not of all or nothing" (186). Inversely too, induction mimics and approximates deduction. For an example of implicit, abductive thinking relatable to the *a fortiori*: "Human rationality requires us at any one time to do the best we can, not to do the best that could ever be possible" (187). So, if *A* is better than any other options given the relevant property or properties of interest in each, *A* is the best for now. As an abduction, all members of the category possess (the) key feature(s) of interest, more or less, and to various degrees. At the same time, we may not know the total number of properties or their degrees. Once we have verified or know that the greater has more positive and less negative features (of appropriate degrees) than any other, we have the very conclusion that the usual *a fortiori* argument tries to determine. Later, *A\** arises as the new best such that it is greater than the old, best *A* in all relevant respects. It answers the question, "Why is *A\** now the greater?" It says that it has the properties of *A*, plus more or higher degrees of them with less negatives.

<sup>18</sup> Abbreviations can help. Since Latin terms still occur, the capital letters AF can work for the *a fortiori*. As I show the large role of the *Qal VaChomer* in Jewish thought, QC is appropriate. I use QC generally. For the English "how much more," HMM might work, which points out the need to pause ("hmm") to consider its validity/likelihood. I leave to others the merits of any abbreviation, especially in the light of what other languages might claim as the authoritative *lingua franca* of today. (Should we opt for a machine code?) Yet someone will have to decide the proper logical operators too. To capture the QC's essence, I suggest this:  $Ax^* \gg Ax$ , (where  $Ax^*$  is the new item,  $\gg$  is that much more sure,  $Ax$  is the given item, and  $x$  the property).

<sup>19</sup> *Mishnaic* Rabbis, or *Tannaim* (repeaters), were the main conveyors of traditional rulings, arguments, and sayings of the earliest part of the *Talmud* (the Oral Law), called the *Mishnah* (written by 200 CE). See Glossary.

## f) 2. The *Dayo* Limit: the Same Feature as Given

In most instances, the Jewish QC in early Rabbinic literature treats the conclusion in a unique way. Although a minority advanced the proportion of consequences to actions, the majority advocated a rule that overrode almost every other consideration: the *dayo* or “sufficiency of judgement” rule.<sup>20</sup> This limiting, *dayo* rule stated that *one could not conclude more than what was granted in the given (weaker) premise.*<sup>21</sup> Thus, if weaker Ben can lift 40 kilos, stronger Abe is more surely able to lift the same amount rather than some unclear, perhaps arbitrary, greater amount. This is plainly sensible.

So the strong, Jewish *a fortiori* meant that the conclusion was “that much more sure” to be *the same* rather than some amount “more,” even if one could scale it to the differing cases of the comparison.<sup>22</sup> The “more” strengthened the idea that the same, given feature applied equally to the other case. Invoking it left traditional decisions or interpretations intact, more or less. As a result, proportionality, otherwise also implicit in the notion of “much more,” could be either defeated or dismissed.

Even today, Maccoby upholds this traditional, limiting, *dayo* rule as applicable to the *a fortiori*. In a number of ways, it makes sense.<sup>23</sup> Especially when a situation is in doubt and one is liable to err in judgement, the least onerous consequence is preferable. In effect, the sages advocated this cautious attitude in their expression: “Be lenient in judgement.”<sup>24</sup> To stay with the given, one also maintains consistency with past truth. Additionally, this preserves and honours the wisdom of one’s intellectual ancestors (as an extension of a Biblical command to honour parents). However, is tradition always equivalent with what is correct action, adequate justice, or complete truth? That is, can the *dayo* limit be exclusively right every time? Are there not cases where some scaling of the given is more sensible?

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<sup>20</sup> I am going to make a distinction here between a rule, as a fixed and unchangeable law, and a principle that will allow for flexibility when other important factors must be included in a conclusion.

<sup>21</sup> That is, if x has it, the other similar thing y should have it too, minimally or as best we know. Yet even this need not be a certain, for while we may know x has this feature, whether y is so similar as to have it is another matter.

<sup>22</sup> It could be reversed, from strong to weak as “that much less,” that the same lesser exists within the stronger as a recognized amount (as if it had been if the cases were presented from weak to strong). It is the basic, weak result within the strong one that gives rise to the latter as an addition to the weaker, core truth. But things have limits.

<sup>23</sup> Hyam Maccoby, *Early Rabbinic Writings* (Cambridge: Cambridge University Press, 1988).

<sup>24</sup> Chaim Hirschensohn, *Beirurei Hamidot* חיים הירשנסון, *ברורי המדות*. ירושלים: דפוס העברי, ירושלים: דפוס העברי, תרפ"ט. (Clarifying the Rules [of Interpretation]). (Jerusalem: Haivri Press, 1929), 58, 60-61, 63.

In the course of this paper, I shall investigate the above and other, pertinent questions. For instance, is the commonly used *a fortiori* the same as a Jewish QC (specifically that of the *Tannaic* Rabbis of the *Mishnah*)? How was the QC employed in Rabbinic discourse and debate in association with other rules of interpretation? In particular, how was the *dayo* justified by the early Rabbinic majority?

Not only early Rabbis such as Tarphon,<sup>25</sup> but also contemporaries such as Sion question the *dayo* as a fixed rule.<sup>26</sup> Further, several difficulties attend the interpretation of the Biblical passage that supposedly back this *dayo* as promulgated by the Rabbinic majority during the formative, *Mishnaic* period. Specifically, while the same *dayo* might be set for reasons internal or external to the actual case, no unassailable Biblical warrant or rule provides a sufficient basis for it as exclusively right.

#### **g) Some Mishnaic and Amoraic Issues**

Over the course of the thesis, I make a number of general historical and theological claims concerning the earlier *Tannaic* and later *Amoraic* Rabbis. To arrive at their exact historical and theological views by way of examining the *a fortiori*/QC argument is not possible; so I have to incorporate and adapt material, as well as assume several things, particularly because my focus is the QC and not those issues, important though they be. However, the way the Rabbis used the argument does point to a few theological views. And one cannot discount historical circumstances that probably had an influence on their ideas and choices. Some of the claims around the *Mishnaic* era are *my reading into* these issues in order to justify the *Tannaic*, majority preference for the *dayo* conclusion that seems *prima facie* imbalanced from an ordinary perspective. So I set up what are likely religious responses, positions, and thinking on their behalf for their *dayo*. The historical picture I present gives the benefit of the doubt to the *Tannaim*. The same kind of reasoning goes into the shift that occurs in the *Gemara* when the *Amoraim* partly redress what I see as a formerly skewed conclusion. Even if this is a bit of construction on my part, a measure of historical and theological backing is provided by such recent and

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<sup>25</sup> Tarphon, a *Tannaic* Rabbi, lived before 200 CE, and is quoted in the Talmud, *Baba Qama*, 2:5, 25a.

<sup>26</sup> Avi Sion, *Judaic Logic* (Geneva: Editions Slatkine, 1997), 55. Yet it is the norm, as also in his article, “Qal VaChomer,” 11, [www.theologian.net/3\\_judaic\\_logic/3\\_chapter\\_04.html](http://www.theologian.net/3_judaic_logic/3_chapter_04.html). H. Maccoby, “Some Problems in the Rabbinic Use of the Qal vaHomer Argument,” 1-5, [www.art.man.ac.uk/RELTHEOL/JEWISH/qalvahomer.html](http://www.art.man.ac.uk/RELTHEOL/JEWISH/qalvahomer.html).

contemporary scholars as Steinsaltz, L. Jacobs, Neusner, Kraemer, S. Cohen, Halivni, and D. Novak, and to some extent Fisch, R. Goldenberg, B. Holtz, and as well as others noted (or not). Thus while I may distort the various pressures the *Tannaim* faced, their actual views, and the complexities involved, with a veneer of background knowledge, I am looking for what would *rationally* explain their positions, which need not always accord with expert perspectives or be wholly explainable by the *Mishnah*. I hope that the historical record accords with my analysis, and the theological ideas are not far off, even if opt for a Biblical priority. I am speculating, but not without reason or evidence.

Not everything about the QC or the *dayo* is covered either; but what I have is enough to show that the *Mishnah's* majority emphasis and Maccoby's exclusivity are not the measure of Biblical rationality, but rather of another sort, based on other important issues. In searching for what those issues were or might have been, one can acknowledge them as rational influences. They help explain how the *Tannaim* employed the argument, which accords with Sion and Abraham's contention that the QC was often inductive and not just deductive. The *Mishnah* throws its weight behind the inductive QC where evidence comes from and for precedents, Biblical and traditional (with a creative blurring of the lines of which source speaks authoritatively).<sup>27</sup> Maccoby wants to push the argument's deductive side, which is only partly true. The logical analysis of the deductive QC favours neither a *dayo* conclusion nor a degree, unless one wants a minimally satisfying answer for only those cases where the *dayo* fits. Some inductive cases can also allow *dayo* sameness or past rulings. However, for all those cases that do not suit, perhaps the majority of deductive and inductive QC arguments, the *dayo* conclusion is not good enough, because exact likeness is rare or inappropriate, and approximate vagueness that favours sameness is often just an interim step to a better answer.

With respect to the theological implication of Divine inconsistency or arbitrariness that derives from the faulty view of an exclusive *dayo* conclusion, I do not think that one has to be neutral about such Divine inconsistency or give in to it, for there is abundant Biblical evidence to the contrary. Divine

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<sup>27</sup> As the relationship of revelation and reason expands over the centuries, each focus dances around the other, to generate a vast Jewish corpus of multiple views of truth, partially grasped by human thinking. A key proponent of that perspective is David Weiss Halivni, *Peshat and Derash* (Oxford/New York: Oxford Univ. Press, 1991).

consistency stands out as cogent because strictness and mercy are compatible. This solution to the theological problem is both simple and powerful, recognized by almost all, even if it not presented in the way I have—perhaps because it is fatal to an *exclusive* dayo, besides restoring sensible ratios to their proper place as QC conclusions.

#### **h) Recent Jewish and General Developments of the *a Fortiori***

Perhaps past unawareness in academia of Jewish developments of the *a fortiori* was due in part to the language barrier: discussions were mostly in Hebrew (or Aramaic), often within a narrow branch of *Talmudic* studies. In addition, up until about a century ago the categorical syllogism as the exemplar of reasoning dominated most logic, with mathematics and scientific method filling in much of the rest, so that other forms appeared as less worthy of consideration. Yet there was more to the story.

For Jewish people up to that time, the field of Jewish studies was almost the only door open to those with intellectual pursuits, and so it was obviously crowded with Jewish scholars. By the 1800s, the widening educational doors attracted the more liberal-minded Jews to secular areas of study. Yet few could or even tried to relate the two different worlds of learning, the religious and secular, particularly in terms of argumentation methods. Some tried to bridge the gap, like A. Schwarz, a mathematician.

Because there was some resemblance of the *a fortiori* to the categorical syllogism, Schwarz (in 1913/4) argued that it could be construed as a form of the syllogism, a logical form available to the Rabbis.<sup>28</sup> Yet one must supply a supposedly implicit, universal premise for it to be valid, which only works for some *a fortioris*. To other authors, this requirement seemed too forced, seldom how the *a fortiori* was used, and invalid with two particulars. It is of more than passing interest to see how

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<sup>28</sup> Louis Jacobs, “The Qal Va-Homer Argument in the Old Testament,” *Rabbinic Thought in the Talmud* (Edgware GB/Portland, OR: Valentine Mitchell, 2005), 116, n.1. Michael Abraham studies Schwarz in “The Kal VaChomer Syllogism – Arithmetic Model”, *Higayyon Studies in Rabbinic*, eds., Moshe Koppel and Ely Merzbach (Jerusalem: Aluma). Some of his article is in my Chap. 2. Moshe Ostrovsky, *The Rules that the Torah Requires* (Jerusalem: K. I. Milman, 1924/5), 50-5, picks up on Schwarz’s method from his *Kal VaChomer*. משה אוסטרובסקי, *המידות שהתורה נדרשת בהן*, ירושלים: מילמן, תרפ"ד. The limited relation of the *a fortiori* to the categorical syllogism’s universal premise is studied later.

Schwarz actually argued the matter and was not just understood or misrepresented by his critics.<sup>29</sup> His attempt to justify Rabbinic *a fortiori* arguments as logical by means of the categorical syllogism is comparable to a parallel development outside Jewish studies.

In the early decades of the twentieth century, in the journal *Mind* (1915-1919), attempts at understanding the *a fortiori* argument are primarily of its lean, transitivity form. One finds this *a fortiori*, transitivity argument: *if A is greater than B, and B is greater than C, then A is greater than C*. The main debate is whether one needs a universal or not. While the point is moot for transitivity, as the argument works both with and without a universal, several modern, typical *a fortiori* definitions (Chapter 1) call for the universal. Again later, Cohen and Nagel mention the transitivity type too,<sup>30</sup> after which predicate logic develops and probably subsumes the argument without much more elaboration.

One observes that transitivity simply doubles the “greater than” relation, while the more typical form does not just repeat the second premise, but instead posits a new feature that is supposed to transfer to the conclusion. In addition, while transitivity is usually deductive, not all instances of the *a fortiori* are. In fact, most cases of the *a fortiori* found even in philosophical literature are not that of transitivity nor are explicitly recognized as an *a fortiori* argument, but are just stated informally in passing, in the course of making some other point or argument; its use is simply assumed to be correct.<sup>31</sup>

With the rise of modern methods, analysis of the *a fortiori* has advanced. In Jewish scholarship especially, we find both formal and informal studies, because mostly in Hebrew, unavailable to a wider audience. Recently, Brachfeld formulates the argument in mathematical logic, while Abraham does so in quantificational logic (in Hebrew). Guggenheimer treats it (earlier, in English) and Sion has a unique method.<sup>32</sup> Chapter 2 looks at these to some extent, appropriate to the limited scope of this thesis.<sup>33</sup>

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<sup>29</sup> I do not make such a study (as Abraham's), but look at some of the ways I surmise one might have argued for it.

<sup>30</sup> Morris R. Cohen and Ernest Nagel, *An Introduction to Logic*, 2<sup>nd</sup> edn., John Corcoran, ed., (Indianapolis/Cambridge: Hackett Publishing Company, 1993), 111, 114-6.

<sup>31</sup> Typically, it runs like this: “If we accept this case, all the more should we accept this other (stronger) one.”

<sup>32</sup> Heinrich Guggenheimer, ‘Logical Problems in Jewish Tradition,’ 171-196, in *Confrontations with Judaism*, ed., Philip Longworth. (London: Anthony Blond, 1967). Again, Abraham's “Kal VaChomer as a Syllogism,” 29-46, and “ע"פ ספר ״הליכות עולם״ – הפשטה מטמטית של הקל והומר – ע"פ ספר ״הליכות עולם״” Meir Brachfeld. “A Formal Analysis of Kal VaChomer and Tsad Hashaveh” (A Fortiori and the Common Element), 47-55, in *Higayyon. Sion, Judaic Logic*.

Since the amount of the feature in the *a fortiori* conclusion forms the bulk of the last two chapters, I merely state here that any reasonable, unbiased value is possible, whether it be proportionally less, the same, or proportionally more than the given, normally based on the ratio of the two compared cases.

### **i) Importance for Study**

If the *a fortiori* argument is widespread, useful, and mostly true, then it holds a significant place in human rationality as a practical and legitimate argument form. This is so for its inductive form no less than its deductive one. However, although *a fortiori* reasoning is common, it is conspicuously absent from most texts about critical thinking. Moreover, one rarely finds the *a fortiori* argument even in philosophical dictionaries and encyclopedias, despite its long history of legal, religious, practical, and conceptual uses. In contrast, in most mathematics texts, the inequality relationship of “more than” and “less than” is almost as ubiquitous as that of equality. As a result, alongside deductive forms, how the argument functioned less formally before modern logic is of more than passing interest. To explore the argument, particularly in its informal aspects, Jewish usage serves the purpose admirably.

### **Interim Summary**

The conclusion of an *a fortiori* argument claims that the relevant feature, property, or value is like that given in a sufficiently similar, comparable case. In some theoretical or actual cases, it always holds as valid and sound. In less strict cases, it assumes that the feature obtains within the normal, continuous range of a common category or else the items are so alike that to deny the feature is unreasonable.

Indeed, we can ask if the greater thing does not have at least what is an essential feature of the lesser, in what way could it be a truly greater case of the lesser or vice versa? Still we must clarify the sense in which the feature surely or only likely exists in the other case, for otherwise, it may be wrong to suggest that it is correct in reasoning or reality. We do not want to rely on an unwarranted assumption or

<sup>33</sup> Exact methods exist, such as percentages when limits can be set. Algebraic Logic is better dealt with by experts. Some of these occur in Chapter 2 or the Appendix. Relative scales too can be established (as in fuzzy logic).

claim.<sup>34</sup> The property must remain throughout the range of the cases. In less formal *a fortiori* arguments the conclusion should more likely follow from the premises than not follow (even before a test vindicates or defeats it). Otherwise, the conclusion is tentative or doubtful until subjected to a real or theoretical test, to be then accepted or rejected. However, even if an *a fortiori* disappoints, we need not reject the argument as wholly incorrect or unreliable, but only the particular case that failed.

The nature of the *a fortiori* is displayed when the given, past feature occurs in the related case which has it too, to some degree, whether the feature is personally or objectively determined. Perhaps the commonality of the thinking process that ranks the greater over the lesser or desires the better over the comparatively worse is so obvious that singling it out for special study is unnecessary and best treated as an ordinary analogy. However, while the *a fortiori* is analogical in type, it is stronger than just an ordinary analogy, for it has superlative relations that possess a stronger connection between the prior instance and the item under study. If analogy is deemed reasonable when it leads to a likely conclusion (despite failures), so too is the *a fortiori*. Valid and sound *a fortiori* deductions are stronger yet, even if limited to strictly related, well-defined, continuous series (such as linear sequences or simple geometrical forms) with heritable features. In general, the *a fortiori* argument can be classified as rational, although a thorough appreciation of it is anything but simple. When used with due care, the *a fortiori* argument is often dependable. The extent to which the *a fortiori* can be rated as deductively logical or inductively reasonable in its various forms will be treated later in more detail.

### **Order of Thesis Development**

Having introduced the *a fortiori* argument and some of its complications, the thesis will proceed with a review of some definitions in Chapter 1. In it, I begin with several standard and individual definitions, paralleled by examples of the argument from a number of sources. This will orient the

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<sup>34</sup> We are talking of a claim's warranted assertibility in weaker, non-deductive cases, in that we have good reasons that it usually works. After it obtains, the claim is verified. However, see the discussion by Christopher Norris, *Truth Matters* (Edinburgh: Edinburgh University Press, 2002), 9-11. Of course, we would like to guarantee that every *a fortiori* preserves truth just by its form (even if the facts fail); but because a comparison often deals with at least one empirical claim, not every *a fortiori* is deductive. One must differentiate "causal laws and casual facts," says Nelson Goodman, *Fact, Fiction, & Forecast* (Cambridge, MA: Harvard University Press, 1955), 25-31.



discussion to the way people view the argument. To these I append a series of comments about the strengths and weaknesses of those definitions. Details of general and specific uses follow, as do various forms and methods of treatment, including a brief analysis of the limiting and proportionality conditions that attend Jewish thought in particular. Next, Chapter 2 deals primarily with an elaboration of both the informal and formal aspects of the argument. Informally, the argument has several probability conditions and characterizations. At a cursory level, I begin to explore these with the help of various perspectives: the idea of valuations with their ordering and ranking, comparative analogy, and the notion of decision-making that chooses the best alternative. In addition, I give inductive examples and show potential fallacies. Some simple mathematical insights are used. Formally, a number of the *a fortiori*'s symbolizations are provided in the thesis, although I do not go deeply into them, but focus on the *a fortiori*'s basic nature. In particular, I review and translate some of the *a fortiori* formalisms provided by others, initially beginning with the categorical syllogism. However, its use is limited to cases where one has a general premise that would include all examples. Since the *a fortiori* can be written in the logical terms of quantificational predicate relations (QPR), which can handle clear cases of the general form and strictly heritable cases of the particular, it has advantages over the categorical syllogism. Because Sion tackles the *a fortiori* from both the Jewish and logical directions, I set out his methodology, which is unique. Since he verbally explains the argument in an implicational form without symbols, I make a number of assumptions to symbolize them in propositional logic to show its possible deductive validity and certainty.<sup>35</sup> Yet these logical languages are not clear about the conclusion's quantity. In all, I discuss issues of likelihoods, relevant premises, validity, soundness, and the possible amounts that could occur in the conclusion. Then in Chapter 3, I investigate the *a fortiori*'s particular and historical role in Jewish thought. Ancient Jewish use of the *Qal VaChomer* (CQ) as a religious type of the *a fortiori* argument furnishes rich material about how it functioned in disputes and how its specific conclusion was drawn. I also review contemporary Jewish thinking about the QC, through such authors as Maccoby, Samely, and Sion, and to some extent, Daube, who span the gamut from traditional to universal views. In

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<sup>35</sup> Sion, *Judaic Logic*. Sion also alludes to mathematical formalizations without showing them.

contrast to Maccoby's support for the same, *dayo* conclusion alone, I lay out the possibility of an alternative view that largely agrees with Sion. Although Samely affirms that the early Rabbis usually upheld the given *dayo*, which supports Maccoby, he is well aware of traditional exceptions. Because of the distinction between ordinary, human reasoning that allows degrees in the conclusion and traditional, Jewish answers that promote the same given, I analyze the *a fortiori*'s status as a religious, QC argument. This also illustrates the roles of reason in Jewish interpretation and practice, and is likely part of the underlying conflict between a stricter, Jewish perspective and a more general outlook. Chapter 4 provides a more specific and sustained critique of Maccoby's claim for the *dayo* as the only right conclusion. Since Maccoby's strong claim introduces a confusion between the *a fortiori* and another interpretive rule, the analogical likeness (*G'zera Shava*), they are compared and contrasted. I also gain support for my challenge of the exclusive *dayo* and defense of degrees from both Daube and Sion. On these and a number of other grounds I indicate how the *dayo* limit must be restricted to cases that are clearly alike or where proportions do not suit. Proper, Biblical QC's show proportional conclusions; so a variable amount cannot be wrong religiously either. Further, an analysis of the *Mishnaic* exemplar (of Miriam) for the *dayo* as right shows this interpretation to be extremely doubtful. We also find apparent inconsistencies in Divine judgements with other precedents in similar cases when the results differ. So this indicates that a prior given is adjusted by Divine mercy (barring inconsistency). In effect, the context of a case determines when to choose the given precedent or *dayo*, or opt for a strict proportion, or moderate either with the possibility of mercy or favour. What we gain is a more balanced, comprehensive understanding of the *a fortiori* in both Jewish and general thought. In other words, the two realms overlap despite specific emphases. Finally, in the Conclusion, along with a summary review, other ramifications of the *a fortiori* argument are touched on, all of which could be developed further. So this thesis establishes its two main claims: that the *a fortiori* is a generally reasonable argument and that in its Jewish context the conclusion cannot be restricted to strengthen the traditional stance alone, but must allow for proportional applications too.

## **Chapter 1: Survey of Definitions and Key Aspects of the *A Fortiori***

The purpose of this chapter is to find an adequate definition of the *a fortiori* argument. Such a definition should recognize that the argument ranges from formal deductions with valid and certain conclusions to informal inductions with acceptably probable conclusions. So I review several, proposed, *a fortiori* definitions to judge their adequacies, note their weaknesses, and cull out various points for consideration. After I lay out how the *a fortiori* is used and might fail, I present my own definition.

### **1.1 Generic *a Fortiori* or *Qal VaChomer* (QC) Argument**

Before we delve into some official, *a fortiori* definitions, since the argument is not always deductively valid or certain, but also probable or likely, we want to call attention again to these informal aspects, which a full definition of the *a fortiori* argument should also account for. At this stage, a general restatement of the *a fortiori*'s typical, straightforward structure will serve as a reference guide. Here is an inclusive description with both the deductive and inductive (or informal) variants:

*When one case is more or less than another in a common category, one of which has a key feature, surely or most likely the other has it to some degree.*

Now let us examine several definitions of the *a fortiori* argument.

### **1.2 Some Official Definitions or Representative Examples**

1) A recent, philosophical definition of an *a fortiori* runs as follows:

An argument that if everything that possesses A will possess B, then if a given thing possesses A to a greater degree, it has a stronger reason (*a fortiori*) to possess B.<sup>36</sup>

Two things about this definition need consideration: the first is the universal term “everything;” the second is the nested inclusion within that universal (as in circles diagram 1). The universal term attempts to make the argument deductive, with the elements below it working within that as a hierarchy.

We can express the antecedent of the definition as premises: Premise 1: *If any X that possesses A also possesses B, then X has B too.* Premise 2: *Some X<sub>1</sub> possesses A more than X<sub>2</sub> possesses A.* The

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<sup>36</sup> Nicholas Bunnin and Jiyuan Yu, eds. *The Blackwell Dictionary of Western Philosophy*, (Oxford: Blackwell Publishing, 2004) 19. On *a fortiori*, see Cohen and Nagel, *An Introduction to Logic*, 111, 114-116.

consequent C: then  $X_1$  has more reason to have B than  $X_2$  has. The antecedent's universal claim generalizes the argument to make it valid. It also proves that both  $X_1$  and  $X_2$  possess B.

One can render an interpretation of this universal, categorical definition as follows: *since any example is included in the overall species or category, for two non-equal individuals, when a feature is contained in the weaker case, it occurs in the stronger. Specifically, as an a fortiori and in the category of any or all, true apples x*, where *any apple x possesses seeds, A, it also has reproductive ability, B;  $x_2$  has A (seeds), and  $x_1$  (apple<sub>1</sub>) has more (seeds) than  $x_2$ , (apple<sub>2</sub>), then  $x_1$  has all the more reason to have B (reproductive ability).* Yet one need not compare individuals at all for this conclusion, because any true case of x (apple) has A (seeds) and B (reproductive ability), which we can read off directly from the general statement, “all true apples have seeds that can reproduce,” regardless of its size or seeds.<sup>37</sup>

In the employment of the universal statement, this definition transforms the *a fortiori* argument into a categorical syllogism (or more complicatedly into an example of quantificational predicate logic<sup>38</sup>) and assumes that this is the only way to understand the argument. This definition as only a special case, however, not the usual form of the argument, which simply compares two things mutually and does not automatically subsume the individuals under the general “all,” “everything,” or “anything.”

This definition is still unclear. If one item is more than the other, is it that one has “more reason” to find the extra feature (B), or does it imply that there is “actually more” of the feature, or are both of these possible? Complex arguments with extra features would accentuate this uncertainty.<sup>39</sup>

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<sup>37</sup> This is the affirmative, particular *I* implication from a universal *A* proposition of the categorical syllogism, understood classically with “existential import,” in that it (*at least one*) exists and is not an empty class. Modern logic allows the premise to be false or irrelevant as a conditional statement of “*if... then...*”

<sup>38</sup> All apples with seeds are able to reproduce; small apple with seeds can reproduce (if it has seeds, then it can reproduce); (surely) a larger apple with seeds can reproduce. A: has seeds; B: able to reproduce; x: any apple; y and z, individual apples; y is greater than z. In QPR terms,  $x(Ax \rightarrow Bx)$ ,  $\exists z(Az \rightarrow Bz)$ ,  $Gyz$ , then  $\exists y(Ay \rightarrow By)$ .

<sup>39</sup> An example underscores the problem. Any galaxy has stars; let any galaxy X exist with stars (A) and total mass (B); now galaxy  $X_1$  is greater than galaxy  $X_2$ ; so surely  $X_1$  has more reason to possess stars (A) with mass (B). Yet, there are other possibilities: 1) more stars (as A+) or more mass (B+); 2) more stars (A+) but the same mass (B); 3) the same stars (A) and more mass (B+); 4) more stars (A+) with less mass (B-); 5) less stars (A-) but more mass (B+); or should we play it safe and say that it surely has 6) at least as many stars (A) or mass (B)? If one assumes that being greater concerns a greater number of stars (A+), not just that stars exist (A), the feature of mass is secondary. The least onerous conclusion, (A) and (B), may be better or the surest, although it is barely informative and does not remove the latent ambiguity. Yet even if there are more stars (A+) and mass (B+),  $X_1$  might still be less than  $X_2$  in diameter or brightness. Does the greater galaxy have more stars, mass, diameter, or brightness?

Under the universal of a categorical syllogism, the actual comparative differences of the lesser and greater cases are superfluous. Yet in a more typical *a fortiori*, each premise performs an essential function. While the categorical syllogism can grant validity, it sidesteps these ranked particulars; so quantificational predicate, relational logic may be a better format. In either case, the definition applies to universal cases of the *a fortiori* only and so is of limited value. Also by not clarifying the conclusion's possible amounts or the likely configurations of induction, the definition's range is not full enough.

2) In a quote from the *Dictionary of Philosophy*, Sion (in his *Judaic Logic*) says that the upcoming example misapprehends the *a fortiori* for a categorical syllogism: "If all men are mortal, then *a fortiori* all Englishmen—who constitute a smaller class of men—must also be mortal."<sup>40</sup> The syllogism with the added premise and the middle term (men) is condensed as follows:

<i>Standard Form</i>	<i>Generic</i>	<i>Typical Symbolization &amp; character</i> <sup>41</sup>
P1: All men are mortal,	All M are P	A (SdPu) Subject distributed, Predicate undistributed
<u>P2: Englishmen are men;</u>	<u>(All) S are M</u>	<u>A (SdPu)</u>
C: Englishmen are mortal.	(All) S are P	A (SdPu) ( <i>valid</i> )

I agree with Sion that this example of the *a fortiori* is a categorical syllogism. What I said earlier applies to this one too with its universal premises (P1 and P2). Again, while the A-A-A structure (coined *Barbara*) works here, even if some *a fortiori*'s have implicit or explicit universal first premises, few have universal second premises as well. Even a valid A-I-I syllogism differs from the more general, *a fortiori* form that has two particular premises, which is invalid (as I-I-I) and so unacceptable in this type of logic.<sup>42</sup> To force the *a fortiori* to be a classical, categorical syllogism is too restrictive of the normal *a fortiori* that seems to work in many non-universalizable instances with two particulars.

This indefiniteness is confusing. Thus one must specify the feature(s) at the outset to know what is more and less. Although there is undoubtedly no measure of the actual numbers, we can estimate whether one has more or less of the considered feature(s), given representative samples of relevantly similar galaxies.

<sup>40</sup> *Dictionary of Philosophy* (London: Pan Books, 1979), quoted in Sion, *Judaic Logic*, 47. In his footnote, Sion distinguishes between the *a fortiori* and the "movement of thought inherent in syllogism, inasmuch as we pass from a larger quantity (all) to a lesser quantity (some). But in syllogism, the transition is made possible by means of the relatively incidental extension of the middle term, whereas...in *a fortiori* proper, it is the range of values inherent to the middle term which make it possible." We differentiate *all* from *some*: *If most humans have sight, then most likely, some will see (from a random sample)*. This *a fortiori* goes from 'the greater to the lesser.'

<sup>41</sup> For those unfamiliar with the classical syllogistic form, see some of its details in the Appendix.

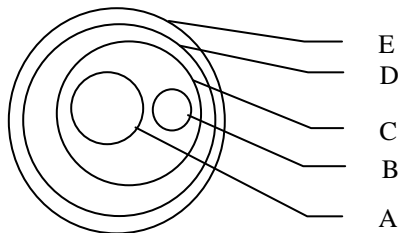
<sup>42</sup> I-A-I would be classically invalid too, because the middle term is not distributed even once. Some things are red; every apple is a thing; so some apple is red. Because of the true conclusion, it seems to be right.

3) While the *a fortiori* argument is not even mentioned in the *Routledge Encyclopedia of Philosophy*,<sup>43</sup> the *Cambridge Dictionary of Philosophy* does fill in the lacuna by giving an extended explanation of the argument form, albeit somewhat similar to the ones above:

[It]... moves from the premises that everything which possesses (a) certain characteristic(s) will possess some further characteristic(s), and that certain things possess the relevant characteristic(s) to an eminent degree, to the conclusion that *a fortiori* (even more so) these things will possess the further characteristic(s). The second premise is often left implicit, so *a fortiori* arguments are often enthymemes. An example of an *a fortiori* argument can be found in Plato's *Crito*: 'We owe gratitude and respect to our parents and so should do nothing to harm them. Athenians owe even greater gratitude and respect to the laws of Athens and so *a fortiori* should do nothing to harm those laws.'<sup>44</sup>

According to this dictionary, we note that the universal "everything" would restrict the *a fortiori* to valid, deductive forms. Read in this sense, "everything" (C), "which possesses a certain characteristic" (D), "will possess some further characteristic" (E), "and that certain things" (A) "possess the relevant characteristic to an eminent degree" (A has more D than B does), to the conclusion that "these things" (A) even more so "possess the further characteristic" (E). In the upcoming diagram, the "eminent degree" or the "more so" assumes B, where A is greater than B, in that A has more D than B does.

**Diagram 1: A Fortiori as a Composite, Categorical Syllogism**



A (the greater) functions like C (in relation to D and E). How do we account for A's relation to B?<sup>45</sup>

In Plato's analogy, we notice the lack of a universal premise. Thus to suit the authors' claim, they suggest this missing premise: *Anything that deserves gratitude and respect is not to be harmed (but*

<sup>43</sup> Nor is it in the *Encyclopedia of Philosophy*, 2<sup>nd</sup> ed., ed. in chief, Donald M. Borchert (Farmington Hills, MI: Thomson-Gale-MacMillan, 2006).

<sup>44</sup> *Cambridge Dictionary of Philosophy*, 2<sup>nd</sup> ed. Gen. Editor, Robert Audi (Cambridge: Cambridge University Press, 1999), 13. 'Enthymeme: incompletely stated syllogism or even the conclusion omitted.' However, it may be a probable and demonstrative proposition, true to all or many (267). In this, the article's author interprets Socrates' claims in *Crito*, 51A, where we also find Socrates as a more law-abiding citizen than any other.

<sup>45</sup> In categorical syllogisms, A and B are particulars of C. As an A-A-A: Every C is a D (every fruit or vegetable is seeded); every D is an E (every seeded thing can reproduce); so every C is an E (every fruit or vegetable can reproduce). As an A-I-I: Every C is an E and some A is a C, then A is an E. Likewise, B is an E. Untouched by the CS, but known, A (apples) is eminent (for seeds) over B (olives). P1: A > B; P2: B has E; Conclusion: A has E.

*rather obeyed*). Whether the universal either need or need not be assumed concerns its relation to the *a fortiori*. Of course, as a valid, categorical syllogism (A-A-A or A-I-I), it will work. However, that the Athenian laws deserve respect and gratitude are to be obeyed and not harmed can come directly from that universal, quite apart from doing the same with one's parents. Even in propositional form, the idea that A is greater than B is skipped over  $\{(A \vee B) \rightarrow C, C \rightarrow D, D \rightarrow E, \text{ so } (A \vee B), \text{ then } E\}$ . Why is A greater than B relevant at all? Plato does not make the universal an explicit requirement. Instead, Plato seems to assume the comparative aspect of the *a fortiori* in that the city-state, as expressed in its care-giving laws, is greater than one's parents who live within it (perhaps in the sense that they too are its offspring). As an analogy without the universal assumption, one can rephrase Plato's example in a typical *a fortiori* manner and add the missing first premise and appropriate details:

*The Athenian city-state is greater than our parents' authority; our parents deserve gratitude and respect in that we do them no harm and obey what they require; so surely Athens deserves our gratitude and respect so that we do it no harm and obey what it requires.*<sup>46</sup>

Notably, Plato's argument proceeds from the lesser issue, where it holds, to the greater claim. Thus, the idea that Athens deserves obedience and respect draws these key features from the parental case.<sup>47</sup>

4) The Encyclopédie Philosophique Universelle puts the *a fortiori* (as *raison de plus* = with greater reason) in this way (with my translation in the footnote):

L'argument *a fortiori* repose sur le schéma suivant: x est y, ou relativement a ce qui est en question z est plus que x, donc *a fortiori*, z est y. Il ne s'agit pas d'une argumentation logiquement valide, puisqu'elle ne repose pas sur la forme mais sur le contenu.<sup>48</sup>

<sup>46</sup> Although not in a standard, logical form, to get the main points across, I just oversimplify the issues, in two possible ways. Legend: A: state; B: parents; C: deserve(s) gratitude, respect, & non-harm; >: greater than, &: and; 1) P1: If B, then C; P2 (*unstated*): (A > B) interpreted as both (if B, then A) and (if A, then B); so if A, then C.

2) P1: B & C; P2 (*unstated*): (A > B) interpreted as both (if B, then A) & (if A, then B); to conclude with A & C.

<sup>47</sup> Since this analogy can fail in several ways, we might want to add two provisos: that the State mimics or derives from parental authority of the family writ large, when such authorities are respected. Although stated above from lesser to greater, it can go in the opposite way, with the result less obvious. P1: All authorities should be obeyed; P2: the greater authority is obeyed; Conclusion: then the lesser is obeyed. (There are dangers, of course: the state can usurp individual rights or people may rebel against the state's claims; so we need a moral authority over both that is true for all, allowing each their legitimate and limited spheres of authority and freedom. The Bible sees God as the moral authority {as true moral Agent, Dt 32:4}, who defines the laws, rights, obligations, etc., for all. For instance, see David Novak, *Natural Law in Judaism* (Cambridge: Cambridge University Press, 1998), 181-8.)

<sup>48</sup> *Encyclopédie Philosophique Universelle: Les Notions Philosophiques*, Vol. 1. Volume dirigé par, Sylvain Auroux (Paris: Presses Universitaires de France, 1998), 51. "The *a fortiori* argument rests on the following schema: x is y, and relatively for the one in question, z is more than x, so *a fortiori*, z is y. It does not succeed as a valid logical argument, because it does not rest on the form but on the content."

This definition departs from those of the universal types. Yet it says that the argument is invalid, because it is based on facts rather than on form. However, this critique is only partly justified, for the argument can come in deductive and non-deductive forms; the former can be valid (sometimes) and the latter probable or likely—which is sufficiently acceptable in scientific and other quarters. One need not deny an argument’s strength when it is not formally valid—and of course, the definition does not say that (as if to wipe out scientific induction or probability claims). Still, the comment does not distinguish between such important forms or note that a highly probable induction usually succeeds. At the same time, the first part of the definition would permit some valid cases, as with simple transitivity. In any case, even if the *a fortiori* is valid only in these or heritable cases where their relation requires the same conclusion, its facts do determine the argument’s soundness. Definitionally, it is succinct but limited.

5) Lalande, in the *Vocabulaire technique et critique de la philosophie*, gives an example of a Latin legal rule: “*Non debet, cui plus licet, quod minus est non licere.*”<sup>49</sup> “It ought not to be that to whom more is permitted, what is less is not to be permitted.” More clearly and positively but loosely stated is this: “He who is permitted to do the greater may with greater reason do the lesser.” Although not a definition, it shows the *a fortiori*’s flexibility. Its possible truth is no less sure in such informal terms.

6) The more dated *Dictionary of Philosophy* says that the phrase *a fortiori* signifies “all the more.”<sup>50</sup> It is “applied to something which must be admitted for a still stronger reason.” This affirms the prior case and seems to be the basic understanding of its role in argumentation. It is simple and inclusive.

### 1.3 General Comment on Above Definitions

Despite the scarcity of definitions of the *a fortiori* argument from philosophical and general dictionaries and encyclopedias, these will suffice overall, albeit as an uneven picture. Yet, if some important philosophical dictionaries avoid the *a fortiori* altogether (perhaps as no longer relevant or partly resolved by quantificational predicate logic) and others seem to confuse it with the categorical

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<sup>49</sup> From Sion, 48, but without his footnote comments; this definition is taken from the French dictionary, 32.

<sup>50</sup> *Dictionary of Philosophy*, 15<sup>th</sup> ed., ed., Dagobert D. Runes (Totowa, NJ: Littlefield, Adams & Co., 1965), 7.



syllogism, this is not encouraging. While each definition has its valuable points and a few are better in some respects, none adequately covers all the general requirements. Before I try to compose a more satisfactory one,<sup>51</sup> we can garner further insights from a number of other definitions and uses.

#### 1.4 Examples and Definitions from Other Sources

We turn first to Aristotle's description as it maps out a locale in reasoning for the argument. After that, we look to various versions used in Roman law. Later, we shall examine some Jewish definitions.

1) The Kneales write that for Aristotle the *a fortiori* ('from the more and the less', as they sensibly put it) is a well-recognized theme, as it is referred to repeatedly.<sup>52</sup> It is an argument 'according to quality', about what is preferable. These examples come from the *Topics*: 'That which is more lasting and durable is preferable to that which is less so,'<sup>53</sup> and 'That which is chosen for itself is preferable to that which is chosen for the sake of something else.'<sup>54</sup> In either case, the preferable item depends on a better feature or set of qualities than the compared item. "Here we have a 'logic of ordinary language' rather than formal logic."<sup>55</sup> On a scale of quality, Aristotle makes the *a fortiori* a matter of preference related to choice. The fact of having the basic quality in either case is not at issue, as it is something known; what he articulates is the general principle of preferential choice. The surer choice as a conclusion is the preferable item. Simply, if A has more good quality than B, A is preferred to B.

2) In addition, "Alexander [of Aphrodisias, the 3<sup>rd</sup> CE commentator] gives an account of arguments" of quality as "*a fortiori* arguments with a general, conditional premiss."

If that which appears to be more sufficient for happiness is not in fact sufficient, neither is that which appears less sufficient. Health appears to be more sufficient for happiness than wealth and yet it is not sufficient. Therefore wealth is not sufficient for happiness.<sup>56</sup>

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<sup>51</sup> The search from partial definitions to a better, encompassing one is an (abductive) reasoning process.

<sup>52</sup> William and Martha Kneale, *The Development of Logic* (Oxford, London: Clarendon Press, 1962), 42. *Topica*, ii. 10 (114b37); iii. 6 (119b17); iv. 5 (127b18); v.8 (137b14); vi.7 (145b34); vii.1 (152b6); vii. 3 (154a4).

<sup>53</sup> Kneales, 43, *Topica*, iii.1 (116a13).

<sup>54</sup> Kneales, 43, *Topica*, iii. 1 (116a29).

<sup>55</sup> Kneales, 43.

<sup>56</sup> Kneales, 106, taken from *In Aristotelis An. Pr. Lib. I*, Commentarium, ed. Wallies, C.I.A.G. ii. (i), 265.

The feature is “insufficient for happiness.” If the greater (A: health) is insufficient, surely the lesser (B: wealth) is too. *A has more potency than B to deliver f, yet A fails; so surely B fails.* (Even health and wealth combined may still not yield happiness, as it is a more complex issue, requiring other factors.)

In the above examples, Aristotle (1) expresses abductive choices for the better item, due to its higher quality, while the Alexander of Aphrodisias (2) rejects the lesser given the greater’s inadequacy.

3) “Aristotle, in his *Rhetoric*, treats the example (‘paradigma’), which he classifies as an induction, in close proximity to other analogical devices, including the *a fortiori* argument . . . .”<sup>57</sup>

Interestingly, Aristotle did not consider the *a fortiori* to be the same as his categorical syllogism; rather, he understands it as an analogic device, unlike what we have encountered in some definitions so far that meant to show it as deductively valid. Perhaps Aristotle was the first to view the *a fortiori* as an inductive analogy. It will also be so considered under Jewish definitions.

4) Further, in terms of analogies drawn to greater and lesser degrees, here are two instances:

i) As an Inductive Analogy: Barker proposes seven rules for inductive analogy that one can apply to the *a fortiori*.<sup>58</sup> For example, Rule 1: *The larger the number of previously observed instances, the sounder the argument’s inference as applied to the new instance.* Thus, if case A has more observations than B, and B is well observed, then A is a stronger inference than B. Also, Rule 6: *The more likely the relevant connection between the properties S and P, given our knowledge of the subject matter, the sounder the argument.* Let us illustrate this: Since plant A has more seeds (S) than plant B of the same type and location, and seeds usually lead to reproduction (P), A is potentially more productive than B.

J. Cohen adds a proviso for any enumerative, inductive analogy: that it survives key tests meant to eliminate it. Once a case has weathered such tests, it rises to a standard that is more likely to be true.<sup>59</sup>

ii) As a Disanalogy: In contrast to the above, Weddle exemplifies his unidentified *a fortiori* as a disanalogy, incorporating similarities and dissimilarities, with differences dominating in this case:

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<sup>57</sup> Alexander Samely, *Rabbinic Interpretation of Scripture in the Mishnah* (Oxford: Oxford University Press, 2002), 174, where he refers to Aristotle, *Rhetoric*, 1393a-b, B20.

<sup>58</sup> Evelyn Barker, *Everyday Reasoning* (Englewood Cliffs, NJ: Prentice-Hall Inc, 1981), 200-205.

<sup>59</sup> L. Jonathan Cohen, *The Philosophy of Induction and Probability* (Oxford: Oxford Univ. Press, 1988), 2, 30-32.

A motorcycle gang tribunal decides that because two violators of a club rule differ in both the degree and the circumstances of their violations, the lesser violator should not get the punishment prescribed for the greater violator.<sup>60</sup>

The disanalogy comes from the differing degrees and circumstances of the violations. However, the implied conclusion (some sort of punishment) gets its strength from the fact that there are similarities in that both are a) violations of b) the *same* rule, and that both c) deserve punishment. Although they differ, they are not so incommensurable as to deny that sufficient similarities link them in a way that one can enact some punishment for each offense. Of course, to be explicit, we can supply the term “surely” as the key meaning of “should” for the *a fortiori*, or else just take it as an analogy of a strong and weak case.<sup>61</sup> Anyway, as an analogy or disanalogy, we have this (fractional) proportionality in principle:<sup>62</sup>

*Worse Punishment applies to Worse Violator as Lesser Punishment applies to Lesser Violator*

The *a fortiori* to be drawn would be this: assuming that bike gang tribunals also operate internally in terms of general justice, *A's violation of the rule is greater than B's; A gets punished; so surely B gets punished too, proportionally less, in light of the differing circumstances.* Unlike the former examples, this one moves from the greater to lesser case and requires proportionality if justice is sought.

5) Kreeft also calls the *a fortiori* and *a minore* arguments analogies. For the *a fortiori*, “if something is true in one case, it is probably true in a second, similar case in which the reason for it being true is even stronger.”<sup>63</sup> For the *a minore* version, it is “all the less.” The criteria for evaluating these arguments are commonsensical, he says, as for analogy. As such, he qualifies the result as probable only. One judges if the claim has a good reason for it and, if necessary, one verifies it. Yet Kreeft does not mention possible, deductive forms, although he does not deny that such might occur.

6) Another explanation of the *a fortiori* comes from the “Wikipedia” dictionary on the internet:<sup>64</sup>

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<sup>60</sup> Perry Weddle, *Argument: A Guide to Critical Thinking* (Sacramento: McGraw-Hill Book Company/California State University, 1978), 141.

<sup>61</sup> Most people can agree that the phrase “should surely not be the same” is better than saying that this is the same as a comparative, proportional analogy, because the former is more likely to occur and so carries more force.

<sup>62</sup> As another proportional equivalence: More punishment/Less Punishment as Greater Violation/Lesser Violation.

<sup>63</sup> Peter Kreeft, *Socratic Logic*, 2<sup>nd</sup> ed. (South Bend, IA: St Augustine’s Press, 2005), 335.

<sup>64</sup> See the internet site, Wikipedia, for an unofficial, philosophical definition of *a fortiori*. Reference: Thomas K. Grabenhorst, “Das argumentum a fortiori,” in S. Schneider, *Logik für Juristen*, 158ff. (Verlag, Peter Lang, 1990).

In the natural sciences and in social and other human sciences where statistics plays a large role, the phrase is used to mean "even more likely" or "with even more certainty."

In classical logic, truth value is binary (either absent or present, without further elaboration), as opposed to quantifiable on discrete or continuous scales as to existence and/or degree (i.e., either absent or present in some quantity that depends on the likelihood of a proposition's truth and/or the degree to which a descriptive statement applies). In classical logic, "*a fortiori*" is a signal indicating an attempt to justify an inferential step by claiming that the point being proven follows "from a[n even] stronger [claim]" or has been stated "by means of [an even] stronger [assertion]." That is, the phrase indicates that a) a proposition previously given or proven in the argument contains and implies a variety of "weaker" or less contentful propositions and b) the proposition being proven is only one of the propositions contained and implied.

This still neglects the weak to strong case, which can be remedied (as the article recognizes this direction). Fortunately, it does mention inductive likelihood and (the non-classical logic of) degrees.

7) As noted in the early 20<sup>th</sup> century issues of *Mind*, the *a fortiori* argument comes in the form of transitivity with its own kind of deductive implication. Transitivity as an *a fortiori* is special in that it is formed out of the doubled premise term(s) and parallels mathematical reasoning in its simplicity. *If A is greater than B, and B is greater than C, then A is greater than C*. In a separate, later work, Cohen and Nagel too present the transitivity argument. In it, the "greater than" term is exchangeable with similar others: *If A is taller (older) than B and B is taller (older) than C, then A is taller (older) than C*.<sup>65</sup>

Again, in reference to the ongoing debate about the need for a universal with the *a fortiori* in various issues of *Mind*,<sup>66</sup> there are two opposing views. Mercier insists that one need not assume or start with a universal, but that a universal (or better, a general) expression for the *a fortiori* arises only *a posteriori* from examples. Against this view is that of Pickard-Cambridge, Shelton, Sidgwick, and Jevons, which claims that universals are implicitly necessary or involved. This group's approach favours the categorical syllogism (CS) with its *a priori*, universal assumption. For Mercier, the

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<sup>65</sup> Cohen and Nagel, *An Introduction to Logic*, 111, 114. It is also a transitive, nonsymmetrical relation, 123.

<sup>66</sup> In the transitive form, see Mercier's article, 'The Argument A Fortiori' in *Mind*, Vol. 26, No. 103 (July 1917), 340-350 (and his earlier, 'The Universal and the A Fortiori', Vol 25, No 97, (Jan 1916), 83-93). One need not make the empiricist assumption for the argument for it to work; and I think Mercier would agree. (See also F. C. S. Schiller, 'Formalism and the a Fortiori', Vol 26, No 104, (Oct 1917), 458-465 and further remarks in Vol. 27, No 106 (Apr 1918), 198-202.) 'Universals and A Fortiori Reasoning' in *Mind*, Vol 26, No 102 (April 1917), 205-215. This is part of an ongoing controversy as evident from a sequence of other articles in *Mind*, such as the latter's 'The A Fortiori Argument', Vol 24, No 96, (Oct 1915), 536-538, F. C. S. Schiller, 'The Argument a Fortiori', Vol 25, No 100, (Oct 1916), 513-517, and in the same, A. Sidgwick, 'The A Fortiori Argument', 518-521.

particulars (the A, B, and C of transitivity) are sufficient on their own, because they bear obvious degrees of difference.<sup>67</sup> Although given in general terms (as A, B, C), he says, these are the general results of a (specific) inductive procedure. As such, he continues, they need not be clearly in the mind ahead of time or even necessary truths in order to make one's observations acceptable or correct. Mercier's notion is more in tune with perfect induction as a way of accounting for deductive ideas as generalizations. Even if there is a universalizable set of validation rules, he notes, these need not be those of the CS. He adds this: "What universal makes the CS universally true?"<sup>68</sup> In Mercier's defense, non-circular transitivity grants deductive validity without being a CS, because, even if one adds the universal, it is superfluous to the basic apprehension of the particulars and their relations. Further, other forms of the *a fortiori* can work inductively too, to yield a likely conclusion.<sup>69</sup>

### 1.5 Comments

A number of definitions of the *a fortiori* assume a universal quantity that can grant formal, deductive validity, while other explanations, examples, and definitions allow more inductive latitude. In comparing the *a fortiori* particulars, many practical, known, or expected situations, often confirmed by further experience, indicate that the conclusion is likely. This depends on the mutually differing ranks, recognized as contextually true, without an explicit, universal premise. We feel reasonably justified in accepting these, despite a residual uncertainty as to their actual occurrence. If we are to add a universal for deductive validity (as in a categorical syllogism), this comes at the price of fewer possible types. Transitivity repeats the greater to lesser relation, but is less common than cases that possess a new feature. We also note that the modal terms "surely," "all the more," or "less so" often signal the conclusion. These various cases elicit the need for a more encompassing, *a fortiori* definition. In all, a

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<sup>67</sup> We can say that the "greater than" relation is true when it is progressive and non-circular requirement.

<sup>68</sup> We face, according to Mercier, an unending search for universals to justify the "all" of the CS, to then justify particulars ("The Universal and the A Fortiori", Vol 25, No 97, (Jan 1916), 84). Particulars may be first in reality, even if we also need some sort of abstractive ability or conceptual structure to distinguish and organize ideas.

<sup>69</sup> Mercier ((No 97), 85) says that if one already answers a rude person, one will *a fortiori* answer a polite one. Although Mercier says this is an *a fortiori* model, Pickard-Cambridge is right to call it an unsound deduction ((No 102), 208). Yet as an inductive claim, which Mercier seems to imply here, it is reliably true.

general expression would include the lean transitivity form, other valid deductions, and robust inductions.<sup>70</sup> Having encountered a number of definitions in philosophical dictionaries, and how various authors treat it, let us turn to some Jewish descriptions and definitions of the *a fortiori* (or Jewish QC).

### 1.6 Jewish Definitions

The *Qal VaChomer* (QC) argument is taken by most Jewish authors to be the same as the *a fortiori*. Early Jewish uses, however, have different emphases. The fact that it appears at the beginning of all three lists of the Rabbinic rules of Biblical interpretation (called *middot* or measures) indicates its importance in Jewish thinking.<sup>71</sup> Indeed, the argument is often at the centre of Rabbinic debates.

1) Jacobs says that the *Qal VaChomer* argument goes “...from the minor [matter] to the major” so that “...if A [the less weighty] is so, then B [the weightier] must surely be so....” This is a functionally descriptive definition. He continues: “The Rabbis use the argument as one of their hermeneutical principles by means of which they expand and elaborate on the Biblical teachings.”<sup>72</sup> As he notes, the Rabbis did not invent the argument; rather, the *Talmud* and the writings of the period recount several instances of the argument in the *Tanach*, as the basis of its exploitation. The Rabbis just assume it works, drawing as much on hoary antiquity and religious authority as on pragmatic matters of life and its general similarity to the *a fortiori* of other cultures.

2) I call attention to an older description by Ostrovsky (which I translate from the Hebrew):

The name *Qal VaChomer* applies only to teach what is a special judgement between two things that bear a graded difference, by means of which we judge what applies from one to the other.<sup>73</sup>

This minimally adequate definition is more general than those encountered so far. Although its brevity is advantageous, its conclusion is still vague. From a religious Jewish vantage point, one might

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<sup>70</sup> A is greater than B; B has property C (which in transitivity is that B is greater than C); so surely, A has C.

<sup>71</sup> Samely, *Rabbinic Interpretation*, 176-7. On 414, Analogies 4 & 5, he has 22 occurrences in the *Mishnah* alone. The first list of 7 rules, located in *Tosefta* San 7:11, is by Hillel who died before 20 CE; the second list of 13 is in *Sifra*, by Ishmael; the third list of 32 is in *BerR* (Wilna edn.), by Eliezer ben Yose. See Samely, 26, n. 92.

<sup>72</sup> Jacobs, *Rabbinic Thought*, 109. The *Talmud*: a large composition of religious documents (written 200-600 CE), of 2 parts: an earlier *Mishnah* (retelling – Rabbinic rulings on Biblical laws) and a later *Gemara* (completion – Rabbinic commentary and justifications for those interpretations). *Tanach* = Law, Prophets, and Writings, referred to as the Old Testament by most Christians. Later in Chap. 4, I discuss *Tanach*, QC (Biblical *a fortiori*) arguments.

<sup>73</sup> השם קל וחמר. Moshe Ostrovsky, (The Rules that the Torah Requires), 41. המיחות שהתורה נדרשת בהן. מיוחד אך ורק למדה זו שהיא פעולת דין מיוחדת לשני דברים שיש ביניהם הבדל מדרגה, שעל פיו אנו דנים מהאחד על משנהו.

presume that it restricts the conclusion to the same given as the *Mishnah's* norm, rather than permitting proportionality. However, the latter is possible too if one emphasizes the point of a “graded difference.”

3) Lichtenstein provides another definition in the English preface to Hirschensohn's book:

[I]f we find that the Scriptures are rigorous in less important instances, we may rest assured that the same rigor will be adhered to, with even more strictness, in more important cases. Then, on the other hand, an inference may also be made from the important to the less important. The deduction is then made, that if the law is lenient in the more important instance, it surely cannot be stringent in the less important case.<sup>74</sup>

We can see new characteristics and distinctions here, with movement in both directions. First, one can have a rigorous feature in a lighter case that clearly follows in a more significant one. Second, as reasonable justice would demand, a lenient feature in the greater case must not become severe in a lesser one. The intention of “with even more strictness” seems to retain the same result in a more definite sense. Yet it is logically possible that a lesser case's strict feature apply proportionally more in a more severe case, unless it is already maximal. Further, it says nothing of a less onerous feature in a lighter case that might be stronger in a more severe case. As a result, we still lack clarity about logically possible proportions. Thus, the above is a *Mishnaic* definition for the *Qal VaChomer*, not a general, *a fortiori* one. To see the *Mishnaic* QC as general would muddy the waters, for the operative term of a typical *a fortiori* has more than just the sense of sameness, for it can include degrees.

4) Maccoby has an explanation from which we can gain further insights:

The *qal wa-homer* argument was regarded as the basic logical tool of halakic reasoning, so much so that it is often called simply *din*, meaning ‘argument’. The *qal wa-homer* is a reasoning by analogy, a form ... especially useful in legal argument, in which it was necessary to compare cases.... Greek thinkers never developed a logic of analogy, which they regarded as a device of rhetoric, not of strict reasoning.<sup>75</sup>

According to Maccoby, the QC is a logical analogy made between cases. However, as we will see, his restriction of conclusion to the given feature makes it non-proportional. As such, it can only be a

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<sup>74</sup> Hirschensohn (Clarifying the Rules [of Interpretation]), preface by M. Lichtenstein, 14. He notes it is one of Ishmael's hermeneutic rules (a 3<sup>rd</sup> generation *Tannaic* rabbi of the early part of the second century), from the introduction to the *Sifre debe Rab* and also found in the *Torat Kohanim*.

<sup>75</sup> Maccoby, *Early Rabbinic Writings*, 173. *Halakic* (or *halachic*) is concerned with proper Jewish practices.

highly special sort of analogy that applies in some traditional Jewish areas, rather than as a secular, legal, or practical argument, which would admit to degrees of judgement or proportional results.<sup>76</sup>

5) Chavel defines the QC this way:

A form of reasoning by which a certain stricture applying to a minor matter is established as applying all the more to a major matter. Conversely, if a certain leniency applies to a major matter, it must apply all the more to the minor matter.<sup>77</sup>

This bi-directional definition limits us to the same result again and avoids other possible combinations.

6) Feigenbaum's definition has a modality scale:

- a) Any stringent ruling with regard to the lenient issue must be true of the stringent issue as well;
- b) any lenient ruling regarding the stringent issue must be true with regard to the lenient matter as well.<sup>78</sup>

This more precise definition has an interesting twist not noted previously. While not stated in these terms, we can call the requirements for the conclusions as the (a) upper and (b) lower bounds, with nothing in between or beyond.<sup>79</sup> In essence, both are *dayos* that conform to the given alone—for any ruling of these sorts. Since we expect the consequence to match the issue, (a) and (b) are unusual cases. Other than the definition's leanness, it lacks the possible, proportional variability of ordinary use.

7) Samely, like Maccoby, sees the QC as an analogy. In addition, Samely says this: "The *a fortiori* argument treats norms as units which, through other norms, allow further norms to be inferred."<sup>80</sup> This statement needs to be deciphered. Apparently, the *a fortiori* takes an analogue (the first norm) to explain

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<sup>76</sup> This is quite apart from a mathematical relationship between numbers or theoretical entities.

<sup>77</sup> Sion, 61, quotes Charles B. Chavel, *Encyclopedia of Torah Thoughts* (NY: Shilo, 1980), 27, n. 106. Sion also notes Rabbi Luzatto's (Ramchal) broader notion of any scaled comparison as the middle term, from the original (*Derech Tevunot*) *The Ways of Reason*, D. Sackton and C. Tscholkowski, trans. (Jerusalem: Feldheim, 1989).

<sup>78</sup> Sion, 61, Yitzchak Feigenbaum, *Understanding the Talmud: A Systematic Guide to Talmudic Structure and Methodology*, 2<sup>nd</sup> rev. edn. (Jerusalem: Darche Noam, 1988), 88. Sion says that modalities nest within modalities. Guggenheimer disagrees, 'Logical Problems in Jewish Tradition' in *Confrontations with Judaism*, 179.

<sup>79</sup> Earlier, I said that upper and lower limits may not be easily definable (as sweetness or bitterness), whereas here they are. Yet they are relative limits only, which later, by analogy, are compared to *A & E* statements.

<sup>80</sup> Samely, 176, uses the *a fortiori* in a wider sense than do Kneale and Kneale, *Development of Logic*, 42, cf 111. They take it in the sense of Burchfield: 'introducing a fact that if another fact already accepted as true must also and still more obviously be true, i.e., with yet stronger reason, more conclusively' (Fowler's *Modern English Usage*, 32). "As an example: 'It could not have been finished in a week; *a fortiori* not in a day.'"



a less known item; this is accomplished by some previously accepted understanding (the second norm) of that given analogue, so that one can infer the result (the third norm).<sup>81</sup>

Samely also describes the particular *Mishnaic a fortiori* or *Qal VaChomer* (QC) in linguistic detail:

The Mishnaic *a fortiori* inference, or *qal wa-homer*, consists of an analogical transfer between subjects.... Its function in the Mishnaic discourse is often explorative rather than apodectic. The mechanism of the inference involves an assignment of (mostly halakhic) categories to the two subjects; a ranking of these categories in a dimension of comparison; and the transfer of what is known about one of them to the other based on the higher rank in the comparison of categories. It is this differential of ranks, which leads to the claim that for the second subject the validity, certainty, or reasonableness of the inferred proposition is even greater than for the subject from which it is inferred.<sup>82</sup>

While not clear here, Samely later avoids the obvious, possible, proportional results, for the same given (*dayo*) is the surer, normal answer in this *Mishnaic* definition. Since exceptions exist even in the *Mishnah* (as we shall see), his statement is correct, but misleads due to this constriction. As an analogy, the QC might afford flexible proportions. Yet he violates his usual care with terms in his comment that the second subject (or conclusion) can be more valid than the given. Sameness, as more surely the case, is equally, not more, valid in a logical sense. Whatever the meaning of the standard phrase, “all the more so,” to say “with greater reason” is better than to mix it with terms like validity, as articulated in formal logic, which permits conclusions that are either the same amount or proportional to the given.

Further evaluation of Samely’s and especially Maccoby’s definitions and claims will occur in Chapters 3 and 4. Since various official definitions and writers consider the QC (*Qal VaChomer*) to be a CS (categorical syllogism), while others roundly deny it (e.g., Jacobs and Samely), a limited discussion of how Schwarz might have seen the matter is worthwhile.

**1.7 Schwarz’s Possible View and Probable Definition:** that the QC, to be logical, conforms to the CS

Because the QC resembles the categorical syllogism, Jewish scholars like Schwarz (in 1914) argued that it was a form of the CS. We noted similar debates in *Mind*, whether one needs to assume a universal “all” to make the *a fortiori* valid or that one can dispense with it (as in transitivity) and just accept the

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<sup>81</sup> This is studied later under analogy, generally in Chapter 2, and more specifically in Chapter 3, with Samely.

<sup>82</sup> Samely, 174. This definition of the Mishnaic argument is normative but not inclusive of all its cases.

particular terms as sufficient. The matter was not finally resolved and just drops out of sight (by about 1920), perhaps because the new, quantificational predicate forms expanded what constituted logic. In particular, it changed the nature of the classical paradigm of logic, the categorical syllogism, to become just a part of the newer, more generalized understanding.

Whether Schwarz's actual claim was that the QC can only be a CS is a matter for further study, because I shall not reconstruct his attempt either, but only focus on it as a possible CS.<sup>83</sup> Doubtless Schwarz realized that with the latent, universal premise, one could construct some valid QC's as CS's. Yet some criticize Schwarz's treatment, although he was not wholly wrong.<sup>84</sup> In fact, we have seen a number of debaters in *Mind* around Schwarz's time who say the same thing about the *a fortiori*. Later (1924/5), Ostrovsky adopted Schwarz's method, probably unaware of the new developments in logic, given his Jewish focus.<sup>85</sup> Even contemporary, philosophical references define it in terms that suit the categorical syllogism some 80 years later, long after quantificational logic was established. Nonetheless, why would Schwarz argue for the QC as a CS around the turn of the 20<sup>th</sup> century?

At the time, Schwarz may have been unaware of the new logical breakthroughs of Frege or the developments of relational methods brought to fruition by Russell and Whitehead, immersed as he was in his large work on the Rabbinic rules of interpretation and his own specialized area of mathematics. If he took his cue from mathematics, every positive, natural number higher on a continuum of rational

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<sup>83</sup> I accept the view of others as sufficient for my concerns. Abraham (35-37) analyzes Schwarz's method formally in predicate logic, reviewed in my Chapter 2. Sion goes about showing the QC's place in reason, to advance the argument's status, even if not in standard ways. More on the CS and Sion's work follows later in that chapter too.

<sup>84</sup> Jacobs mentions this on 116, n.1, in "The Qal Va-Homer Argument in the Old Testament," *Rabbinic Thought*. Also Jacobs, *The Talmudic Argument* (Cambridge: Cambridge University Press, 1983), 5. Samely expands this, *Rabbinic Interpretation*, 185, n.31. For Jacob's to accuse Schwarz as mistaken about the argument as a CS is somewhat disingenuous, as Jacobs seems unaware of or avoids other logical forms. We might forgive Schwarz's early unfamiliarity with predicate logic, but less a much later oversight by Jacobs, whose example is useful, but limited, and his explanation too brief. As it stands, apart from Rabbinic and Biblical authority, mere description is not the same as correct use. Although the QC is not just a CS, Jacobs might state how it can function logically without a universal, or refer to it elsewhere. Samely points out where he thinks Schwarz was weak or wrong and adds a symbolic structure, 177, n.9. Yet when he stresses that Schwarz gives only a part and not a whole QC, this is a slight exaggeration. As a benefit of the doubt, Samely supplies the missing stuff, although one would expect a full QC from Schwarz. Samely says that Schwarz is weak when he excuses the Rabbis' non-use of Aristotelian reasoning as 'too boring' and that the difference between the QC and the syllogism is 'purely formal'. When Sion states that the *a fortiori* is not a CS in the way the Rabbis used it, he offers his own method, *Judaic Logic*, 30-62.

<sup>85</sup> Ostrovsky, 60.

numbers is always more than a lower one.<sup>86</sup> By analogy, if a lower case on a continuum within a special category has an inherent feature, every like, higher case has it too. Since a CS is not valid with particular premises, one needs a universal. In Schwarz's defense, if his standard was mathematical proof, perhaps he saw in the CS the strongest form of deductive logic possible for the *a fortiori* at the time of the Rabbis.<sup>87</sup> Even if he was familiar with quantificational predicate relations, the Biblical writers and later Rabbis did not likely argue in those terms.<sup>88</sup> To propose such an advanced grasp of logic might be anachronistic. In any case, as Sion observes, the Rabbis approach was more inductive than deductive.<sup>89</sup>

The non-transitive, common *a fortiori* with two particulars may require a universal for validity. Even if we assume an *all* and conclude each particular valid (as *A* to *I* propositions), the *I*'s still need to be joined to decide if a case has more of (or more assuredly) the feature given. If the higher case is analogous to *all*, we can only conclude probably or factually for the lesser.<sup>90</sup> If a lesser and its property is fully included within a greater, **any** lesser works. However, QC's are seldom well defined or sure.

For an *a fortiori* deduction with two particular premises, the logic of quantificational, predicate relations (QPR) might succeed where the categorical syllogism fails—but not in every case. *A fortiori* (QC) deductive validity can be shown *in strictly limited, continuous sets* (as in Chapter 2 with the features of circles). When a property is heritable, the particulars of the *a fortiori* conclude validly.

Since QPR logical validity for both the universal and particular is broader than the universalized categorical syllogism (CS), it is a better system (although some examples are still invalid). The CS is a limited version of QPR and can be included within the QPR form, which can cope with more QC types. Neither Schwarz nor others, then, are entirely wrong. In some cases, the Rabbinic QC with the same

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<sup>86</sup> A specific category would have to be true of both the higher and lower cases, whether both as positive, even, odd, prime, or whatever, and not a mixture, even if in some cases the relationship still works.

<sup>87</sup> See Dov M. Gabbay and John Woods, in 'The Practical Turn in Logic,' in *Handbook of Philosophical Logic*, 2<sup>nd</sup> ed., Vol 13, eds. D. M. Gabbay and F. Guentner (Netherlands: Springer, 2005), 15, for the hegemony of the syllogism until the latter part of the 19<sup>th</sup> century (revolutionized by such persons as Frege and Peirce). They also note the inadequacy of artificial, formal (mathematical) logic to capture all of practical reasoning's breadth (17).

<sup>88</sup> Abraham puts Schwarz's argument (35-37) and the QC of the Rabbis (39-46) into quantificational form. However, Guggenheimer claims that the Rabbis did argue in these ways, although not symbolically, 179-185.

<sup>89</sup> See Sion, 11, 20-22, 28, 29, especially on 22, n.2. Sion uses the more specific term "adductive" too, e.g., 133.

<sup>90</sup> I see this as an acceptable argument with nested characteristics, whether always or generally, if the lesser is (likely) fully distributed in the greater. *The lesser quality home has a washroom; (likely) this better home has one.* Since the definition of "lesser quality home" includes a washroom, minimally, to fit, the better should have it too.

result is logically valid by QPR methods (Chapter 2 and Appendix). However, we need not be restricted to deduction alone, because when we deal with the facts of particular cases, the probabilistic methods of inductive reasoning can be strong enough to show many cases to be sensible (although fallible) claims.

The *a fortiori* and the categorical syllogism relate only in part.<sup>91</sup> Even the more general logic of quantificational predicate relations does not deal with everything about the *a fortiori*, because the same given and a ratio are equally valid (as in Chapter 2). Thus, although the *a fortiori* is largely analyzable in quantificational logic, the argument can still be considered somewhat unique and not fully assessed. Since Jewish treatments of the QC bring out such intricacies, I delve into them in Chapter 3. For now, to appreciate the *a fortiori* possibilities, I set out the range of QC's (*Qal VaChomer*) and CQ's (*Chomer VaQal* = strong and weak), although the QC term can stand generically for any such arrangement.

### 1.8 Alternate Arrangements of QC Terms

The common *a fortiori* (QC) reads like this: *a feature associated with a weaker case, should attend a stronger case of the same sort* (within a specific class or category). The stronger to weaker (CQ) case of transfer is similar. Combined and generalized, we have this: *a feature associated with one of a ranked pair in a grouping should be associated with the other, to some extent*. This extent would permit both what is the same and proportional; but to decide which is better depends on the circumstances. For the moment, this definition will suffice. I have used the word “should” above to weaken the alternate term, “surely,” to allow both definiteness and likelihood. Besides those QC and CQ cases, variants of the *a fortiori* form are possible. To cover these other versions, I set them out in typical, Rabbinic frameworks of fours, with the conclusion showing the corresponding attainment or non-attainment of the feature.

In a positive, successful sense of attaining the same feature or a proportion, we have these:

- a. If the lesser has the feature, surely (or very likely) the greater has the same, equal feature.
- b. If the lesser has the feature, surely (or very likely) the greater has more of the feature.
- c. If the greater has the feature, surely (or very likely) the lesser has the same feature.
- d. If the greater has the feature, surely (or very likely) the lesser has less of the feature.

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<sup>91</sup> The universalizable QC overlaps the CS; but both fall within quantificational predicate logic. A wholly particular QC would be classically invalid as a CS, but not always in QPR. See Chapter 2 for further analysis.

Similar to the above four, we have the unsuccessful, non-attaining cases:

- \*a. If the lesser fails to attain a feature, surely (or very likely) it fails equally with a greater feature.
- \*b. If the lesser fails to attain a feature, surely (or very likely) it fails more with a greater feature.
- \*c. If the greater fails to attain a feature, surely (or very likely) the lesser fails with the same feature.
- \*d. If the greater fails to attain the feature, surely (or very likely) the lesser fails it even more.

The following could still occur, less surely or likely in most cases, yet more commonly in f and \*e:

- e. If the greater has the feature, surely (or very likely) the lesser has more of the feature.
- f. If the greater has the feature, surely (or very likely) the lesser fails to have that feature.
- g. If the lesser has the feature *f* (as a defect), surely (or very likely) the greater has less *f*.
- h. If the lesser has the feature *f* (as a defect), surely (or very likely) the greater fails to have that *f*.
- \*e. If the lesser fails to attain a feature, surely (or very likely), the greater could attain that feature.
- \*f. If the lesser fails to attain a feature, surely (or very likely), the greater could attain more of it.
- \*g. If the greater fails to have *f* (as a defect), surely (or very likely), the lesser could have that *f*.
- \*h. If the greater fails to have *f* (as a defect), surely (or very likely), the lesser could have more *f*.

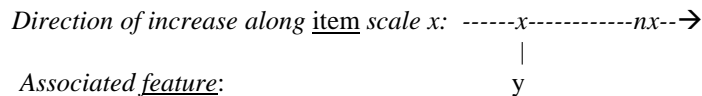
To exemplify the above, I adapt some of Samely and Sion's ideas in simple mathematical<sup>92</sup> and diagrammatic forms. I employ the most likely, modal, signalling terms. Subsequent comments follow.

Four Positive Cases:

- a. *If I can lift a kilo with one finger, **surely** I can lift the same with my entire hand.*

Legend: Let *x* stand for the weaker item, *y* for the associated feature, and *n* (*n*, positive > 1) as a multiplication factor that applies to *x*, so that *nx* is the greater item.

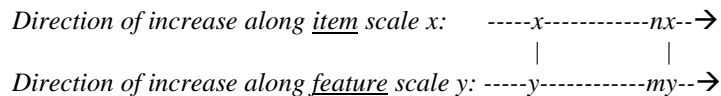
Generally: If *x* (the weaker item) can do *y* (the feature), surely *nx* (the greater) can do *y* too.



The stronger can do at least as well as the weaker, included case. The “sameness” here is a minimal (*dayo*) condition for an acceptable conclusion, as observed by the majority of the *Mishnah*'s scholars.

- b. *If I can lift a kilo with one finger, **surely** I can lift **more** with my entire hand.*

Generally, if (item) *x* can do *y*, surely *nx* can do *my* (*n* and *m* being positive, multiplier amounts).



The stronger can do substantially more than the weaker (normally). This is a proportional condition for the conclusion.<sup>93</sup> A few Rabbinic scholars felt that this empirical condition should not be universally ruled out by the majority claim of a minimal, equal conclusion, as in (a) above.<sup>94</sup>

<sup>92</sup> These also incorporate clarifications suggested by my supervisor, Professor Joseph Novak.

c. *If the student got 100% on the exam, and 50 is a pass, then **certainly** s/he has passed.*  
 Generally, if  $m$  (value attained) by  $x$  (student = item), and if  $n$  (is a pass), and  $m > n$  (or  $Gmn$  as a dyadic, predicate relation), then  $x$  passed. Again  $n$  and  $m$  are positive.

Place of item  $x$ :  $x$   
 Direction of feature increase: ----- $n$  (pass at 50%) -----  $m$  (maximum at 100%)

When the greater has surpassed or included the lesser, the same is analytically true as a deductive certainty: what one grants to the lesser is true of the greater (here anything between 51 and 100, as single marks). Still, any mark on the exam is also proportional to the pass.

d. *If the crowbar has just raised 100 kilos, **a fortiori** it will raise this 50 kilo weight.*  
 Generally, if (item)  $x$  can do  $my$ ,  $x$  can do  $ny$ , where  $m > n$  (*ceteris parabus*).

Place of item  $x$ :  $x$   
 Direction of increase of feature  $y$ : ----- $ny$ ----- $my$ -----→

Going from the heavier to the lighter case is inductively true and demonstrable by experiment. Lesser values are included up to the given 100 kilo. Despite the likelihood, on this upcoming try, it may still fail to lift less. How likely is that failure? Usually, it is remote and not worth worrying about.<sup>95</sup>

Four Non-attaining Cases:

\*a. *If you did not get more than 50% on the exam, **surely** you did not get 100% on it.*  
 If (item)  $x$  is not enough for  $y$ , then  $x$  is not enough for more, as  $ny$  ( $n$  a positive number  $> 1$ ).

Maximum attained for item  $x$ :  $x$   
 Direction of increase in feature  $y$ : ----- $y$ ----- $ny$ →

This too is deductively certain. If a lower requirement is not met, then a higher is surely not met.

\*b. *If 100 kilos of  $y$  is not enough to qualify, **much more then** 50 kilos of  $y$  is not enough.*  
 If the greater  $my$  is not enough for (item)  $x$ , the lesser  $ny$  is not enough for  $x$ , where  $m > n$  and  $> 1$ .

Minimum Requirement for item  $x$ :  $x$   
 Direction of increase in feature  $y$ : ----- $ny$ ----- $my$ -----|-----→

<sup>93</sup> This may be a linear  $my$  or not; the actual amount is indefinite, but normally more than the weaker.

<sup>94</sup> The *dayo* rule was supposedly Divinely revealed to exclude anything else – but more on this later. Ostrovsky, 42, claims that the weak is found in the strong premise and thus transferable as a weak (same) conclusion.

<sup>95</sup> A typical crowbar is most unlikely to fail on the next try with a significantly lighter weight. The claimant could assume that the tool was inspected sufficiently to be very confident that it will prove true. Raising 200 kilos is another matter. Here, one makes a considered prediction, structural calculation of its physical features, probability of failure, or actual test. While repeated use weakens a crowbar, an average failure rate can be determined. If a load of 200 k is a recommended maximum, it may not fail until 25,000 uses under normal conditions of 100-200 k. As it is doubtful that any record was kept on this crowbar, the worker simply does not know its failure range. But stress marks usually appear prior to failure, noticed by the careful worker, who would then not make the statement so confidently. Without such signs, one is justifiably confident of success and rarely wrong. Even an ordinary person may sense the crowbar's strength, although not as experienced or knowledgeable as the regular worker.

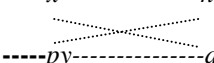
When the judgement “not enough” is made for the greater case, it follows likewise for the lesser. It is deductively true. When more than 100 was an expected or minimum amount, because  $100 > 50$  and the 100 failed, anything below is obviously insufficient. (A greater  $py$  at 101 (\*f) would satisfy item  $x$ .)

\*c. *If I cannot lift the weight with my hand, **more surely** I cannot lift it with my finger.*  
 Generally, if  $nx$  (the greater item) cannot do  $y$  ( $n$  being positive),  $x$  (the lesser) cannot do  $y$ .

*Direction of increase in scale of item  $x$ :* ----- $x$ ----- $nx$ -----/----- $\rightarrow$   
*Property/feature  $y$  that is not attained:*  $y$

For the same sort of thing, normally, the less able cannot do what the more able has failed to do. This too is inductive thinking, for I might suddenly display unusual strength to achieve the unexpected. Of course, this is not for different times: when my hurt hand was weak, I failed to raise the weight; but now when better, I pick it up easily with a finger. Perhaps, at some point with an increase in  $x$ , as two hands, I might lift  $y$ . Yet although inductive, the general form is deductive, after removing the variable aspects.

\*d. *If I cannot lift the 70 kilos with my hand, **surely then** I cannot lift more with my finger.*  
 If  $nx$  (the greater item) cannot do  $py$  (the lesser feature), surely  $x$  (the lesser item) cannot do  $qy$  (the greater feature), where  $nx > n$  and  $p < q$ .

*Direction of increase in scale of item  $x$ :* ---- $x$ ----- $nx$ ----- $\rightarrow$   
*Direction of increase in feature  $y$ :* ----- $py$ ----- $qy$ ----- $\rightarrow$   


As long as these are serious attempts in normal circumstances, doubt as to the truth is not rational. However, strange things do happen, so again, this example is a generally true, inductive form in that doing more by something less able is unreasonable when the stronger was unable to raise less.

The following (e, f, g, h, \*e, \*f, \*g, \*h) are inductively possible, depending on the situations. Presumably, the arguer knows them as often true and thus reasonable, although still falsifiable.

*e. If the adult (stronger) animal needs some means of protection, surely the baby needs more.*

Since the stronger needs the feature, the weaker likely requires it as much if not more. Yet once cases of helpless babies survive, we would have to add some provisos: that large numbers or natural habitat could serve the overall purpose of general species survival—which is the function of camouflage or other minimal, protective means. One can thus upgrade a weak *a fortiori*.

As converses, f and \*e state the same thing: the stronger can have or do what the weaker cannot or does not, because the stronger passes the weaker's (current) maximum value or threshold (*human babies can have baby teeth, but they lack adult teeth*). For f, \*e, and \*f, the diagram below suits.

f. *If stronger table nx can support 70 kilos, surely (very likely) this weaker x cannot.*

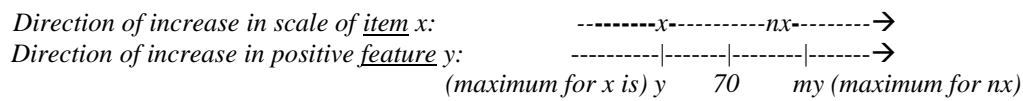
The capacity of nx includes the 70, whereas x does not, for it reaches only to y, which is less.

\*e. *If table x fails to support 70 kilos, this stronger table nx very likely (almost certainly) can do it.*

Just because weaker x fails, does not mean that stronger nx cannot; in fact, 70 is obtainable here.

\*f. *If table x fails to support 70 kilos, a stronger table nx is very likely (almost certainly) to do more.*

Table nx can carry anything within its range up to some (average) maximum load of my > 70 > y:



g. *If the weak wood table x has a lot of deterioration, the solid wood table nx has less deterioration.*

h. *If the weak wood table x has deterioration, the solid wood table nx lacks that amount.*

\*g. *If the solid wood table lacks deterioration, the weak wood table likely has deterioration.*

\*h. *If the solid wood table lacks deterioration, the weak wood table likely has much deterioration.*

### 1.9 Comments about the Variants

Several variations are possible, stated positively, as either likely or certain, or in reverse, as unlikely or impossible. Further, even when true, some conclusions grant the same amount as the premise or call for a variable amount. We perceive potential problems too: an *a fortiori* may fall prey to formal and informal fallacies: invalidity, unsoundness, improbability, and unreasonableness, as well as other familiar types. Such failures go beyond the proper range, fall short, or face an exception, such as a gap.

As many *a fortioris* occur within the vast, gray area of less than 100% certainty (as the middle range of *I* and *O* propositions), we have to allow room for interpretations that remain less than what is deductively valid. Such inductive, *a fortiori* arguments involve empirical matters thought or known to be reliable. Facts affect the conclusion's degree of truth, although in well-tested, physical sciences, some are virtually certain. Aware that the inductive, *a fortiori* may or may not obtain, it is subject to degrees of belief or doubt. Generally, inductive cases hold true at well over a 50% probability. *A fortiori* inductive cases, therefore, despite the supposed knowledge of the premises and assured manner of the



conclusion, might range between plausibility to almost, but not quite, indubitability. As such, we should look at the variability of the main, characteristic, operative term(s) that introduce(s) the conclusion. This will focus our attention on how to understand the term we insert in a good definition.

### 1.10 Key Operative, Indicative Terms

Typically, the conclusion's introductory, signaling terms or phrases are "all the more so," "surely," or "that much more." Any of these terms suggests an obviously right or strong relation of the feature from one case to the other. Somewhat typical Hebrew terms indicate the Biblical and traditional, Jewish, QC arguments, although not always fully or explicitly stated but often assumed. Often read as "how much more," it expects a positive response, as if "clearly" or "evidently." It comes across like this:

*Given the facts of this known case, is it not that much surer that we accept the other case too, since it is greater (or appropriately lesser)?* In any case, in both the regular *a fortiori* and the Jewish *Qal VaChomer*, the simple terms "surely" or "should" are convenient. Yet, how are we to read either? As I have argued, we want a term not to be strictly and narrowly formal in the deductive sense alone, but to allow a broader, inclusive claim of reasonable likelihood, as an induction. Although the operative term "surely" can carry the rhetorical sense of "obviously" or the modal sense of "necessarily," "should" is preferable as "most probably" or "very likely" in the strong, inductive sense, although it can convey the weaker one of "likely" or only "possibly" true. If "surely" is slightly strong, "should" is a bit weak.

To consider the *a fortiori* argument as a deduction, however, we may want to change this crucial term, "surely," into a hypothetical, "if...then..." At the same time, because the argument attempts to express the sense of being factually well known in the manner of "since...surely..." it falls somewhere in the range of both senses.<sup>96</sup> In all, if we recognize that the general term "surely" can cover this wide range of options from deductive certainty to inductive likelihood, it can function admirably. Otherwise, we have to upgrade the term "should" from just a sense of most probably to include certainty. "Surely" seems better for both purposes, while "should" is too much of a stretch for deductive cases.

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<sup>96</sup> Guggenheimer, 179, 180, refers to the language and requirement of definiteness, not modality.

## 1.11 Other Terms, Symbols, and Meanings

Many other words are associated with the *a fortiori*. For the sake of seeing some of their scope, I set out a number of these typical terms involved. In the course of the paper, I have used and shall continue to touch on most of these, often in combinations, without necessarily dealing with all in equal or even sufficient depth, or even to employ any related symbol (except in some mathematical or logical cases).

For the compared statements of the *a fortiori*, we utilize various, standard expressions. In proceeding, it is helpful to be familiar with these related, yet opposed pairs (although one could add more), often with differing numerical, valuational, legal, or psychological senses:

*Heavier – lighter; stringent – lenient; more – less; stronger – weaker; greater – lesser; higher – lower; larger/bigger – smaller; harder – easier; more severe – less grave; better – worse; preferable – less desirable; or more significant – less significant.*

There are also the relational terms “greater than” ( $>$ ) and “less than” ( $<$ ) between compared items, and, as noted, the key signal or main operator for the *a fortiori*'s conclusion, “much more” or “surely.”

Let us now explore some of the ways that the argument expresses its differences between items:

- 1) within some considered, continuous group or class in which the feature holds, or
- 2) by analogy, comparatively close or distant such that the feature is likely to hold.

Each of these has options that relate the compared items, key operator, and the feature in common:

1. a) *More than*: to possess more of a feature in common with another in the *same, continuous group*. Generally,  $x$  is more than  $y$  (or  $x > y$ ), with  $y$  having a feature, so that  $x$  has more of it, with no known case in the group that lacks it. So if  $y$  has a flowering characteristic, bigger  $x$ , should flower even more, as it has greater potential. Also, if  $x=5a$ ,  $y=3a$ , “ $a$ ” being common, we can say exactly by *how much more*, namely that  $x$  is greater than  $y$  by  $\{5a - 3a =\} 2a$  or  $x = 5/3 y$ .

1. b) *Less than*: to possess less of some feature in common with another in the *same continuous group*. Generally,  $x$  is less than  $y$  (and corresponding as above,  $x < y$ , and “ $a$ ” common, etc.).

1. c) *Equal to*: to possess the same feature in common with another in the *same continuous group*. Generally,  $x$  is equal to  $y$  ( $x = y$ ) and  $x$ 's feature are the same as  $y$ 's. Rarely, a) or b) act like c).

2. a) In *analogy*, for two things *sufficiently alike*, what occurs in one, probably occurs in a similar way in the other; but if too different, it may fail or be less likely for the sought after feature.

2. b) In *analogy*, for two otherwise differing things, a *comparison is drawn* in terms of some attributed feature that connects both and may be related in some scalar way.

An example of 1a and 1b together compares teams, one ranked poorer and the other better:

*In my last coaching job, I had a mediocre team that did not work well together or like to train, but it still did not end up at the bottom of the league. This team did consistently better and placed higher last year than that one. Since this team is more talented, likes training, and works so well together, I can surely expect you to do better than them again this year, while they probably will not improve, unless they make some exceptional, unexpected changes.*

This *a fortiori* is reasonable, all things being equal, because of the likely, enduring differences between the two teams (assuming the coach was not the main problem). “Surely” is used to motivate the team.

For analogy 2a, flows of water and electricity are relatable. From the early days of the newly discovered electric currents up to at least 1970, to describe the less comprehended, electricity in a wire, someone related it to the more familiar process of water flow in a pipe.<sup>97</sup> This water analogue explained much about electricity, although not all. Due to obvious differences in kind, it would have been most surprising that everything about electricity operated exactly like water.

In such physical analogues, an exact sameness of feature(s) would be most unlikely; so the conclusion is better as a proportional likeness. As a general, analogical, *a fortiori* argument, *if the better known item functions in this way, the similar but less known may well function similarly*. The crucial aspect here is sufficient similarity. The tentative expression “*may well*” is better for similar but different items, while the stronger term, *surely*, can be reserved for much more similar ones or certain outcomes.

Many analogies connect more disparate things (2b). In comparing unlike things, such as a house and a human, both require something in common, such as *appropriate care*, even if the type of each differs.

*Since a person can buy or build a house, the person is more important (normally). Now we take care of our houses to maintain their value and protect us from the external environment, for they are subject to deterioration (and cannot care for themselves). Since a house needs proper upkeep to remain valuable and functional, even more, a person requires proper care, although that care differ somewhat in kind.*

If a lesser object, a house, requires due care, much more does the more important entity, the person.

Let us summarize the *a fortiori* types as used in argumentation that a good definition should cover:

- a. To move from a feature (judgement or decision) in a weaker case to that in a stronger one;
- b. To move from a feature in the stronger to that in a weaker case;
- c. To move from a particular or paradigm to a general case (inductively (or as a conduction));
- d. To move from a more inclusive, general, or universal to a particular (inductively or deductively);

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<sup>97</sup> This included such phenomena as liquid friction (& heat) in a pipe compared to electrical resistance in a wire, water volume to current capacity, and quantity per second. (Yet, not everything is understood about water flows.)

- e. To move from a less inclusive or poorer case to one with more of the feature (abductively);
- f. To move from a better known case to the lesser known, given a key likeness or by making a connection that carries over reasonably from one to the other (conductively or analogically).

At this point, we can revise our earlier, tentative definition or propose a new one.

### **1.12 A General Definition**

We can define an inclusive, positive *a fortiori* as a type of analogy in this way: *For congruent items, when one of the ranked items in the comparison has a feature, due to the (likely) heritable property, the other probably or surely has it to some degree too.* Put in this way, the argument is clear and gives the greatest range, up to 100% for (deductive) certainty, to some 50+ % (inductively) as sufficiently correct. The items are “congruent” in that the comparison is a proper, common relation, whether natural to the items or artificially imposed or warranted by the context, where the feature is normally expected to occur throughout, backed with sufficient data or tests. The conclusion’s quantity is noted but not resolved, which can be the same given feature of a premise or a proportion. Although the above *a fortiori* definition is viable with respect to its analogical aspect, Chapter 2 will distinguish key elements that exist between it and the ordinary analogy. As I shall show, because the *a fortiori* argument’s two cases are commonly known to be more closely related by their rankings than the cases of the typical analogy, the former thereby gains in being more likely true. More, because some forms are certain in their implications (due to the heritable, ancestral, or recursive property, as explained in Chapter 2), it can be deductively valid and sound too. Unlike the general *a fortiori* that can have the same or a proportional amount in the conclusion, the stricter, *Mishnaic a fortiori* (in Chapter 3) demands the same amount for the most part. In Chapter 4, I resolve the matter of the concluding amount from a Jewish perspective, so that consistency of thought can exist between the general and Jewish realms.

## **Chapter 2: A Fortiori Thinking as Reasonable**

This chapter concentrates on the range of *a fortiori* arguments, as deductive and inductive types, each with its conditions, strengths, and limits. First, I consider the argument's basic reasonableness (2.1). After that, I note distinctions between deductive and inductive methods (2.2). Then the discussion proceeds to formal and informal fallacies of the argument (2.3). A review of the methods stresses the matter of relevant premises (2.4) and goes on to compare specific differences of the *a fortiori* with ordinary analogies (2.5). I follow these with further graphic and verbal clarifications of the conclusion's possible quantities (2.6). An informal layout of the argument builds upon its relative rankings to look again at the general notion of transitivity and the relation of the *a fortiori* to the categorical syllogism (2.7). From that, I examine some formal symbolizations of logical (and mathematical) practice that include various critiques (2.8). A brief summary gleaned from these formulations (2.9) leads to a detailed analysis of the possible quantities of the conclusion, once the argument is accepted (2.10).

### **2.1 Issues about *a Fortiori* Reasonableness**

How sure is the *a fortiori* claim overall? This chapter will examine the question from the viewpoint of inductive and deductive arguments. First, as introduced, the *a fortiori* argument is a special kind of analogical comparison, for it compares items and proposes that a feature present in one item may well have a corresponding feature in the other. Although analogy is a weak form of induction, it extends our thinking into new areas through potential relationships, which, when evident or proven, expands our knowledge. Yet the *a fortiori* analogy appears to be stronger than an ordinary analogy, as will be shown. For this inductive claim, we want to know if it is sufficiently probable and justified by supportive facts and key tests. Second, in some cases the *a fortiori* is deductively true and not just likely. Even when the argument is deductively valid, we still want to check its facts to guarantee that it is sound too. It is important to reiterate that the *a fortiori* requires a clear family or class link to justify the claim that the given feature in the known item occurs, to some extent in the other, or else there are good reasons to so

relate them. Also possible are various, inductive argument sub-forms, such as conductive likelihood (as a reasonable option) and abductive choice (as the best option).<sup>98</sup>

## **2.2 Various Forms in Rational Thought: Deductive and Inductive**

Let us firm up the place of the *a fortiori* argument within general reasoning methods, in terms of its two, basic forms, the deductive and inductive, which we want to compare and explore:

- Type 1: a theoretical, deductively valid form (and invalid with true premises and false conclusion); but then, facts show if the valid argument is sound (if untrue facts or invalid, it is unsound).
- Type 2: an empirical, inductively probable form, such that the conclusion is reasonably likely to occur, although it might factually fail and thus be an incorrect argument in that case.<sup>99</sup>

### **a) Degrees of Certainty and Limitations in Deduction and Induction**

A formally deductive argument form is a theoretical form divorced from facts, in order to discover if it is valid. Yet most ordinary arguments have real contexts; so we must abstract or remove the facts to test the generic, deductive structure for logical validity. If valid, one can reintroduce the facts to check the argument's soundness. When valid and the facts true, the argument is sound; if invalid or its facts untrue, it is unsound. A deductively sound *a fortiori* guarantees that the feature occurs in the other case.

For the *a fortiori* as a deduction, we want at least what a conditional argument offers to be valid: true premises that do not lead to a false conclusion. In addition, we may insist that only relevant (and true) premises apply in that the premises actually relate to the conclusion, rather than that we have just a hypothetical proposition with formal validity. A true conclusion should really connect to or depend on those true premises, which are stronger than just possible or even false premises. Then, when a valid argument claims a definite conclusion about a factual truth, the argument is also sound. However, deductivity, as only one form of rationality, is limited in scope. We want inductive arguments too.

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<sup>98</sup> Disagreements surround abduction and conduction as to their inductive standing. I use conduction as a weaker argument than induction, even if it is one, in that it is more of a considered opinion and less rigorous. Likewise, abduction is a choice based on valuations and judgements that are often more subjective than objective, even if one wants to be accurate and fair. I deal with these distinctions further in the chapter. For the sake of simplicity, I place analogical thinking under induction, although the analogy overlaps much of induction and can be its precursor.

<sup>99</sup> To say that 'A is preferred to B' seems to make 'A is better than B' an analytic truth in the way that 'A being measured and perceived greater than B' implies that 'A is greater than B.' Yet in variable human evaluations, such weaker, uncertain, but still reasonable (personal) preferences need not be objectively better or consistently held.

Induction's factual basis is in empirical experience. By it, we extend our knowledge synthetically to fill the gap where deduction (as an analytic tool) is not possible.<sup>100</sup> Yet induction is less than perfect in its ability to arrive at a true conclusion.<sup>101</sup> Its conclusions are only likely, given in terms of numerical or verbal probabilities. For certainty, we want a deductive proof, not an inductive probability.<sup>102</sup> Inasmuch as much reasoning is not reducible to deduction, we need not insist on it for every *a fortiori* either.

Because induction fails to convey either formal validity or deductive certainty, many attack it as a deficient form of argument. Despite this “problem of induction,” I will take this inability as a weakness only from the vantage point of deduction and not from those of generally successful, good practices or empirical science. Although fallible, induction is a broad, sufficiently reasonable form of argument. Indeed, because induction can cover deduction when 100% true or false, it is more inclusive in scope. On the other hand, one can view deduction as an ideal pattern that induction tries to approach.

#### **b) Probabilities in Inductive Methods**

Since good probabilities are more likely successful than not, inductive inferences, confirmed as substantially correct, can be relied upon.<sup>103</sup> However, inductive probabilities contrast with a deduction's modal sense of *necessary*. With two almost identical items, although the same feature in the new is very likely, it is not always certain. Highly controlled scientific or inductive experiments can affirm a well-known fact or provide greater precision; but even then, such claims are not totally proven. Even if a

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<sup>100</sup> For instance, *The Justification of Induction*, ed. Richard Swinburne (London: Oxford University Press, 1974).

<sup>101</sup> Discussed by Gabbay and Woods, ‘The Practical Turn in Logic’, 56-60.

<sup>102</sup> I have accepted a scale of preference for argument types: if any argument is useful to some degree in granting reasonable conclusions, then those with higher certainty are better. Deduction is better than induction or its lower sub-forms, abduction, conduction, and analogy. The idea that one approach is better than another shows the *a fortiori* principle. However, there may be no better formula or answer available or possible in a situation; so the last one or its equivalent is the best. Where only one method is appropriate, even if tentative, the *a fortiori* principle says it is better than no answer or a failed one. If something is inexplicable, then no comparison is possible. Still we might hold out the hope that a tentatively reasonable answer is better than a currently inexplicable one. The principle of a better option is the one with good potential over an interim, poor, failed, or non-answer; the existing best is realized in the one that works better. This *a fortiori* principle of “better than” (as a kind of “more than”) applies within transitivity (A is better than B is better than C, so A is better than C). But this is not the typical *a fortiori* form where we have a feature that defines the better. If A is better than B on a feature, f, it assumes f, abductively: A has f, B has f, and as A's f is better than B's, surely, A is best. A's f over B's is a proportion. “Does the *a fortiori* characterize all arguments?” The simple answer is no, as many arguments have no comparisons (avoiding silly or non-answers) or the defining feature is unclear or varies situationally.

<sup>103</sup> One need not expect thinking to be always deductive, as much is based on past experience. If I smell smoke, it is likely that there is a fire nearby, not that it is certain, as it might be extinguished already or I might be mistaken.

feature is almost certain to occur given the past, absolute consistency is unattainable as it depends upon variable circumstances. As for singular or historical events, they are seldom predictable or demonstrable due to their often non-repetitive nature. Indeed, an original event is a statistical improbability, although factually indisputable; its reoccurrence in another case may exhibit differences without duplicate conditions. While empirical *a fortiori* cases aspire to dependable results, they have to cope with the volatility of many natural factors and partly unpredictable situations that yield tentative conclusions. In all, anomalies, statistical patterns and probabilities may or may not guide us in the next case. For all that, we accept inductive conclusions when highly likely.<sup>104</sup> For such *a fortiori* arguments, the feature that pertains to one case can only be presumed to apply to the other case to various degrees of assurance (and amounts). However, when genuine doubt exists, the conclusion remains uncertain or unlikely. Then we require more background information or an additional, strong, supportive argument to conclude that it is more probable than not. Thus for induction, we decide if the crucial factor is more or less likely to be included in the other case or class of cases, subject to revision.

Let us refer to an example of the mundane matters that an *a fortiori* often wrestles with: *If this little apple is sweet, would a bigger one of the same family also be sweet?* We cannot deduce it; but inductively, we can assume or test it. Indeed, the argument often expects a measure of such prior data or post-verification to support its reasoning, for otherwise it may be doubtful. Given an affirmative history, more often than not, the conclusion is probably true, our vague, statistical memory altered with each bite.<sup>105</sup> After a statistically sufficient sample of the variety, we can say that most larger apples of the type were progressively sweeter than the smaller ones, so that this larger one is very likely to be sweet too. Yet, even if most large, fresh apples of that type are sweet, some will be sour, tasteless, or awful.

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<sup>104</sup> A Non-Pascalian probability: a claim is likely in this case. Pascalian: black ball is 90% likely when 9/10 are. L. Jonathan Cohen, *An Introduction to the Philosophy of Induction and Probability* (Oxford: Clarendon, 1989).

<sup>105</sup> What makes something more or less sweet are the relative characteristics of sweetness (sugars) versus sourness (acids). Needless to say, one person's taste differs slightly from another's, and depends on what was eaten before. Also, one part of an apple may be less sweet than another; or rot may have set in. Size may relate to blandness and varieties vary with size. If we had an instrument that measured the quantities and types of sugars and acids (as well as liquids that affect perceived sweetness), we would be better able to rate our tastes (somewhat) more accurately.



When we can put our tentative valuations into numbers, we gain (the semblance of) precision over the (real or apparent) vagueness of verbal terms. Our confidence level should reflect reliable facts or truths, for we are talking of cases with a history. Up to 50% of actual occurrence, we lack sufficient assurance, so that *a fortiori* is more likely untrue. At 50%, we are undecided. For basic confidence, we need more than a 50% probability. Above 50%, the argument is more likely true than not.<sup>106</sup> Each percentage (or part) above or below 50% increases or decreases our confidence that the claim is right. With probabilities above 75%, we are justified to say that the crucial factor tied to one case is *likely* to apply to the other.<sup>107</sup> Over 90% gives a very high likelihood that the conclusion is true. *Given the fact of 95 out of 100 random cases that show the feature obtains, we can be very confident that it will again.*

While uncertainty of results remains troublesome to induction, still, it has an advantage: its probable conclusions do not limit us to the absolute certainty of sharp, binary, yes and no answers, so that it can cover less definite cases. Experientially, it is sensible to go with what is more likely to occur than to wait for complete certainty—often nearly impossible to attain. In this, a good *a fortiori* probability is practical, provided it is mostly successful, especially on important issues (which may need critical tests).

An analogy will clarify the distinction between formal certainty and actual probability. We can compare strict yes or no and 100% true or false answers with semi-true and semi-false ones by means of black and white pigments. Assume that the black is 100% pure, as is the white. When we mix these pure black and white paints, they appear gray (some black and some white). Gray here is neither black nor white but both. If a lighter gray is composed of fewer black dots (or requisite molecules) and more white ones, then we can conclude that a darker gray has more black or else less white (without unusual

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<sup>106</sup> Although we start with some sense or estimate (of it being less likely, equally, or more likely than not), compared experience or compiled statistics can revise our earlier, partial intuitions or partial data accordingly.

<sup>107</sup> Nevertheless, despite our sense of confidence of the likely truth or untruth of the conclusion, after having the evidential or argumentative supports we seek, the actual reality may still end up unexpectedly as the opposite. Even with historical data, expected outcomes may not concur with the facts. However, if this reversed situation upsets the likely, expected conclusion, we can revise our earlier probability with updated values. By repeating this procedure over the long term, expected and actual probabilities are supposed to come into line. If the initial expected outcome regularly becomes the unexpected opposite, this opposite now takes over as the new expected value. (We would apply the initial expected and actual probabilities repeatedly in Bayes' Theorem.) If that were not so, and we have complete unpredictability, then nothing could be concluded. If things flip back and forth over time, there still may be some underlying causes or reasons for that non-linear, periodic-type behaviour and, hence, possible predictability. Statistics, probability theory, and fuzzy logic can deal with some of these predictions.

light, altered psychological states, or other pigments), even if we remain unsure of the precise amounts of the mix.<sup>108</sup> Thus, analogically, just as we have undefined mixtures of black and white that merge as shades of gray, so too, some states of affairs are uncertain as to absolute truth or falsity (pure black and white), to allow part true and part false claims as probabilities, until they can be resolved.

Exact truth and falsity are ideal truth-values, limited to some ideal formulations. For much of reality, where we encounter indefinite conditions and unknown possibilities, we estimate a likely truth-value of a claim—to the degree it can be done. Such probable results apply to our confidence level with respect to the *a fortiori*'s conclusion, to progressively affirm or deny it. With a series and variety of critical tests, we know more surely—up to the ideal of 100% certainty in some cases.

After one has determined that the transfer of the given feature is reasonably likely, a decision can be made about whether the same amount as the given or a degree of it is more likely. To decide which, we start non-committally, but realize that it may well depend on more information than the premises provide. This is due to the fact that gray can appear in a variety of ways: the same as before, more black or less white, more white or less black, or some other combination of pigments or surface conditions.

However, not every case that we encounter lends itself either to deductive certainty or a high inductive probability. Indeed, much experience and problem solving resist simplification into normal formulae. Yet if we still have good reasons to believe that something can or will hold, we employ other, sometimes weaker, experiential or rational, inductive forms to yield acceptable solutions.<sup>109</sup> In such ordinary thinking, the argument can show up in such inductive sub-forms, as abduction, conduction, or analogy.<sup>110</sup> With these, the more general scope of *a fortiori* thinking comes into wider play.

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<sup>108</sup> If we start with an initial, white base, then we add black to make the darker gray. For exactness, we need precise inputs. Since the world is not just like on-off switches, but displays ranges of values and intensities, so too, we must deal with varying amounts (for colour), wavelengths of photons, quantum effects, absorption, reflection, transmission, re-radiation, etc. Yes and no, on and off are not opposed to states that exhibit intermediate ranges, but are complementary aspects of reality, whether or not maxima and minima exist.

<sup>109</sup> Probable, inductive arguments are also plausible, but may be considered as more at the higher ends of the scale of reasonableness. For a valuable review and adaptation of the work of Nicholas Rescher, *Plausible Reasoning*, see Gabbay and Woods, *Handbook of Philosophical Logic*, 2<sup>nd</sup> ed., Vol 13, 15-122, especially 68-105. In the article, Gabbay and Woods also touch on abductive thinking.

<sup>110</sup> Abductive reasoning's status is controversial; but as inference to the best explanation, it is generally accepted as more than a simple induction. Likewise, conductive thinking is little explored. In it, one looks at the premises as

*Abduction chooses the overall best alternative already known to possess the key feature(s).* When people desire or opt for a better choice under the circumstances, an abductive, *a fortiori* lurks in the background.<sup>111</sup> Such practical reasoning is often habitual, sometimes with more than one feature.<sup>112</sup> In evaluation and decision-making, it is a normal tool of many professions.<sup>113</sup> To find the best option, one must consistently rate each and get a total score of all the key factors for each alternative. This process tends to preclude or filter out irrelevant, inadequate, or highly speculative cases. If the key feature is lowest car upkeep, the car that best suits this purpose is the right conclusion, all else (like initial price) being equal. *Because B has the key feature and A has more, A is that much better than B.* Since the *a fortiori* abduction reverses the typical form, the best contender displays the feature(s) in question best.<sup>114</sup>

leading to a reasonably likely conclusion. Although an induction, it often has vaguer terms that are less statistical or definite. One sees conduction in Carl Wellman, *Challenge and Response: Justification in Ethics* (Carbondale: Southern Illinois University Press, 1971). The premises of abduction are relatable, with features often differing in values for each alternative; or else there is just one possibility being tested for its degree of success or failure in differing situations. The higher score (or likelihood) of one option over another in the comparison makes the abduction work, as it leads back to the the cases whose conclusion or result is preferable. The best option has the best results. See also Walton, *Abductive Reasoning*, 3-4, 16-23, 34-36, 230-231. Walton, however, does not define conductive arguments or determine whether they are the same as or differ from abductive ones. See his footnote on 279 (from p. 3). In some of his examples (as with other authors), it is difficult to separate the two, since he uses abductive in both ways: from what are given, evidential premises to a likely conclusion (a sort of evaluation), and from hypothetical, alternate premises to the most likely, provisional conclusion. An *a fortiori*, conductive argument has related premises that lead to a likely conclusion (less a weighted choice) that has the feature sought.<sup>111</sup> When the term “best” means the biggest in a specific series of three containers of the same shape to hold the same objects (and price or other factor is not at issue), we compare them and then rationally choose the largest. The right choice is based on the idea that if the smallest will hold some, the largest will hold more. That realization may have come about by experience, even from the pre-verbal stage of childhood. Nonetheless, the theoretic truth stands to confirm this as a rational process. If we seek the lowest price of the same item among three stores (all other things being equal), we should choose the least expensive after checking all three sites and prices.

<sup>112</sup> A practical example: Should I buy the higher priced food nearby or the fresher, less expensive food that takes more time to get? I must weigh the comparative benefits against the costs, each element changing daily, dependent on many variables and issues. More onerous decisions require careful, time-related analysis. Yesterday’s best may be superceded on the winner’s podium by another today and so on. Previously unconsidered factors may be incorporated into an evaluation, leading to a revision. Additionally, my personal valuing procedure may alter in time, or various facts may show something is now better or worse. This comparative reevaluation process may iterate repeatedly. Generally, the abductive *a fortiori* helps one to make a practical, best choice from among relevant alternatives, whether it is time-based and rational or partly subjective.

<sup>113</sup> Pertinent comments about practical abductions occur in Gabbay and Woods, ‘The Practical Turn in Logic,’ in *Philosophical Logic*, Gabbay and Guenther, 107, 111. They propose that “successful abduction for conviction...is strong enough to minimize the epistemic disadvantage” of the method itself, whereas an unsuccessful one does not. They state that proof beyond reasonable doubt in judicial matters is resolvable by “the logic of abduction.”

<sup>114</sup> I take abduction as a sub-category of induction about empirical matters, as a crucial choice made under uncertainty although it can be deductive (*any case that has more of the feature is best*). It is a way of seeing it as empirical in contrast with the theoretical—even if an oversimplification (as empirical understanding may well require theoretical rules to justify them and pure theory without actual content would be empty).

Actually, as noted, natural competition also works in this way, so it is not just a human preference or choice, even if we deliberate more than animals.

*Conduction suggests a more likely case that would satisfy some situation. A conductive a fortiori works towards the case that most likely possesses the feature: If I want sports equipment, I can go to a general store or a sports store; but surely the sports store is more likely to have it. In general: For feature  $f$ ,  $A$  or  $B$  might have  $f$ ; more likely  $B$  has  $f$  than  $A$ . One might be satisfied with a reasonable plausibility for the conclusion or else seek a more robust warrant so that it will more likely follow from the premise(s) than not. As such, a conductive analogy is a bit stronger than an ordinary analogy.*

*Analogy proposes some like feature from a given case that might apply to the new. In scientific or legal analogy, one begins with a known case and works towards a credible claim for the new item. In science, specifically, one seeks a constant or correlative feature in the new item, which one typically assumes in order to set up a test that justifies or likely disproves it, and to what degree. (E.g.: *If this new material has rubber-like qualities, then it too should stretch and bounce; so test for those features; and if it has, compare it to other known rubbers.* In general: *If  $A$  is more or less like  $B$ , and  $B$  has  $f$ , then  $A$  should have  $f$ -ness.*) So too, in ordinary matters, the conclusion should likely occur, given the past, to be verifiable or defeasable by further experience or tests.*

With these inductive analogies, one should try to defeat the argument, rather than just assume that superficial likeness to the given case will lead to the feature's reoccurrence. An argument with a majority of expert affirmation that has weathered genuine attacks from various quarters is justifiably better than an untested claim, so that it is much more likely to be true. In all, these practical, inductive methods are valued for their usefulness, their ability to add to our knowledge, and their help in deciding a conclusion's amount. Let us look at some examples.

**c) Examples of Inductive Arguments**  
**i. In Scientific Induction**

Let us consider an example of scientific induction. Specifically, if we inject 1000 mice with a low dose of a substance known to have adverse effects at some rate above the null, background rate, and

another 1000 mice with a doubled dose, all things being equal, we could expect that those with the higher dose would exhibit either more frequent or more severe results (or both). If  $D_1$  is the single-dose case, and  $D_2$  is the double-dose case, then  $D_2 > D_1$ . For  $D_1$ , the result is  $R_1$ . What result can we expect for the double dose  $D_2$ ? This result  $R_2$  will presumably have the relation  $R_2 > R_1$ , which is to be either confirmed or disproved (in the tests). In short:  $D_2 > D_1$ , and  $D_1$  yields  $R_1$ ; so for  $D_2$ , we assume  $R_2$  such that  $R_2 > R_1$ . (In some instances,  $R_2$  might equal  $R_1$ .) Stated as an *a fortiori*: *when the single dose  $D_1$  has known, adverse effects  $R_1$ , the doubled dosage  $D_2$  is reasonably assumed to have at least as bad results  $R_2$ , if not worse to some degree.* Yet this result,  $R_2$ , is tentative. Another experiment might overturn it: a new lab bred mouse or wild type may develop a resistance to the substance.<sup>115</sup> Further, in biological systems, the relationship between too little substance, enough, and too much is seldom linearly related. As in most areas of science, the conclusion, although theoretically posed at the start, depends on past evidence and future, crucial tests. The *a fortiori* inductive hypothesis that  $R_2 > R_1$  will be true when repeatedly confirmed by key tests only renders it more probable, even if not always precisely.

## ii. In Practical Arguments

I refer to an example that Walton calls plausible reasoning, which dates to the Sophists of the fifth century BC.<sup>116</sup> A jury tries to determine the party guilty of starting a fight, the weaker or the stronger. Although not put in this way, we have an abductive idea that is *a fortiori* in form: *The weaker person (B) may have started the fight, but more likely the stronger (A) did.* Rearranged and expanded: *although both had a motive to start the fight, A is stronger than B; so all the less likely that B started the fight and all the more likely that A did.* Succinctly as an *a fortiori*, abduction: *A and B have f-ness, the motive to start the fight; A is stronger than B; more likely A started (ceteris paribus).* This abductive conclusion leads us to the more plausible (best) explanation of who started the fight, here lacking other evidence.<sup>117</sup>

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<sup>115</sup> While enumerative instances are important, one tries to defeat or eliminate the claim by critical experiments.

<sup>116</sup> Walton, *Abductive Reasoning*, 28-29.

<sup>117</sup> To make a conductive argument, one asks the (theoretical) question: Who normally is likely to start a fight, a stronger or weaker person? (Of course, usually, a weapon or hidden advantage in the hands of the physically weaker turns her/him into the stronger.) Our answer is that it is more likely that the stronger initiates. The conductive emphasizes the *a priori*, higher chance of a correct answer, while the abductive is *a posteriori* the best.

Although close to abduction, in conduction I *pre-judge* the case where the feature is likely. But if I pre-judge the case of the guilty party purely on his greater strength, I need not bother with the evidence of witnesses, actual weapon, or stealth. So conduction is a weaker argument than evidential abduction.

As a weak induction, a conductive argument's premises lead to a promising conclusion that is more likely true to have the feature (than another case). *A has a feature, while B and C are ranked in a class with A; if item B is more likely to have the feature than C, then B is the more likely, surer solution.*<sup>118</sup> So, if Abe, Ben, and Caz play basketball, and Abe scores well, while Ben is the tallest and Caz is shorter than Abe, surely Ben is more likely able to score more than Caz (normally). Given past knowledge of the advantage of height, this is reasonable. Still, many times the expectation is upset, as when Ben is hurt or physically prevented. The empirical relation shows the *a fortiori's* inductive sense, where we pre-set a higher probability that Ben scores more, rather than be assured of it under every condition.<sup>119</sup>

Before I tackle the formal symbolizations that look at the *a fortiori's* logical validity, let us consider various informal fallacies and possible failures, although some are formal issues too.

### 2.3 Potential Problems

The *a fortiori* argument can also fall prey to a number of fallacies, both formal and informal, just as in other types of reasoning. Aside from a) formal logical invalidity or b) inductive improbability, c) informal problems attend the *a fortiori*. The main mistakes (some diagrammed earlier) are these:

1. Fallacies of composition and division: The conclusion is false and the argument invalid.
2. Going beyond what can be properly concluded: Even with some given, normal, or assumed link, here a minimal or maximal condition may not allow any proportional relation, sameness, or any inference at all. One simply claims too much. It is false and invalid, or else unlikely.
3. Falling short of what can be properly concluded: Even with some given, normal, or assumed link, here a minimal or maximal condition may allow the same or a proportional amount, but which is still insufficient. The claim is still too little to meet the mark (so is false or unlikely).
4. Wrong Choice: The reasoning for the best was an abductive, conductive, or personal error.
5. False result: The conclusion's likelihood was a conductive or inductive error.

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<sup>118</sup> A scores 20% of the time; B scores more than C; so B is more likely than C to score closer to 20%.

<sup>119</sup> In a simpler example: Since the wider-spaced netting can catch stuff, much more should a smaller screen. While this may fail without smaller things to catch, or if too weak and breaks, it is mostly affirmed by experience.

Invalidity and improbability involved in the numbered problems (2) and (3) above are more difficult to formalize, but are dealt with in some detail in due course in this chapter. Items (4) and (5) are more explicit than (2) or (3). Point (1) is relatively easier to illustrate.

Examined briefly, point (1) contains two fallacies to be avoided with the *a fortiori* argument:

1. a) the compositional fallacy assumes that what is in the part exists multiplied or distributed in the whole; this is often wrong, as smaller parts do not necessarily make the whole fully like them;
1. b) the divisional fallacy assumes that what exists generally in the whole will be found specifically in the part; this too is often false, as the overall nature of the whole may not be found in every part.

In order to avoid these fallacies, a “hereditary” or strong fact must be known to hold or prove true.

Let us look at examples of these *a fortiori* fallacies in order to see how to avoid or resolve them.

1. a) Compositional Fallacy (CF): a characteristic of the part wrongly extended to the whole.

CF 1: *This room (lesser) is well laid out, then surely the entire house (greater) is well laid out.*

While a good designer aims at a thoroughly consistent plan, it is not always achievable in practice.

Something is often wrong or unsuitable. Because the claim fails in experience, we deny this conclusion as surely true or even highly probable. The argument is more likely fallacious (taking the term “well laid out” as expressing either a professional or a knowledgeable person’s point of view).

To avoid the compositional fallacy, we would want to introduce the *dayo* sameness or limiting principle, but in a special way, as its important insight deals with doubtful matters. Here we limit the conclusion to what we know as sure within the whole (as is typical for the *dayo*), rather than about the whole. We would have to claim this: all we can be sure of is that *the house is well laid out only in so far as this room is*. This is a “watered down,” *dayo* conclusion. Only the given part within the whole is sure. In such cases, it is safer to wield the *dayo* in this way, rather than give in to the likely fallacy that claims too much for the whole. At most, then, for the whole house, a probable *a fortiori* could work, based on background knowledge of consistent quality from the designer and the owner, or just on the basis of the room as well-designed. However, this probability of like quality is tentative and retractable. At most, we are sure only that the whole is as good as the part’s contribution to it; the rest is speculation.

Accordingly, in order to avoid the *a fortiori* compositional fallacy that transfers the lesser feature to the whole, we have to deny deductive assurance, without the justifying, extra knowledge or strong premise (such as, “this designer always does excellent work” or “this magazine never shows poor quality stuff”); instead, we can claim at most an inductive likelihood.<sup>120</sup> Let us look at another example.

*CF 2: Water is composed of two gases that can explode when together. Since a small volume of hydrogen and oxygen is explosive together at room temperature in the presence of a small spark, how much more is a larger volume of water explosive under like circumstances?*

Here, we have to avoid changes in quality. Although water is composed of hydrogen and oxygen, its combined, stable state as water does not exhibit the unstable, gaseous state of its individual components. If we had electrolyzed the water or introduced a significant amount of the two gases not fully absorbed by the water, but existing separately in some way, then this event could occur. If we saw an explosion within a body of water (or vapour), it is more likely that it came from such a combination of explosive gases and spark, or extraordinary heating, or radical pressure drop, or some other cause than the water itself. A spontaneous explosion of water at our everyday temperatures, pressures, and normal states of affairs is extremely unlikely.

Now let us take a likely, non-fallacious, daily *a fortiori*, which needs some qualifications.

*Remarkably good player Quincy joins a mediocre team “The Primes.” Since adding a higher than average person to an average group most often raises the standard, we can surely conclude that “The Primes” are thereby better.*

Indeed, this is reasonable. We expect the team to improve *somewhat* in line with Quincy’s continued performance. Yet we must add the qualifier that this will happen only if all other factors remain the same (or internally improve), a big qualifier. Human factors do not stay fixed (as was the actual state of the house). The team might slack off; Quincy may not perform up to par; accidents or losses may occur; or the competitors may improve to change the standards. However, the record shows that acquiring better players normally improves a team overall. If this is untrue or unlikely, superior players would not be hired (or paid exorbitant salaries). Still, we do not want to say that the whole team will become as great as Quincy. Although Quincy is a great player, his team “The Primes” may not be corporately

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<sup>120</sup> Note: I call on the universals “never” and “always” to settle what might be a fallacy otherwise.



great, even if they perform better as a group. We can say that Quincy’s contribution probably improves the team—if he continues to be extraordinary—and by his example, others will likely perform better too. All told, Quincy’s total effect ( $Q+n$ ) is likely greater than his actual ability ( $Q$ ); so we are confident that the team is better overall. Whether it performs better than others is another matter, for if all teams improve enough, “The Primes” could end up worse in the league standings than before its acquisition of Quincy. Individual improvement sometimes, but not always, reflects itself globally.

1. b) Divisional Fallacy (DF): a characteristic of the whole wrongly taken to be in the part.

Notice the difference between these, upcoming statements i) and ii):

i) *Since the whole towel is dyed red, surely every part of it is red.*

ii) *Since the towel is dirty, surely one can find dirt anywhere on it.*

Whereas i) is true,<sup>121</sup> ii) may well be false (DF 1). Thus ii) is more often than not excessive, because seldom is every part of it soiled, unless soaked in dirt. “Dirty” is too indefinite to apply always to all the towel, which by observation can often be decided if true (unless the kind of dirt needs further tests). In this case, “dirty” is a rough, general term, extended to the whole, rather than applicable to every spot. The better claim would say that the towel is relatively dirty—a kind of proportional application.

DF 2: *The Prompts are a great team, so for sure Quitter is a great team player.*

Quitter may well decrease the quality of the team, but not enough to remove it from greatness; the Prompts are great despite him. A non-quitter of equal abilities to Quitter is better for the team. Yet that may still not make the non-quitter great unless s/he already is or else becomes great. Only if “The Prompts” hire people like Quincy, a great player, does greatness include him, if he continues to be great.

Having looked at compositional and divisional fallacies (1), we examine cases that fall outside the given’s range, as beyond (2) or short of it (3). A familiar physical illustration of both occurs with light.

2) Fallacy of Going Beyond a Limit:

*Wavelength of A is much longer than B; B is visible (as red); so surely A is visible.*

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<sup>121</sup> One still must be careful to define at what level something is being stated. *The entire towel is green, so any part of it is green too.* Although true as a general observation, on very close examination, spots adjacent to the green may be white, or everything may be composed of blue and yellow, so that it only appears green at a distance. So we have to realize that “is green” is taken as “appears green” under the present level or conditions of observation.

Clearly, this depends upon the actual wavelengths: some are still visible while others fall short of natural, human visibility. A much longer wavelength than red would be infrared or sound vibrations beyond the range of unassisted, human sight. A similar fallacy occurs at the other end of the spectrum:

*A\* is a much shorter wavelength than B; B is visible (as blue); so surely A\* is visible.*

Again, some cases are true, others false—the later usually beyond human visibility (from ultraviolet).<sup>122</sup>

Specificity is crucial. Sometimes, by rearranging the premises or changing a term, the meaning can become clearer in order to conclude well. We can see how things can go awry when too ambiguous.

*Mountain A is greater than mountain B; B has trees; so most likely, A has trees.*

Although this follows a *a fortiori* form, its ambiguity is as problematic as its factual content, so we cannot be sure that A has any trees at all or that it is a greater mountain in some sense. We can try to resolve the problems in a few ways: a) Add the premise, *most mountains have trees*, so that A probably has trees. b) Point out the fact that trees are irrelevant to the relative greatness of the mountains, so the premises are not actually related. c) State that the term *greater* is too ambiguous, and so this *a fortiori* argument is just improperly formed. The mere presence of the terms “greater,” “surely,” or “most likely” need not make the argument a good *a fortiori*. Rephrasing is better: *Mount A has more than B; mount B has trees; all the more, mount A has (more) trees*. Reversed premises are even less ambiguous: *Mount B has trees; mount A has more than B; all the more, A has (more) trees*. Here, we can assume the same feature(s) occurs (*A has trees*) as an almost obvious fact or an analytic truth. However, we seldom worry over such trivial arguments and look for the less obvious, known thing in an *a fortiori*.

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<sup>122</sup> For some other waveform with regular peaks and troughs, greater cases may obtain after a gap, but not at any greater amount. Here scientific study and better knowledge would revise an earlier, simplistic yet fallacious claim.

In this example, of course, we can make a claim stronger by allowing detectability rather than visibility. Detectability by instruments, while indirect, is broader in scope. We can extend the cases that turn out to be true. But our instruments may not be able to detect beyond a certain point of sensitivity, where the fluctuations of the instrument readings are greater than what the next smaller detectible amounts might be. In creating more sensitive instruments or critical tests, the claim may be affirmed or denied. Otherwise, one would have to rely on some guaranteed law or acceptable assumption to say that something probably or surely existed beyond what is presently detectible. Still if just an assumption, it could not be affirmed entirely as true until critically tested. Our confidence in claiming something beyond what can be detected currently would be based on background considerations from the whole realm of physics. However, if a better, more comprehensive theory of physical reality were formulated, it may affirm the claim, propose a better one, still declare it as tentative, or else deny it.

While the “more” of the predicate should relate to the operator’s “all the more,” a failed conclusion indicates an improper connection. Given all the possibilities for an *a fortiori* to fail, one can question the very argument itself. Yet the argument form itself need not fail, only the actual case. The argument is a reliable guide when used reasonably, while it remains open to correction.

## 2.4 Comments on Relevancy and Acceptable Forms

Besides carefulness, one can avoid outright fallacies and diminish problems with the *a fortiori* in at least two ways. a) As noted, we can weaken the sense of the operator, “surely” or “all the more so,” from the deductive to the inductive “should” or “all the more likely.” Then we expect some non-applicability up to a virtual, 100% likelihood (as equal to a deduction). b) Or we can strengthen the relevancy relation of the premises to allow only those that suit a sound, deductive *a fortiori*.<sup>123</sup> However, since induction is the most frequent form, a weaker term is better. As for relevant premises, we want both formal soundness (valid form and true fact) as well as informal strength. Since formal validity is achievable accidentally from a false premise, this is less than desirable for ordinary claims of reasonability, which expects more than just the bare, formal validity. Yet we face problems with either approach: inductive probability is weaker than certainty, while relevancy overly constrains general, deductive validity. Still, formal deductive validity would reject strong inductive cases. While it would be ideal to have a simple, modal term to apply with equal strength everywhere, instead of either “surely” or “should” (as these are too restrictive for every *a fortiori*), we seem to lack the requisite one. We have to include then, as stated, the weaker sense within “surely” as acceptable even if it increases ambiguity.

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<sup>123</sup> The relevancy demand makes the argument a restricted deduction. Here, the premises (P’s) are to be relevantly true and the conclusion (C) true for validity; if not, the claim is unacceptable. To be relevantly valid as an argument, it is not good enough to merely avoid the case of true P’s and a false C, we want to disallow cases of false P’s, and allow only true (P’s) with true C. The relevancy condition, rather than general acceptability of the argument form, requires that the premises be inseparably related to the conclusion for the C to be valid. With the *a fortiori*, mere superior over inferior relation of general commonality is fine as far as it goes, but it is insufficient to grant certainty for the conclusion. The less has to imply the more and vice-versa. This would narrow down the *a fortiori* to just those sorts of inclusions that work. By requiring a relevant relation and a true conclusion, we assure the argument’s validity and increase its potential soundness. Thus if one mountain has trees as its characteristic feature, the other mountain, to be surely of that kind, has trees too. However, if the conclusion is well known, there is little point in making the argument. As such, relevancy may be too strong a requirement. Still, although such an argument is guaranteed to be valid and factually sound, it must be checked for its final amount (as equal or a ratio).

As such, for the *a fortiori*, we qualify the term “surely.” As a mathematical or logical truth in carefully proscribed contexts, the term “surely” holds the strongest sense. In speculative ideas or natural things, the term should be acceptable as highly probable, likely, plausible, or sufficiently possible.

Inductive methods in uncertain contexts allow tentative conclusions.<sup>124</sup> Some practical uses of the *a fortiori* argument may even lead to more robust analyses or eventually to deductive formulae. Still, the full range of *a fortiori* forms is better than being limited to deduction. Additionally, we can consider inductive probability as analogous to deductive validity and its factual rightness to soundness; and on the other hand, perfect induction is deductive.<sup>125</sup> Because the *a fortiori* premises are already strongly relevant and taken as true in most instances, we need not worry about cases with false premises. As Johnson puts it, “*A fortiori* logic is not equivalent to FDL [Formal Deductive Logic].”<sup>126</sup>

In sum, while improper reasoning abounds, what is fallacious or invalid in deduction may still be reasonable in less formal methods. The informal may permit what is impermissible in deduction. To claim more for the *a fortiori* argument than the governing concept, method, theory, or facts allow may press it into committing a fallacy. Later in this chapter, I address the more stringent, formal aspects of logic, but for now let us return to the informal, acceptable, and practical method that can throw light on the wide nature of the *a fortiori* argument—analogy—as indicated by some earlier definitions and uses.

## 2.5 Analogy

Analogy attempts to explain something less well known, the subject under study, by means of the better-known thing, the analogue. For Govier, analogy is an appeal to consistency due to similarity.<sup>127</sup> A simple definition calls it an “inference that if two... things agree in some respects they will probably agree in others” or “a likeness in one or more ways between things otherwise unlike.”<sup>128</sup> As an informal argument, analogy is subject to degrees of success or failure. To raise its success, one seeks sufficient

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<sup>124</sup> Rescher, *Rationality*, 122.

<sup>125</sup> Peter A. Facione and Donald Scherer, *Logic* (New York: McGraw-Hill, 1978), 88, employ sound/unsoundness for both deduction and induction. They also compare validity of the former to being justified in the latter.

<sup>126</sup> Ralph H. Johnson, *The Rise of Formal Logic* (Newport News, VA: Vale Press, 1996), 76.

<sup>127</sup> Trudy Govier, *A Practical Study of Argument*, 5<sup>th</sup> ed. (Belmont, CA: Wadsworth, 2001), 352.

<sup>128</sup> *The New Merriam-Webster Dictionary* (Springfield, MA: Merriam Webster, 1989), 42.

likeness and minor differences between the analogue and target: a strong parallelism will increase the chance of a similar conclusion, while incommensurables will likely lead to an incorrect conclusion.

Analogical argument relates to the *a fortiori* in that both compare cases to derive insights or results that may have the same or similar features to the known. Indeed, the *a fortiori* is commonly called an analogy. Thus ordinary analogy can open up new vistas of understanding for the *a fortiori*. Yet is the *a fortiori* nothing more than an analogy? Even if the *a fortiori* is analogical in its general pattern, its differences are significant enough to say that it is a special kind of analogy. To demarcate the *a fortiori* sufficiently, we need a better assessment of the ordinary analogy first and then a comparison of their similarities and differences. (In Chapter 3, I take up the analogical claim by contemporary Jewish authors, and in Chapter 4, their differing Jewish forms.)

#### **a) Ordinary Analogy: Strict or Comparative Likeness**

First, analogy can appear in a tentative, modal form as a (hypothetical) conditional: *If A has factor x, and as A and B are similar, then something like x may well be a factor in B too*. Second, it is also an inductive, probability argument: *Since x usually occurs in A, and B is similar, something like x probably will accompany B*. Third, more strongly, *analogue A with feature x can be related proportionally to item B with feature y*. For example, *the sweetness (x) of an Apple (A) is comparable to the sweetness (y) of a Banana (B)*. One can also add (or subtract or note) some other factor: *An Airplane's flight is like a Bird's, except that the bird also flaps its wings*. In some cases, different things, A and B, can turn out to behave or have a factor that is effectively the same: *just as Abe can score, so too Ben can*.

Analogies are not of equal worth, however. Yet if a poorer analogue, formula, or model explains a new item somewhat, a closer fitting one should do better and thus replace the former.<sup>129</sup> A good model would show greater accuracy, mimicking it up to an ideal exactitude.<sup>130</sup> A better analogue has the

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<sup>129</sup> Note the latent *a fortiori*: if poor or wrong methods yield positive results, improved ones should be better.

<sup>130</sup> After one has a sufficiently comprehensive grasp of the new item as part of common knowledge, the guiding analogue may be dropped as the interim crutch it was, having served its purpose. Retained analogues, as less perfect, explanatory devices, can become unhelpful or even counterproductive. (In the past, the analogue of water flowing in pipes explained electricity in wires; but now most studies of electrical currents have dropped the old model.) No analogue, as a similar but different entity, can be identical or as good as the thing itself.

following attributes: a) it has fewer misfits or serious deviations; b) it reduces false leads and wasted efforts; c) it is more successful in exploring, tracing, and grasping the target; d) it more accurately predicts the consequent(s); and, e) its results are more fruitful. For this better analogue, we look for high similarity with the new, or we need to match a few analogues to parts of the new, or else we must construct it. One tries to cull out deficient, defective models early, although one discovers the degree of success or failure after testing. The latent *a fortiori* expectation implicit in the drive towards a better model often improves one's grasp of the new. Yet the best model is the item itself, properly understood.

Analogy is an approximation between two items in that it links up some possible or actual similarities, despite obvious differences, to find some common likeness(es). Most compared things are not exact equals: *this thing and that one are only partly and possibly alike*.<sup>131</sup> In contrast, an equivalence relation has what is true (or false) of one thing as true (or false) of the other (and so substitutable). As an ideal induction, a best analogy will have strict likeness: *just as this, so is that*.

#### **b) A *Fortiori* as Special, Analogical Thinking**

The *a fortiori* situates itself between an ordinary analogy and an equality. If ordinary analogy compares things that are somewhat alike, but do not necessarily bear a strong relationship, the *a fortiori* is more fine-tuned, for it builds on an already known, strong relationship between its two ranked items.

Both the ordinary analogy (OA) and the *a fortiori* (QC) compare a thing, idea, or situation with another similar (and relevant) one, with minor and no major differences, to gain further, correct insights. Yet the *a fortiori* has some unique characteristics. Let us compare the OA and the QC: With the OA, the target determines (even discards) the analogue and the proposed outcome; with the QC, the given always applies to the new to determine the result. It is a reverse process; but both try to apply something from one case to the new. The best OA is most alike with the least differences to a new case, which may not differ by degree; the QC already builds on given likenesses between cases, which always differ by

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<sup>131</sup> As a specific example: Capitals such as A, B, C can explain the later appearance of lowercase letters a, b, c, which are essentially equivalent, except for some rules by which each is employed. For an ordinary analogy, we can compare a pomelo to an orange and a grapefruit: oranges and grapefruit grow on trees, have thick skins, range from sweet to sour; so this pomelo, although with a thicker skin, but with similar characteristic is also a citrus fruit.

degree. The OA compares things that often differ in kind, whereas in a QC, the things typically express a key commonality or category. Whereas the OA argues that if sufficient similarities exist, such and such might well follow, tentatively, the QC goes beyond that supposition in its explicitly related cases, so that its conclusion is surer and at times deductively valid. (The OA’s conclusion is less likely, more qualified, and probative; while the QC asserted conclusion is tentative too, it is more confident, due to its proximate, corresponding cases.) Infrequently, OA results are the same. One expects a variance in results given the relative difference between analogue and target. The same result can be more frequent with the QC, although normally, one expects a proportion.<sup>132</sup> Additionally, the OA usually lacks the “less than/more than” terms of the QC (unless we expand analogies to include this type).

The search for the better analogue that yields better results implicitly borrows from *a fortiori* reasoning and makes analogy subsidiary to the conductive type. Yet in comparing cases, the *a fortiori* conforms to the general analogical pattern. As such, the two kinds are intertwined, but not identical.

We can arrange the main likenesses and differences between the OA and QC in a chart:

**Diagram 2: Comparison of Ordinary and A Fortiori Analogies**

Ordinary Analogy (OA): known P to new Q

1. P is sufficiently like Q to be compared;
2. P and Q may differ in kind;
3. P differs from Q somewhat;
4. Since P has aspects *a1, a2, a3* & Q has *a1, a2*,
5. then Q could behave like or have what P has;
6. - so e.g., Q may have *a3* too (very similar);
7. or Q could have more or less of what P has;
8. - so Q could have *a3 +/-* too.
9. Conclusion is normally tested.
10. P is an interim case.

A Fortiori (QC): known, given P to compared Q

- 1\* Q is already like P and readily compared;
- 2\* P and Q don’t differ in pertinent ways, but do differ in quantity or quality, & sometimes genus;
- 3\* P and Q differ only in scale (X):  $P < Q$  or  $P > Q$ ;
- 4\* Since P has aspects *a1, a2, a3* & Q has *a1, a2*,
- 5\* then Q should behave like or have what P has;
- 6\* - so e.g., Q can have *a3* too (the same - *dayo*);
- 7\* or Q likely has more or less of what P has;
- 8\* - so Q should have *a3 +/-* too.
- 9\* Conclusion is expected and may be verifiable.
- 10\* P is fixed as the given case.

In 1 and 1\*, as P and Q do not commute, their starting points differ. The OA could work, despite the differences; but its conclusion is normally tested to verify if it holds and to what degree. For the QC, the cases are often more alike than an OA and so should be more able to receive the feature, which the “all

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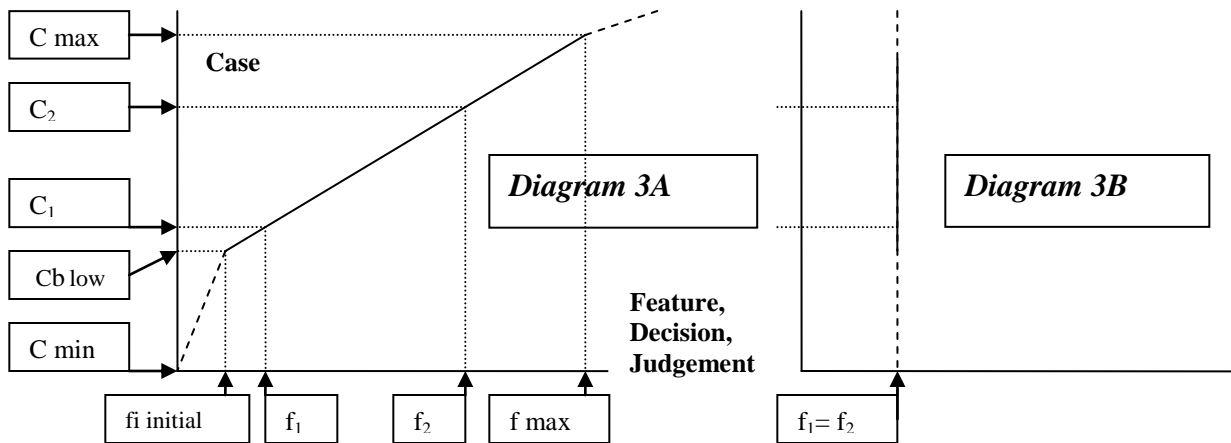
<sup>132</sup> An *a fortiori*’s conclusion either is the same (*dayo*), despite the degree of difference, or somehow scaled to the difference. Overall, proportions more natural, while fixing the conclusion to the level of the given is an exception in everyday situations, although in some Jewish contexts (the *Mishnah*’s), equality is the norm.

the more so” operator implies.<sup>133</sup> The QC is more specific and stronger than the OA’s speculative approach.<sup>134</sup> Also, the *a fortiori* principle can govern the selection process for the OA’s better analogue. Altogether, the *a fortiori* argument is an unusual analogy—almost enough to be considered on its own.

## 2.6 General Issues about the *a Fortiori* and its Possible Conclusions

Up to this point, I have discussed several ways of analyzing the *a fortiori* that give varying levels of assurance. Let us now graphically represent the comparative relations (*more than* or *less than*) to help clarify the argument. The *a fortiori*’s **cases** (as the *independent variable*, generally) are plotted against their attending, inherently associated or inseparable **features** (as the *dependent variable*). Arbitrarily, the x-axis marks the dependent feature, decision, or judgement based on differing cases; the independent variable is on the y-axis.<sup>135</sup> The proportional results are in diagram 3A and the fixed result in 3B.

**Diagram 3: A as Proportional and B as Same/Dayo**



In 3A, Cb is the lowest case on the continuum in which the feature appears as fi. Conversely, fi is the initial, entry point determinable at case Cb. C min is the minimum possible case that can even be considered, but too low to have the requisite feature f. C max is the highest point on the continuum where feature fmax obtains, beyond which f fails. Case 1 or C1 is the actual case with feature f1 given, while Case 2 or C2 is the case where feature f2 is to be determined. f varies with C: The change in C determines the change in f. In case C2, the f2 associated with it is proportional to f1, shown by the slope s ( $s = f/C$  or change in f to change in C ( $s = (f_2 - f_1) / (C_2 - C_1)$ )). Also,  $f_2 = (C_2 - C_1)s + f_1$ . Of course, we could reverse course, to begin higher and end lower down. (The slope need not be linear.)

In 3B, for the new case, C2, no difference exists for the feature f2, as  $f_2 = f_1$ , despite the fact that C1 was less serious or weighty. (Again, the situation can be reversed, if C2 was the beginning reference point and C1 the new case.) As  $f_2 = f_1$  is fixed, any C gets the same f, for the range in which f holds. Certainty of results can conflict with fairness.

<sup>133</sup> While pomelo 1 is slightly sweet and to my liking, pomelo 2 is sweeter still, and, therefore, more to my liking.

<sup>134</sup> For analogue and target, contexts and proximities within a category strengthen or weaken the comparison.

<sup>135</sup> We could switch the cases and features, or subjects and predicates, as x’s and y’s.



As stated (and explored later), the technical term in Rabbinic thought for the repetition or fixity of the same feature ( $f_1 = f_2$  in 3B) is the **Dayo Sufficiency Rule or Precedent Principle**—a judgement or decision in the new case ( $C_2$ ) that holds it to the former ( $C_1$ ) without change. If there is a sufficient reason to conclude that the new case differs significantly from the earlier one, a decision arises to find a new precedent or else adjust  $f$  proportionally, as  $f_1$  to  $f_2$  (in Diag. 3A). This is a practical revision. So when the feature should correspond to differing cases, it should be suitably scaled to the new case, rather than fixed to the given as a minimum or maximum. Here the same precedent (*dayo*-sufficiency) does not limit the conclusion. Thus, the **Proportionality Principle** occurs when significant differences require implementing a **Practical Revision Principle**. Thus three principles operate in an *a fortiori* conclusion: the same **Precedent** (represented by the *dayo*), the **Practical Revision** (when an adjustment is better), and **Proportionality** (to scale the variation appropriately).<sup>136</sup> If leniency is called for, one should revise proportionality in turn, perhaps to moderate it by the *dayo*, to result in a compromise. Revision mediates between precedent and proportion. It all depends upon what is the most reasonable or critical factor at play. That is, does the difference between items govern the outcome or does the given feature govern? In any case, if one needs to revise, the outcome can range between the same given and the straight proportion, preferably resolved by an abductive or rational choice, rather than arbitrarily.

## 2.7 Possible, Formal Structures of the *a Fortiori*

We have advanced to the stage of introducing some formalities to the argument. Due to the often, unfamiliar symbols and rules of modern deductive forms, I defer those for the moment and proceed to simpler forms which prepare the logical ground for the broader grasp of quantificational, predicate relations. For one, I expand on the relation of the categorical syllogism (CS) to the *a fortiori* (QC). Because Sion's approach is unique and I have relied upon him extensively throughout, his method receives special attention. To round out the picture, I introduce some informal, inductive structures.

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<sup>136</sup> Earlier, I called the two premises principles, their order not being crucial for reasoning: in one case ( $C_1$ ), we have a known feature ( $f_1$ ), and in the other,  $C_2 > C_1$  (or  $C_2 < C_1$ ). Now we want to draw the new conclusion: what do we make of some  $f_2$ : is it the same (*dayo* rule), a simple proportional, or some point in between?

**a) General Forms of the *A Fortiori*/QC**

The basic QC argument is now familiar: two premises and a conclusion ( $P1 \ \& \ P2 \ \rightarrow \ C$ ). One premise, P1, has an item (A) with a known feature (f); the other premise, P2, ranks the two items ( $A > B$  or  $A < B$ ) in a mutually comparative class. So the claim (C) is that the feature (f) occurs certainly or else probably (*Pr*) in the other item (B), either as the same or a relative quantity. Listed are these forms:

- 1) Deductive *a fortiori* form: **P1**: (A has a feature f) & **P2**: ( $A < B$ ), then **surely C**: B has feature f.
- 2) Inductive *a fortiori* form: **P1**: (A has a feature f) & **P2**: ( $A < B$ ), then **likely C**: B has f.
  - i. Abductive: **P1**: ((A with feature f) & (B with f)) & **P2**: ( $A < B$ ), then **C**: B is best choice.
  - ii. Conductive: **P1**: ((A with f) & (B with f)) & **P2**: **likely** ( $A < B$ ), then **C**: B is **more likely** true.
  - iii. Basic Analogical: **P1**: (A with feature f) & **P2**: (B is similar to A), then **likely C**: B has similar f.

To generalize (1) and (2): **P1**                      &                      **P2**                      → **C**    or    **probably C**  
 Spelled out generically: **P1**: (A has f) &    **P2**: ( $A < B$ ) or ( $A > B$ ), then **C**: B *surely* or *likely* has f  
 Main truth values:            *T or F*                      *T or F*                      *T or F or Pr(T) or Pr(F)*

Since the *a fortiori*'s premises are normally true and relevant, we can dispense with the false premises of formal validity. With true premises and a false conclusion, the argument is deductively invalid; but, when the conclusion is true, it is valid.<sup>137</sup> For induction, a probably true conclusion, *Pr(T)*, makes the argument acceptable, while a probably false conclusion, *Pr(F)*, makes the argument unlikely. (Probable premises would lower the QC's likelihood.) Confirmation improves inductive claims. With a highly probable conclusion (widely, repeatedly, and critically verified), we can accept the inductive, QC argument's general reliability. Let us examine various deductive formulations, starting with the CS.

**b) The Categorical Syllogism (CS) and the *a Fortiori* Argument (QC)**

Comparisons link things usually through a common category. Categorical syllogisms (CS) do this as hierarchical classifications under universal concepts or genera or as coextensive concepts.<sup>138</sup> Since we saw recent definitions (not Aristotle's) take the *a fortiori* as a CS, this deserves more attention. Even if

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<sup>137</sup> Some Rabbis attacked the premises' truths, to reject the conclusion, which is an incorrect formal disproof procedure. Still, while a QC may be formally valid, its false facts make it unsound. If the Rabbis rightly reject the conclusion and then the premise(s) as a *Modus Tollens*, then it was both invalid and unsound. Also, when clear, counterfactual (*hefucho*) cases with differing (given) conclusions, the original argument is doubtful or disproved.  
<sup>138</sup> Genera may be higher classes that link lower ones on differing levels. Item x may be comparable to y under some point of interest, likeness, or ranking in a category z; so as a rule-of-thumb, objects with more of z are higher on the scale of z; x with more z ranks over y with less; (if  $x > y$ , then  $x = y + \text{some difference}$ ).

the CS is only partly applicable, it can serve analogically for the broader range of *a fortiori* arguments, if we take the universal of the subject as analogical to the greater item.

As noted, some QC's are CS's. An *a fortiori* can work with one or two universal statements. In a CS, if we assume or inject a universal, we can relate the two particulars: *All apples are fruit; little apples are fruit, surely then, big apples are fruit.* To repeat, universal A propositions allow I's to be formed directly.<sup>139</sup> Since any apple (small, medium, big, red, green, mottled, or brown) qualifies as fruit, the details are superfluous for a CS. Conversely, since an apple is defined as a fruit, the term "any" is understood and does not need to be stated (except that logic may require it). The CS is concerned only with a vague "some," while globally indifferent to the specifics of the middle range between A and E.

However, if a higher-lower relation is always true within a genus, the argument can work. *Every case of A is chosen to be greater than B (within the same class type where f is true); B is such as to bear f; so, A bears f too. Any greater radius sphere is greater than a lesser radius sphere (which implies that volume is a feature), so as long as  $rg > rl$ , the particular as  $(rg = 10\text{ cm}) > (rl = 3\text{ cm})$  holds; since the 3 cm one has volume  $v$ , the 10 cm one has  $v (+ e, e$  the extra). With a universally true warrant (as  $A > B$  in a linear series of positive numbers,  $(10 > 3)$ ), the *a fortiori* as a CS need not suppress the difference between cases or require another argument to conclude that the property holds; the truth is built into the premises. This also means that positive numbers and operators ( $>$  or  $<$ ) have universal meanings and are not inductive generalizations.*

Without some universal, a CS cannot validate two particular premises, unless we limit them just to the range in which the property exists or is true. Strictly heritable cases are universalizable; but one may not realize this before the claim is made or checked. What is only possible (or statistical) is not valid; nor can one validly infer from particular to general either. Yet inductive QC inferences from weaker to stronger cases can be likely, although exceptions show non-universality.

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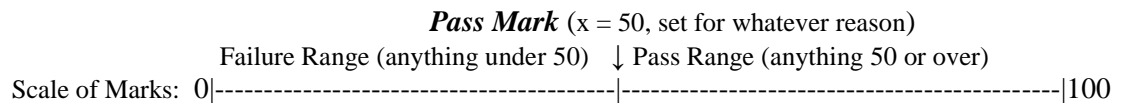
<sup>139</sup> If all aardvarks are anteaters, the big aardvark is an anteater as much as the pygmy one. The relative sizes are superfluous facts once we know that all examples have the relevant characteristic (feature or judgement) anyway.

The non-universalizable, comparative details of interest in many QC's are either irrelevant or untreatable by a CS, which neither solves these particulars nor dissolves relative differences as inconsequential.<sup>140</sup>

Consider a typical exam with a 100 maximum mark for all right answers and a 0 for all wrong ones. If we fix a pass/fail point as the rule, we define every other point on the continuum: *if anything over 50 is a pass (without cheating), surely getting anything 50 + n (n as positive) passes, while anything below 50 fails.* Nothing matters except the mark above or below the critical turnover point.

*All who receive 50 or more pass, and none at 49 or less pass (assuming whole marks); P got over 50, and surely passes (so too Q who got 100). R got less than 50, and surely fails (as does S at 0).*

**Diagram 4: Pass-Fail Condition**



There is no mystery here about what is more or less, defined by the crucial point as pass or fail, all or nothing, yes or no, true or false, 100 or 0, A or E effectively. Yet as stated, the CS usually does not concern itself with the relative differences of the particular passes and failures, which are untouched issues of importance to the QC.

For the QC, we are not only concerned about a pass or fail, but also about better and worse ones, *with or without outer limits.* The *a fortiori* is specific: *If 50 is a passing grade and good enough, and 50+ is greater than 50, surely, 75 is a better pass than 60.* Actual quantities are determinable here.<sup>141</sup>

Quantificational predicate logic is more general than the CS and can formulate the comparative relations of the QC's. Still, let us work towards it via transitivity, a trimmer form of the *a fortiori* and through the propositional expressions that I adapt to Sion's constructions.

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<sup>140</sup> A series of arguments are possible: All apples are fruit, so small apples are fruit (A to D); likewise large apples are fruit (A to I). Next, we depart from the CS: all larger apples are bigger than smaller apples (graded by an independent scale to avoid inaccurate relations); since largeness means quantitatively more than smallness, large apples have more fruit content than small ones (*ceteris paribus*). We have a CS and a scaled comparison. Being a fruit assumes a volumetric content. (The unfertilized flower hardly qualifies as a proper fruit.) The CS includes any quantities under "some." The proportional adjectives "small" and "large" that describe quantity are in the same class (or quality) as fruit. The QC still wants to know more than just the simplified quantity of "some."

<sup>141</sup> Again, the chosen pass need not relate to upper or lower bounds, for in many ways all are arbitrary. What we want is a point of adequate performance that decides success or failure. One can even have an uncountable pool of questions from which we choose a certain minimum of correct answers and as few wrong ones (with no demerits).

### c) Comparative Value Rankings

We often string several, related items together in a sequence as a ranked series of one thing over the other.<sup>142</sup> If we were to employ the mathematical symbols  $>$  as “is greater than” and  $<$  as “is less than,” and then rank three items, such a horizontal chain would look like this:  $A > B > C$ .

Although such a string is not yet a well-formed formula, one can transform it into such in a transitivity argument:  $A > B$ ,  $B > C$ , so  $A > C$ . Yet transitivity is a special *a fortiori* in that its second premise is just another, greater than term ( $B > C$ ), rather than some new feature. The usual *a fortiori* also has two ranked items ( $A > B$ ) in a group, but one has a specific feature ( $B$  has  $y$ ), to claim that the other item should have it too ( $A$  has  $y$  to some degree). As long as the greater  $A$  is sufficiently like  $B$  in some way, and  $B$  has some feature  $y$  (say tallness),  $A$  is claimed to have  $y$  too. We should further clarify these forms, because transitivity is either unnoticed or else confused with the usual *a fortiori* argument.

1) The **a fortiori principle in transitivity**: puts the ranked facts in a double series; or else, one can consider the second case as the added feature: ( $A > B$ ;  $B > C$ ). While this ranking is not yet a well-formed formula, it is the prerequisite to the transitivity argument.

2) The **transitivity argument**: puts those premise statements into a well-formed formula: *if A is greater than B, and B is greater than C, then A is greater than C.* ( $A > B$ ;  $B > C$ , so  $A > C$ .) This transitivity form brings out only one aspect of the *a fortiori* argument, however, namely that of the “greater than” over the “less than.” Transitivity is a chain of relations (of  $A$  to  $B$ ), a further ( $B$  to  $C$ ), which leads to the conclusion ( $A$  to  $C$ ). The  $B$  serves as a middle term. A non-fallacious, non-circular transitivity is a valid deduction and is stronger than a typical *a fortiori*, which may or may not be.

3) The more **typical, a fortiori argument**: has a new feature that it claims to transfer to the other case. This more frequent, *a fortiori* argument form says that if the lesser has a regularly associated factor, the greater should surely or probably have it too, minimally ( $A > B$ ;  $B$  has  $f$ ;  $A$  should have  $f$ ).

As noted, both the exchange in *Mind* and the later authors Cohen and Nagel see the transitivity argument as an *a fortiori*. Although several contributors to the debate in *Mind* insisted that the universal

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<sup>142</sup> To represent the category of human height with tallness as a measure, Alf is taller than Bert, who is taller than Cam or Carl (of the same height), who are taller than Dave, who is taller than Emma, Erna, or Ernest. Of course, sameness or equality of some things is specific to a time, measured approximately. Symbolized:  $A > B > C1, C2$  (*being equals*)  $> D > E1, E2, E3$  (*also equals*). Were we to later find an  $A^*$  that was judged higher than  $A$ ,  $A^*$  would displace  $A$  as first. So too, any new item could be slotted into an appropriate position on that scale. For differing categories, however, we would need to find a common denominator that suitably related them. Thus a comparative valuation is a form of judging the qualitative or quantitative differences between things, setting each in an ordered sequence, from the highest or best to the lowest or worst, graded under some category or another, whether or not wholly agreed with, or that the criteria and order might change. So for pets (say dogs, cats, birds, and monkeys), various preference orderings are possible. Other preferences are common: a safe and healthy state is preferable to one only safe but not healthy, or another only healthy, or one neither safe nor healthy.

is understood ('Any A that is greater than any B', and so on), others stated that it is not required, but that the argument can work on the basis of a non-circular, ranked series ('This A is greater than B'...). In one article of *Mind*, however, Pickard-Cambridge also points out that the mere fact of qualitative likeness does not make transitivity valid in every case. Yet he claims that there is one universally valid form and another that is universally invalid. *That A cheats B and B cheats C, does not permit us to say that A actually cheats C.*<sup>143</sup> Perhaps it would be better to say that there can be unsound cases, although the form may still be valid. Alternately, C can cheat A. In such circular arguments too, the transitivity form fails. There is no necessary connection between those above, two premises, unlike numerical or ranked amounts, as in the upcoming hierarchy (of acts) with the extra feature (guilt) that characterizes most *a fortioris*: *if A is a bigger cheat than B, and we hold B guilty, surely we also hold A guilty to some degree.* While some transitivity and the typical *a fortioris* can fail, they are often sensible and often right when we guard against committing a fallacy of thought, fact, or mixing different contexts.<sup>144</sup>

#### d) Specific Examples of Deductive Forms as Mathematical or Quantitative Types

Mathematics provides a model of how different quantities can display the *a fortiori*, when we recognize the inherent notions of greater and lesser, whether or not we assume a universal *all*. Frege's notion of a successor of zero helps generate the series of natural numbers. As a proof by recursion or complete induction, the first instance possesses the hereditary or ancestral property for all its successors. If every positive successor  $x$  is greater than a predecessor  $y$ , we have a universal, numerical relation.<sup>145</sup> Transitivity is obvious: 5 is more than 4 is more than 3; so 5 is surely more than 3. In the opposite sense: since: 3 is less than 4 and surely less than 5. Succinctly,  $(|x| + |n|) > |x|$ .<sup>146</sup> This *a fortiori* works too: *in class x, if |x| has the feature of evenness, a larger example (|x| + |n|) has it too, if n is divisible by 2.*

<sup>143</sup> Pickard-Cambridge, "Universals and A Fortiori Reasoning," *Mind*, vol. 26, no. 102 (Apr. 1917): 212-214.

Another argument works: Government A taxes Business B who taxes Customer C, so A taxes C (indirectly).

<sup>144</sup> Novak has contextual rearrangements of transitivity, in David Novak, "Maimonides and the Science of the Law," *Jewish Law Association Studies IV*, ed B. S. Jackson (Atlanta: Scholars Press, 1990), 111-112.

<sup>145</sup> For Frege's notion, see "Relational" in *Routledge Encyclopedia of Philosophy*, 789. Also see "Ancestral," 29. We can universalize the rule: if successor  $a_2 > a_1$  in a series, then  $a_{(n+1)} > a_n$ , subscript  $n$  being positive.

<sup>146</sup> The expression  $(|x| + |n|) > |x|$  reads like this: absolute  $x$  plus absolute  $n$  is greater than absolute  $x$ , in that we are considering positive forms of the numbers. (If  $n$  was negative, the left side would be less than the right side. And obviously, if all were negative, the left would be less than the right.)

However, we must carefully define the category and terms to avoid error, for odd numbers are not divisible by 2 into whole amounts. Oddness is (hereditary as) non-evenness. If  $x > y$ , and  $y$  has quality  $z$  (as bare numberness, length, or volume), then  $x$  has  $z$  too. Just as numerical relations can have a hereditary factor, so too can other relations. Besides the CS, transitivity, and mathematical versions, there are other ways to treat the *a fortiori*

#### **e) Summary of Simple Deductive and Inductive Forms**

Altogether, because deductive certainty is not always possible and one can rely on a good, inductive likelihood, one need not restrict the *a fortiori* argument to one form alone. While inductive methods fall short of deductive assurance, it is still better to offer a probable argument than to always suffer immobility by pleading ignorance. Induction expands the scope of reasonable answers to cover less universal and more particular issues. So too, when the greater rigour and assurance of scientific induction are unattainable, one can settle on largely successful, practical inductions or its sub-forms. These include the abductive (best choice), conductive (likelihood), and analogical (possibilities), sometimes combined.<sup>147</sup> In such probable cases, while one might think that the *a fortiori*'s scaled comparison will conclude with the expected feature, the limitation of knowledge requires that the claim be expressed less surely. While we prefer to propose or predict that the feature obtains, we can check our assumption against subsequent reality. On the other hand, one can argue against a claim in that it is that much more unlikely to occur based on specific reasons or past failures.

Statements with true facts can grant both deductive soundness and inductive rightness. Conversely, facts reveal a possible, fallacious induction or an unsound deduction. With the mountain, mere height is not directly relatable to trees, although we can claim its likelihood based on knowledge, exceptions noted for disasters, clear stripping, attack, disease, infestations, animal, desert, soil, or frost conditions. With surveys of trees on mountains, if the probability of the feature is true over 50% of a representative sample, inductively, it is "likely." To ensure that *this* mountain is indeed treed, we must verify it.

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<sup>147</sup> Although the *a fortiori* compares two items normally, there is no reason to require that alone; so one could have a series of lessers to greater (that is being claimed to have the like or scaled feature), a kind of induction by enumeration or pattern of increase. And it works in the opposite direction, from greater to lesser.

Empirical claims, widely and critically checked, are usually more reasonable than ones based on rare occurrences, dreams, or wild speculation.

In sum, the assurance of the given feature's transfer from one case to the other corresponds to each form. a) With a formal deduction, a valid and true conclusion is certain, indubitable, and sound (unless false and unsound). b) In an induction with given data, the claimed conclusion is probable to some degree: virtually certain (say over 98%), most likely (say 90% or more), highly likely (75% or more), possible (over 50%), weak or progressively unlikely (below 50%); but we determine the truth of the actual claim by a specific test, *a posteriori*.

## **2.8 Various Formalisms**

Up to this point, besides induction, I have superficially discussed deductive methods for the *a fortiori* by exploring the categorical syllogism's partial role, transitivity, and some rudimentary, mathematical forms. Various formulae exist, mostly in Jewish literature, as attempts to symbolize the mainly Jewish QC argument patterns. I start with Ostrovsky, who uses Schwarz's CS form for the Rabbinic QC. Abraham follows, as he develops Schwarz's method initially before going on with his own, far more technical analysis. I provide a non-technical introductory explanation and conclusion for Abraham. Sion's method is far simpler. He employs a common scale for the feature (as utilized in my earlier diagrams). I add the terms of propositional logic, which are already latent in Sion's verbal expressions. Next, I discuss the essence of what Brachfeld does, but leave his complex formulae to the appendix. As for Guggenheimer, I quote him and add some pertinent comments about the definite result. Afterwards, I point out how quantificational predicate logic treats the universal cases and how recursion theory applies to particular ones. Following that, I compare these varied approaches and discuss the conclusion's quantity (in valid arguments) that is left largely unanswerable by these methods, which leads into Chapter 3 where the same given is preferred.



### a) Ostrovsky's Formulation<sup>148</sup>

Writing in Hebrew (ca. 1924) on the full complement of interpretive rules for the Bible that include the QC, Ostrovsky develops a condensed form for it, based partly upon the prior work of Schwarz. A common example that he uses has both lesser and more serious issues, with each occurring in less and more serious circumstances.<sup>149</sup> The first issue concerns a tooth bite or hoof wound (together the lesser), while the second issue is a goring (often more serious) that an animal (cow or bull) inflicts. Each of these wounds can occur in a public place (considered the lesser) or in a private one (more serious). In a common place, the public exercises care to avoid harm, while the animal's owner restrains it. Legally, one deems the private yard of the person harmed more important. Presumably, the owner must augment his precautions there due to the closer proximity of the animal to people. As givens, we know that a bite or trampling is typically more serious when it occurs in private than in public and that a goring is worse than a bite or trampling in public. One wants to determine the penalty for a goring in the private precinct of the harmed person. The upcoming layouts show two approaches: one is from the perspective of the type of wound and the other from the type of place. Ostrovsky uses a minus sign (–) for the less severe and a plus (+) for the more onerous. We start with the QC evaluated in terms of the wound types (**A**: tooth/horn wound; **B**: horn wound; **a**: fine in public space; **b**: fine in private space).<sup>150</sup>

P1: **A – a + b**: Tooth or Horn Wound – (less severe) fine in public + (more severe) fine in private  
P2: **B + a**: Horn Wound + more severe in public space  
C: **B + b**: Horn Wound + more severe in private space

<sup>148</sup> Moshe Ostrovsky (משה אוסטרובסקי. המידות שהתורה נדרשת בהן) discusses several QC examples in *Hamidot She-haTora Nidreshet Bahem* (The Rules that the Torah Requires, 1924/5), 39-86, although here I provide my own reasoning on a well-rehearsed case.

<sup>149</sup> Schwarz, he says, viewed this example as a reasoned (*d'savra*) or common QC, based on the author of *הליכות עולם Halichot Olam* (Eternal Traditions). Ostrovsky (36) notes that in its original context (in the *Mishnah*), the controversy between Tarphon and the other council Rabbis was the very contrast between reason and the majority view, where this was a QC ruling of tradition (*d'dina*) and that ordinary reasoning was not to be followed.

<sup>150</sup> Ostrovsky, 68.

א-א + ב: שן ורגל – חיוב ברשות הרבים + חיוב ברשות הניזוק  
ב + א: קרן + חיוב ברשות הרבים  
ב + ב: קרן + חיוב ברשות הניזוק

א-א + ב: ברשות הרבים – חיוב שן ורגל + חיוב בקרן  
ב + א: ברשות הניזוק + חיוב שן ורגל  
ב + ב: רשות הניזוק + קרן חיוב

The argument is also formulated in terms of the places of occurrence (redefined A\*: Public; B\*: Private; a\*: fine for tooth/hoof wound; b\*: fine for goring, although Ostrovsky used no asterisks to distinguish):

P1\*:  $A^* - a^* + b^*$ : Public space – (less of a) fine for tooth or hoof wound + (more) fine for goring

P2\*:  $B^* + a^*$ : Private space + (more) fine for tooth or hoof wound

C\*:  $B^* + b^*$ : Private space + (more) fine for goring

On the face of each, it looks like there ought to be a more serious fine for a goring (+) in the private yard (+). Yet both conclusions (C:  $B+b$  and C\*:  $B^*+b^*$ ) could be maintained as possessing the same degree of severity as given in the premise (a *dayo*) rather than as permitting an increase. For the first conclusion C, there is no reason to believe that the horn wound needs to differ between the public and private arenas, despite its greater severity than a bite or trampling in either place. Presumably, in both places the animal must be restrained, all the more so in private with the animal close by, and not just avoided as in public.<sup>151</sup> Indeed, in private areas, such as when one inspects the animal, it is more likely that the animal kicks or steps on the person than that it gores, for ropes likely hold its head and not its legs, unless there is a clear need. In public, the onus likely divides between the owner and the person who might get too close to the animal. In private, despite the owner's greater restraint upon the animal, the person who examines the animal on his own property bears more risk, for he too ought to show greater caution. Indeed, with such precautions, the more restrained animal in a private area is less likely to cause a severe goring, whereas in public the goring could likely be more severe than a bite or hoof wound. Thus in C\*, one need not require any greater fine for the goring in private than in public. As such, while a goring typically allows a greater fine in public than the bite or trampling, it need not be so in private. In assessing guilt in a private space, therefore, the person may well bear more responsibility for the expected danger, unlike the less expected danger in public. Inasmuch as a judge may not have adequate evidence to determine the truth of the counter claims, he takes the greater probability into account, not the lesser; so he operates more by a general rule of likelihood than a theoretical construct. Then the same level of fine as that given (the *dayo*) is the norm, barring any other testimony that can be trusted to alter that judgement. It is practical (legal) reasoning rather than a formal, theoretical logic.

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<sup>151</sup> This likely developed from Ex 21:28-36 of a person hurt or killed by an unrestrained bull, esp. if aggressive.

However, we will return to this distinction over the quantity of the conclusion later, in Chapters 3 and 4, especially in relation to Biblical precedents. At this point, let us turn to other explanations, diagrams, and formulae, starting with those of M. Abraham, because he states that Ostrovsky follows Schwarz in an attempt to construct a deductive argument based on the categorical syllogism.

**b) Michael Abraham's Analyses**<sup>152</sup>

Abraham, a contemporary, Israeli scholar writing in Hebrew, also examines the QC from his standpoint of an "arithmetic model" as he calls it. He understands the overall argument as deductive, although it often comes as an induction. He introduces the QC from Jewish tradition as one of the rules of Biblical interpretation that others have studied before he gives his own dissection of its structure. Then he writes the generic, Ostrovsky/Schwarz argument in predicate logic (that covers the CS):<sup>153</sup>

Premise 1:  $(x)(P(x) \rightarrow G(x))$  [Major P: For all **x**, if **x** is **P**, then **x** is **G**]  
 Premise 2:  $P(a)$  [Minor P: For specific instance **a**, it is a **P**]  
 Conclusion:  $G(a)$  [Conclusion: For **a**, it is a **G** too]

Abraham does not mention that the above form does not tell us what is more and less severe or what **x** is. Perhaps we are to know that **P** is less and **G** is more. Nevertheless, inasmuch as the first premise covers any **x** where **P** and **G** hold, the relative ranking does not really matter (as in the CS). To rectify matters, he has a chart that shows the various severities for the *Mishnah's* classical, animal problem:

**Diagram 5: Increased Severity of Domains of Occurrence and Wound Types:**  
 (*Domain* items progress in severity from left to right (horizontally), *Wound* types from top to bottom (vertically); the bottom right square (G/T) is what is sought.<sup>154</sup>)

<i>Domains</i>	Public: <b>H</b>	Private: <b>G</b>
<i>Wounds</i>		
Bite or Hoof: <b>R</b>	–	+
Goring: <b>T</b>	+	(+)

From that layout, Abraham sets out the Ostrovsky/Schwarz formulae to cover both the horizontal and vertical cases (and later develops and analyzes his own formulations as the article progresses).<sup>155</sup>

<sup>152</sup> Michael Abraham, *Higayyon*, "The Kal Vachomer as a Syllogism – Arithmetic Model," 29-46. His article I translate and reproduce here, mostly from his p. 35 onwards, sometimes paraphrased; other clarifications often denoted in [ ] brackets. All the main material is his.

<sup>153</sup> Abraham, 35. He says that Schwarz rejected the possibility claim (of "Korban Aharon") for that of certainty.

<sup>154</sup> Abraham, 35. My Hebrew translation adjusts items; the result he shows is a single + sign set within a circle.

Horizontal P1: $(x)(H(x) \rightarrow G(x))$	[For all $x$ , if it can occur in Public, then it can occur in Private]
<u>Horizontal P2: <math>H(t)</math></u>	[A Goring ( $t$ ) can occur in Public domain ( $H$ )]
Conclusion: $G(t)$	[A Goring ( $t$ ) can occur in Private domain ( $G$ )]
Vertical P1: $(x)(R(x) \rightarrow T(x))$	[For all $x$ , if Bite/Hoof Wound ( $R$ ) can occur, Goring ( $T$ ) can]
<u>Vertical P2: <math>R(g)</math></u>	[In Public or Private domain ( $g$ ), Bite/Hoof Wound can occur]
Conclusion: $T(g)$	[In Public or Private domain ( $g$ ), Goring can occur]

Abraham points out that these are inductive rather than deductive reasonings,<sup>156</sup> because, despite the form, these are possible givens, rather than certain or necessary conclusions (even if we drop the “can”).

Then Abraham discusses the complicated issues, which I now explain loosely.<sup>157</sup> We have the given data: that  $R$  in  $H$  (bite/foot in public) is less, while both  $R$  in  $G$  (bite/foot in private) and  $T$  in  $H$  (horn/goring in public) increase in severity. We need to determine  $T$  in  $G$  (horn/goring in private) by the QC, which seems to indicate an obvious or *prima facie* increase. If one argues that the given  $R$  in  $G$ , although an increase over given  $R$  in  $H$ , is still less than given  $T$  in  $H$ , then the sought  $T$  in  $G$  could be the same or even less than  $T$  in  $H$ . A rejoinder could counter that some increase seems requisite. In turn, although a goring  $T$  is often worse than a bite or foot/hoof wound  $R$ , these are reversible. If one argues the likelihoods of harm and varying responsibilities (as I offer in the Ostrovsky piece above), one can deny the QC’s otherwise sure increase. Lacking such an argument, one could still quote a traditional ruling that upholds the maximum allowable as the known given, such that the fine for  $T$  in  $H$  suffices for  $T$  in  $G$ , despite a theoretical possibility of increase. This traditional ruling comes from elsewhere, not from the argument *per se*. However, it is *possible* that the  $T$  in  $G$  is more severe despite precautions (backed by reliable witnesses). Then the traditional norm that exacts the penalty of  $T$  in  $H$  or  $R$  in  $G$  in these circumstances faces an exception, and the penalty for  $T$  in  $G$  would demand an increase. The increase can rely on the prior given as a norm or on the fact of increase. Yet neither the increase here nor the same severity are strictly formal, logical answers, but are instead tied to traditional practice or current knowledge. That is my informal understanding of Abraham’s thinking.

<sup>155</sup> Abraham, 35-36. Note that  $x$  performs differently: as a wound in the horizontal and as a place in the vertical.

<sup>156</sup> Abraham, 36.

<sup>157</sup> Abraham, 38-39.

Abraham then refines his analysis in a formal, “algebraic model.”<sup>158</sup> “Let us define two functions from the range of harms to the range of their [localizable] occurrences (of greater seriousness).”<sup>159</sup>

He sets up the following legend:  $g_1(z)$  – function of estimated seriousness of penalty (fine) in public domain  
 $g_2(z)$  – function of estimated seriousness of penalty (fine) in private domain  
 [z is any case, which can be instantiated by c or d as follows]  
 c - hoof/tooth [i.e. bite], as relevant element that demarcates this wound type  
 d - horn/goring wound, “ “ “ “ “ “ “ “ “  
 v - minimal level of a penalty’s severity (as a fine) in public domain  
 w - minimal level of a penalty’s severity (as a fine) in private domain

For example, an estimated penalty (or fine) z in public might be more than some minimum:  $g_1(z) > v$ .<sup>160</sup>

In the QC argument, we have these premises and the conclusion **horizontally** [as **1h, 2h, 3h**]:<sup>161</sup>

- 1h.** Premise1:  $g_1(c) < v$  given [fine for *hoof/tooth* in *public* is less than minimal fine in *public*]  
**2h.** Premise2:  $g_1(d) > v$  given [fine for *goring* in *public* is greater than minimal fine in *public*]  
**3h.** C:  $g_1(d) > g_1(c)$  *1h, 2h* [thus the fine for *horn* in *public* > fine for *hoof* in *public*]

This leaves before us a number of alternative descriptions for the inductive part that lies at the base of the QC, says Abraham, in effect in the move from  $g_1$  to  $g_2$  [*public* to *private* domain]:

- I.*  $g_1(z) = g_2(z)$  [Function describing an estimate of seriousness in *public* as equal to a *private* one]  
*II.* (ij)(( $g_i(d) > g_i(c)$ ) → ( $g_j(d) > g_j(c)$ )) [For any pair, if *public* d > *pub.* c, then *private* d > *priv.* c]

The requirement of *I* is all the stronger [than *II*] in that it identifies the 2 functions, so that, for instance, the conclusion for this equality will not be fulfilled if the QC is refuted.<sup>162</sup>

Possibility (*II*) is a more moderate choice and requires that its monotonicity<sup>163</sup> increases with the functions  $g_i(z)$ . [In formula *II*, while ij stand for any pair, contextually, the pair is *public* and *private*.]

- 4h.**  $g_2(d) > g_2(c)$  for either of *I* or *II* [this for *goring* parallels the earlier conclusion **3h**]  
**5h.** P3:  $g_2(c) > w$  given [by definition, as parallel in *private* space: fine/hoof > min. fine/priv.]  
**6h.** C\*:  $g_2(d) > w$  *4h, 5h* [*goring* carries more fine than minimum w when in *private* space]

Then for the **vertical** argument of alternative *I*, Abraham presents the following [as bold **1v, 2v...**]:

- 1v.** Premise3:  $g_2(c) > w$  given [repeat of line **5h** from above]  
**2v.** Premise1:  $g_1(c) < v$  given [**1h**] (note: **v** denotes **vertical**, while v is min. fine/public)  
**3v.** C\*\* :  $v > w$  *1v, 2v, and I* [above as  $g_1(c) = g_2(c)$ ]  
**4v.** Premise2:  $g_1(d) > v$  given [again by definition **2h** repeated]  
**5v.** C\*\*\*:  $g_1(d) > w$  *3v, 4v* [*goring* carries more fine than minimum w when in *public*]  
**6v.** C\* :  $g_2(d) > w$  *5v, and I* [as  $g_1(d) = g_2(d)$  from *I*, so *goring* has more fine than min. in *priv.*]

<sup>158</sup> Abraham, 39.

<sup>159</sup> Abraham, 39-40. (The decreased font size here is to keep the lists and formulae together for easier referral.)

<sup>160</sup> Abraham, 40.

<sup>161</sup> Abraham uses the terms horizontal and vertical for various cases, which I distinguish by **h, v, rh, rv, H, & V**.

<sup>162</sup> Abraham, 40.

<sup>163</sup> Abraham, 40. [Monotonic: increases or decreases on an interval: so a function is monotonically increasing if for any two points  $z_1$  and  $z_2$  in the interval when  $z_1 > z_2$ ,  $g(z_1) \geq g(z_2)$ ; and if  $g(z_1) > g(z_2)$ , the function is strictly increasing, normally written as this:]  $(z_1 z_2)((z_1 > z_2) \rightarrow (g(z_1) > g(z_2)))$ . Abraham does not have the outer brackets of this last formula, which I assume for the entire expression (in his n.15, found on his p46).

Abraham notes that *II* seems to oppose **3v** as  $v > w$ , for these may not be measured in the same way (for  $g_1(z)$  to  $g_2(z')$  too, as not necessarily measured as the same severity in *I*), making **6v** questionable too.<sup>164</sup>

Then Abraham sets out the **vertical II argument (v1...)** and a reworked legend, defined as follows:<sup>165</sup>

- $P_1(z)$  – the function of the estimated penalty’s severity (fine) for the bite/horn wound
- $P_2(z)$  – the function of the estimated penalty’s severity (fine) for the horn wound
- a – Public domain
- b – Private domain
- y – minimum/basic penalty/fine for bite/horn wound
- x – minimum/basic penalty/fine for the horn wound

He analyzes **vertical [v]** claims like **horizontal [h]**: [**v like h**]

- { $g_i \rightarrow P_i$ } [fine/place type to fine/wound type]
- { $c \rightarrow a$ } [bite/horn to public place]
- { $d \rightarrow b$ } [horn/gore to private place]

- v1.**  $P_1(a) < y$       given [by definition that fine in public < min. fine for bite/horn]
- v2.**  $P_1(b) > y$       given [ “ “ “ fine in private > min. fine for bite/horn]
- v3.**  $P_1(b) > P_1(a)$     **v1, v2** [fine in private > fine in public for bite/horn]
- v4.**  $P_2(b) > P_2(a)$     **v3, II** [fine in private > fine in public for goring]
- v5.**  $P_2(a) > x$       given [by definition that fine for goring in public > min. fine for goring]
- v6.**  $P_2(b) > x$       **v4, v5** [transitivity]

[**v II**] Now the **vertical QC** claim for *II* becomes this:  $(ij)((P_i(b) > P_i(a)) \rightarrow (P_j(b) > P_j(a)))$ <sup>166</sup> Since both **h** and **v QC**’s above can be attacked by the same refutation, there is another approach.

Abraham’s upcoming relations apply now as **horizontal h** to **vertical v II**:

- [Fine for the] bite/horn wound in public:  $P_1(a) \rightarrow g_1(c)$
- [Fine for the] bite/horn wound in private:  $P_1(b) \rightarrow g_2(c)$
- [Fine for the] horn wound in public:  $P_2(a) \rightarrow g_1(d)$
- [Fine for the] horn wound in private:  $P_2(b) \rightarrow g_2(d)$

[These give this instance in **v II** by substitution:  $(i_2)((g_2(c) > g_1(c)) \rightarrow (g_2(d) > g_1(d)))$ ]

Next, he will try to attack the following two, revised assumptions:

- For **vertical II**, instance of *v II* translated [generally]:  $(z_1 z_2)((g_2(z_1) > g_1(z_1)) \rightarrow (g_2(z_2) > g_1(z_2)))$
- For **horizontal II**, expressed earlier as:  $(ij)((g_i(d) > g_j(c)) \rightarrow (g_j(d) > g_i(c)))$

These two claims differ and are not two versions of the same claim as might seem in a cursory view.

Thus, a disproof of either the **vertical** or **horizontal II** statements will not apply to the other as before.<sup>167</sup>

<sup>164</sup> Abraham, 40-41. I believe he writes  $g_2(z')$  instead of  $g_2(z)$  to indicate the change from c to d.

<sup>165</sup> Abraham, 41.

<sup>166</sup> Abraham, 41, points out that his entire analysis of the horizontal and vertical claims above has not compared the values of the 2 differing functions or the minimum fines in order to leave room for their possible, unique differences. Additionally, the claim that one can escape disproof by changing directions looks very strange, as if the **h** and **v** seem to be differing formulations of the same claim, while the logical disproof does not care about the formulation. Both claim types derive from the same 3 givens and conclude with the same logic. So how can the disproof that attacks one not attack the other in principle? As the disproof of the QC comes inductively against the given claim and not the deductive part, one can simply disagree with the claimed givens of **h** and **v** as if wholly different; so the impression that they are the same claim presented in two ways is just an illusion.

As we continue, a disproof from an external ruling attacks claim *I* or *II*; so switching the QC could counter the specific attack against the other direction. However, a speculative disproof (line or column of the square in diagram 5 above) attacks the way the facts are provided and it can refute both directions (or fail to refute either) as it does not distinguish between them. The algebraic model presented can describe any disproof given earlier. A religious ruling as a disproof of the vertical adds a new harm (e), with differing values of  $g_1(e)$  and  $g_2(e)$  that disproves the monotonicity.

The religious ruling for the horizontal disproof adds function  $g_3$ , with values  $g_3(c)$  and  $g_3(d)$  that do not preserve the monotonicity of  $g_3$ . Again, the horizontal disproof does not affect the vertical claim or vice versa.<sup>168</sup>

These reformulations are now slightly different. Let (e) be a harm caused by a burn that is chargeable when occurring in a public space [supposedly because the person burned was less able to avoid it], but not in private [where the person burned by the other would more easily avoid it].

For the QC, Abraham presents this attempted **refutation of the horizontal II (#rh)**, which fails:<sup>169</sup>

- 1rh.**  $g_1(e) > v$       *new given* [fine/penalty for *burn* in *public* > min. fine in *public*]
- 2rh.**  $g_2(e) < w$       *new given* [fine/penalty for *burn* in *private* < min. fine in *private*]
- 3rh.**  $g_1(e) > g_1(c)$     *as*  $g_1(c) < v$  *is given claim* [**1h:** fine for *burn* in *pub.* > fine for *bite/hoof* in *pub.*]
- 4rh.**  $g_2(e) < g_2(c)$     *as*  $g_2(c) > w$  *is given claim* [**5h:** fine for *burn* in *priv.* < fine for *bite/hoof* in *priv.*]

This fails to refute horizontal *II*, however, because it [*II*] dealt with c and d [not e and c].

For an attempted **refutation of the vertical II (#rv)** case using its terms, Abraham has this:

- 1rv.**  $P_3(a) > P_3(b)$     *given* [new penalty in *public* is more serious than in *private* space]
- 2rv.**  $P_1(a) > P_1(b)$     **1rv** and *II* [apparently as in **v II** above, but switched to suit the religious ruling]

This vertical conclusion **2rv**, refutes only the QC of **v3** above, shown there as  $P_1(b) > P_1(a)$  [due to the reversal of severity by the external, religious ruling].<sup>170</sup>

Concerning assumption *I* [the equal penalty option], not refuted before horizontally, Abraham says that lines **3rh** and **4rh** now counter its claim [of  $g_1(z) = g_2(z)$ ], because now the functions are not equal. [Anyway, we do not need to refer to it or the added case of burning. As I argued above, if the going in the private sector was often less serious than in public, then instead of  $g_2(d) > g_1(d)$ , we have  $g_2(d) < g_1(d)$ . Likewise, one also disproves the standard answer of an equality of penalty severity.] Additionally, it would be possible to disprove horizontal assumption *II* in both directions by adding something to the harms ( $z_1z_2$ ). A third possibility of refuting both directions in assumption *I* would be if the facts were

<sup>167</sup> Abraham, 42.

<sup>168</sup> Abraham, 42.

<sup>169</sup> Abraham, 42.

<sup>170</sup> Abraham, 42, 43.

given as  $\{\leq, \geq\}$  rather than as  $\{<, >\}$ . Thus, there are 3 possible ways to explain controversies between protagonists of either side, says Abraham. (Abraham also refers to another case, which I skip.)<sup>171</sup>

Then to complete the picture of speculative disproofs of the QC, Abraham continues:<sup>172</sup>

**Horizontal (H):**  $g_i(z) \rightarrow g_i(z) + h_i(z)$ , with  $h_i(z)$  a change (increase) in severity;

**Vertical (V):**  $P_i(z) \rightarrow P_i(z) + h_i(z)$ .

“That is, the function that describes the severity has to change due to the reasoning involved.” Thus, a number of revisions are made. In the **horizontal (H)**, the *bite/hoof* wound (c) is worse than before due to the more onerous change of place from public to private [ $g_2(c) > g_1(c)$ ]; and the *goring* (d) remains the same as  $g_1(d)$ , (although it might decrease or increase). For the **vertical (V)** QC of place,  $P_1(z)$  also requires an increase in the penalty beyond what was allowed earlier. Abraham says that because the disproof that derives from the lesser of the horn wound is also less for the severity of the foot wound, one does not need to deal with them separately [i.e., the vertical V and horizontal H].<sup>173</sup>

- |                                                 |                                                                                                        |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>V1.</b> $P_1(z) \rightarrow P_1(z) + h_1(z)$ | <i>refutation</i> [Assumed for vertical V]                                                             |
| <b>V2.</b> $P_1(a) + h_1(a) < y$                | <i>given</i> [as <b>v1</b> + $h_1(a)$ , vertical V definition of fine/ <i>bite</i> in <i>public</i> ]  |
| <b>V3.</b> $P_1(b) + h_1(b) \geq y$             | <i>given</i> [as <b>v2</b> + $h_1(b)$ , vertical V definition of fine/ <i>bite</i> in <i>private</i> ] |
| <b>V4.</b> $P_1(b) + h_1(b) > P_1(a) + h_1(a)$  | <b>V2, V3</b> [From]                                                                                   |
| <b>V5.</b> $P_1(b) > P_1(a) + h_1(a) - h_1(b)$  | <i>moving elements to the sides</i> [of <b>V4</b> to right of $>$ sign]                                |

This leaves 3 possibilities:<sup>174</sup>

1. If  $h_1(z) = \text{constant}$ , i.e.,  $h_1$  is a fixed function, the QC holds because  $P_1(b) > P_1(a)$  [since  $h_1(a) = h_1(b)$  cancels itself out without change in **V5** and so agrees with **v3** above]. This would disprove the vertical refutation [**2rv** above] and the horizontal refutation likewise [ $g_1(d) > g_1(c) + h_1(c) - h_1(d)$ , with  $h_1(c) = h_1(d)$ ], taken as a column or line. The assumption of a constant thus would fail as a disproof for it is not the QC case of the given increase [of the *bite/hoof* wound severity from *public* to *private*].
2.  $h_1(a) < h_1(b)$  strengthens the QC as  $P_1(b) > P_1(a)$  gains more: the *private* stays more than *public*.
3.  $h_1(a) > h_1(b)$ , however, might counter the QC’s conclusion, vertical as  $P_1(b) > P_1(a)$  as something unprovable, just as it would the horizontal formulation [that  $g_1(d) > g_1(c)$ ]. [That is, although one began with a larger fine in *private* than in *public*, the possible increase in severity of the *public* case over the private one might reverse the conclusion.]<sup>175</sup>

<sup>171</sup> Abraham, 43.

<sup>172</sup> Abraham, 43.

<sup>173</sup> Abraham, 43.

<sup>174</sup> Abraham, 43-44.

<sup>175</sup> I have reversed the  $<$  and  $>$  signs in points 2 and 3 as my understanding, rather than what was printed.



Abraham then sums up his findings.<sup>176</sup> Although he did not utilize assumption *II* in that the disproof does not attack the assumption of monotonicity, he says that such a QC is wrongly conceived, because we did not understand the givens as originally made as religious judgements; so what was disproved as a misconception in *I* would apply to *II*. That is, the difference between *I* and *II* does not change the results of speculative disproofs, but only the results of traditionally ruled disproofs (as A below):

- A. The legal ruling as a disproof [from external authority, *pircha dinit*] only refutes a claimed QC.
- B. The speculative disproof [*pircha d'savra*] based on the slotting in of the additional [ $h_i(z)$ ] amount would be able to refute both the horizontal and vertical QC's [of 3 just above].
- C. Speculative attempts to disprove the QC's based on just the given column or line information [as there is no effective difference] do not succeed in either way (for options 1 or 2 above).

His last point about the failure of some speculative attempts at refutation would, it seems, justify the point that there are deductive QCs, not just inductive possibilities. Some theoretical QC's are correct.

Now we can turn to other formulations of the deductive *a fortiori* and consider Sion's analysis of the QC as a new type of syllogism. His method is considerably simpler to grasp than Abraham's. I utilize Sion's explanatory terms and put them into the standard, propositional terms and formulae.

### c) Sion's Analysis of the QC

As we begin with Sion's analysis, we need to look at some of the background ideas he presents.<sup>177</sup>

He says that most cases of an increase or decrease, of one thing relative to another, require a possible or real relationship between them. This primary relationship is the key to any additional feature being included. In mathematical terms,  $y$  is a function of  $x$ , or ( $y = f(x)$ ), or  $y$  varies with  $x$ .<sup>178</sup>

In order to deal with the *a fortiori* in more formal terms, Sion coins some special terms that parallel statements of premises and conclusions in ordinary logical form, but are distinguished to avoid confusion. Since the normal, first term is the subject or antecedent and the second term the predicate or

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<sup>176</sup> Abraham, 44.

<sup>177</sup> Sion, *Judaic Logic*, 30-38, 56.

<sup>178</sup> As  $x$  changes,  $y$  changes. For some  $n_x$  (larger or smaller),  $y$  relates in some way as the feature. (Whether the plot of  $y$  to  $x$  is linear or non-linear, incremental steps are seldom an exact fit, but rather approximate a straight line or curve.) When we talk of a circle, the area is as much a function of the radius as the radius is of the area; so  $y = f(x)$  or  $x = f(y)$ . For the sale of a product, the price charged can determine the number of items purchased or the number purchased can determine the price (although less often so). However, in making decisions, it is often a one-way relationship, the decision being the dependent variable. For one-way cases with a heritable feature ( $y$ ) attending a case ( $x$ ), we can have this: for some  $x$ , there is a feature  $y$ . The  $y$  is a function of  $x$  or  $y$  depends on  $x$ .

consequent, Sion calls his types subjectal, antecedental, predicatal, and consequential, which have positive and negative senses too. He then organizes these QC types in a unique way, with minor and major premises (and major and minor).<sup>179</sup> Sion’s method yields a number of quasi-syllogistic forms for the *a fortiori*. Since Sion’s analysis is new and somewhat intricate, I provide an example of each. I also reproduce the main ideas he expresses, somewhat simplified, both in verbal and symbolic terms.<sup>180</sup>

Sion takes as a positive subjectal one “whose subsidiary term (S) is a conjunction of two factors, a constant (say, K) and a variable (say, V).” Then, “suppose V is a function (*f*) of the middle term (R), i.e. that  $V = f(R)$  in mathematical language.”<sup>181</sup> As a preliminary way of setting out the argument, Sion gives us this structure with two premises and a conclusion:

Major:           P is R, more than Q is R,  
 Minor:           and, Q is R enough to be S;  
 Conclusion:     so, P is R enough to be S.

But “R enough” is a threshold value...not a fixed quantity. In the case of the minor premise, involving Q, the value of R is Rq, say; whereas, in the case of the conclusion, involving P, the value of R is Rp, say; and we know from the major premise that Rp is greater than Rq. Looking now at S, it is evident that if it consists only of a constant (K), it will be identical in the minor premise and the conclusion. But, if S involves a variable V, where V is a function of R, then S is not necessarily the same in both propositions. If  $V = f(R)$  represents a straightforward linear relationship, then  $V_p = f(R_p)$  will predictably be proportionately greater than  $V_q = f(R_q)$ ; but if  $V = f(R)$  represents a more complicated relationship, then  $V_p = f(R_p)$  may be more or less than  $V_q = f(R_q)$ , or equal to it, depending on the specifics of the formula.<sup>182</sup>

My earlier diagram (sloped and vertical cases of Diagram 2) and other formulae tried to capture the main ideas of the proportional and same conclusions. Sion has added R as a middle term and S as the

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<sup>179</sup> Sion, 30, 54. His interesting approach to the QC sees it as a somewhat parallel (copulative) syllogism with 4 terms (rather than 3), built with subjects, predicates, middle, and a new, subsidiary term. He formulates its valid and invalid moods, positively and negatively, moving from major to minor and minor to major premises.

<sup>180</sup> Sion, 30-62, views the *qal vachomer* as a special syllogistic form composed of 3 propositions and 4 terms rather than the standard 3 terms. Rather than being a case of predication, by using the copula “is” (in a stronger, specific sense), the idea is more of general implication than of a weaker, relative sense (32-33). Perhaps it would be better to take it as an inductive form of subalternation adapted from the CS. It may include a general “all” of X, even if not always universal, compared to “some” of X. Analogous to the “all-some” distinction, it deals with what are less than “all”, thus filling in a gap that the subalternation in Aristotelian syllogism does not handle. It deals with the categories of quantity and relation within the same category with a certain property.

<sup>181</sup> Sion, 56.

<sup>182</sup> Sion, 56.

transferable feature. Similar comments apply to his other *a fortioris* with valid moods.<sup>183</sup> His method is syllogistic in its general structure, yet translatable into propositional forms. I picture the basic idea here:

Range of R upwards, with corresponding items marked as R's:  $\text{---Rs-----Rq-----Rp-----}\rightarrow$   
 Items: (initial S characterizes any item (Q, P) along R, increasing from S): S(min) Q P

One can interpret his terms with standard, logical connectives to put the QC into propositional form by making the specific assumption of inclusion of a property within the continuous range or category where they occur.<sup>184</sup> Once the property pertains to all members within the range of the set, it is logically valid. In an example that symbolizes the argument, I follow his explanations of this first form that he calls a *positive subjectal*, which proceeds from the given major to minor premises:<sup>185</sup>

Major: P is more R than Q is R, {A lemon (P) is more acidic (R) than an orange (Q)},  
 Minor: Q is R enough to be S; {An orange (Q) is acidic (R) enough to be sour (S)};  
 Conclusion: So, P is R enough to be S.<sup>186</sup> {So a lemon (P) is acidic (R) enough to be sour (S)}.

In this interpretation, the result will be only in terms of general sourness, rather than as a degree of it.

Legend: (in Sion's symbols) (put into typical, symbolic form with p, q, r and connectives)  
 Rp = acidic as a lemon p (= if it is a lemon)  $\rightarrow$  r<sub>1</sub> (= then it is acidic as a lemon)  
 Rq = acidic as an orange q (= if it is an orange)  $\rightarrow$  r<sub>2</sub> (= then it is acidic as an orange)  
 Rs = acidic as a citrus (fruit) r<sub>3</sub> (= if it is acidic as citrus)  $\rightarrow$  s (= then it is sour)

Sion's analysis, implicationally or conditionally is in column (I), which I symbolize in (II), and put into standard, propositional form in (III). The key move that Sion makes in (I) below is step three of each premise ((iii) & (vi)), where the "greater than" relation is substituted by a conditional (due to inclusion).

I	II	III
Major premise: (i) if P then Rp, & (given by Sion) (ii) if Q then Rq, & (iii) Rp > Rq, implying: if Rp then Rq <sup>187</sup> (at least)	1. P $\rightarrow$ Rp 2. Q $\rightarrow$ Rq 3. Rp $\rightarrow$ Rq	a) p $\rightarrow$ r <sub>1</sub> (given) b) q $\rightarrow$ r <sub>2</sub> (given) c) r <sub>1</sub> $\rightarrow$ r <sub>2</sub> (given)

<sup>183</sup> Sion, 57. This appears below in a logically symbolized form that I add.

<sup>184</sup> Sion, 38-39. If I misunderstand his meanings or symbolize them improperly, I stand to be corrected.

<sup>185</sup> *Subjectal* is Sion's way of expressing the subject initially, while *predicatal* begins with the predicate. Minor (subject term) and major (predicate term) come from the premises in a classical syllogism, but for the *a fortiori*, Sion employs the major as having greater measure or degree within the range while the minor less (30-32). In using the implicative (if...then) form rather than the copulative ("is" [a part of or a species of the implicative]), this more generally covers and "is not limited to 'is', a narrower more specific class concept" (33).

<sup>186</sup> Note that R serves as a middle term. In the example, R is the range in which the common fact of acidity is graded, such that S as sourness is defined too—itsself a range, narrow or great (even with some sweetness too).

<sup>187</sup> This is the significant part for Sion. The relation of more to less means that not only does each exist, but also that one implies the other. To be less, is to be less than another; and to be more, is to be more than another, each mutually related. Simplified as a conditional, it also suppresses the more to less relation, while it relates each to

Minor premise: (iv) if Rs then S, & (given by Sion) (v) {= (ii)} if Q then Rq, & (vi) Rs includes Rq, implies: if Rq then Rs. <sup>188</sup>	4. $R_s \rightarrow S$ 5. $Q \rightarrow R_q$ 6. $R_q \rightarrow R_s$	d) $r_3 \rightarrow s$ (given) e) $q \rightarrow r_2$ (given as b) f) $r_2 \rightarrow r_3$ (given)
Conclusion: (vii) {= (iv)} if Rs then S, & (viii) {= (i)} if P then Rp, then (to be proven) Rs includes Rp, or if Rp then Rs (or $P \rightarrow S$ )	$R_s \rightarrow S$ $P \rightarrow R_p$ $R_p \rightarrow R_s$	$r_3 \rightarrow s$ (given as d) $p \rightarrow r_1$ (given as a) $r_1 \rightarrow r_3$ (the claim)

The next step is to prove the conclusion, in long and short form for II and III.

Long Proof:

II		III	
7. P	(Given)	g) p	(given)
8. Rp	(7, 1, Modus Ponens)	h) $r_1$	(a,g, MP)
9. Rq	(3, 8, MP)	i) $r_2$	(h,c, MP)
10. Rs	(6, 9, MP)	j) $r_3$	(i, f, MP)
11. $R_p \rightarrow R_s$	(8,10, $\rightarrow$ Introduction)	k) $r_1 \rightarrow r_3$	(h,j, $\rightarrow$ I)

Short Proof:

$((R_p \rightarrow R_q) \& (R_q \rightarrow R_s)) \rightarrow (R_p \rightarrow R_s)$ (3, 6, Transitivity) (TA or HS)	$((r_1 \rightarrow r_2) \& (r_2 \rightarrow r_3)) \rightarrow (r_1 \rightarrow r_3)$ (c,f, Hypothetical Syllogism)
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The shorter proofs (transitivity or hypothetical syllogism in (II) or (III)) are easier to grasp than the longer proofs. This result, as Sion explains verbally, is true when Rs refers to a continuously increasing, open-ended range. No breaks or limits to sourness occur within its acidic range. Since a lemon is acidic, and acidic is sour, then a lemon is sour. The less acidic, sour orange is an interim means to conclude that the lemon is sour too. However, the *greater than* relation effectively disappears in the conclusion. His method does not fully capture the significance of the two related items (lemon as sourer than orange); instead, it focuses on the mutually same feature (the sourness) of common inclusion (within acidity), which suppresses possible degrees. This same shift of emphasis occurs in Sion's other interpretations.

Sion's calls his next form a *positive predicatal* that goes from major (greater) to minor premise:

Major: More R is required to be P than to be Q,  
 Minor: S is R enough to be P;  
 Conclusion: So S is R enough to be Q.<sup>189</sup>

Example: {More acidity (R) is required to be a lemon (P) than to be an orange (Q)},  
 {Something sour (S) is acidic (R) enough to be a lemon (P)};  
 {So something sour (S) is acidic (R) enough to be an orange (Q)}.

another point. If Sion's move works (to include the lesser feature in the greater), my interpretation in propositional logic follows. (In QPR logic, this difference is stated as  $R_pq$  (or  $R_qp$  in the opposite sense), in which all the terms have a new form to suit the system the application. But I reserve for later the QC in QPR.)

<sup>188</sup> Citrus fruit can be included under the more general category of sour things (although also sweet). But not all sour things are citrus. One can say, *if it is an orange's acidity, then its acidity is sour*, symbolized in terms of acidity as  $R_q \rightarrow R_s$ . (In QPR, the compared items are  $Rqs$ , with all the qualifications for the other terms.)

<sup>189</sup> Sion, 39.

Again, the conclusion acknowledges only the fact of sourness as acidic, rather than possible degrees. As fleshed out by Sion in (I),<sup>190</sup> I add italicized notes, with symbols and connectives in (II) and (III):

I	II	III
Major premise: (i) if Rp then P, & ( <i>Sion's given</i> ) (ii) if Rq then Q, & (iii) Rp > Rq (implies: if Rp then Rq) <i>if it has lemon's acidity, then also an orange's</i>	1. Rp → P 2. Rq → Q 3. Rp → Rq	a) r <sub>1</sub> → p (given) b) r <sub>2</sub> → q (given) c) r <sub>1</sub> → r <sub>2</sub> (given)
Minor premise: (iv) {= (i)} (v) if S then Rs, & (vi) Rp includes Rs (implies: if Rs then Rp) <i>at least</i>	4. Rp → P 5. S → Rs 6. Rs → Rp	d) r <sub>1</sub> → p (given =a) e) s → r <sub>3</sub> (given) f) r <sub>3</sub> → r <sub>1</sub> (given)
Conclusion: if (ii) Rq then Q, & if (v) S then Rs, then Rq includes Rs, or if Rs then Rq. ( <i>to be proven</i> )	2. Rq → Q 5. S → Rs 6. <i>Rs → Rq (or S → Q)</i>	r <sub>2</sub> → q (repeat b) s → r <sub>3</sub> (repeat e) r <sub>3</sub> → r <sub>2</sub> ( <i>the claim</i> )

Long Proof:

7. S (Given)	g) s (given)
8. Rs (7, 5, MP)	h) r <sub>3</sub> (g, e, MP)
9. Rp (8, 6, MP)	i) r <sub>1</sub> (i, f, MP)
10. Rq (9, 3, MP)	j) r <sub>2</sub> (j, c, MP)
11. Rs → Rq (8, 10, →Intro)	k) r <sub>3</sub> → r <sub>2</sub> (i, k, →I)

Short Proof:

((Rs → Rp) & (Rp → Rq)) → (Rs → Rq) (6, 3, Trans.) or (HS)	((r <sub>3</sub> → r <sub>1</sub> ) & (r <sub>1</sub> → r <sub>2</sub> )) → (r <sub>3</sub> → r <sub>2</sub> ) (f, c, HS)
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Acidity's sourness (Rs) is enough to have (or include) an orange's acidity (Rq). Here too, the short forms are more direct and simpler to grasp. Sion reiterates that Rs refers to a continuously increasing, open-ended range. Only if the argument's range is continuously increasing and open-ended can the *a fortiori* be validated, as it operates 'under normal conditions.' For non-continuous, upper and lower limits or broken ranges, one needs special procedures. These can be left to the specialized treatments of mathematicians, says Sion, which are beyond the scope of this paper too.<sup>191</sup> To this, Sion adds:

[O]ur ability to reduce *a fortiori* argument to chains (known as *sorites*) of already established and more fundamental arguments signifies that this branch of logic, though of value in itself, is derivative—a corollary which does not call for new, basic assumptions.<sup>192</sup>

<sup>190</sup> Sion, 39.

<sup>191</sup> Sion, 40-41. However, Abraham's method appears earlier while I include Brachfeld's in the Appendix.

<sup>192</sup> Sion, 40.

Yet abnormal conditions can occur that inhibit the *a fortiori* argument, declares Sion. These happen where the feature has limits, such that one case may be within the range while the other falls outside. Sion provides the following expressions of such cases (here in *subjectal* and later in *predicatal* form):<sup>193</sup>

Subjectal: Though P is R enough to be Q,  
and Q is R enough to be S,  
still, P is too much R to be S.

Example: {*Though the Perception is Rough enough to be Considered*},  
{*And what is Considered is Rough enough to be [normally] Symbolized*},  
{*Still, the Perception is too Rough to be Symbolized*}.

This conclusion is possibly true in that S is not achieved: what is too fuzzy is usually too undefinable.

In other words, P has passed an upper limit beyond which it is improper to conclude with the feature. Instead of a normal *a fortiori* where P is R enough to be S, now it is inadequate to be S. While Q sits within the range of S, P claims to have surpassed (or fallen short of) the range that is reasonable or factually true. However, we need some extra premise to guarantee that P is *in fact* that much less than Q to conclude that P has too much R to be S. We must define the threshold value as here: *A Perception that has no adequate explanation is too Rough to Consider preciSely*. As it stands now, we have “too much R,” in that it falls below S. It works as an argument, as an atypical QC. A simpler example shows the negative conclusion by the normal sense of a mountain as higher than a mound. *A mountain is high enough to be a hill, and a hill is high enough to be a mound, but a mountain is too high to be a mound*. It is outside the acceptable range (as in 1.8 f and h). Let us look at his specific, *predicatal* form too:

Predicatal: Though more R is required to be P than to be Q,  
and S is R enough to be P,  
still, S is too much R to be Q.<sup>194</sup>

{*Though more Reason is required of an argument to be Proven than to be merely Questioned*},  
{*and the Syllogism is Reasonable enough to be Proven*},  
{*still the Syllogism is too Reasonable to be merely Questioned*}.

Here, the Syllogism (S) is beyond the point where Questioning (Q) applies: because S is sufficiently reasonable, it is outside the zone of doubt.

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<sup>193</sup> Sion, 41.

<sup>194</sup> Sion, 41.

Then Sion mentions examples of argument forms, which remain invalid as an *a fortiori*:

While P is more R than Q, and Q is too little R to be S, yet P is R enough to be S. <sup>195</sup>	$R_p > R_q, R_p \rightarrow R_q$ $R_q < R_s, \text{ or } R_s \rightarrow R_q$ $R_p \rightarrow R_s$
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No transitive relationship leads to the interim conclusion of  $R_p$  and then to  $R_s$ . The gap is unfilled.

Since the two premises do not connect, this is a false or pseudo-*a fortiori*. Perhaps it is better taken as an ordinary, invalid argument of two true premises and a false conclusion ( $(p \ \& \ q) \text{ as true} \rightarrow r \text{ as false}$ ).

Up to this point, Sion has dealt with what he calls the **primary** *a fortiori*, after which he considers a new class called the **secondary** *a fortiori* of compound sentences in the same quasi-syllogistic form.<sup>196</sup> Since his idea is clear enough, I leave to the appendix his additional compound QC's.

In all, Sion's methodology (in propositional terms or not) is a way to treat the QC without referring to universal or particular terms. Still, it requires the inclusion of one case within another to allow a conditional interpretation, as well as an unbroken continuous range in which the feature occurs. His method's advantage is its clarity, although the basic condition of sufficiency blurs the original "greater than" relationship. As we shall see, this sufficiency condition promotes the majority view of the Rabbis of the *Mishnah*, while not appreciating enough the minority's objections and later leanings of the *Amoraic* Rabbis.

#### **d) Meir Brachfeld's Analysis**<sup>197</sup>

Our next, modern, Hebrew author Brachfeld has another approach to the QC argument, along with several refutations drawn from a more traditional author. Since Brachfeld's analysis involves both class logic and quantificational terms of an even more highly specialized nature than Abraham's, I only attempt to cover some of the highlights of the article in general terms in order to interpret key aspects. Because his method is beyond the scope of this thesis, I leave to the appendix his main formulae along with some of his comments that I also translate.

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<sup>195</sup> Sion, 42.

<sup>196</sup> Sion, 43ff.

<sup>197</sup> Meir Brachfeld, "A Formal Analysis of Kal VaChomer and Tsad Hashaveh" (Common Element), 47-55, in. *Higayyon Studies in Rabbinic Logic*, eds. Moshe Koppel and Ely Merzbach Jerusalem: Aluma.

The argument's main premise (his  $M_1$  for *melamed* = that which teaches), which contains the given degree of severity (*chumra*), is included in what one subsequently learns (*ha-lamad*) in the conclusion (because the greater includes the lesser). The second premise ( $M_2$ ) has a judgement or decision that pertains to the given. Then this (same) judgement/decision relates to the conclusion. Brachfeld notes that if the religious tradition does not occur in the first premise, the inferred conclusion is not a QC type, but another form of argument, either as what arises from the context (*mah matzui*) or something generally recognized elsewhere.<sup>198</sup>

Attacks on the QC are of two types: against its conclusion (*me'sofa dedina*) and against its premise(s) (*me'ikara dedina*). The first says that the specific decision in the conclusion need not follow from one case to the other, because in some other, well-known example it fails. The premise may allow a true conclusion; but in other cases, it may permit another conclusion, which was supposedly true. Some specific cases are valid while others are invalid or unsound. We lack consistency and are thus unsure that it need occur in every case. [In other words, this is not deductive.] It so happens that the severity found in the premise is also irrelevant to the possible judgements one can make. In attacking the premise, the main problem, practically, is its irrelevancy to the specific case. This QC argument [while valid] is still unsound. With fluctuating severity values, the situation only worsens. We would have to show that the current case certainly relates (as the same or via a bridge) to the one with the judgement, rather than to the one where it does not. Of course, it would be worse if the premise was relevant and the conclusion did not follow than that it was irrelevant and the conclusion true. If we find an example with the same irrelevant premise, it may have a different conclusion. (Also, both the irrelevant premise and the conclusion might be false, which again, although formally valid, is an unsound argument.) Another case with the same irrelevant premise and the same, true conclusion might improve things—but again, not as a sound argument. Then, what do we do with the other cases? In such a mixture of different alternatives, if we cannot eliminate or defeat the non-equivalents, we can make an abductive/inductive choice of the best one, even if it lacks deductive certainty.

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<sup>198</sup> In what follows, I provide what I think to be the main points to be made, not all or what Brachfeld says.



In all the attacks, there is an overriding problem in the religious, Jewish sphere: If every QC can be refuted, then it is not a good argument form;<sup>199</sup> but, if it is a rule that derives from God, then this would be most awkward. However, we know that the argument is deductively possible in certain cases; and inductively, when its background data are well known (and especially if shown to be heritable), it can be a reliable guide, particularly when the attacks are strained, irrelevant, or clearly inadequate.

**e) Heinrich Guggenheimer's Analysis<sup>200</sup>**

Guggenheimer's view of the QC argument is that it can be deductive in some instances. Firstly, Guggenheimer sets out a number of parameters that will apply to the QC in its Jewish context.

The sentences of Scripture, as far as they have legal relevance, give a system  $\Sigma_0$  of propositions. For the sake of clarity, we may assume that all propositions are of the form ' $\varphi_0(a)$  is true' where  $a$  is an element of a given set (of relevant subjects) and  $\varphi(x)$  a predicate. Our problem is to find a set of predicates  $\varphi(x)$  for which the *provable* propositions ' $\varphi_0(a)$  is true' under the rules of propositional logics and certain other operations generate a logical system  $\Sigma$  which consists of the true statements of Talmudic Law. We know that the system of statements of  $\Sigma_0$  contains contradictory statements and therefore the usual rules of logics cannot be used in it. We shall ask that the system  $\Sigma$  be free of contradictions if the usual rules of logics are applied to its statements. As it will turn out, one obtains not a single system  $\Sigma$  but a whole tree of systems.<sup>201</sup>

Specifically concerning the Jewish QC, he says the following:

This is a fundamental procedure, so much so that it is called *din*, that is, logic...an admirable solution...of the problem of making analogy an exact reasoning. As such it is valid not only as a rule of transfer, but also as a rule of derivation within the new system. It is the essential extension of Talmudic logics over propositional (Aristotelian) logics. It works because all systems  $\Sigma$  are incomplete.<sup>202</sup>

Comparable predicates that are partially ordered by "the severity of the penalty for an offence" may have restrictions upon their domain of validity, he says. Then he defines "a predicate of second type, whose arguments are not objects but predicates:"

$\alpha(\alpha, \beta)$ : The predicate  $\alpha$  is stronger than the predicate  $\beta$ . By definition this predicate has a truth value (true or false) only if the particular predicates are comparable. In all other cases it makes no sense. (An example for comparable predicates is...*Numbers* XII, 14-15.  $\alpha(x) = x$  was stricken with leprosy

<sup>199</sup> This is the sense of Brachfeld's closing comments regarding the author of "*Halichot Olam*." See also D. Novak in "Maimonides and the Science of the Law": "Virtually every *kal vahomer* is considered to have a possible refutation" (114); it is, "at best, a close analogy, nothing more" (115).

<sup>200</sup> Heinrich Guggenheimer, 'Logical Problems in Jewish Tradition,' 171-196, in *Confrontations with Judaism*, ed. Philip Longworth. (London: Anthony Blond, 1967).

<sup>201</sup> Guggenheimer, 181.

<sup>202</sup> Guggenheimer, 181.

by the Lord,  $\beta(x) = x$  spat at in the face by her father.) Mathematically, the main property of an order relationship is its transitivity: if  $\psi$  is stronger than  $\varphi$  and  $\chi$  is stronger than  $\psi$  then  $\chi$  is stronger than  $\varphi$ :  $\sigma(\psi, \varphi)$  is true and  $\sigma(\chi, \psi)$  is true imply that  $\sigma(\chi, \varphi)$  is true... for comparable predicates.

The main object of Talmudic logic is not a study of the predicates, but one of true statements which appear as elements of some system  $\Sigma$ . On the level of the elements we can also define a relation 'x is stronger than y'. By definition, an element  $a$  is stronger than an element  $b$  if for some pair of comparable predicates  $\varphi(x)$  and  $\psi(x)$  for which  $\varphi(a)$  and  $\psi(b)$  hold true, the predicate  $\varphi$  is not weaker (and in at least one instance is stronger) than the predicate  $\psi$ . In contrast to the ordering of predicates, this relation cannot be called an ordering since it is not transitive in general.<sup>203</sup>

Unfortunately, he shows, one can find true circular statements:  $a$  (no Sabbath work is permitted) is more severe than  $b$  (no leprous priest can work in the Temple) that is stronger than  $c$  (priests serve/work in the Temple on Sabbath), which is severer than  $a$ .<sup>204</sup> One should note that this circularity conflates semi-relatable cases, rather than makes a distinction for each pertinent pair in their separable contexts.

If there exists a predicate  $\chi(x)$  and elements  $a$  and  $b$  such that  $\chi(b)$  is true is a *provable* proposition in the original system, but neither  $\chi(a)$  is true' nor  $\chi(a)$  is false' can be proven on the basis of the available data without recurrence to a new rule, and if  $a$  is stronger to  $b$ , then the rule *kal vahomer* states that some statement ' $\mu(a)$  is true' must hold for some predicate  $\mu(x)$  which is not weaker than  $\chi(x)$ . By the axiom of definiteness, the only possible solution is  $\mu(x) = \chi(x)$ . (This particular application of the principle of definiteness is known as *dayo*, *Baba Kama*, 24b. Its Biblical root is Numbers XII, 14 concerning the punishment of Miriam for her slander of Moses. The comparison is between punishment by the Deity and punishment by the father. Even though the first is infinitely stronger than the second, the punishment is quantitatively the same.)<sup>205</sup>

I shall discuss this "axiom of definiteness" shortly that would yield the same given or *dayo*.

Guggenheimer says that the QC as a "rule transcends elementary logics" and derives from the Bible. "Accordingly, the statement of the QC rule itself is an element in the system  $\Sigma$ ...limited to cases in which the statement ' $\chi(b)$  is true' can be proven," both without the use of the QC and by it alone.<sup>206</sup>

In all, although he admits that the QC can fail, it can work in certain cases. This is similar to what we saw in Abraham's finding, in that it allows a possible way to disarm a refutation when the various, basic amounts strengthen the QC's conclusion and a contrary, traditional answer is not available.

<sup>203</sup> Guggenheimer, 182.

<sup>204</sup> Guggenheimer, 182. Work forbidden generally in principle does not prevent the exception for the fit priests.

<sup>205</sup> Guggenheimer, 182-3. *Baba Kama* or *Qama* is the same Talmudic section (= Outer Gate, as intro to subject).

<sup>206</sup> Guggenheimer, 183.

Next, let us turn to a treatment of the *a fortiori* argument that utilizes quantificational predicate logic with dyadic relationships. This method is more difficult but more inclusive than the categorical syllogism. It attempts to formalize a deductive *a fortiori* that is more explicit than Sion’s.

**f) In Quantificational Predicate Logic (QPR)**

Quantificational predicate logic of relations can apply to the *a fortiori* in those cases that have the feature or property in question continuously, in that it is hereditary or ancestral or fixed. In such specific cases, a feature of a category has the property throughout and so is necessarily true, universally or for a clearly defined range in which it holds. For a proportional example, let us use circles. To say that any circle has a circumference is a universal, proportional truth about circles. To begin to formal this, we say that if anything  $z$  is a circle  $A$ , then it has a circumference  $C$ :  $(z)(Az \rightarrow Cz)$ . However, to restrict our universe of discourse to circles that bear a relationship “greater than” (or  $y > x$ ), we have  $(y)(x)Gyx$ .<sup>207</sup> What we want to claim for those circles of differing sizes is this: if a little circle has a circumference, surely a bigger one has it too. Let  $x$  be any smaller circle; then for any smaller circle,  $(x)(Ax \rightarrow Cx)$ . So like the smaller, a larger circle  $y$  should have circumference  $(Cy)$ , such that  $(y)(Ay \rightarrow Cy)$ .

- 1.  $(z)(Az \rightarrow Cz)$     *given premise* [a universal truth about circles that they all have circumferences]
- 2.  $(x)(Ax \rightarrow Cx)$     *given premise* [that any smaller circle has a circumference]
- 3.  $(y)(x)Gyx$           *given premise* [that circle  $y$  bears greater than relation to  $x$ ]
- To Prove:  $(y)(Ay \rightarrow Cy)$     [we need to prove that the larger circle  $y$  has circumference  $Cy$ ]
- 4.  $Aa \rightarrow Ca$           1, UI    [ $a$  as any arbitrary instance applied to universal 1; see appendix for rules]
- 5.  $Aa \rightarrow Ca$           2, UI    [ $a$  “to 2”]
- 6.  $(y)(Ay \rightarrow Cy)$     4, 5 UO    [we generalize the arbitrary case(s) for any other circle]

Clearly,  $Gyx$  is superfluous, just as in a CS. In fact, we did not need 2 either. Just premise 1 is sufficient. In other words, a larger circle has its own circumference. Yet we can also show that the circumferences differ relatively between any separable groups of smaller and larger circles. As the conclusion we seek, for a smaller  $Ax$  and a larger circle  $Ay$ , once the “greater than” relationship  $Gyx$  is known to be true for them, it expresses itself in  $Cyx$  too, which says that the circumference of  $y$  is greater than that of  $x$ .

- \*1.  $(y)(x)Gyx$                                 *given* [as before in 3 above]
- \*2.  $(y)(x)(Gyx \rightarrow (Ay \ \& \ Ax))$         *given* [the  $Gyx$  is expressed in the relation between  $Ay \ \& \ Ax$ ]

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<sup>207</sup> My thanks to Prof. Rolf George for corrections and comments concerning QPR formulations and also his referral to heritable properties and recursion that follows.

- \*3.  $(y)(x)((Gyx \rightarrow (Ay \ \& \ Ax)) \rightarrow Cyx)$  given [since  $Gyx$  is a relation of circles, it is one of circum.]  
*To prove:*  $(y)(x)((Gyx \ \& \ (Ay \ \& \ Ax)) \rightarrow Cyx)$
- \*4.  $Gba$  \*1, UO [any arbitrary cases: b, a]  
 \*5.  $Gba \rightarrow (Ab \ \& \ Aa)$  \*2, UO  
 \*6.  $Ab \ \& \ Aa$  \*4, \*5, MP  
 \*7.  $Gba \ \& \ (Ab \ \& \ Aa)$  \*4, \*6, & intro  
 \*8.  $(Gba \rightarrow (Ab \ \& \ Aa)) \rightarrow Cba$  \*3, UO  
 \*9.  $Cba$  \*5, \*7, MP  
 \*10.  $(Gba \ \& \ (Ab \ \& \ Aa)) \rightarrow Cba$  \*7, \*9,  $\rightarrow$  intro  
 \*11.  $(y)(x)((Gyx \ \& \ (Ay \ \& \ Ax)) \rightarrow Cyx)$  \*10, UI [generalize, since it can work for any case chosen]

Both the basic fact of a circumference (although in the first example C is specific to y, the same *quality* is found as x) and the greater amount (differing quantity  $Cyx$ ) are equally valid conclusions.

For the same conclusion, as stated earlier for numbers: *every whole, even number is perfectly divisible by 2 (by definition), as property P; so if the lesser even number has P, the greater, even number has P too. For any x, if x is an even number (A), then it is divisible by 2 (P). Any (y), if even and greater than (x), surely is divisible by 2.* Formulated, we have this:  $(x)(Ax \rightarrow Px)$  and  $(x)(y)((Ax \ \& \ Ay) \ \& \ Gyx) \rightarrow Py$ . However, for odd numbers, this does not work, although another feature would (as non-divisibility by 2, by definition). While universal cases of the *a fortiori* can be deductively valid, it does not hold true everywhere.

To prove the typical argument with particular premises, which may not always be true either, we require it to be a case of recursion (as with the universals above). Otherwise, we can take the argument as a probabilistic claim for particular cases in which they generally prove true. I quote an explanation of recursion to show how certain groups of particulars would be correct (and leave the possible QPR for particular premises to the appendix, which employs *reductio* disproofs of the opposite assumption).

Proof by Recursion is more often called proof by mathematical induction or complete deduction.<sup>208</sup>

[I]n its simplest form, [it is] a proof that every non-negative integer possesses a certain property by showing (1) that 0 possesses this property, and (2) that, on the hypothesis that the non-negative integer  $x$  possesses this property, then  $x+1$  possesses this property. (The condition (2) is often expressed, following Frege and Russell, by saying that the property is *hereditary* in the series of non-negative integers.)

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<sup>208</sup> I employ material on Recursion and Recursiveness from the *Dictionary of Philosophy*, ed., D. D. Runes, 266.

Notions of recursiveness may also be introduced for a function whose range consists of only a portion of the non-negative integers (in the case of a monadic function) or of only a portion of the ordered sets of  $n$  non-negative integers (in the case of an  $n$ -adic function)....

In simpler words, if the initial property is heritable in a particular case, the next one(s) *in that strict series* inherit(s) the same property. Thus, for an example, if we insist that to be an apple requires the fleshy pulp of a minimally defined size, then the next larger apple that we include has the same property of fleshy pulp. While the same conclusion suits this larger apple, clearly one can argue equally that the larger apple has that much more of the given minimum stated in the first instance. In other words, concerning the amount of the conclusion, logic on its own is neutral; it is satisfied with equality (as an interim minimum) and proportionality (as something more, which may or may not be exactly decideable). We have to decide which choice may be better in the actual context or accept both as reasonable, alternate solutions. Yet equality is just a special state of a more general proportionality.

## **2.9 Summary of Formal Methods**

As the methods illustrate, there are simple and complex ways to formulate the *a fortiori* argument, not all of equal usefulness. Ostrovsky's adaptation of Schwarz is not strong enough to cover particular cases, which require other methods. Unfortunately, the modern methods employed by Abraham, Brachfeld, and Guggenheimer are rather opaque to most readers except for those familiar with such forms of logic. While QPR is less difficult, it still requires special knowledge and skill. Sion's method is comprehensive, simpler, and translatable into propositional form, although it subsumes the graded comparisons under classes of inclusion or hierarchy, to make them somewhat less obvious. For it, the reader's attention is required to rank the cases and features on a common scale, as well as consider possible degrees. Abraham shows that the speculative QC can escape disproof, whereas a prior ruling can indicate a disproof (or denial) of an actual (religious) QC. Brachfeld reviews another author within the Jewish tradition who claims that there are always disproofs (presumably drawn from or requiring traditional rulings), but which would leave the entire point of the QC as a divinely revealed rule a yet more basic problem. That is, if the QC is a correct reasoning method, there cannot always be a certain

disproof; and if there is always a disproof, the QC cannot derive from God. For Guggenheimer, the *Mishnah*'s majority solution that concludes with the same given (derived from a Biblical paradigm) is correct within that particular, logical tradition. However, Sion allows either a proportion or the same amount as possible, although his method tends to favour the latter as truer. In all, various methods show that some QC's can possess formal validity, even if the conclusion's amount is not fully resolved. So let us discuss the possible quantities of the *a fortiori*'s conclusion in more general terms before we look at the specific, Jewish QC with its typical, same result.

## 2.10 Conditions of Choice for the Conclusion's Same or Proportional Amount

Since a valid QC tells us about the transfer of a common property, whatever the amount may be, we often need another argument to show which possible conclusion is better in an actual situation. For the QC in religious, Jewish thinking, Guggenheimer states that the Rabbinic "principle of definiteness," makes it (the *dayo*) the "only possible solution."<sup>209</sup> However, this definiteness axiom or principle that imposes the same amount in this context stands in stark contrast with daily QC's and other Rabbinic examples where scaled results can occur too. Still, we should discuss the pros and cons of the possible amounts before we see how these play out in the specific realm of Jewish thought (in Chapters 3 and 4).

From our previous investigation, we see that the QC conclusion's possible quantity is not always determined directly by deductive or inductive reasoning, even if the CS and other models preserve the same, given property/feature.<sup>210</sup> While for common denominators or heritable properties in a class in valid, deductive QC's allow only what the species requires or family transfers, not every differing detail need be explicitly determined.<sup>211</sup> It may be unclear if the same feature or a scaled amount is better. With

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<sup>209</sup> Guggenheimer, 183. To demur from definiteness incurred removal from the circle of authority, 176.

<sup>210</sup> In Jewish debates, the (majority) *Mishnaic* ruling, judgement, or conclusion usually kept the same given. This could be challenged or defended. At the end of the day, since the argument was about practical, religious affairs, the conclusion's amount was determined as the right one, abductively (a preferable *a fortiori*), often made for reasons extraneous to the logic involved. Guggenheimer, defends this Talmudic logic that stresses the notion of definiteness (for the same given as *dayo* sufficient), its specific logic being one of a "whole tree of systems" (181).

<sup>211</sup> For this sultry Collie and that surly Mongrel, since each are dogs (have dogginess), if M pants, C pants too (under similar conditions). We could list many common properties that each possess. However, degrees of hairiness are contingent. We need extra facts. But if we assume more than what is permitted, lacking the actual warrant, then we cannot acknowledge general validity or even the soundness of some particular conclusion.

a parallelogram and a triangle, it is clear that the former has an extra side and a larger, total, (precise) internal angle. Yet it is also true that the parallelogram has at least three sides and as much total internal angle as the triangle. Still, the greater amount (4 sides and  $360^\circ$ ) is a better answer than the same amount (at least 3 sides and  $180^\circ$ ). For an undefined polygon ( $n$  sides  $> 3$  sides) over a triangle (3s), however, the opposite holds (as at least 3s, unless we are content with ns). If inexact descriptions can be deductively problematic for quantities, even more so are vague inductions. Often we choose what seems best with the available data, preferably to use an unbiased, abductive comparison. Let us look at the informal thinking process by which we typically conclude an appropriate amount in a particular case.

In order to arrive at a conclusion, we often think in a discursive, deliberative manner, rather than jump to any conclusion. That is, we first consider the subject or act involved before we actually judge or conclude a matter. We weigh things up and mentally link the suitable level of outcome to each act: for negative thing or act (A-), we might make a judgement (J-); for a similar but worse thing or act (A--), while it could get the same judgement (J-) minimally, we judge it as proportionally worse (J--), normally. Likewise, if a positive thing or act (A+) is worth reward (J+), a yet better thing or act (A++) can get the same (J+), but preferably a higher award (J++, not less). We might also consult with others or refer to similar precedents. However, to limit the conclusion always to what equals a prior case seems abnormal, for we tend to insist that better or worse states should match the respective values of their acts. Yet, problems can attend either a prior, equal amount or a ratio, as the upcoming examples show.

Clearly, when stronger Abe lifts 45 kilos, we are unsure what weaker Ben can do, because we lack knowledge of the maximum amount that either can do. With more accurate measures of their top capacities (over a short period), we could calculate that amount. Then, only if the weight is near Abe's maximum capacity, things become more precise: now it is *surer* and *most likely* that Ben *cannot* lift the same weight as Abe (although potentially falsifiable). So too for Abe's average, maximum 45 kilos, weaker Ben is *most likely* able to lift some vague "less." Still, that is a better answer than the false

equivalent. Thus, in cases that go from a greater to lesser, *when the greater is at a maximum*, the same given is seldom acceptable, while some degree less is justifiably more sensible, despite its imprecision.

To go from the weaker to the stronger is not straightforward either. If weaker Ben can lift 40 kilos, we are *surer* that stronger Abe can do at least that rather than an indefinite extra. All we can say is that Abe is able to handle a reasonable amount between a 40 minimum and a likely upper figure. No fully consistent tests can scale things in such matters: the more exercise, the stronger Abe might become; or else, he might injure himself. At most, we have a typical, average, upper bound for Abe. It can be safer, *surer*, or *more likely true as a minimum* to grant the *same* amount: *the stronger can do at least as well as the weaker*. Yet something even marginally more would better reflect the fact that Abe is stronger. In what relevant way can he be truly stronger if he does not lift 40+n kilos? Again, we are talking about relevantly true premises. The same amount is definitely true, but less accurate, if not worse than some sensible extra. Theoretically, we can assume that *some extra degree is also true*, even if it relies on variable facts. Thus, for an *a fortiori* case of less to more, *a degree is as true as the same quantity*; but generally, even *a speck more (+n) is better and truer* (as A +n) than the same answer (A). In ordinary affairs, then, to go from the weaker to the stronger instance, a minimum as a given (the equivalent or *dayo*) is a definite, practical, and simple answer, yet not always the truest or fairest.<sup>212</sup>

In sum, both results have advantages and disadvantages, although degrees are better overall. In weak to stronger case, the normal expectation of more competes with the surer claim of the same result. The given is a lower bound, with some vague extra likely. In contrast, in most strong to weaker cases, even a vague proportion is *fairer*. Scaling is more common, while at times inexact. As a formula, if given feature  $f_a$  belongs to case A, and case  $B > A$ , to apply  $f_a$  to B is weaker than an upscaled  $f_b$ ;

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<sup>212</sup> For example, a fixed, set-up fee is not always the best option. In fact, the same charge makes the poor or minimal user pay disproportionately more than others for the same, basic installation. The identical charge is plainly unfair compared to the wealthier person, able to afford a higher premium (often with a larger property and longer distance to the supply) or the heavier user (who should pay more than the average user). For ongoing use, while a proportional charge is normal, seldom is it continuously adjusted, but graduated to rectify things in part. A set-up fee's unfairness remains, for at the start, it is often too difficult to determine each user's current or future state, or accurately scale use later on. Set-up costs, written off over a longer contract, scaled to use, would be fairer. Graduated taxes, subsidies for the poor, writeoffs, refunds, elderly benefits, and so on do try to balance affairs, but all these are often inadequate as many still fall through the cracks, besides adding administrative costs. Their purpose is to correct the imbalance created by standardized procedures.



indeed  $f_a/A = f_b/B$ , or  $f_b = (f_a)(B/A)$ . The lesser feature of the lesser case is equivalent to the greater feature of a greater case. A proportion preserves the underlying feature or can restore it, while repeated sameness can be weaker, worse, or mathematically false. Because proportionality depends on and upholds the basic quality of the original feature, what is the same and proportional are inseparable.

Yet, as shown, without a way of measuring the difference of cases A to B and how the given feature  $f_a$  relates to case A, the considered amount  $f_b$  can be vague. We need a decision procedure or abductive evaluation in such cases. From the *weak to strong* cases, one decides if the actual case better conforms to the given  $(f_a)$  or not. If not, we resort to a scaling  $(f_b)$ .<sup>213</sup> The actual degree, if required and possible, depends upon the comparative difference between cases (as in the formula,  $f_b = (f_a)(B/A)$ ) along with other relevant matters that may modify the result to what is admissible or recommended. Since severity from *strong to weak* cases typically adjust downwards, Guggenheimer's claim for the "axiom of definiteness" cannot work here; instead, one must reach outside the argument to find a precedent that might apply fairly and appropriately. Thus, *a fortiori* conclusions may be the same or vary according to the proportional method, empirical evidence, and other reasonable choices. To decide properly, we need verified data, pertinent factors, consistent evaluations, better arguments, or sensible precedents.

In this chapter, I have analyzed several forms of the inductive and deductive *a fortiori* argument, each of which captured a pertinent facet and range of cases. Mathematical forms and procedures, non-circular transitivity, and strict heritability can work validly with the greater than ( $>$ ) and less than ( $<$ ) relationships. Yet, even if one asserts that some QC forms are valid and sound, or only likely true, or the best of the relevant options, it does not mean that people always get it right, as Sion has remarked too. In addition, once the conclusion is seen as either sure or reasonable enough, we still need to determine the quantity of the conclusion, either as the same (the *dayo*), scalable to the givens, or else a compromise. Deductive logic itself, as shown, does not always provide the answer, as any of these can

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<sup>213</sup> Proportionality need not always be linear: each next step in excess speed may double the punishment (fines) of the prior step, due to risk of harm. One might have a more rapid start or end (non-linear) for other reasons: to warn people (increase severity) or show mercy (decrease severity). A sliding scale may be appropriate in other cases, to demonstrate moderation from either strict proportionality or overly rigid conformity to the given precedent.

be equi-possible. Other reasons and abductive factors thus tend to sway the decision, correctly or not. In Chapter 3, we shall look into such extra factors that take on extraordinary importance in the Jewish, *dayo*-proportionality evaluation, while in Chapter 4, interpretational issues and the amount of the conclusion will be resolved from a religious viewpoint.

The strengths, limitations, and weaknesses of general *a fortiori* reasoning has its parallel in traditional Jewish thinking, which tries to cope with a specific palette of concerns. So having surveyed a number of *a fortiori* definitions, informal methods, and stricter logical forms, we are ready to examine some of the traditional Jewish uses of the argument in more depth.

### **Chapter 3: Historic, Jewish Use (Biblical and Traditional)**

The Jewish *a fortiori*, the *Qal VaChomer* argument, arises in the *Tanach*, is adapted by the Rabbinic *Tannaim* of the *Mishnah*, and is then reassessed by the *Amoraim* of the *Gemara*.<sup>214</sup> As such, the Jewish QC develops through time and is not uniform in its use. To set the stage for this *Mishnaic* QC and its function in Rabbinic debate, I provide some background material and Biblical examples (with more in Chapter 4). Modern contributors like Samely will fill in the picture. While this chapter concerns itself with the Jewish QC, it is specific to the *Mishnah's dayo* claim that the given feature of the premise is sufficient for the conclusion. Although this is the *Tannaic* majority view of the *Mishnah* and upholds past religious values, it creates a host of problems that I shall point out. As noted, Maccoby's claim that the prior given is the sole, logical conclusion aggravates matters. However, objections arise in Jewish and not just in general thinking. Since the minority *Mishnaic* view (and the greater *Amoraic* latitude) differs from the majority one, I demarcate each. This shows that Maccoby's claim that the crowning of the *dayo* conclusion as alone correct is not always true religiously. Instead, solutions that allow sameness and degrees together are better, for they help dispel internal Jewish disagreements and repair the separation between what are proper, natural QC's and accepted, religious ones. In Chapter 4, I shall tackle the two approaches to the QC's possible conclusions mainly from a Biblical vantage point. There, not only will I establish that the QC (partial analogy) and GS (strict analogy) rules of interpretation are distinct, but also, supported by a full complement of Biblical QC's, I resolve the controversial *dayo* claim from the Biblical text itself.

#### **3.1. Background to the *A Fortiori* or *Qal VaChomer*** **a) Biblical, Natural, and *Mishnaic***

The QC argument occurs in the Bible as early as Genesis. Yet, the largely equivalent, ordinary *a fortiori* is grounded, practically and generally, in common thinking and human judgements. One might

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<sup>214</sup> *Tannaim*: Rabbis of the *Mishnah* (ca. 50 BCE – 200 CE). *Amoraim*: Rabbis of the *Gemara* (ca. 200 - 600 CE). *Mishnah* and *Gemara* (in earlier Jerusalem & later Babylonian versions) form the entire *Talmud* or “Oral” law. The *Gemara* develops, interprets, and comments on earlier parts and the prior, written law, the *Torah* proper, the first 5 books of the Jewish *Tanach* (as *Torah* {law}, *Neviim* {prophets}, and *Ketuvim* {writings}), the latter two as extensions and developments of the *Torah*).

also say that the origin of both the Biblical and human types is natural, the Biblical text merely referring to that fact. In any case, there is an affinity between the natural *a fortiori*, the Biblical QC, and the more narrowly focussed, *Mishnaic* QC, which tries to separate itself from what is common to experience.

From its Biblical roots, the Jewish *Qal VaChomer* blossomed in later Rabbinic discourse. Indeed, like the common *a fortiori* in Greek rhetoric and Roman law, the QC held an important place in Jewish religious thinking. The QC appears in the (“oral” law) tradition of the *Mishnah*, transcribed by about 200 CE, although the actual interchanges between Hillel and his interlocutors, the *b’nei Beitar*,<sup>215</sup> took place some 200 years earlier. Hillel’s contemporary Shammai (often more religiously stringent) and his school of followers were recognized as very adept at wielding it.<sup>216</sup> Both Hillel and Shammai’s facility indicates a development process that took the Biblical QC’s to this advanced stage. The QC continues in the *Gemara* (recorded by ca. 600 CE in Babylon). In all, Rabbinic scholars of the entire period and beyond saw the QC as a proper instrument of reason (alongside other types, rules, and methods), as it *derived from good Biblical and especially Divine prototypes*.<sup>217</sup> Since the *Mishnaic* QC rests upon good Scriptural examples, an initial acquaintance with some Biblical QC’s will expand our generic grasp.

#### **b) Some Biblical QC’s**

During a famine in the Middle East recorded in Genesis (44:8), the ten older sons of the patriarch Israel sought food in Egypt for a second time. Over thirteen years earlier, they had sold their younger brother Joseph into slavery (and likely death), who had in the meanwhile, unbeknownst to them, become the equivalent of Prime Minister. On their first trip, he accused them as spies, but later set most free, not just with their grain, but also with their money, which Joseph had secretly returned through his servant.

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<sup>215</sup> A direct translation is the “sons of Beitar” (either of a person or a town), although they could be disciples of a school centered in that place, which may also have represented a certain view.

<sup>216</sup> Samuel Hoenig, *The Essence of Talmudic Law and Thought* (Northvale, NJ/London: Jason Aronson, 1993), 92. Sion, 61-62, n.14, says that the terms lenient and stringent seem to refer to subjective or emotional reactions to laws, felt as releases or hardships; but they can be taken as more formal definitions with regard to the laws. Positive or negative imperatives or prohibitions are stringent; they are lenient, when not clearly stated, ethically contingent, permitted, or one is exempt. Expressed as modal logic, one must exercise care in each context.

<sup>217</sup> Again, Hillel had 7 rules (expanded by Rabbi Yishmael to 13; later 32 were considered). Apart from these, various general principles were also advanced, such as Divine specificity for each word or mere human repetition, no before or after (timelessness of eternal truths), possible readings or meaning (“70 faces”), majority rule (*ribbui*) over individual or even Divine approval of minority views (*miut*), tradition (consistency and continuity), etc.

This second time too, in a set-up contrived by Joseph, the brothers were caught with his prize goblet. Against the accusation of theft, they defend themselves with (what is traditionally taken to be) a QC argument: “If from Canaan we returned [the former] money found in our sacks, why would we steal again?” In other words, “Having proven our honesty by returning earlier money, it makes less sense for us to steal now.” As a clearer QC: “If our innocence was already proven by the returned money, and proven innocence is greater than suspected guilt, ‘how much more’ are we now innocent?”

This claim need not be true, for they might have stolen the goblet anyway and absconded again with the money and the bigger prize after gaining the boss’ confidence. However, one must compare this with the more likely threats of greater loss: Money is virtually worthless to starving people, so more is not clearly preferable. Wealth cannot guarantee that grain would be available later or that those with it would sell, given a drought with no end in sight. Already under suspicion as spies, any excuse might stop future trade or get them incarcerated or killed. Thus, even if supplies might exist, to run the risks of a return trip, robbers, other desperately hungry people, inflation, suspicious and unwilling Egyptians, possible imprisonment, death, or starvation, a theft makes little sense. The odds would be that of a much greater chance of severe losses. Secure food in hand is better than ill-gotten gain, given such dire risks. Thus, although the implicit QC is open to challenge, all considered, under an actual, deepening famine and potentially worse outcomes, it is a most sensible defense of their innocence.<sup>218</sup>

Another Biblical example is Moses’excuse about the futility of going back to Pharaoh after his first demand for release of the Israelite slaves only made the king increase the people’s workload, which led to their refusal to hear more of Moses’ empty promises. “If the Israelites have not listened to me, how much less [will the] Pharaoh?”<sup>219</sup> Moses had more influence with his people than with the king, their

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<sup>218</sup> More on this example will come later, including what sort of conclusion this is.

<sup>219</sup> Sion, 52, reconstructs the passage from Ex. 6:12 as a negative *subjectal*. I add the symbolizations as before:

Major Premise: *The Israelites obey God more than Pharaoh does*

Israelites, P, obey God, R, i.e.,  $(P \rightarrow Rp)$  more than Pharaoh, Q, obeys God, R, i.e.,  $(Q \rightarrow Rq)$ ,  
and  $Rp > Rq$ , or  $(Rp \rightarrow Rq)$  [greater implies lesser]

Minor Premise: *The Israelites do not obey God enough to listen to Moses*

P do not R enough “to listen to Moses” ( $\sim S$ ), i.e.,  $(P \rightarrow \sim S)$  or  $(Rp \rightarrow \sim S)$

Conclusion: *Pharaoh will not obey God enough to listen to Moses*

slave-master; but as they refused to listen to Moses again, he cannot speak for them; so surely, Pharaoh will also refuse to listen. Still, this claim is more likely so than certain. Yet to dislodge Pharaoh's position, immense power, and divine pretensions, which Moses was well aware of, required a power greater than even Moses expected or had experienced to a sufficient degree up to this point; hence, from a human point of view, his argument is highly probable and most reasonable.

The above Biblical QC's are self-defensive instances within larger (Egyptian) contexts. The Rabbinic QC's had more internal Jewish concerns. Still, these QC's arose during the early *Mishnaic* period in Israel, within a Greek and Roman milieu, which also had similar *a fortiori* arguments. Did these somewhat differing cultural uses have an influence on the Rabbinic QC, and if so, in what ways?

### c) Possible External Influence and Reaction

Aside from its Biblical source and its natural occurrence in human reasoning, some Greek and Roman influence on the Rabbinic QC is likely, given their long, mutual history.<sup>220</sup> The extent of this influence is unclear, however, although it seems largely negative, because the Rabbis may well have reacted to *a fortiori* arguments in order to distance the Jewish QC from any undesirable, foreign, conceptual and religious associations. Such a clear distinction would help preserve Jewish uniqueness.

We know of some outside influences upon Jewish views. Philo of Alexandria (ca. 20 CE) fostered a Judaizing of some Platonic ideas, who saw the latter as universal truths that accorded with Biblical ones. However, against that Hellenistic bent of such foreign-educated Jewry, there stood a conservative camp within Israel, still proud of its military overthrow of (Syro-)Grecian rule and culture by the Maccabees (ca. 165-164 BCE). Moreover, one could assume a lingering hatred of foreign domination among Jews following their recent defeat in two utterly disastrous, Roman wars (66-70 and 132-135 CE), which had prevented their regaining political, cultural, and religious freedom. No doubt, a strong ideological

all the more, Q will not R enough "to listen to Moses" i.e.,  $(Q \rightarrow \sim S)$  or  $(Rq \rightarrow \sim S)$   
Perhaps it is better stated negatively to start with. So instead of  $P > Q$  in terms of (likely) obeying God, we should make  $Q > P$  in terms of (likely) disobeying God, and since P don't obey God via Moses, surely Q doesn't obey God via Moses (as long as P and Q are disobedient, but who need not be all, as some obey – such as Aaron).  
<sup>220</sup> Martin Hengel, *Judaism and Hellenism* (Minneapolis: Fortress, 1991), 150. David Daube says as much in his 'Rabbinic Methods of Interpretation and Hellenistic Rhetoric,' in *Collected Works of David Daube* (Cambridge: Cambridge University Press, 1947), 333-355.

reaction spilled over against any sympathetic accommodation of non-Jewish ideas. Thus, Philo (if known) would likely have lost favour among the early Rabbis who would have rejected this philosophic, syncretistic approach, their animosity fanned by allegorization of the *Tanach* (Jewish Bible), interpreted in terms of Platonic ideas. After Christian thinkers adopted this allegorical method, it would exacerbate Rabbinic resistance, for it became a backdoor to a dangerous garden of interpretations that could not be condoned.<sup>221</sup> So too, foreign, *a fortiori* use would be suspect. Yet, inasmuch as Greek culture and Roman rule dominated Israel for centuries, some parallel concepts, legal arguments, and commercial practices inevitably crept into Jewish ideas. These find expression in the many foreign terms recorded in the *Talmud* (despite anti-foreign sentiments and caustic exposure of the rulers' injustices and errors). Although we can grant some secular colouring, because the QC argument's principal and final authority depended upon the Biblical text, the Rabbinical Jewish tradition would stay as close as possible to its roots.<sup>222</sup> Thus, while similar, the *Mishnah's* QC differs somewhat from an ordinary or general *a fortiori*.

The Rabbis, as surviving leaders of Jewry's turbulent wars and recorders of the *Mishnah*, carried Judaism's banner into an uncertain future. Add the accumulated bitterness towards the nation's cruel oppressors, and one can readily appreciate that, for the most part, only what paralleled Jewish ways was acceptable. Only good, natural reason, open and available to all, could approach the cordoned realm of Judaism. Presumably, even genuine, moral rulings would face scrupulous screening and be substituted by a Jewish tradition if available. Before I provide some specific, *Mishnaic* QC's, an overview of the argument's functions in religious debates, moral teachings, and binding religious decisions is helpful.

#### **d) Role of *Qal VaChomer* (QC) in Rabbinic Discourse**

Aside from its modern relational formulations, by far the largest body of material that shows the *a fortiori* argument actively employed over the longest period, including the examination of certain of its

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<sup>221</sup> See Hoenig, 61, for a similar view. Also, Salo W. Baron and Joseph L. Blau, *Judaism* (Indianapolis: Bobbs-Merrill, 1954), 31. .1983 מוסד ביאליק, ירושלים: *פרשנות המקרה היהודית*. עורך. משה גרינברג, עורך. *Parshanut HaMikra HaYehudit* Jewish Biblical Exegesis (Jerusalem: Mossad Bialik, 1983), 1, 6-7. See also the article by Shlomo Pines, "Jewish Philosophy" in *The Encyclopedia of Philosophy*, ed., Paul Edwards, (New York: Collier-Macmillan and The Free Press, 1967), 262. Also regarding resistance to ideas of gentile world, see Shaye Cohen, *From the Maccabees to the Mishnah* (Philadelphia: Westminster Press, 1987), 34-46, 58-9.

<sup>222</sup> For some background, see Adin Steinsaltz, *The Essential Talmud* (New York: Basic Books, 1976), 20-24.

merits and problems, is found within Jewish studies. As each generation of Rabbinic scholars studied the past, the extended debates grew over the centuries in which the QC took a prime place. These debates were preserved for future study in cursory, almost typified form, as Neusner often states.<sup>223</sup> Even after the *Talmudic* period (ca. 600 CE), the QC's wider use remained largely within Jewish circles.

In fact, the *Qal VaChomer* argument is so frequent in *Mishnaic* Rabbinic reasoning and debate that Maccoby affirms its importance in this way: "The *wa-homer* argument was regarded as the basic logical tool of halakic reasoning, so much so that it is often called simply *din*, meaning 'argument'."<sup>224</sup> Steinsaltz writes about it in this manner: "the assumption is that any man may employ this method and derive [a] new *halakhah* from it."<sup>225</sup> On its own, remarks Novak, a QC can even rationally convince and solve various issues.<sup>226</sup> While the Rabbinic QC argument was assumed as deductive, in practice, the premises were often established inductively, says Sion. Yet, continues Sion, the Rabbis did not formalize it nor separate the inductive aspects from the deductive.<sup>227</sup> He goes on to state that the Rabbis developed the QC informally through actual practice to note its limitations and permissible uses: "It was reasonably well-understood and competently practiced..." despite some questionable regulation of its use.<sup>228</sup> Indeed, it was "one of the most brilliant contributions of Jewish logicians to generic logic."<sup>229</sup>

#### **e) Reason, Religious Authority, and the *Dayo* Limit**

Anyone who reads the *Talmud* will recognize the prominent place given to reasoning. Indeed, by reason one interpreted the Scriptures, in some cases by means of a QC. As a key tool of reason, the *Mishnah* employed the QC in two main ways: the minority explored its scope, often to challenge an

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<sup>223</sup> Jacob Neusner, *Halakhic Hermeneutics* (Lanham: University Press of America, 2003), 218; *Talmudic Thinking: Language, Logic, Law* (Columbia, SC: University of South Carolina Press, 1992), 4-5, 12, especially 123-5, 178-9.

<sup>224</sup> Maccoby, *Early Rabbinic Writings*, 173. Spelling of Hebrew and Aramaic transliterations in English differs among writers. I normally quote them exactly. As the dot under the *h* of the *wa-homer* does not always transfer between computer programs, I drop it. I give words in their simplest form that requires no special knowledge of scholarly devices. The 'h' has the same guttural 'ch' as in modern, Hebrew pronunciation (adapted from ancient, mainly Sephardic (Spanish) use). The term *halakic* sounds like *halachic*. Formally, a *halachic*, Rabbinic ruling means to walk in or follow a proper lifestyle as a tradition-observant Jew (a bit more laxly in some circles today).

<sup>225</sup> Steinsaltz, 222-223.

<sup>226</sup> I conflate some of D. Novak's points from his 'Maimonides and the Science of the Law,' 106-7.

<sup>227</sup> Sion, 114, for previous statement, and for this one, 131.

<sup>228</sup> Sion, 169.

<sup>229</sup> Sion, 114.



issue, while the majority held it in a restricted sense to neutralize an attack or defend and reinforce the existing tradition.<sup>230</sup> The respective QC arguments lent credence to each position, often serving as a flashpoint in the Rabbinic debates over a correct interpretation. Whether the Rabbinic scholars raised objections or waived the QC aside, the exercise of reason was encouraged.

Likely based on Biblical and especially Divine examples, the QC was placed first in the growing lists of the Rabbinic rules of Biblical interpretation. Yet by itself, the QC was not always authoritative. Even without a strong counter-argument, the defenders could turn aside a QC argument, if they believed the true meaning of a Biblical passage, principle, or tradition said otherwise. Although the QC seldom changed a majority stand, its ability to sharpen religious understanding pointed to its significant role.<sup>231</sup>

While the Rabbis of the *Mishnah* allowed natural, *a fortiori* reasoning legitimacy in mundane affairs, they constrained it in religious matters. This was because natural reason had a negative side: it could be rash and extreme or else too ignorant and limited in its scope and ability. Human reason could uncover and preserve essential truths; but reason did not create truth out of nothing. While the Rabbinic scholars sought the best or truest intellectual, practical, and moral answers, these had to fit within their religious worldview, even if it meant restricting speculative reasoning.<sup>232</sup> The ultimate source of the religious QC's propriety and practice rested on the authority of good Biblical precedents, not on unrestrained human ability. In this way, the majority of the *Mishnaic* Rabbis circumscribed human reasoning and ideas within the authoritative realm of revelation and their official interpretation of it. How did this approach likely become an official method of QC interpretation in the *Mishnah*?

Since the common *a fortiori* of ordinary thought allowed a variable conclusion, in *Mishnaic* Jewish eyes, this probably left the QC argument too open to any idea and thus too risky for religious purposes. Doubtless, the Rabbis worried about the future of the Jewish community and its practices, which from their perspective was possible only if Judaism was faithful to its ultimate, overarching truths. Religious

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<sup>230</sup> An outline of the typical debate as a general form or argument structure is in Appendix B3.

<sup>231</sup> See for instance, Hirschensohn, 60.

<sup>232</sup> This reappears with Crescas (1340-1410) who tried to discredit philosophy as unfounded or false says Norbert M. Samuelson, "Medieval Jewish Philosophy," in *Back to the Sources*, Barry W. Holtz, ed. (New York: Summit Books, 1984), 282-3. Of course, considerable speculation and creative halachic decisions occurred. S. Cohen, 230.

parameters had to set the proper place and use of reason. Thus to preserve the truth and right practice of religious tradition required a rule with the highest scriptural authority. In particular, God's employment of the QC would have the greatest impact in proscribing correct usage. So besides the Rabbis' social concerns and religious conservatism, an extra condition on the *Mishnah's* QC kept reasoning tethered to accepted views: a strict, *dayo* interpretation legitimized the same, given tradition as religiously correct. The *dayo* restriction, as the opinion of most sages, would restrict the result to the given case and not allow it to be more strict or lenient, as Steinsaltz notes.<sup>233</sup> As a result, this *dayo* or sufficiency rule held QC conclusions safely within Jewish tradition, rather than submitted to the rulings of ordinary reason (as less worthy) or sullied by straying into unacceptable foreign practices.<sup>234</sup> One did not allow an ordinary QC to establish a religious truth, but instead, the truth of tradition established the QC.

Let us look at what Maccoby says about the *dayo* conclusion that is to hold for a QC argument.

#### **f) Maccoby's View of the *Mishnaic Dayo***

Maccoby claims that the *dayo* limit was a principle of correct QC usage:

An important principle in the Rabbinic use of the *qal wa-homer* argument is called *dayo* (literally, 'it is enough for it'). This principle states that the conclusion of a *qal wa-homer* argument can never contain more than its premises. Thus the following would be an invalid *qal wa-homer* argument:

1. A moderately good child should be given a sweet;
2. Therefore, a very good child should be given two sweets.

The correct conclusion is:

3. Therefore, *all the more so*, a very good child should be given a sweet.

The latter is as far as one can go in strict logic, since any attempt to add to the premises must be arbitrary.<sup>235</sup>

After Maccoby marks off what is a proper QC, he rejects as invalid, Pauline proportional examples in the New Testament. The warrant for these claims comes from a Biblical source:

This was the incident of the punishment of Miriam by leprosy, when God argues as follows, 'If her father had but spit in her face, should she not be ashamed seven days? Let her be shut out from the camp seven days, and after that let her be received again' (Num. 12:14). The argument

<sup>233</sup> Steinsaltz, 223. I assume that he means not more lenient than the given leniency.

<sup>234</sup> Hirschensohn, 50. If one cannot make a QC from tradition, *surely less so from daily life*. Also, Novak, "Maimonides," 111. Religious aspects are special (*kodesh*) and approved as fit (*kasher*); the ordinary (*chol*) would be barely permitted.

<sup>235</sup> Maccoby, *Early Rabbinic Writings*, 173-174. Again, repeated in his article. Maccoby, "Some Problems in the Rabbinic Use of the Qal va-Homer Argument," 1-2, [www.art.man.ac.uk/RELTHEOL/JEWISH/qalvahomer.html](http://www.art.man.ac.uk/RELTHEOL/JEWISH/qalvahomer.html).

may be paraphrased as follows: if offending a father (a relatively light thing) is punished with banishment for seven days, offending God (a relatively heavy thing) should be punished *all the more so* with banishment for seven days. The Bible here provides an impeccable *qal wa-homer*, studiously refraining from adding any days to Miriam's punishment, beyond the number yielded by the principle of *dayo*.<sup>236</sup>

The *Mishnaic* majority interpretation of this passage is thus the key to understanding the right way to use the QC argument. Indeed, the *dayo* conclusion arises almost single-handedly from here.<sup>237</sup> Thus, Maccoby's enunciation that the QC's conclusion can "never" go beyond the degree of the given premise bases itself on this presumed Divine judgement (as the most authoritative, best source).<sup>238</sup>

We find numerous affirmations of this claim elsewhere.<sup>239</sup> On this specific ground, the Rabbis could turn aside other proportional results drawn from a QC, even if based on a tradition. Yet, the Biblical example of Miriam does not settle the *dayo* or sameness result unambiguously or exclusively. This point will find emphasis in this chapter and especially the next. Several other problems attend such a strong *dayo*. However, before raising objections, it is fair to acknowledge several important points made or implied by the *Mishnaic* Rabbis and by Maccoby that favour this *dayo* limit.

#### **g) In Favour of the *Dayo* Limit**

While natural QC reasoning's lack of religious boundaries can be problematic for tradition, so that one may want to impose rational or religious limits, the issue spills over into the Bible too. Because everyday *a fortiori* arguments and religious QC's occur within the Biblical text itself, the *Tannaic* Rabbis of the *Mishnah* had to make a major distinction. When a QC in Scripture advocated justice, spoke truth, or set out a required practice, it served as a religious guide (*halacha*); but when QC's gave immoral or illegitimate results, they were designated as examples of bad or evil reasoning (*choshech*: darkness).<sup>240</sup> So although found in the Bible, even ordinary QC reasoning might easily justify an excess

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<sup>236</sup> Maccoby, 174. Much more about this example will come in Chapter 4. See also Ostrovsky, 55.

<sup>237</sup> Maccoby calls the *dayo* a principle, while I see his claim functioning as a fixed rule, denying any other option.

<sup>238</sup> Maccoby, "Some Problems in the Rabbinic Use of the Qal va-Homer Argument," 1, from the internet article: [www.art.man.ac.uk/RELTHEOL/JEWISH/qalvahomer.html](http://www.art.man.ac.uk/RELTHEOL/JEWISH/qalvahomer.html). Also, Sion, 55. The reference is in *Baba Qama* 25a.

<sup>239</sup> For instance, Ostrovsky, 55-61; references its articulation in the Talmud (*Torat HaKohanim, Niddah, Hullin*). See also Hirschensohn, 50-53. D. Novak, 109, quotes an occurrence in the *Sifra* (from introduction, ed.

Finkelstein): "...it is sufficient (*dayo*) that the inference (*haba min hadin*) be just like the premise (*kenidon*)..."

<sup>240</sup> Hirschensohn, 41-42, discusses these cases. In Chapter 4, I also review some of this again with examples.

or a wrong. Therefore, not only should a religious QC be invariably right and promote moral behaviour, it also had to circumvent potential abuse. To avoid such unacceptable results, the religious QC had to meet the condition that its conclusion follows a prior religious truth. The Biblical passage with Miriam backed this idea, for it rested on a hypothetical precedent involving her father (somewhat indirectly). Far more, God expressed it. So an ordinary Biblical QC was not good enough for the higher demand of a religious QC. While an everyday QC argument might posit any reasonable result, an explicitly religious QC had to maintain what was the given, correct, Jewish tradition, without change (the *dayo*).

This *Mishnaic* QC form had its benefits in upholding Jewish understandings of revealed truths and the moral values contained therein. Indeed, subsequent traditions and religious rulings were supposed to be consistent with revelation and traceable to Sinai (where God enunciated the commandments and attendant laws that would restore and maintain a relationship with Him). To attack these traditional understandings was tantamount to denigrating revelation and God Himself, and thus to court disaster.

The motivation for the *dayo*, to keep thought and action free from error, is clearly honourable. Other advantages accrue. For instance, in many situations it is safer to go with what you know than a more doubtful and perhaps, partly arbitrary, proportional conclusion, especially as relative differences between things are often too vague, hard to assess, or irrelevant to satisfy the need for a definite result. Further, if one seeks to be lenient or merciful in judgement, as the Rabbis stated, then the least severe outcome would often conform to the given. Additionally, as implied by Maccoby with the children, praiseworthy behaviour is pure and free of any ulterior motive. One should do what is right for its own sake, goodness being its own reward, as the Rabbis pertinently remark. Reward is a side benefit. To expect more than appreciation for a good act is contrary to it as a moral norm of life. Mere posturing or outward show for the sake of reward is not morally good.<sup>241</sup> Moreover, how could one credibly scale

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<sup>241</sup> With children especially, one should not show favoritism nor want to seem to bribe people to be good. Not only that, but also each child is different, and one wants each to be as good as possible, according to their ability (for the right reasons, not mercenary ends). The reward is actually superfluous and might cause harm when children expect something for behaving in the way they should anyway. A hug and word of praise to each should be enough to reinforce good behaviour. The most important thing is that children are loved and accepted as they are, although goodness is desired too, and not just for what they do or the quality of their performance. More, one

exact rewards to ill-definable levels of goodness? Yet no doubt, Maccoby's example intends to show more than that essential goodness is primary or that the same, basic reward is sufficient: he wants to uphold the *Mishnaic* majority interpretation for the QC as correct and proportionality as wrong.

Several reasons promote the limiting *dayo* as more than just a recommended principle, but rather as a fixed rule. 1) Any change from the given, Maccoby calls arbitrary. 2) If the QC's conclusion "never" contains more than what is in the (least) premises, sameness is the logically right answer. According to Maccoby, any other QC conclusion (that scales a feature to the relative difference of cases) is strictly invalid in logic, although one might deploy it surreptitiously to overcome unsuspecting people, easily swayed by rhetorical flourishes.<sup>242</sup> 3) The *Mishnaic* Rabbinic majority hold past interpretations and judgements as true. 4) The same reward for differing behaviour of children sounds eminently sensible. 5) The Biblical case of Miriam looks like a Divine exemplar. Thus, the *Mishnaic dayo* and Maccoby's view of it look justified. However, each of Maccoby's and the *Mishnah's* points that take the same, given, *dayo* conclusion as sufficient or necessary are open to challenge.

#### **h) My Defense of Degrees and an Outline of *Dayo* Objections**

In order to clear away the less onerous issues regarding the *Mishnaic* QC's *dayo* conclusion, I shall investigate some of them at the outset. In particular, (1) Maccoby's charge that *proportionality is arbitrary* deserves comment. The notion that (2) *the same answer is logically more reasonable than a proportion* was largely dispelled in Chapter 2, in that a ratio is equi-possible if not more common; but this will be expanded. To counterbalance point (3) *that the Mishnaic, Rabbinic majority favours the same given*, there exist a) concurrent *Mishnaic* objections, b) later *Amoraic* ratios, and c) Biblical examples. Maccoby's case (4) faces a counterexample at the end of this chapter. Because the Miriam text (5) from which the *dayo* arose (Num.12:14) needs a separate analysis, I leave it to Chapter 4. For now, I assert that although this critical text is a *dayo*, it does not warrant a definitive *dayo* interpretation.

should instill this attitude before the reality of competitive behaviour and proportional rewards takes hold. To reverse this priority, easily leads to problems about how good one was and how s/he deserves more of a reward.  
<sup>242</sup> Sion's footnote on page 47 of his *Judaic Logic* notes Maccoby's claim again in *The Mythmaker, Paul and the Invention of Christianity*, 64-7. See also Maccoby's internet article, "Some Problems," 2.

To preview my upcoming challenges (in Chapter 4), I simply note these points: a) Only one feature repeats in Miriam's judgement while degrees are also meted out. b) No Biblical consistency is evident in highly similar cases that would reinforce the use of a precedent. c) Another interpretation makes better sense of the facts.<sup>243</sup> Finally, d) to insist on the same amount creates severe theological problems. For now, I respond briefly to Maccoby's attack on proportions and his exclusive support of the *dayo*:

(1) *Proportions are Arbitrary*: With respect to a proportion's arbitrariness, Maccoby is partly right to raise it as a potential problem. Yet, not all proportions are arbitrary. At the same time, Maccoby simply sidesteps any arbitrariness with the same, fixed, *dayo* result.<sup>244</sup> In addition, the given amount's apparent clarity overrides the need for a fair outcome, which sameness cannot guarantee, but instead can be unjust. It is unreasonable to assume the given is always right, for a careful proportion can be more sensible and just. Sensible proportions intersect in the moral realm with the *Mishnah's* religious QC.

(2) *The dayo alone is logical*: To repeat the same feature as before can be logical, but so can a proportion. One needs further reasoning to decide the amount. The *dayo* rule, then, is really an imposed *Mishnaic* restriction, not "strict logic." If the stand of the *Mishnaic* majority is problematic, Maccoby's position is worse, for he goes beyond the *Tannaic* norm when he accentuates the *dayo* as the only general, logical conclusion of a QC.<sup>245</sup> Maccoby's insistence clashes with normal *a fortiori* reasoning too, which can take a good proportional result. To deny proportions pits the natural against the religious and sets up a false dichotomy between what is morally good and what might be more just than the given ruling. If the religious QC relates to right reason, to set tradition against what is sensible is unnecessary and awkward; and reason divided into secular and religious sorts is not wholly sustainable either.<sup>246</sup>

(3) *The Mishnaic majority was right*: Even within their own ranks, a *Mishnaic* minority resisted the sameness view. Although the received tradition carried the day, some felt it was at times arbitrary. It

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<sup>243</sup> Sion, 55, and others claim that mercy can explain the passage, but I go into much more depth in Chapter 4.

<sup>244</sup> Novak, 107, "Maimonides": unlike the arbitrary, extraneous criteria of other hermeneutic rules, a QC is more rational. The Rabbis' proverb that "to attempt too much can miss, but with less comes results" cuts both ways.

<sup>245</sup> Again, Steinsaltz, 223, does not take the *dayo* as the absolute truth of a QC, but "the opinion of most sages...."

<sup>246</sup> It also confuses two hermeneutic rules: If the QC performs like a strict analogy, the *G'zera Shava* (GS: equal judgement), it yields the same outcome, and so blurs the distinctions between the QC and the GS. I argue this fully in Ch. 4. Also D. Novak, 111: "...*dayo* is not an internal logical limitation, but rather an external theological one."

may well imply that the minority disagreed with the strong, *dayo* claim of the Miriam text, for otherwise they would have acquiesced without objection. Significantly, the *Amoraim*, as later commentators of the *Tannaim*, strengthened that minority by adding proportional QC's. Which Jewish camp was right?

(4) *Differing children are to receive equal treatment*: Maccoby's case of the children backs his idea that the only correct conclusion is to repeat the same given from the premise; yet this is too one-sidedly simplistic, as elaborated later in this chapter.<sup>247</sup> The inherent value of persons and their overt performances can differ and, hence, must be distinguished and judged appropriately.

Thus far, the *Mishnaic dayo* limit has some religious advantages, for it restrains reason to the safety of received tradition. On the other hand, rigid conservatism can be stultifying and plainly wrong. Some adaptation to new circumstances seems requisite.<sup>248</sup> Another Jewish idea can sharpen these points.

#### **i) The *Dayo* and the “Measure for Measure” Principle**

At this point, I appeal to another important Jewish idea called the “Measure for Measure” principle (*Midah c'neged Midah*).<sup>249</sup> Primarily, this principle equitably relates a consequence to an action. The quantitative degree of a result (or judgement), should correspond to an act, if not also its quality.<sup>250</sup> This

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<sup>247</sup> I give Maccoby the benefit of the doubt in being aware that “less” as well as “more” is possible.

<sup>248</sup> The subject is too complex for proper explanation here, so my comments are sketchy simplifications at most. According to Maimonides, there are various types of Jewish laws. The fixed ones are a) the written, Mosaic laws and to some extent b) Rabbinic ones that explain details not clear in the text. (Oral laws may depend upon the hermeneutical rules, besides other principles, although one is hard-pressed to see the connection in some cases to the Biblical text (such that even Moses is baffled, according to tradition, in b. Menachot 29b).) Some Oral laws are preventative Rabbinic legislations (*g'zerot*), which if obsolete, were still not rescinded by a later Rabbinic body. To help one keep religious law or cope with new realities, the Rabbis enacted new ordinances (*takanot*). Local custom (*minhag*) was respected too. The fixed and flexible laws divide along religious and civil issues usually. See Hoenig, 13-23, and D. Novak, “Maimonides and the Science of the Law,” 104-8. Also see David Weiss Halivni, *Peshat and Derash* (New York/Oxford: Oxford University Press, 1991), xv, 14-5.

<sup>249</sup> “Measure for Measure” (Hebrew = *Midah c'neged Midah*) is a sort of equation of act  $A_1$  with its judgement  $J_1$ , otherwise known as “eye-for-eye” or “tooth-for-tooth” (*lex talionis*). Another act  $A_2$  would have an appropriate judgement  $J_2$ . Often taken by the Rabbinic judges as metaphorical (as in some scriptures), an equivalent price was exacted for various offences, rather than seen as always literal (BQama 84a). It is a precursor to “action-reaction.” See Max Kadushin, *The Rabbinic Mind*, 3<sup>rd</sup> ed. (New York: Bloch Publishing Company, 1972), 15-16, as “an independent manifestation of the concept of God's justice....” This connects to the special aspects of God's justice (*Middat Ha-Din*) and mercy (*Middat Rachamim*). Mercy may soften strict justice.

<sup>250</sup> I see this mutual matching as an inductive rule generalized from the “eye for eye, tooth for tooth...” examples, Ex 21:23-25, Lev 24:20, Dt 19:21, with compensation by financial equivalence is possible at times (Ex 21:18-22:14). For more on strict equivalence or a less strict, but equal, financial one (or more), see Daube, ‘Texts and Interpretations in Roman and Jewish Law’, *Collected Works of David Daube*, 182-186. Also, see Hoenig, 60. While this looks like it applies to a QC as a *dayo*, it is only where both cases are the same. If the first case is about a tooth's loss and the other an eye's loss, the latter would require extra compensation, not the lesser amount. One

balance, as a ratio or kind of equation (as noted at the end of Chapter 2), can apply to the QC. It would imply that identical acts have equal results, and differing acts have correspondingly scaled results. Moreover, the naming of the hermeneutic rules as *midot* (plural of *midah*), of which the QC is one, lends credence to this version of *Midah c'neged Midah* as a right measure of one thing to another.

In ordinary affairs, this principle means that for equal or otherwise undecideable cases the same result could apply. However, when things differ, past sameness fails to balance the new account. To suit the new case, one should calculate a new amount. The idea is that punishment should fit the crime, rather than undervalue severer cases with minor penalties or commit injustice when minor misdemeanors receive overly severe judgements. To treat serious crimes lightly or light crimes too harshly undermines the very notion of fairness and justice (unless deeper, ethically right and justifiable reasons override).<sup>251</sup>

Indeed, the Rabbis did not want to cause undue or unjust suffering, as they stated, “Be lenient in judgement.”<sup>252</sup> Leniency, often expressed by a *dayo* limit, would apply from the lesser precedent to the greater instance. However, for an initial stringent ruling, fairness, expressed by the “measure for measure,” would rule out the prior stringent *dayo* as too severe in a lesser case, rather than as enough.

How can one justify that some lesser amount is proper when the greater is the given? To find a *dayo* that was not excessive would require casting about for a more lenient precedent (requiring a marvelous memory), if such a case existed. Otherwise, one could appeal to the leniency principle in order to find a true lesser within the greater. Ostrovsky implies that the lenient aspect within the strong is what one can transfer to the lesser case.<sup>253</sup> Yet how do we know the actual lesser amount? Is there a special rule that picks it out? We have to rely on a guess, an expert judgement, a traditional precedent, or a similar

either moves to the appropriate precedent (an acknowledgement of the proportional principle), or when not available, as it has not been spelled out in a tradition, one must proportion the new result to the closest given.

<sup>251</sup> Whatever one might say about various forms of criminal justice (retributive, corrective, etc.), one normally starts off with the given crime along with the notion of equivalence for redress, even if not perfectly achievable. The rightness of the *Midah c'neged Midah* is more than just a moral rule of proportionate justice, but something that is also consistent with physics, as in Newton's law: *every action has an equal and opposite reaction*. (Any negative inequalities can be accounted for when entropy is included, which by analogy would be like the inadequacy of human justice to a crime, as something almost always unfair, lost, or unresolved in human affairs.)

<sup>252</sup> In *Pirkei Avot* (Sayings of the Fathers), it is applicable to the QC. Again, see Hirschensohn, 58, 61, 74.

<sup>253</sup> Ostrovsky, 42 (in referring to the QC & CQ forms as one): "למידים קל מחמור להקל...ע"פ המצות דין קל בדבר החמור."



weaker case, quite apart from the strong given of the QC. Surely, this is a clumsy way to determine the hidden amount, a backdoor, *ad hoc* way of preserving sameness. Indeed, to reach outside the higher given is convoluted and in the end just mimics a relative scaling. Normally, to find the lenient within the stringent, one just scales down the given to a sensible amount based on the other data. Instead of Maccoby's denial of degrees, leniency by scaling is easier than this roundabout method of finding a latent weak part within the strong, which is really the same as a relative proportion anyway.

**j) General, A Fortiori Possibilities Compared with Mishnaic QC, Dayo Limitation**

We should gather up the various *a fortiori* possibilities of weak and strong cases in order to locate the *Mishnah's* particular *dayo* restriction that Maccoby carries to an extreme. The common *a fortiori* with lesser to greater matter, or *a minori ad maius*, lines up with a Jewish QC, while the greater to lesser one, *a maiori ad minus* or simply *a minori*, is a CQ (*Chomer V'Qal*).<sup>254</sup> A natural QC can result in the same *dayo* or a proportion. The less typical CQ moves from the greater case and its feature to the lesser with a degree, for the the same amount would be too harsh or unfair in most, less onerous cases.<sup>255</sup> The conclusion is adjustable to suit leniency or fairness at the decision-maker's discretion. Although degrees can be vague, specific quantities are possible. Overall, from the perspective of ordinary reason, exact sameness (the *dayo*) applies in equal cases, while a degree is usually applicable, even if attenuated.

Matters become complex in the practical, moral, and legal issues of Jewish discussions, as in most cultures: a feature can be either lenient or severe both in more serious and less consequential cases.<sup>256</sup> The weak to strong QC and the strong to weak CQ give us eight permutations. Written out in column A and then condensed in column B (with S = *stringent* feature, L = *lenient*, G = *greater* or more serious case, and W = *weaker* or less crucial one), we have these possibilities (tabulated afterwards):

A	B
1) <i>stringency</i> in the <i>less</i> crucial to <i>stringency</i> in the <i>more</i> serious matter;	1) S in W to S in G;
2) <i>leniency</i> in the <i>less</i> crucial to <i>leniency</i> in the <i>more</i> serious matter;	2) L in W to L in G;
3) <i>leniency</i> in the <i>less</i> crucial to <i>stringency</i> in the <i>more</i> serious;	3) L in W to S in G;

<sup>254</sup> The term Qal VaChomer can generally stand for this CQ too, because it is the principle of the relationship of the weak and strong rather than which part bears the given. For the Hebrew reader, see Ostrovsky, 42, 44.

<sup>255</sup> When faced with a missing premise, we can add it from the details of the comparison made.

<sup>256</sup> Since *Mishnaic* QC's can have added features, they can get more complicated. So these are the basic forms.

- |                                                                                                     |                      |
|-----------------------------------------------------------------------------------------------------|----------------------|
| 4) <i>leniency</i> in the <i>more</i> serious matter to <i>leniency</i> in the <i>less</i> crucial; | 4) L in G to L in W; |
| 5) <i>stringency</i> in the <i>more</i> serious to <i>leniency</i> in the <i>less</i> crucial.      | 5) S in G to L in W; |
| And normally, we refuse the next three cases types on grounds of fairness and justice:              |                      |
| 6) <i>stringency</i> in the <i>more</i> serious to <i>stringency</i> in the <i>less</i> crucial;    | 6) S in G to S in W; |
| 7) <i>leniency</i> in the <i>more</i> serious to <i>stringency</i> in the <i>less</i> crucial;      | 7) L in G to S in W; |
| 8) <i>stringency</i> in the <i>less</i> crucial to <i>leniency</i> in the <i>more</i> serious.      | 8) S in W to L in G. |

Now we tabulate these according to the 5 normally **acceptable** and 3 {unacceptable} QC/CQ types, and identify the 2 (otherwise acceptable) cases that Maccoby wants to *{disqualify}* as degrees:

**Diagram 6: Acceptable, Unacceptable, & Supposedly Disqualified QC/CQ's**

	<i>QC</i>	<i>CQ</i>
	W to G	G to W
i.	<b>S-S</b>	{S-S}
ii.	{S-L}	<b>{S-L}</b>
iii.	<b>L-L</b>	<b>L-L</b>
iv.	<b>{L-S}</b>	{L-S}

According to Maccoby, the *Mishnaic* QC is logical only for the same given. In the chart, this means that the following alone are permissible in his view: QC (W to G): **S-S, L-L** and CQ (G to W): **L-L**. Usually, one excludes the QC {S-L} and CQ {L-S} as unjust, as well as the *dayo* CQ {S-S} as unduly disproportionate. Proportional QC **{L-S}** and CQ **{S-L}** are acceptable under natural reasoning, but automatically excluded by the *dayo* rule. However, we find what are unexpected cases in the *Mishnah*: a QC (W to G) **S-S** in turn allows both a CQ (G to W) {S-S} that is typically disallowed and a QC **{L-S}** disqualified by Maccoby to become acceptable, as the upcoming examples show.

**k) Two *Mishnaic* QC's: Sameness Despite Difference, Difference Despite Likeness**

1) Rabbi Simeon bar Yohai (2<sup>nd</sup> CE) provided this QC: 'Not even a bird perishes without the will of heaven, how much less a man.'<sup>257</sup> Although without an actual reference, the background viewpoint is Biblical and concerns Divine oversight of natural events. As a positive, condensed QC, we get the same conclusion: *Like a lesser animal, surely the greater man perishes too, within the (general and current) will of God.* As a physical maximum, death is the severe end of life. We have little reason to seek some decision procedure here, or that the *dayo* is offered as a universal norm (although the end is clearly the same), or that one needs to know anything other than that the prior example elicits a similar result. The

<sup>257</sup> From y. Zevachim 9:1. Probably this should be taken in the sense of God's permissive rather than causative will. In essence it conflates or paraphrases some references, as Koh 3:19, 20. (Verse 16 can apply to the next case.)

severity of the lesser's death links to the same severity in the greater case (S-S). We could reverse the matter in a CQ fashion: *if man dies (permissibly under the will of God), surely birds do too*. If there is doubt about the CQ {S-S} case, there is doubt about the QC (S-S). If the QC is acceptable, is not the CQ too?<sup>258</sup> This case of stringency in the greater allows stringency in the lesser, to make such CQ {S-S} cases logically possible. While death can be a maximum, not all cases are. So one must judge each case individually, rather than presume it is automatically forbidden or allowable. This point of rational allowance applies to proportionality too, as in the upcoming instance.

2) Also related to death, Sion has a *Mishnaic* QC, where the same *dayo* is unlikely, based on this:

[A] more complex, implicational form of *qal vachomer* ... is described in the Encyclopaedia Judaica (8:367), as follows: 'It is stated in Deuteronomy 21:23 that the corpse of a criminal executed by the court must not be left on the gibbet overnight, which R. Meir takes to mean that *Gd* is distressed by the criminal's death.'<sup>259</sup>

Rabbi Meir then argues in a QC manner: 'If God is troubled at the shedding of the blood of the ungodly, how much more at the blood of the righteous!'<sup>260</sup> Rephrased, *since God is grieved when even the wicked die justly, how much more is He grieved when the innocent die unjustly?*<sup>261</sup> Surely, justice carried out against the guilty is less cause for grief than injustice against the innocent (if God can have such "anthropopathic" feelings<sup>262</sup>). Can one seriously argue that God's sadness over injustice against the innocent (greater) is exactly like the just execution of the guilty (lesser)?<sup>263</sup> The unjust person (hurts his prior equality and) is not equal to the just. Equal grief is inappropriate too. The same, severe execution

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<sup>258</sup> We could add the truth that all face natural death. However, we could still object to the comparison: innocent people die unjustly from human acts, direct or indirect, seldom as food, while birds are often killed by another as food; more people die accidentally than birds; man consciously does evil and may deserve death, birds do not.

<sup>259</sup> Sion, 54. God, in more pious circles, is written as G-d or Gd. Even in Hebrew, God's name in its more explicit forms is modified. The abbreviated forms are a carry over from the traditional and some Biblical uses, based on the sense of not taking God's name lightly or irreverently, and thus an interpretation of the commandment.

<sup>260</sup> Sion, 54. Ezek 18:23 is a source of the idea: "Is it really so that I delight in the death of the wicked, says the Lord Himself, and not [rather] that he turn from his ways and live?" (My paraphrase)

<sup>261</sup> Found in mSan 6:5 II, as noted by Samely, 186/7.

<sup>262</sup> Whether or not one agrees with Maimonides' position about God's "simple" nature, strengthened by his Aristotelian leaning, the difference still stands. Even if that simple view is affirmed by Norbert M. Samuelson, *Revelation and the God of Israel* (Cambridge: Cambridge Univ. Press, 2002), despite page 47, see 30-33, 39-41, 172-5, 237, strong objections exist. Anyway, one simply cannot equate opposites; if God could distinguish between cases of justice and injustice, then He would (or ought to) "feel" differently about these two situations.

<sup>263</sup> Although not so stated, the reverse is possible: that God is more grieved with the criminal's death, suffering without any chance of change or rescue, than with the innocent who will be compensated by God for the injustice. Yet this shows non-equality too. God's calculus of the actual worse may be deeper and more enduring than ours.

(S-S) leads to greater grief {L-S}. While it is undoubtedly true that God would be at least as troubled by the death of the innocent as the guilty, this is surely not Meir's point. Despite our inability to account for the greater upset that God might feel, the most sensible view is that of an increase.<sup>264</sup> We could add that feelings differ in kind too: a disturbed relief for the guilty one's demise, while shock for the innocent's.

In the *Mishnah*, if the idea of the same *dayo* works for differing cases and a different tradition for differing cases, why not a justly proportional conclusion in differing cases? (One does see a distinction between conceptual acceptance of this possibility versus practical punishment {*on 'shin*}.) Particularly, here, we can accept that grief is more in one and less in the other (even if the grief may be reversed for a deeper reason). While death is the same, the subjects are contrasted and so beg for more than the same feelings or types of feelings (unless God totally separates feelings from matters of justice).<sup>265</sup> Although these are homiletical stories (*aggadot*) and not religious duties (*halachot*), they show how one is to understand and relate to moral issues, for man is to imitate God ("you shall be holy as I am holy"), even if our human lack is a proportional deficiency vis-à-vis God's perfection.<sup>266</sup>

At this point, as pressure grows against the *dayo*'s superiority, I simply propose that the *dayo* cannot be exclusive in every case, let alone in religious ones, especially when dealing with many practical issues that would make some outcomes unfair or even unbelievable.<sup>267</sup> It is normal that a more severe crime deserves a more severe outcome, although an equal outcome might work (as, *like a man dies, so*

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<sup>264</sup> With (D) for *Disturbance* in the conclusion,  $D_1$  is for death of the guilty and  $D_2$  for the innocent,  $D_2 > D_1$ . Even if God is more upset from an eternal perspective with the fate of the wicked (such that  $D_1 > D_2$ , if his final state is worse, because God ultimately rectifies the injustice done to the innocent), this is still a non-equality.

<sup>265</sup> I think most would have a problem with God having the same feelings about every matter and that they are totally separated from judging degrees of guilt. That would make us somewhat defective at best or God strange at worst. This is despite the need for objectivity by a judge. And we almost surely can gauge the different feelings qualitatively and by some quantitative measure: shock at the death of an innocent (say a raped child to name a specific horror) and some sense of relief when the perpetrator is punished (perhaps not to hurt another again).

<sup>266</sup> Lev 11: 44, 45. The context has to do with unclean things, but by extension, it includes avoiding wrong things, while observing good ones. As a conceptual *dayo*: if God views it so, surely, humans too.

<sup>267</sup> Other Rabbinic proportional QC's are evident, such as this one from Sifra (a Midrashic Commentary on Leviticus, c. 400 CE). The quote of Sifra 27a comes from C.G. Montefiore and H. Loewe, *A Rabbinic Anthology* (New York: Schocken, 1974), 205, concerning Adam's sin and one who repents and receives atonement for sin.

R. Jose said: ...Now which is greater, the attribute of reward (lit., of goodness) or that of punishment? Surely the attribute of reward. If, then, the attribute of punishment, which is less, caused all those deaths, of him who repents from sin, and fasts on the Day of Atonements, how much more will he bring blessing (...*zekut*—being declared innocent) to himself and all his generations to the end of time.

Even if one wants to say that the quantity is the same between punishment and reward, the quality is opposite.

*too a lesser bird*). Thus, the QC/CQ table above can allow more variants than Maccoby does. Since the *Mishnah* sometimes employs another rule of Biblical interpretation with the QC, I introduce this stricter analogy before I give an example of it in a famous, Rabbinic debate.

### **1) Another Jewish Analogy: Equal Judgements (*G'zera Shava*)**

The *G'zera Shava* (GS) is also one of the original seven rules of Biblical interpretation, along with the *Qal VaChomer*, ascribed to Hillel (the Elder, ca. 30 BCE).<sup>268</sup> By these rules, one can understand the Scripture and apply its teachings to life. Specifically, the *G'zera Shava* (GS) is an equivalent judgement that one can make between highly comparable cases that fills in a detail from one to the other. As few Biblical passages, even when alike, are exact copies,<sup>269</sup> when they look very similar, but have either a gap or a new detail, it calls for some sort of comparative resolution. It is an analogy between passages.

In Chapter 2, we noted that the *a fortiori* is analogical in form, although it is stronger than the common analogy (OA). Maccoby and Samely, among other authors, construe the Jewish QC as an analogical form of reasoning, rather than as something entirely new and independent. As analogies, the QC and GS relate. Weiss, however, takes a slightly different tack by saying that the QC resembles the GS analogy.<sup>270</sup> In some cases, a GS can accompany and support a QC in a larger argument to resolve specific problems. The GS differs somewhat from the QC in that the GS is stricter than either the QC or the normal analogy. These assertions necessitate a further exploration of the GS, after which we can compare similarities and differences between the ordinary analogy (OA), the *Qal VaChomer* (QC), and the *G'zera Shava* (GS).<sup>271</sup>

The GS analogy correlates similar terms, phrases, meanings, or contexts from one Biblical passage to another. However, are the passages about the same or similar things or is joining them too tenuous?

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<sup>268</sup> These 7 rules are enunciated in Tosefta, Sanhedrin 9:11 and the Sifra on Leviticus, forming the basis of Yishmael's later, more detailed 13, and followed by an even more elaborate 32 rules.

<sup>269</sup> Exact repetition would be largely pointless, other than to emphasize something or to create redundancy to cover for likely, future, copying errors.

<sup>270</sup> Moshe Weiss, 'The Gezera Shava and the Qal-VaChomer in the Explicit Discussions of Bet Shammai and Bet Hillel.' Bar Ilan University Website. Basically, the QC compares legal properties, the GS, Scriptural words.

<sup>271</sup> There are distinctions in analogies: the common analogy, the natural *a fortiori*, the religious QC, and the GS.

In many instances, the occurrence of the same words or expressions in two passages and corresponding contexts signal that they are probably talking about similar matters. Even if the contexts and details differ slightly between disparate passages, a relationship may still be possible. In addition, passages often reinforce each other. Alternatively, one case may be more significant or fuller; or one might limit or expand the other (perhaps as spelled out by other rules). One can draw further inferences too. While the GS is not a certain analogy, it can be sensible to link similar cases and fill in or limit corresponding parts, as long as one avoids hasty conclusions.<sup>272</sup> Where things are largely alike, then, association is reasonable and the information transfer can proceed. Thus, the GS rule explicitly formalizes the introduction of a missing, important detail, term, or context from one case to the other.

While the GS makes sense with sufficient similarity, it does not guarantee that one forges a correct link or makes a true comparison. Even with identical words, if the contexts are completely different, the relationship may be remote or unwarranted. The GS is just an analogy: when highly similar, it usually works; but it can fail due to superficial likenesses or by not appreciating the differing contexts. Where matters remain uncertain, recourse to a cardinal passage, an authoritative, Rabbinic interpretation, other principles, traditionally accepted, religious belief or practice, or a decisive argument can help. In like manner, when a QC argument appears weak, a good GS can back it up. Before we show this supportive role of a GS, however, let us see how the GS operates in a comparison of two similar passages.

The *Mekhilta* commentary on Exodus (written near 200 CE, but likely an old tradition by Hillel's time) uses a *G'zera Shava* analogy to resolve a missing detail. Two passages, Ex. 22:15-16 and Dt. 22:28-29, show the common phrase, 'a virgin to whom he is not engaged' (*betula asher loh orasah*); yet slight differences occur between the first case for seduction and the second for rape. Similarities continue with the subsequent marriage and financial penalty paid to the father for the disgrace involved. They are highly alike, yet the amount of the penalty (50 silver coins) in the first case is missing; so by GS, it is gleaned from the other case. To infer the missing amount, we compare them first:

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<sup>272</sup> One must differentiate between metaphorical (*derash or midrash*) and literal meanings (*peshat*), the latter as definitive. Still, the *halacha* may follow the former, as in "an eye for an eye." See Hoenig, 58-60.

**P1 Given Exodus:** a (man not engaged to virgin), b (virgin seduced), c (pay father – if/as he demands, although might possibly be foregone), d (an unspecified fine), e (marriage).

**P2 Given Deut:** a (man not engaged to virgin), b\* (virgin raped; not identical to b, but alike enough), c (pay father without qualification), d\* (adds to d an actual amount, 50 silver coins), e\* (adds to marriage in e that he cannot divorce her).

**C: Exodus:** by GS, the fine, d, in case P1 should be normalized as 50 silver coins too, as d\* in P2.

By the GS rule, the conclusion in the parallel instance accords with the same, given, 50 coins amount.

The GS method is sufficiently clear. Shortly, in Chapter 4, I shall compare the GS and QC. For now, let us see how the *Mishnaic* QC is woven into a larger debate, to stake out a position or resolve an actual issue, and how a GS can come to its aid (as in the second of the upcoming examples).

### **m) Two Famous Examples of *Mishnaic* QC's in Debate**

Two oft-quoted instances show how the *Mishnaic* QC argument is stated, challenged, and defended. The first exchange is between the *Sadducees* (priestly families that included the high priesthood in the second Temple period, about 165 BCE - 70 CE) and the *Pharisees* (the main school of religious tradition, which grew up during the same period, but survived the Temple's destruction largely formed the "school" of Rabbis that led to the *Mishnah*).<sup>273</sup> The second interaction occurs between Hillel (the Elder, ca. 30 BCE) and the more traditional school of the *b'nei Beitar*.<sup>274</sup> Both intend to settle important religious matters, authoritatively, because the Bible is not clear on them.

#### **1) Sadducees and Pharisees**

Since the two, main, religious parties, the Sadducees and the Pharisees, disagreed on many issues, it is not surprising that each constructed arguments that upheld their respective positions, while attempting to refute those of the other. One such controversy develops over an extension of a Biblical passage. In Exodus, it tells how to deal with some disputes that arose in the daily life of a largely agrarian society.

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<sup>273</sup> The Sadducees (*Tzadukim*) largely composed and supported the priestly, Hashmonean/Maccabean descendants, who had revolted and defeated the Syro-Greek conquerors and Hellenistic sympathizers in Israel, ca. 170-165 BCE. The more traditional Pharisees (*P'rushim*) rejected Sadducean pretensions with respect to Maccabean, political kingship and claims to the high priesthood, which had no Biblical endorsement, for they did not descend from either Davidic or high-priestly lines. A group of objectors, the Essene/Dead Sea Sect(s), wanted both a true high priest and legitimate king. (Other groups at the time held a variety of beliefs and practices.) After the destruction, the Pharisees emerged as dominant, to unify belief and practice under their own, Rabbinic rules.

<sup>274</sup> The *b'nei Beitara* (Bathyra) are "sons" or persons from a place called Beit Ara, or followers of a school, the House of Ara (Light/Enlightened) or Ira (Reverence), signifying their character or else the name of their teacher.

One example concerns a goring bull (Ex 21:28-36). If the animal accidentally caused death, it was to be killed, incurring obvious loss to the owner (who might pay damages in a less serious case). However, if the animal was already known to be dangerous and was still unrestrained, not only would it be killed, but also the owner would suffer death for his criminal neglect, unless a monetary equivalent was agreed upon. Yet there is nothing about damage caused by slaves.<sup>275</sup> Who was responsible then—slave, owner, or both? Since there was already a notion of responsibility for damage caused by animals, it provided a basis for a further interpretation about liability for damage incurred by a slave.<sup>276</sup>

Arguing by means of a QC, the Sadducees claimed that slave owners are also responsible for their slaves (the greater), who are more able to obey their masters than animals (the lesser). Moreover, they said that according to Scriptural law, owners were actually obliged to pay for the damage caused by the animals. So, presumably, as the masters failed to exercise due caution by not instructing or controlling their slaves properly, they are to be liable. It is also a *dayo* claim for a minimum, equivalent liability.

This QC, the Pharisees would reject.<sup>277</sup> They only held owners liable for damage caused by their domesticated animals and not by their slaves. However, the Pharisees did not actually present an opposing argument or a QC. Yet the record is incomplete. Thus, we too, as *Talmudic* students do, must reason this out, based on the given information or on other things that one should know. We can try to discover how the Pharisees might have broken the Sadducees' QC. The refutation by the Pharisees seems possible on two counts: one can deny the premises are applicable (as just unrelated cases); or one can show that the conclusion is false (and hence, the Sadducees' argument is invalid).<sup>278</sup>

One can readily surmise what counter-arguments might defeat the QC. Whereas animals just act naturally and must be kept continually under some form of control, which when not, the owner could be

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<sup>275</sup> In ancient Israel, slaves were more like servants, served up to six years (unless they chose longer), and released with enough means to establish themselves. Serious consequences fell on failure to uphold these laws of release.

<sup>276</sup> See Daube's discussion of Roman and Rabbinic ways of dealing with such things in 'Damnum and Nezeq' in *Collected Works of David Daube*, 245-56, and references to the Talmud (m. B. Kama {or Qama} 1:1, 2:6).

<sup>277</sup> From mYad 4:7. Samely, abbreviated from 182-4. Also see Daube 186-7, 193-8.

<sup>278</sup> Simplified, the QC's contrast: Sadducees: with no duty to animals {A}, owners must pay damages (the extra factor); with duty to slaves {B} and slaves greater than animals {B > A}, people must pay damages for them too. Pharisees: people pay for animal damage; obligations towards more controllable animals are greater than with less controllable slaves (A > B); so damages (extra factor) are already covered. This neutralized the Sadducees' QC.



held directly accountable for the damages, a slave may deliberately disobey the master, freeing the owner from personal responsibility. In essence, then, these are differing cases. On the other hand, if the slave was responsible to control an animal, the owner had to pay for the damage the animal caused, but in turn probably exacted it from the slave, thereby ending up even. Yet the owner paid for the animal's damage, not the slave's, which just reaffirmed the tradition not the QC. If the slave's direct action caused harm, one assumes, s/he would be punished or fined as anyone else, citizen, foreigner, or free who broke the law that covered all alike.<sup>279</sup> So again, as the owner need not pay when the slave pays, the QC is invalid because its conclusion is false. In effect, the Sadducees' QC is neither helpful nor correct: on one hand, it conflates distinct issues (animals and slaves); on the other, the same results occur anyway in traditional practice, without the QC claim. That is, monetarily, slaves pay directly to the victim or owner for a deliberate act or plain irresponsibility; or the owner pays directly for the animal's damage or indirectly when the slave is punished and he bears the slave's lost productivity.<sup>280</sup> Thus, the Pharisees could neutralize the Sadducees' QC as being misconceived or superfluous.

Even behind a QC's rebuttal, there is the underlying, implicit, abductive principle found in a QC: a better argument is more convincing or based on a better authority (*if A's positive, key feature is stronger than B's, then A is a better choice than B*).<sup>281</sup> In the next example, we find two, complex exchanges: a GS comes to the aid of a QC (*(GS + QC) is stronger than the QC alone*); then, together with the traditional ruling (*GS + QC + Tradition is stronger still*), the cumulative effect carries the assertion.

## **2) Hillel's QC Claim Rejected, then Accepted with Proper Backing**

Since Hillel is the first official formulator of the *Tanach's* rules of interpretation, his actual use of the QC argument, as the initial one of his set of seven, is worth examining. The controversy between Hillel and his interlocutors that requires resolution concerns various religious offerings not fully detailed in the Biblical text; specifically, these concern the times and priority of implementation. The religious

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<sup>279</sup> Despite the differences in persons and payments for citizen, foreigner, or slave, the law and justice that falls on the greater, would surely fall on the lesser. See Lev 24:22 and Num 9:14.

<sup>280</sup> Further, as Daube and Finklestein suggest, a poorer Pharisee could be ruined by a malicious slave, unlike the wealthier Sadducee who could afford the fine, more easily protect his property, or collect damages (Daube, 197).

<sup>281</sup> See Toulmin, Rieke, Janik in appendix A1, where two arguments are compared as to their respective strengths.

law called for various official sacrifices, some performed daily; but for the special Passover offerings, the requirements are not as clearly stated, especially about possible conflicts between these and others.

One Biblical passage delineates that the regular daily sacrifices are offered even on Sabbath, the weekly day of rest. Another passage mentions the special Passover holiday sacrifice; but it does not state its permissibility on the Sabbath.<sup>282</sup> Thus, when Passover and Sabbath coincide, one must decide first, which is more important, the daily sacrifice or the Passover? Then second, if one of them is more important, does it ‘override’ the other?<sup>283</sup> Specifically, if the Passover offering is primary or at least equal, is it performed on a Sabbath too, just like the regular daily offering? Apparently, Hillel wants to establish that the Passover sacrifice is more important and so can occur on the Sabbath.

Hillel begins his argument that the Passover sacrifice occurs on the Sabbath day by means of an analogy between the two similar passages, using the *G’zera Shava* (GS) rule of interpretation.<sup>284</sup> The common phrase “in its time” (*b’moado*) establishes that the GS analogy is possible, as it occurs in both passages for everyday sacrifices of Numbers 28 and for Passover ones of Numbers 9. This GS pattern gives him the conclusion (C\*) for the missing detail of the latter passage as follows:

<u>Num 28</u>	<u>Num 9</u>
Given1: Daily offering	Given1*: Passover offering
<u>Given2: “in its time”</u>	<u>Given2*: “in its time”</u>
Given C: Daily time includes Sabbath (a rest day)	C*: <i>Passover time includes Sabbath.</i> [by GS]

Since each offering happens “at its appointed time” (*b’moado*), and the daily offering time includes the Sabbath, by means of the GS, the Passover type occurs on Sabbath too (the missing fact of Num 9).<sup>285</sup>

<sup>282</sup> Num 9:3-13: “...the Passover [offering] in its time...” and for the daily sacrifices, Num 28:2-10: “...in its time...two lambs of a year old are to be offered daily...also on the Sabbath.” The Passover holiday sacrifice commemorated the crowning means by which the Israeli people were finally able to leave Egyptian enslavement.

<sup>283</sup> See Menachem Fisch, *Rational Rabbis* (Bloomington & Indianapolis: Indiana University Press, 1997), 97-98, referring to Pes 6:1. To override may be: to displace entirely, to substitute by performing both functions, to come before, after, or else simultaneously with the Sabbath one.

<sup>284</sup> Again, the *G’zera Shava* or GS (Equal Judgements) meant that similar terms or phrases in differing places, despite some variations, were analogous, so that one could learn something missing or new from either.

<sup>285</sup> P1: Sabbath offering (SO) in its time (T); P2: Passover offering (PO) in its time (T). In P1, T is a Sabbath, so in P2, T is a Sabbath too, by the GS rule. The problem of a specific time between the solar and lunar calendars is solved because the Passover (= *Paschal*) offering can occur on any day of the week, including Sabbath, rather than fixing the solar date that would push the lunar one out of its place. Passover occurs within the spring season of the new year (of *Aviv*, later called *Nisan*, usually in April-May) in remembrance of the culminating event of the Egyptian exodus, rather than any other time or during the usual, civil year.

Only Hillel's second argument is a QC, however. The reason for the order, Fisch states, is that reasoning by a GS was considered to be stronger than by a QC, because of the former's Biblical grounding in two (or more) passages, so that it generally overruled the latter in cases of conflict.<sup>286</sup> If the GS was sufficient, a QC was unnecessary. Yet if a GS was inconclusive, as doubt remained about the controversy, then a QC could make the telling difference. So while this GS precedes the QC, it is the QC as "employed by Hillel" to answer a response that finally tips the scale in favour of Hillel's claim.<sup>287</sup>

Thus to strengthen this GS claim, Hillel constructs a QC argument, comparing the less serious to the more serious issue: 'If the [daily] *Tamid*-offering, which does not entail a divine punishment of *Kareth* [cut off]<sup>288</sup> is brought on the Sabbath, the *Paschal* (Passover) lamb, which entails a divine punishment of *Kareth* surely can be brought on the Sabbath.' The QC with two premises and a conclusion follows:

- P1: The (less serious) ordinary offering is performed on the Sabbath;
- P2: A Passover offering, as it carries a maximum penalty for non-compliance, is more onerous in character than an ordinary one without that penalty;
- C: Therefore, the more serious Passover offering should be performed on the Sabbath too.

Noteworthy, although the Passover is more important, the same conclusion follows.<sup>289</sup>

Despite the combined strength of the GS and QC arguments, each is subject to challenge. The first response is a general objection to GS analogies: since one can compare any common words or phrases or similar contexts, the range of potential GS's is huge, with many simply unjustified. Thus, in order to bring some order and control over the rampant possibilities of new *halachot* (religious practices) being instituted, something would need to be invoked to halt unintended, impractical, far-fetched, or plainly wrong ideas. It is, therefore, not enough to just argue by a means of a GS, one also needed a Rabbinic authority to back up the suggested view as Biblically and traditionally correct.

The second objection relates to this problem of authority, but goes deeper than Hillel's specific GS: not only did he not quote an authority for his GS, or else forgot it, he also acted arrogantly on his own

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<sup>286</sup> Fisch, *Rational Rabbis*, 99-102, n.123 & 131, 224-5. See also Hirschensohn, 60, for a discussion of what type of interpretation and argument takes precedent and what needs support. One is to judge conservatively.

<sup>287</sup> Asher Finkel, *The Pharisees and the Teacher of Nazareth* (Leiden/Koln: E.J. Brill, 1974), 123-4.

<sup>288</sup> Literally, *to be cut off* can mean exclusion, exile, or death, perhaps implying a premature death or its equivalent.

<sup>289</sup> Yet, if asked about offerings and punishments, we could construct a QC that had a proportional increase, although it is unnecessary, as it is already stated.

authority.<sup>290</sup> According to Fisch, however, it was because Hillel relied on his own reasoning, as shown by the QC, instead of on named authorities, perhaps having forgotten them, that he was given the highest position as chairman of the religious, Jewish court in Israel.<sup>291</sup> Fisch's point is that reason can back up an accepted, traditional position, rather than rely only on (imperfect) memory.

Hillel's premises in the GS and QC argument were open to specific attacks. One could claim an improper, GS analogy because of significant differences between the Passover and ordinary offerings. For instance, the daily offerings were performed much more frequently than the Passover ones (normally just once a year); and the daily were wholly burnt, while the latter eaten (and only the remains burnt). So these cases were only superficially alike and the GS doubtful. Additionally, there was a counter QC: the daily, more frequent and wholly burnt offerings took precedence over the Passover ones, possibly to prevent the latter on the Sabbath. Still, one had a QC as a rejoinder: the numerical total of Passover offerings likely far exceeded all the regular, daily ones, for the entire nation actively participated in the Passover. Thus, if quantity was the operative factor, the retort of greater Passover numbers counters the claim of more frequent daily offerings. Further, if severity was the key issue, as Hillel insisted, then the Passover offerings (in the re-invocation and remembrance of national liberation by God), which carried excommunication for the non-participant, were more onerous than the regular, daily offerings made by the priests on everyone's behalf. Additionally, Passover made the daily offerings possible.<sup>292</sup> Yet if neither side is obviously stronger, more is required to tip the scales.

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<sup>290</sup> Such arrogance was contrary to the assumed humility everywhere expressed in the *Talmud*, a key factor as to why Hillel's interpretations usually carried the day over the more severe requirements and better logic of Shammai and his school. Perhaps one might surmise that because the young Hillel was humbled by this failure and thus became humble, he got the job as President of the religious court, according to the Babylonian tradition. Even as President, while chiding others for forgetting the official sayings of former masters (Shemaya and Avtalyon), he was in turn embarrassed by the question having himself forgotten and only later recalled them after seeing the practice of the people. On the other hand, the earlier, Jerusalem Talmud has the QC first and the GS after, as if a QC has priority. Also, Hillel's appointment is only a consequent of his acknowledgement of the proper tradition of Shemaya and Avtalyon, and thus an advocate of conservative precedent over freer, rational novelty. See Fisch, 99, 102; and regarding Hillel's humility, see 211, n.17. In fact, there is an apparent Divine approval for Hillel's ability to fix the halacha/practice due to his humility (Eruvin: 13, b). Also found in TosHag 2:11.

<sup>291</sup> Fisch, *Rational Rabbis*, 99, and 103-4 for the next comment too.

<sup>292</sup> That also illustrates their differences, but not enough to dismiss the comparison. See Fisch, 101-2, footnotes 133, 134, on page 225. Not everything about the exchange occurs in the Talmud (initially oral). Arguably, just as the Bible, as a handy text, had to be of manageable length to provide only key incidents, examples, and basic

When counter-arguments stalemate or defeat arguments, one requires an unassailable authority to break the impasse or overcome defeat. To such Hillel apparently reverted. According to a tradition (in the *Tosefta*), after presenting two GS's and a QC, Hillel avers to his teachers (presumably Shemaya and Avtalyon), and only then gets the top job, says Fisch. In effect, he concedes that the final authority is tradition, not reason, although reason is useful where memory fails or information is lacking.<sup>293</sup>

On this final point, we see the delicate balance that the *Mishnah's* Rabbis made between tradition and reason. Their orientation was towards accepted understanding and proper religious practice, not just reasoning with conceptual ideas. For another analysis of what the *Tannaim* of the *Mishnah* did with the QC, I turn to Samely, interspersed with some relevant comments made by other Jewish scholars.<sup>294</sup>

### 3.2 *Mishnaic* QC Uses

As already mentioned, the *Tannaim* employed the QC argument in several ways: to probe, question, challenge, defend, stalemate, and refute positions, sometimes augmented with other arguments, appeals to authority, or prior interpretations. This wide range of QC's reflected the expanding role of reason in Jewish thought. At the same time in *Mishnaic* thinking, while the QC offered some logical strength for a new position, the final ruling in a matter usually concurred with the past, as noted. However, although a traditional judgement functioned as if fixed, potentially, convincing reasons could lead to an amendment or replacement—if made by a majority of more numerous judges with greater religious authority. New

principles, so too the Talmud, already massive in size. Inclusion, even of every basic possibility, is impractical if not impossible. The above points of the various arguments would be left to the teacher and students to develop, having already been given enough clues. See David Kraemer, *The Mind of the Talmud* (Oxford: Oxford University Press, 1990), 70. While one can suggest that the Talmudic editors really missed spelling out such opposing possibilities, by just noting their sophisticated level of argumentation and analysis, this claim is less likely than that it was left to pedagogy. Fisch's assertion of an anti-traditionalist, editorial group that approved of certain "subversive" views about the results of reasoning can be boosted by a similar balance of probabilities (approving of reason rather than just tradition). If anything, this last argument is the unstated reasoning from Scripture, for the daily sacrifices depended on the prior, Passover sacrifices.

<sup>293</sup> For Fisch's account, 103-4. For the additional points about Akiva's reasoning powers where memory easily fails, reasoning can be placed in the service of the overall tendency to support earlier knowledge, see Fisch, 106-110. Before Fisch studied the matter, Daube also sees Hillel's example as one of reason, via the hermeneutic rules, that coincides with tradition and Scripture. Ongoing interpretation matches tradition as the Oral Torah (Law, later understood as the Talmud) that derives from the Biblical, written Torah. See Daube, 'Rabbinic Methods', 338-9.

<sup>294</sup> Many have studied the QC, but only some are included. (Not referred to, for example, are Safrai and Stern.)

situations allowed some latitude for semi-novel interpretations.<sup>295</sup> Yet substantial changes seldom occurred in the *Talmudic* period or the centuries thereafter. Despite this overall conservatism (partly to maintain Jewish unity),<sup>296</sup> scholars of opposing sides in debates relied on the QC argument's rationale.

#### a) Samely's Assessment of the *Mishnaic* QC

Samely assesses how *Mishnaic* thought treats the QC, albeit from his linguistic perspective.<sup>297</sup> Accordingly, he calls this Rabbinic QC rule a hermeneutic resource that is analogical in form. Yet Samely recognizes that the QC often had the plainly pragmatic aim of guiding the Jewish people in their day-to-day lives. Aside from its practical uses, Samely says that the Jewish QC performs in three other main ways: 1) hermeneutically, 2) persuasively (in a rhetorical way), and 3) didactically. As a hermeneutic rule of Scripture, one assumes its use is correct. As a means of persuasion, it presents various views, brings to light possible objections, and then provides answers. Also didactically, students learn "proper" reasoning in the scholarly debates to arrive at the official conclusion (or non-resolution).

In the *Mishnah's* Rabbinic debates, the QC argument primarily challenges an accepted position, although it could also serve as a shield in the hands of a tradition's defenders. For the most part, Samely remarks that "the *Mishnah* uses the *a fortiori* for probing the consistency of a normative position, or the exploring of the consequences, than for categorically determining it."<sup>298</sup> The QC may come in the form of a hypothetical conditional ('if...then'), which is then "combined with a negated, rhetorical question (anticipating the answer 'yes')." On its own, however, the *Mishnaic* QC is seldom able to establish a point without the help of an authoritative tradition or Biblical passage.<sup>299</sup> Frequently a passage supports

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<sup>295</sup> This is a much debated, complex subject in some scholarly Jewish circles today. The tendency of smoothing over disagreements during the progressive development of the Talmud (a set of religiously based, social rules and commentaries) still left standing the intellectual debates about what various Rabbis believed. (See Jacobs, *Rabbinic Thought*, concerning the Talmud's compositional process.) One view is that the majority position was the proper, traditional interpretation of Jewish teaching, and kept the record of the minority position(s) as what failed. Another view is that preservation of the minority opinion was for its potential authentication by a more authoritative, wiser group of future scholars.

<sup>296</sup> Hirschenson, 86.

<sup>297</sup> Samely, *Rabbinic Interpretation of Scripture in the Mishnah*, 174-193.

<sup>298</sup> Samely, 175/6.

<sup>299</sup> The relating of one or more Biblical passages may serve to extend or limit the general or particular rule involved. Further, unless a Biblical example could be taken as a universal law or paradigm case, it must be seen as

the key premise, although verses may undergird both the premise(s) and the conclusion.<sup>300</sup> Even if the challenger's argument had Biblical and Rabbinic support, still the defender might be able to turn the tables by pulling out a trump verse, higher authority, traditional precedent, additional argument, or other QC. If a repartee or reasons are as strong as or stronger than the attacking QC, it is stymied—the presumption rests in favour of the tradition. Thus if clear Biblical grounds or prior traditions exist for a belief or practice, the QC cannot overturn it. In addition, the premise of the argument might be either unacceptable or unrelated to the conclusion. In other instances, QC's with undesirable consequences get rejected. Although often raised in a dispute as a preliminary, theoretical position, the same proposer may even refute his own QC. In that a QC may appear to be persuasive, but then is overturned, it becomes an occasion to re-evaluate previously unemphasized aspects of the passage or else serves as an interim foil to get at a deeper truth or a new solution. In the last analysis, the *Mishnaic* QC does not create any new information; it is only a tool to uncover existing or hidden truths of Scripture or tradition. This is because the QC argument's conclusion derives from a known, prior truth.

Overall, one receives the impression that the *a fortiori* belongs to the generally quite prominent dimension of the *Mishnah* which supplements authoritative solutions by heuristic probing and didactic presentation.<sup>301</sup>

Earlier, we compared the *a fortiori* with analogy in general. Samely's comparison of the *Mishnaic* QC with the strict form of Jewish analogy, the *G'zera Shava*, will lead us into a more critical discussion of these two analogies as being similar yet different (to be brought out further in Chapter 4).

#### **b) Samely's Analysis of the QC as Analogical**

Samely, like others, affirms that the *a fortiori* follows analogical form.<sup>302</sup> Yet he too points out that the *a fortiori*, *Mishnaic* QC differs from the strict, Jewish analogy, the *G'zera Shava* (GS).

particular, which may still be inductively generalized. Such general or particular Biblical or other statements could serve as premises in an *a fortiori* argument. See Sion too, 57-60.

<sup>300</sup> Samely makes this unclear distinction: "The overall form of the *a fortiori* is not: 'Scripture says x, *a fortiori* does it say y', but rather: 'x is the case (as Scripture says...), *a fortiori* is y the case.'" Samely, 175. What Samely is saying here too briefly of the general *Mishnaic* type is best divided between the given and the conclusion: the Rabbis take an example, x, in that Scripture says it; then they draw their *a fortiori* conclusion, rather than that the whole QC argument is explicitly stated as such in the Scriptures. Since the QC often has to be read into the passage, Malachi 1:6 could be a QC, although on the face of it is a GS.

<sup>301</sup> Samely, 190-193.

Just as in the *a fortiori* argument, analogical inferences appear in the Mishnah with and without explicit links to Scriptural wording. . . . But in contrast to the *a fortiori*, the analogical comparison of the ANALOGY and KEYING resources may take as its starting-point, and sole *raison-d'etre*, the *textual* relation in scripture of the two subjects. The analogy becomes *wholly* a textual resource, so to speak, in a way in which the Mishnaic *a fortiori* argument never does.<sup>303</sup>

This dense paragraph needs an explanation to get at what Samely means regarding both the QC and GS.

According to Samely, while there are various Jewish analogies, here he refers to two kinds: a) the purely Scriptural one, the GS, and b) the looser one, the QC, both “hermeneutical textual resources.”

While the GS is solely about Scripture, a *Mishnaic* QC is less strict. That is, the QC uses Scripture either directly, as paraphrases, or else as indirect ideas. Although similar, then, each hermeneutic rule in the *Mishnah* is still distinct. Specifically, the main aim of the Scriptural GS is to discover how one is to understand Biblical words in the light of other textual statements of the Bible on the same subject.

Quotes often come in chronological order, although they need not be.<sup>304</sup> In contrast, the *Mishnaic* QC analogy need not always be involved with actual, Scriptural words: “analogies without [Scriptural] words tend to start from an assumption that two subjects fall in the same category with regard to some *halakhic* feature, so that a different *halakhic* feature can be transferred from one to the other.”<sup>305</sup>

In parallel with the *Mishnaic* QC is the QC of ordinary reason, although the *Tannaim* did not accept it for *halachic* use in the *Mishnah*. This ordinary QC goes beyond the basic, given statements, to arrive at extensions or conclusions theoretically implied. Apart from purely Scriptural GS (and other hermeneutical analogies), we can expand the range of QC’s beyond *Mishnaic* allowance. There are a) Scriptural QC’s, b) variable *Mishnaic* QC’s, and c) *Amoraic* QC’s, although the last are not Samely’s concern, for he is interested in the *Mishnaic* kind primarily.<sup>306</sup> In Chapter 4, I compare the GS and

<sup>302</sup> Samely, 15. The *a fortiori* is an analogical, hermeneutical procedure. Pure scriptural analogy, the GS, is also *Mishnaic*; but the QC in the *Mishnaic* use need not just use scripture. I use Samely’s terms although they are not as clearly stated by him as I have written them, but assuming that is what he meant.

<sup>303</sup> Samely, 195.

<sup>304</sup> In a GS, one can go from a prior to later passage, or vice versa, as well as make other connections.

<sup>305</sup> Samely, 197. The variant *halakhic* or *halachic* is guttural ‘ch’: a traditional rule or practice the Rabbis promote.

<sup>306</sup> To these one could add related QC analogies as possibilities: Scriptural to secular/general, secular/general to Scriptural, *Mishnaic* or Traditional to secular/general, etc. Further distinctions, especially in the Scriptures, by separating out natural, human issues and those dealing with Divine relations, yield even more types.



*Mishnaic* QC analogies further to expose a serious problem, especially with Maccoby's construal of the QC argument's, repeated conclusion.

For now, let us set out the *a fortiori* in Samely's analogical format, based upon his linguistic analysis. The QC (Analogy 4.2 as he calls it), runs somewhat simplified like this:<sup>307</sup>

If norm *n*, belonging to category *N* that is lower on scale *X*, has predicate *A*,  
then norm *m*, of category *M*, higher on scale *X*, logically has predicate *A* too.

The graded categories of *N* and *M* (general items) with their allocated norms of *n* and *m* (actual items) have places along a common, dimensional scale *X*, which is the operative factor that relates them.<sup>308</sup> In the *Mishnah*, these norms are moral and religious requirements evidenced in actions. Predicate *A* is the given and concluding feature or property. (I take his term “logically” to mean “with good reason,” rather than as a deductive truth.) The *Mishnaic*, textual structure orders its components into what Samely sets up as *n-N-A* and *m-M-A* sequences that I organize.<sup>309</sup> Samely utilizes this *Mishnaic* QC:

And if the person who separates from the blood, from which man recoils, receives a reward; then the person who separates from robbery and forbidden sexual relations, which man covets and desires, how much more so will he merit for himself and his generations and the generations of generations of his generations until the end of all generations!<sup>310</sup>

To conform this to Samely's overall format for the QC ((*n-N-A*) (*m-M-A*)), we write as follows: If norm/action **n** (*abstaining from blood*) in category **N** (*something typically repulsive anyway—so less tempting*) on scale **X** (*of bad things*) gets **A** (*a good result*), then surely norm/action **m** (*avoiding theft/illicit sex*) in category **M** (*a more desired, but bad thing—and so more tempting*) on **X** (*bad things*) gets **A** (*a good result—if it were a dayo*) or **A+** (*better result—as explicitly stated*). Next, I condense this into his general structure with its norm/act to consequence relation and then fill in the example's details.

Diagrammed as *n-N-A* and *m-M-A\**, along a unifying scale, *X*, Samely's QC structure emerges:

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<sup>307</sup> In his appendix (413-4), among all the other hermeneutic resources (some cooperate), Samely lists the various analogical procedures of the *Mishnah* as he has defined them for the *a fortiori*. See my Appendix.

<sup>308</sup> Samely, 178. I have adapted this definition earlier in mapping out the argument, and do so again shortly.

<sup>309</sup> This is a scaled-down version of the example and analysis that Samely has on 179, 180, taken from mMak 3:15 and Deut. 12:23-25. In n.9, on 177, he also gives a formula from Oxford logician, J. Cohen, for the *a fortiori* apparently as this: (n)[(x)(y)(F(x,y) = n → G(x,y) =<sup>m</sup>) → (a)(b)(F(a,b) > n → G(a,b) ><sup>m</sup>)]. To decipher this, I read: For all n, and for any x and y, if they have a feature of equality in n, then another factor is equal to it as m, so that for any actual cases a and b, with the feature between them greater than n, then the other factor is greater as m.

<sup>310</sup> Samely, 179, taken from mMak 3:15 (IV).

**Diagram 7: n-N-A to m-M-A\* along Scale X**

	<b>1. General Structure</b>	<b>n-N-A</b>	<b>to</b>	<b>m-M-A*</b>	
	Categories:	<b>N</b>		<b>M</b>	
X)	Scale <b>X</b> (N is lower than M on X):	---- ----- ----->			(direction of increase on X)
	Norm(s) or Action(s):	<b>n</b>		<b>m</b>	
	Result:	<b>A</b>		<b>A</b> or <b>A+</b> ( <b>A-</b> for opposite sense)	
	<b>2. Particular Example</b>				
	Categories:	<b>N: Bad, Repulsive Anyway</b>		<b>M: Bad, yet more Desirable</b>	
	Scale <b>X</b> ( <i>Bad Things</i> ):	--- ---worse/harder to do----- ----->less bad/easier to do			
	Norm(s) or Action(s):	<b>n: abstains from blood</b>		<b>m: abstains from theft (or illicit sex)</b>	
	Result:	<b>A: reward</b>		<b>A: same or A+: higher reward</b>	

X joins together the case types M and N. The X factor of similarity, sharing, or group association binds the two things in a relation, in order to legitimately compare and resolve them. For Samely, this comparative dimension X is either implicit or explicit in the idea of M being higher (or more onerous than) N. Samely puts forward this unifying X dimension, an unknown premise within the Rabbinic worldview, as the most reasonable choice in that it is logically “necessary for the argument to work.” Additionally, the missing premise, with X, makes the argument an Aristotelian ‘enthymeme.’<sup>311</sup> Regarding the result, A\* stands for all possible conclusions, either as A (the same), A+ (more), or A- (less).<sup>312</sup> In the actual example, A+ is the obvious answer called for, not just A (as Samely has it).

Samely’s *Mishnaic* example argues for a much greater reward for only somewhat more meritorious behaviour. If one abstains from what is normally abhorrent and receives a reward, resistance to a real temptation that merits a never-ending reward, both for himself and all his descendents, is a far greater

<sup>311</sup> Samely, 180-182. This common dimension X is similar to Sion’s method, although here the degrees are clearer.

<sup>312</sup> In making judgements or decisions about some sensible goal or with good reason (legal, moral, or social), one might justifiably impose the same feature “A.” We might even prefer an ideal “ought”, as “A” in the first case, to also justify the result of “A” in the second: *if one “ought” to judge with “A” for the first case, then it is surely better to actually judge it as “A” in the second, rather than anything else.* While the *a fortiori* argument often takes the given, predicate feature “A” as if tightly bound to the prior norm/action, we can imagine that this need not always hold, as in the *Mishnaic* case above. We may rightly demand more (A+) or less (A-). We ought not go with the more severe, prior judgement (A) in a new, less severe case, but make it less (A-). In this way, ethical principles (of what ought to be) can guide moral judgements (in particular cases). A proper valuation of what is preferable overall can guide good, pragmatic decisions when such are not whims, (excessive) vested interests, biases, or rigid rules. Such are likely positions that one associates with some norm/action. The looser the association, the less sure we are about the conclusion, either in the first place (n-N-A) or in the second (m-M-A\*), as it is even further removed and thus more doubtful. I use A\* instead of Samely’s A. While he gives this example and recognizes the reality of A+ (increase) and A- (decrease) elsewhere, he relegates these to non-halachic cases.

increase. Clearly, the reward is limitless in amount and duration. This QC emphasizes the striking extras, far beyond the graded temptations. This is much more than what the *dayo* norm allows.

In general, Samely urges caution in pressing a formal, logical schema on the Rabbinic QC, so that the rhetorical and informal nature of this language, culturally and historically based, can express itself.<sup>313</sup> By allowing language its initial, creative freedom and vagueness, one does not force language artificially into overly restricted or truncated forms at the outset. Inasmuch as logical systems eventually can and do expand the range of things they cover, this more permissive approach has clear benefits for later advances in logic.<sup>314</sup> Notably, this attitude is more flexible than Maccoby's. In effect, rather than freezing the *Mishnaic* QC to the same reward (A), this looser sense would open the range to variable conclusions too (the A+ as higher, or in other circumstances, A-), as the very example indicates. Yet Samely qualifies how to judge the concluding amount that one observes for the *Mishnaic* QC.

### c) Quantitative Aspects of the Jewish *a Fortiori*

Differences in any comparison are qualitative or quantitative (or both). While one often expects a scaled result with ordinary *a fortioris*, an exact answer can be difficult to achieve, as pointed out. So in order to get a definite amount, the same given can work (as a norm, minimum, or maximum). Indeed, this is what Samely finds in his survey of the *Mishnah* where equal results prevail. Yet that cannot discount either the expectation or reality of conclusions with degrees in the *Mishnah*. With Samely's specific, *Mishnaic* example, although the feature is understood to increase, nevertheless, he maintains that it is atypical, an exception. He discusses the nature of the increase (or decrease) in this way:

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<sup>313</sup> Samely, 181-182. He quotes Aristotle: 'a person who strikes even his father will also strike his fellows.' Here, the "personal or moral characteristic" is missing, namely, that to strike one's father is worse than striking another, making disrespectful treatment of others lower on the scale and more likely. Clearly here, while the *a fortiori* lacks the syllogism's formal conclusion, we could say that the 'will also strike' is to be taken as a generally true observation about human nature, and inductively probable. We can imagine situations of a nasty father, while one's fellows are not, reversing the order of the quote, to deny the *a fortiori*. Yet in most normal relations, the social status and respect accorded to parents in Greek society is assumed, making the *a fortiori* statement right, and thus occasioning the surprise of Socrates at the action of Euthyphro about to prosecute his father for murder (after treating a drunken, violent servant harshly, who had murdered another, allowing him to die from accidental exposure). See Aristotle, *Rhetoric* B20, 1393a-b, 1397b (bk. ii, ch.23.4) & *Topics*, 114b37-115a14 (bk. ii, ch. 10). For an *a fortiori* and an example, see Lloyd, *Polarity and Analogy: Two Types of Argumentation in Early Greek Thought*, (Cambridge, 1966), with Homer 386, and Aristotle 407-413. Also footnoted by Samely is the article by E. E. Ellis, 'Biblical Interpretation in the New Testament Church,' in Mulder and Sysling, *Mikra*, 700.

<sup>314</sup> Samely, 181, although I have modified his points in both of the last sentences, Burrell stated them too.

What exactly is increased in the argument? The impression of a quantitative increase is sometimes due to the fact that the categories of point 2 [‘an element of protasis *n* belongs to category N; the same element of protasis *m* belongs to category M’] are defined in terms of quantitative differences, for example, when monetary value is the defining moment (e.g. mHul 12:5). But if one looks around for something that can be increased in all the cases, whether or not any of the subjects can allow for quantification, one is left with two possibilities it seems: an *epistemic* increase, and a *deontic* increase.... In the Mishnah it is often used for positions that are actually considered doubtful, and then have an air of saying: if this *is not* correct, it really *ought* to be! This points in the direction of a concern with what the logic of the normative system *requires*. Where the *a fortiori* is subsequently rejected, the Mishnaic discourse reveals that law is a convention or divine commandment, not logic. It seems that the increase suggested is thus one of epistemic and normative certitude.<sup>315</sup>

In effect, the same conclusion is only surer, not greater in most cases. In desiring “epistemic and normative certitude” in “that law is a convention or divine commandment,” the conclusion does not increase, but is equal to the given. It is only an “epistemic...and a deontic increase.” What appeared to be a tendency to increase the *Mishnaic* QC is not one after all. Here convention and command array themselves, for the most part, against the straightforward sense of a ratio. Ordinary and only some areas of religious thought may allow a more speculative conclusion. Apparently, religious tradition can differ from looser reasoning. *Mishnaic* QC’s are to conform to known tradition because of its certainty. Since the *Mishnah* tends to reject quantitative change, Samely too is in basic accord with Maccoby.

We have noted that Maccoby stakes out the *dayo* conclusion alone as logical, while he relegates ratios to rhetoric. For Samely, however, it is the Rabbis’ QC use that is rhetorical, not just logical. I will settle this disagreement (*macheloket*) between rhetoric and logic later.<sup>316</sup> Still, it is “not [pure] logic,” *contra* Maccoby.<sup>317</sup> While Samely and Maccoby converge on some things, they diverge on others.<sup>318</sup>

Nonetheless, Samely reiterates this *dayo* restriction on QC argumentation. This restriction “stipulates that the measure of punishment is not to be determined from an ‘inference’....”<sup>319</sup> In other words, the tradition takes precedence over possible QC ratios. However, as Samely’s explicit example shows, there are two sides to the *Mishnaic* QC’s conclusion: while most cases favour the *dayo*, clear

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<sup>315</sup> Samely, 185/6.

<sup>316</sup> In Samely’s favour, Daube also sees the QC as rhetorical and reasonable, not just in the *dayo* case.

<sup>317</sup> Samely, 186. Sion concurs (for most Rabbinic interpretations), 171: “whatever it is, it is not...pure logic.”

<sup>318</sup> Samely, 182.

<sup>319</sup> Samely, 186, taken from Sifre, noting Mielziner, *Introduction to the Talmud*, 134f, and Bacher.

exceptions make it plainly non-exclusive. Therefore, an uneasy tension remains between the tradition upheld by the *dayo* and the reasonableness of variable conclusions. It seems that other factors are at play to override QC proportions. One likely reason for this *dayo* restriction was to add another hedge of protection around religious tradition, just as tradition itself protected the inner core of Biblical laws.<sup>320</sup>

This problem of two conclusions types—the same, traditional, favoured one (the A) and an allowable, proportional one (A+ or A-)—continues to disturb Samely. Even his surrender to monetary changes does not cover the other variations of actual increase or decrease (as with unequal grief or merit). In closing his section on the *a fortiori* where he is concerned with social and religious norms (as upheld by the *dayo* it seems), he says that “[t]he actual purpose and effect of such hedges are not easy to determine.”<sup>321</sup> Dissatisfied as he is with the unreconciled, Rabbinic treatments, Samely alleges significant differences. To account for these otherwise blatant exceptions to *dayo* sameness, Samely makes some key distinctions. He says that not everything in the *Mishnah* has to do with strict, *halachic* interpretation and required practice. In such matters, *Mishnaic* logic appears to function more freely.<sup>322</sup> Thus, when not dealing with such religious norms, Samely modifies his earlier *a fortiori* format: “if subject *n* belonging to category N, lower on scale X, has predicate A, then subject *m* in category M, higher on scale X, “logically also has predicate A (or logically must have more of the quality A).”<sup>323</sup> In effect, this recognition by Samely is telling: there is no univocal, *Mishnaic*, *dayo* exclusivity. Unless Maccoby will admit to this weaker *dayo* claim, his position appears extreme. In most religious practices (*halacha*) the *dayo* holds, to maintain consistency with the past; but elsewhere, ratios are allowable.

If in non-*halachic* settings the limiting *dayo* is often inappropriate, then the *dayo* is not universal. Is it then just a *Mishnaic* religious norm? Clearly, we have moved from the the *dayo* as logically correct

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<sup>320</sup> Mishneh Avot 1:1. Daube says that novelty, extensions of Biblical or older Rabbinic to new cases constituted much of ‘the fence around the Torah,’ rather than only around the plain, Biblical laws. The sense is of two Torahs, one Biblical and one Oral, the latter including old Rabbinic traditions and reasoning. That is despite a parallel idea of a tradition in Roman rhetoric that contrasts with reasoning. This might have influenced or else strengthened the Jewish methods. See ‘Rabbinic Methods of Interpretation’ in *Collected Works of David Daube*, 335-9.

<sup>321</sup> Samely, 186.

<sup>322</sup> Zion distinguishes between what would be normal logic and Rabbinic or Judaic logic, hence the title of his book, *Judaic Logic*, 171. Somewhat opposite to Samely, I would think that Zion would hold that the Rabbis are acting “freely” in imposing the *dayo* alone and strictly when allowing normal logic with either a *dayo* or degree.

<sup>323</sup> Samely, 187-8, simplified.

everywhere, in Maccoby's sense, to something like Samely's general norm, which is much like Sion's majority vote or abductive decision (adductive as he calls it). This means that the *Mishnaic dayo* is really a flexible principle that can allow for proportionality. Thus, while one must always consider the *dayo*, it is not always the right or only answer. One must not insist upon it without good reasons. Further, even the religious aspect is less secure than Samely contends: for if God can grieve more and less, so can a human; and our varying types of grief are not exactly the same as God's. While grief is an individual feeling and may not be a required religious duty (*halacha*), it is a proper attitude to be expressed outwardly. More, if merit supposedly increases (dramatically) for resistance to greater temptation, is this not also morally encouraged? Is not good behaviour required here, despite the possible exaggeration of its value? Even if the example is a homiletical addition, surely it was believed as true and expected to be kept as *halachically* right. Severing homily from *halacha* would rob the example of its force. Samely's attempt at brushing aside *aggadic* material fails to convince.

The QC argument in Jewish contexts goes beyond the *Mishnah's* treatment with the *dayo* as correct, for Jewish tradition is not uniform,<sup>324</sup> but evolves in various ways with respect to the QC as well.

### 3.3 Additional Perspectives of the QC

Contemporary, Jewish scholars, such as Kraemer, Elman, and Fisch, also discuss the overall role of argument, with the QC as the hallmark of Jewish reasoning within the larger, *Talmudic* tradition.<sup>325</sup>

Kraemer compares the earlier and later *Talmudic* versions.<sup>326</sup> While the earlier, Jerusalem *Talmud* is more restricted, practical, and *halachically* definitive—even if somewhat incomplete, with unanswered questions, minimal alternatives, and short argumentation—the later, Babylonian (*Bavli*) *Talmud* is replete with speculative possibilities and extensive exchanges, particularly in its final edited layer.

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<sup>324</sup> For a popular account, Max I. Dimont, *Jews, God and History* (New York: Mentor Publishing, 19uu), 128. The more scholarly approach is in Halivni, *Peshat and Derash*, e.g., 33, 37, 47, 92, 113.

<sup>325</sup> Since Maccoby complains that the succeeding *Amoraim* of the *Gemara* (that supplements the *Mishnah* of the *Tannaim*) forgot the correct way to conclude the QC, this particular issue will be examined in Chapter 4.

<sup>326</sup> Kraemer, 95-7. The *Talmud* has two versions, the earlier one originating in Israel, called the *Yerushalmi* (from Jerusalem or Israel), and then an expanded development of it, called the *Bavli* (from Babylon).

[W]here alternative analyses are available, as the *Bavli* has demonstrated...there is often no reason to conclude that a particular analysis is the correct one.<sup>327</sup>

The proper stand (which Fisch sees as not always the overt conclusion) is left to the student to discover. Varied, optional positions or analyses are offered in the Babylonian *Talmud*. While its exercises begin as more academic and theoretical than definitive and authoritative, in the end, a normative conclusion is often reached about what is right—but with a sort of question mark appended. The earlier, conceptual rigidity is being relaxed and expanded, at least intellectually.

Religious authority of the majority of scholars could fix what constituted the right tradition, claiming as the justification that ‘it is not in heaven’ (Deut 30:12, y. MK 81c-d, 3:1; b. BM 59b). That is, God gave authority in earthly matter to the proper authorities or human sages, because religious truths were already revealed, supposedly understandable by them, to guide others. If so, what exactly does this mean if one is not to add or subtract from Biblical truths (Deut 4:2, 5:32, 12:32)? I shall tackle this point with the proportional, Biblical QC’s in Chapter 4, which seem to add or subtract.

Concerning the QC argument, although it might stand alone, it may need help as we saw earlier. Elman remarks that what often follows a QC is a quote from a parallel tradition (a *baraita*) in its support.<sup>328</sup> Together, the QC and this outside tradition present the issue or an alternative, as neither is sufficient on its own. We see both a balance and a tension between reason and tradition.

Although the *Mishnaic* QC on its own could not rule on a *halachic* issue, it could affirm the traditional, accepted stance of the law. Yet if a majority position or prior tradition always triumphed in settling a matter, then any opposing, minority view would be trumped automatically, whether backed by argument or not.<sup>329</sup> According to Kraemer, one aspect of the issue is that argument is the least authoritative part of any case.<sup>330</sup> Additionally, a majority of experts is better than a minority opinion. The tradition, then, recognized as authoritative by the majority, is what set binding, religious practice (*halacha*). “Halakha...is not to be equated with truth,” opines Kraemer, where truth here is merely a

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<sup>327</sup> Kraemer, 97. The traditional parallel was indicated by a lead-in expression, ‘should you say’.

<sup>328</sup> Yaacov Elman, *Authority and Tradition*, (Hoboken, NJ: KTAV Publishing, 1994), 42, as e.g., b: Pes 81a.

<sup>329</sup> Kraemer, 122 (y: MK 81c-d, b: BM 59b), and Ex 23:2.

<sup>330</sup> Kraemer, 132. This was noted earlier in the discussion with Hillel concerning the Passover offering.

result of limited, human reasoning.<sup>331</sup> Religious practice has to be determined apart from truths fashioned by reason, partly because reason yields too many possibilities, some of which are unacceptable. One could say in this religious context that the right tradition or practice is also the most reasonable. However, basically, no discord between right reason and accepted tradition should occur.

While reason may appear on one side of a controversy and tradition or revelation on the other, they are actually equivalent: “in the *Bavli*, is identified...the formula ‘if you wish I will say [that the opinion is justified by] reasoning and if you wish I will say’ [that the opinion is justified by a certain, traditional interpretation of] scripture.”<sup>332</sup> That is, there are two routes to the correct answer. Truths are obtainable from the primary route of Scripture (and its traditional understanding); but a parallel route exists via reason. Even if Scripture is the source, when unclear, it requires reasoning, perhaps by the majority opinion of religious experts, in order to decide what the best interpretation is.<sup>333</sup>

If reason can be so effective, it may not need a Scriptural anchor either. But despite the exploratory nature of reasoning found in the *Bavli*, the general view of human reason is that although it bears a useful if not essential role, it is limited and not the ultimate source of truth.<sup>334</sup> Thus, both an argument such as the QC and an adequate backing of a traditional authority (derived from Scripture) combine to produce the appropriate understanding of a matter. From the Jewish standpoint, then, there is really no conflict between revelation and reason, because Scripture both ‘reveals and conceals’—making reason necessary, not just to understand, but also to explore and expand the range of Scriptural truths.<sup>335</sup>

In a way, the QC argument mirrors the overall purpose of the *Talmud*, which is not primarily to determine the law, but “to preserve the record of earlier generations studying their own tradition and

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<sup>331</sup> Kraemer, 132, 139.

<sup>332</sup> Kraemer, 141.

<sup>333</sup> See also Jacobs, *The Talmudic Argument*, 50-63, concerning *rubba* as probability or expert majority view.

<sup>334</sup> Kraemer, 146-150, 154-6, 171, 188. See Yebamot 14a about the better arguments of Shammai versus the majority of Hillel. Indeed, on many occasions one finds a semi-complaint about the reason for an action being an unclear teaching by saying that ‘scripture should have said...’ except that God chose some other way of saying things (as in Yoma 81a & Zev 99a). Samely has a similar quote and comment.

<sup>335</sup> Kraemer, 187-190, who also quotes Susan Handelman; Tannaic and Amoraic differing emphases, 16-7, 94-5.



provide materials for later generations wishing to do the same.”<sup>336</sup> Yet a trend is evident through time, with an increasing contrast between the *Mishnah*’s limit on reason and the *Gemara*’s greater latitude.

So how do these different Rabbinic approaches relate to Maccoby’s insistence that the QC argument disallows variable ratios in the conclusion? Let us re-examine Maccoby’s example and propose a counterexample to show that the same result in differing cases can have unacceptable consequences.

### 3.4 Counterexample to Maccoby’s Good Children

Recall Maccoby’s example of the two children who should get the same reward when both behave well, despite the fact that one acts better than the other. This supports his QC claim that an equal, *dayo* reward is alone right and that one must reject a ratio as logically bad, arbitrary, or inexact. Noteworthy is his unstated idea that differing treatments might be psychologically bad.<sup>337</sup> Although the *dayo* recognizes the value of persons as equal, still, it is often right to reward a better performance. To show Maccoby’s one-sided *dayo* view and to balance the picture, let us consider a counterexample of two students, where fairness demands differing grades or rewards for varied performances.

My counterexample is this: student *A* writes an exam and is graded 60 (out of a 100 total), while student *B* writes a much better exam (without cheating). Now the marker must decide if the *dayo* operates universally or if grades are fairer. Clearly, grading is fairer. In effect, reality is richer than Maccoby’s partial view indicates. My counterexample, therefore, stands alongside Maccoby’s example to balance rather than wholly overthrow it. Let us explore these two, contrary positions.

It is obvious that student *A*’s much better work should not be assigned just a 60 like that of student *B*’s, which would be plainly arbitrary. The 60 is the least possible mark as a start, which can stand when there is no need to judge the actual merit of student *A*’s work. Yet, by the principle of fairness or justice, student *B*’s much better work surely deserves more. Exactly how much more may be difficult to

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<sup>336</sup> Robert Goldenberg, “Talmud,” in *Back to The Sources*, ed. Holtz, 156.

<sup>337</sup> One can compliment good children equally as persons of worth, without discouraging one or the other. A reward is an extra (sometimes not recommended, lest one have to negotiate about who deserves what, thereby generating quarrels about relative goodness and appropriate rewards, insoluble in a non-arbitrary way without a form of test – what is being avoided). Some children normally behave better, others less so, given individual personality and character; relative to their given states, one may behave as good as the other.

ascertain, but most, *experienced graders* learn to give a *reasonably fair mark* on essays or exams, up to the 100 maximum. The individual marks reflect the often approximate, but adequate, amount that each paper deserves (where exact answers, as specific true-false questions, are not required). Marks are to mirror quality. The grader can rightly award a 90 for student A's much better work that meets the course's expectations. Here, no setting of the bar at the given, lower mark of 60 is right, as if more certain, any more than one would grade the poorer exam at 90, just because the better one was graded first. Whatever logic attends the *dayo*, therefore, is not to cover cases where we need to grade relative performances fairly and sensibly. This applies to other judgements too. Is the petulant or cruel child always to get a candy anyway? I doubt Maccoby would agree. If my counterexample stands scrutiny, then the *dayo* rule cannot be a universal limit, but is just a general principle alongside degrees.

Recall the 50% pass/fail exam in which the 60 passes just as much as the 90. Yet in other cases, proportional marks are in order. Similarly, worse crimes are not to be treated like minor offenses. That is, in both types of cases, we must know under what conditions the *dayo* applies. The *dayo* may work when relative performance is not an issue or when an exact ratio cannot, or should not, be provided.

Consider another absurd consequence if the *dayo* was better than proportionality (or equivalent to it here): any passing student may be considered for advancement or a scholarship purely on the basis of having passed, rather than on the basis of mastery of the subject or some special ability to succeed. That means, out of all who passed, one might as well arbitrarily choose any student as equal to another, for the fact that one got 60 and the other 90 is utterly irrelevant under a *dayo* rule. Are we to reward the student with 60 the same as the one with 90? Even if it has occurred, no serious person would agree.<sup>338</sup>

Since this alternative possibility of grading performance cannot have escaped Maccoby's attention when he chose his example (with his likely experience as an educator), his unusually stilted conclusion demands an explanation. In fact, Maccoby does recognize a genuine difference between the two children, as the other child was not just good, but "very good." Yet he protests over unequal rewards.

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<sup>338</sup> That some other student with 85 has greater potential than the one with the 90 who may have "maxed" out is another matter, to be graded under a category of residual potential. This potential can be included in an evaluation, but changes nothing about the mark or that potentiality too is subject to variation and is not always the same.

We can concede that basic goodness is primary and individual performance secondary—particularly for young children. For that human insight, Maccoby deserves commendation; but one cannot praise the latent unfairness. What really matters for Maccoby is the children’s *general or common goodness as a quality* (shown by the equal quantity), not their *relative goodness*. This key distinction he has either failed to note or else simply skipped. In his opinion, the *dayo* alone is true, which the example just serves to convey. However, when we must decide about relative (or extrinsic) goodness, we go beyond the issue of just basic (or intrinsic) goodness. We stop emphasizing similarities despite differences and focus on the similarities along with key differences. Maccoby chooses only the like quality that links the two as central, not the comparative quantity (or quality) that differentiates them. In doing so, he calls for an overly strong, disjunctive “or,” of “this *or* that” (as either a common quality {with its quantity} *or* else a differing quantity), when his own example allows for both conclusions, of “this *and/or* that,” as an inclusive disjunction. His rendition is simplistic. Unsurprisingly, Maccoby finds the same quantity in the common quality that interests him. Rationally, this is suspect, for he has not properly eliminated the other, genuine possibility of the inclusive disjunction as required by logic. (One must first disprove that the ratio applies or show that it is weaker than the same answer.) To affirm only psychological and ethical qualities does not assure us that the exclusive *dayo* quantity is logically better. Because the QC combines both similar quality and the same *or* differing quantities, to deny half the disjunction by means of tradition or some example is a weak claim. All that Maccoby may say is that the *dayo* is one way of solving an *a fortiori*. No logically unquestionable way is left for the *a fortiori*’s conclusion to be limited to the premise’s given feature.

Therefore, my example stands alongside Maccoby’s, to say that equal and proportional results have their respective merits. When we want to know the *essentially common quality* of two items, despite their differences, we choose the lowest quantity of the common denominator.<sup>339</sup> When we *evaluate the relative performance* of individuals against each other or by some specific standard, we look to the

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<sup>339</sup> If *B* displays a feature, *f*, and *A* is more representative of the type than *B*, surely *A* has more reason to have the same, common feature, *f*.

differences as significant.<sup>340</sup> Thus, one must distinguish the critical issue in order to settle the amount: Is this a matter of the overriding likeness (despite differences) or relevant differences (with similarity)?

### 3.5 Summary of *Dayo* Uses and Problems

A) Dayo Value: The *Mishnaic* QC and *dayo* were useful in several respects. 1) The QC was an occasion for *Talmudic* debate and judgements; 2) their record pointed out potential mistakes, and 3) they exercised students' knowledge and skills. As Sion noted, even if not a deduction 4) the *Mishnaic dayo* was often a reasonable choice. 5) The majority assumed it to be Biblically mandated by God. 6) It also served Rabbinic authority and 7) it maintained consistency with the received, Jewish tradition.

B) Dayo Problems (Formal and Informal Consequences): Despite its advantages, the *Mishnaic dayo* is problematic, aggravated by Maccoby's insistence on it as the only logical solution. 1) His view that the *dayo* is logically exclusive is unproven (despite Guggenheimer's approval of it as one stream in the *Mishnaic* context, for he admits to other streams). 2) Maccoby seeks deductive certainty, but improperly rejects the logical option of ratios. 3) He treats the QC's linguistic "surely" too narrowly, unlike the more tentative claims of the ordinary *a fortiori* and analogy. 4) Abductive choice is often confused with deduction, for the overt preference for the exclusive *dayo* is not due to strict logic, clear justice, or uniform facts, but points to extraneous religious or other considerations. 5) A strong *dayo* ignores the actual nuances of the new case essential in determining fairness. 6) Samely and Sion are not in full accord with Maccoby, for the majority of rulings in most *halachic* cases do not exclude proportional examples. 7) And Samely parts company with Maccoby over the issue of rhetoric. 8) The rationality of individual rewards (and penalties for badness) counters the common quality that upholds the *dayo*.

All we can justifiably say is that the *Mishnaic* QC more often promotes the *dayo*, while it permits variations in non-*halachic* practice. The *dayo* is a means, a handy tool in the arsenal of the defenders of tradition. However, as the only QC solution, the *dayo* can be both rationally and even morally problematic. Yet, even if these objections are considerable (and proliferate), they do not falsify the *dayo*

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<sup>340</sup> So when we compare *A* to *B*, with *A* greater than *B*, and *B* having some value of a feature, then typically, *A* has a greater value of that feature (and not merely surer to have the same as *B*'s, as a minimum, true though that be).

option. More, if the *dayo* is a Divine rule, any reason for its use is a bonus and any criticism inadequate. (However, in Chapter 4, I show that since God does not regard the *dayo* as the sole solution, neither should we.) If the Rabbis were partly cognizant of such problems, what major factors or concerns might have been uppermost in their minds to promote such an otherwise, imbalanced conclusion?

### **3.6 Judaic Concerns Compared to Ordinary Ones**

#### **a) Why Choose the *Dayo*?**

We can assume that the Rabbis were not careless or irrational, but instead, well aware of what they were doing when they debated and decided issues. So why promote such an extreme *dayo* requirement?

It appears that the need to preserve Judaism and Jewish life, especially in hard times, meant that safe limits had to be set, conservative procedures established, and religious continuity maintained to fence in both its thought and practice. Various options might be proposed and considered; but basic positions marked off the borders of the approvable from the potentially dangerous.<sup>341</sup> Of course, they could brush aside weak options. Through debate and a (probable) weighing of the issues, the religious fences would be strengthened and unacceptable matters disposed of—outside of Judaism proper.

Unlike just any social laws that can change with differing human opinions and decisions, the Jewish view was that its Biblical, ethical and religious laws or principles were eternal. While not subject to just any human revision, the sages could apply the paradigms and principles correctly to new situations.<sup>342</sup> Yet to apply the laws rightly required some sort of normative interpretation, which then developed into an ongoing tradition. Thus, like the regulation of any civil society where one allows only certain things, under Rabbinic jurisdiction it meant specific beliefs and actions rather than others.<sup>343</sup> Ideally, their vision was that these characteristic features be central to a healthy, Jewish society and lifestyle. To be Jewish in the full, *halachic* sense meant that one held to the higher, Biblical and traditional standards.

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<sup>341</sup> For example, see Steinsaltz, 230-3. Also see Kraemer, 126.

<sup>342</sup> This can characterize any healthy society, upholding laws and practices akin to the moral and ethical code of Judaism. Judaism's mostly negatively stated moral rules are recognized as minimal requirements for human attitudes and conduct. The general, negative command, "do no harm" is approved by most moral philosophers, even if doing good is a positive configuration that adds to the intent and is itself found in the Jewish Bible too.

<sup>343</sup> Neusner, *Talmudic Thinking*, as in his preface, x, employs this last phrase repeatedly in his copious writing.

As in most legal precedents, the *Mishnaic* Rabbis presumed that prior, traditional judgements were correct and to be respected. More than that, consistency and continuity were valuable principles that derived from God.<sup>344</sup> Yet in dealing with an important issue, what if the alternate stance, expressed by a proportion was more convincing and fairer? Even if clearly at variance and logically stronger than the traditional ruling, “if it were not for the fact that the tradition said otherwise,” it would have been accepted as authoritative—an obvious, religious decision.<sup>345</sup> Such a decision to favour the *dayo* was not due to Maccoby’s claim of “impeccable” logic (interpreting Num 12:14 as if given by God for all QC’s).<sup>346</sup> It was a view of tradition that demarcated some ideas to be included from those excluded.

However, in many conflicting cases, the sages sought either a compromise or an exception to justify the religious decision as correct after all. Thus to reconcile opposing opinions, they either accepted both as essentially similar or else separated them as too different.<sup>347</sup> Slight differences permitted a case’s inclusion as a variant of some precedent (or perhaps as a combination or an overlap); clear differences required other categories or cases to apply. When cases were irreconcilable due to outstanding or carefully drawn distinctions, one might reject the QC as failing to build a common enough bridge. Then, another issue was central to the conflict. Over the new position, one might wage a new intellectual battle. In spite of the seemingly correct reasoning made for QC ratios, not strict logicity, but another precedent or authority would then resolve the matter, to thereby overcome division and restore peace. Creativity was a key to discover alternate solutions. In the end, issues only appeared to be contrary to tradition, not actually, especially as every good thing was the same in its essential, common goodness.

In effect, one followed the *dayo* or the closest paradigm to stay faithful to tradition. One welcomed an apparently new solution, as long as it bore Biblical or traditional authority to echo the past. If not, it was suspect and in need of correction or rejection. In a few instances, a slightly different tradition might

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<sup>344</sup> Hermeneutically derivable from Scripture is that God is consistently good and right, as are moral truths.

<sup>345</sup> This is a paraphrase as found in Samely, 185/6. Also see D. Novak, ‘Maimonides and the Science of the Law,’ 111, in *Jewish Law Association Studies IV*, for the “theological” decision to limit the QC to the *dayo*.

<sup>346</sup> Again, Maccoby, 174.

<sup>347</sup> For example, David Novak, ‘The Dialectic between Theory and Practice in Rabbinic Thought,’ 125-6, in *Study and Knowledge in Jewish Thought*, ed. Howard Kreisel (Beer Sheva: Ben-Gurion University of the Negev, 2006).

permit a compromise between the former given and an outright proportion.<sup>348</sup> As such, one could push the boundaries a bit—as long as one acknowledged the principle that the original paradigm was the main ruling, presciently able to cover such future possibilities within its general scope.

However, if the circumstances changed sufficiently over time or else the new case was later shown to be basically different, then the matter could be debated—like before—but now between generations of sages (*Tannaim* and *Amoraim* or later sages). Thus, on the discovery of a critically relevant fact or a stronger principle or argument, a new judgement might be made by the majority vote of a future, wiser council of more respected, Rabbinic leaders.<sup>349</sup> Presumably, after debate, they might revamp a former decision, if they had support from another *Tanna*.<sup>350</sup> Again, a genuine difference permitted a subtle modification of the precedent or the realization that the present case required a new ruling, even if it was not unique. Earlier similarities with the paradigm had proved superficial and misleading, to justify a revision. Extended reasoning or modified judgements could cover minor variations. Yet deviations from the past were seldom extreme, as one honoured past wisdom, argued by the finest Rabbinic minds of former generations (assumed better). Eventually, however, even minor shifts would become a series of like, but graded positions, each with its corresponding, modified judgement—a scale after all. At the same time, there was the need to reduce the many possibilities to a manageable number of case types.

For all that, one did not accept an ordinary QC, even if based on a *halachic* tradition, to determine religious, *halachic* duty (of proper, Jewish life). Nor could a new position or special case teach something novel.<sup>351</sup> QC proportions were exceptions, and exceptions made no rules. Perhaps too, this was to halt premature rulings (“Be moderate in judgement”), to diminish serious controversies that

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<sup>348</sup> We could call revision an *analogue, comparative search rule*: if one case is not close enough, move to the next closest which is. An analogue with the most relevant similarities and fewest, key dissimilarities is best. Then one can draw a likely conclusion. Yet even then, it needs to be tested if what the analogue predicts for the new actually suits it sufficiently, thus strengthening the appropriateness of the otherwise tentative conclusion.

<sup>349</sup> Over time, the Rabbis grew in function as educators and religious leaders in Jewish society, as well as lawyers, judges, and eventually the political representatives before the foreign, ruling authorities. S. Cohen, 221-4.

<sup>350</sup> Jacobs, *The Talmudic Argument*, 13.

<sup>351</sup> Hirschensohn, 51, 63, 68-9. Any apparent novelty was already dictated to Moses at Sinai (Peah 2:6, 17a)

brought disunity, and to stop missteps that would permit what was forbidden or interfere with a duty.<sup>352</sup> The check on freedom would orient people towards traditional rulings. Not only did it channel humans down the religiously right paths, it also restrained excesses or wrong behaviours—for everyone’s good. Secure walls protected both people and values from external contamination. This conservatism was more than just a desire for consistency, for the Jewish people depended on their intertwined truths to exist as a people. That way, past wisdom shone through tradition to enlighten the future. Guarded by the scholarly majority, tradition was at once the mainstay and often the final say. The Rabbis ruled by these rules, not by some theoretical logic or reasoning, but for the sake of larger social and religious issues—mostly intentionally I would assume.

#### **b) More on the Relation of Revelation, Tradition, and Reason**

Regular, *Mishnaic* practice seems to have solved its perceived religious needs by holding the QC to the same, received tradition—a form of consistency and continuity with the past. Yet if one prefers objective criteria that accord with general truths, one might spurn this *Mishnaic* stance that maintains the past as special pleading, a desperate defense of tradition by a small clique within Jewish society, whose bias is suspect and its claims partly fallacious. Yet from the perspective of traditional Judaism, revelation was deemed to be true and thus to be responsibly supported and vigorously defended.

One can concur with the value of consistency, while not submitting to forced conformity. Yet, consistency should also mean that a past judgement suits the specific case, not an ill-fitted one, just because the cases are roughly alike. Mere likeness is insufficient and imposed conformity is unfair. Nor can it be morally countenanced that consistency with the past breed injustice in a new case. Since outcomes can be proportioned properly to the given, they also relate to and maintain past wisdom, to yield a sufficient measure of consistency. Surely, both fairness and consistency are attainable goals.

However, Maccoby advocates the *dayo* as the only logically correct answer. This is highly doubtful, for the *dayo* is only partly satisfactory in reason, decision-making, or justice. Indeed, the safety afforded by the *dayo* cannot be promoted as the sole solution when it is forced on some counts and plainly wrong

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<sup>352</sup> Hirschensohn, 74, 86.



or unjust on others. Moreover, if the transferable feature is a clear deduction, a selective process of Rabbinic debate and vote is unnecessary. Only if the result is not sure or predetermined is a debate and vote meaningful, to find and then agree on a case that is closer than the QC's given. Yet even agreement on the closest case may not be fair enough. A proportion is simpler to make and the closest match.

Revelation and tradition (as the true grasp of Scripture) seem to oppose reason. Yet that is not entirely so. We saw that if a QC made a more reasonable inference than a traditional stance, it was merely an apparent conflict—and that, only for the moment. The Rabbinic majority saw tradition as more likely true or surer—the tried precedent that held the epistemological high ground over imperfect, human opinion or speculation.<sup>353</sup> Tradition, presumed correct, had the benefit of the doubt. Religious truth, then, was more than just fact or logical argument: it involved a unity of beliefs and expressions of Jewish life (under God),<sup>354</sup> along with thinking things through as rationally as possible. Some reconciliation was possible: for even if at present one could not marshal a good defence against a proportional QC, somehow in the final analysis, reasoning and facts would prove consistent with revelation, traditionally interpreted. Still, I shall press this issue further in Chapter 4 to show that good proportions are as much Biblically true as is the *dayo*.

### **3.7 Summary of the *Mishnaic Dayo* Pros and Cons**

Let us enumerate some points of our assessment of the *Mishnaic QC's dayo* as a traditional Jewish, moral, and social decision, backed by a Divine interpretation, and not just as a logical or legal one:

1) In everyday life, reason engages principles and precedents, to decide what is right proportionally; but in the Jewish sphere, the ultimate authority is religious. This is because in *Mishnaic* Rabbinic concerns, religious truths stand higher than an error prone social consensus or appeal to reason. That is, if God created nature and reason, then revelation truths precede, inform, and correct the derivative,

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<sup>353</sup> My thanks to Professor Jim Diamond for that personal comment, University of Waterloo, 2006.

<sup>354</sup> Neusner, *Talmudic Thinking*, makes this main point of unity repeatedly, 4, 5, 134, 177, 181, 187. See too, Seth Schwartz, *Were the Jews a Mediterranean Society?* (Princeton and Oxford: Oxford University Press, 2010), 168.

general principles and mundane processes that might mislead or fail. The Biblical and religious tradition rests on unchangeable truths and better moral practices. Hence, a Divine *dayo* seems to make sense.

2) Deployment of this *dayo* (rule) keeps the QC in tow and upholds traditional understandings.

3) As religious views impinge on the *Mishnaic* QC's unmodified adoption of prior tradition, Sion views this choice as a deliberate abduction, not a straight deduction with a certain conclusion.<sup>355</sup>

4) While religious QC's are mostly bound to past ruling by the *dayo*, tellingly, this does not bar ratios in the *Mishnah*, contrary to Maccoby's claim of *dayo* soleness. Samely qualifies ratios to non-*halachic* items, which is only partly true. Yet, it is wrong to surrender to sameness if less fair than a ratio. An ordinary analogy and a sensible *a fortiori* allow right, not wrong or exaggerated outcomes.

5) Proportional QC's are not false if exemplified in the *Mishnah* and *Gemara*. Even if they are not religious duties (*halachot*), they are the right attitudes to hold. Anyway, such attitudes align with duties.

6) Even if a proportional QC's conclusion may be inexact, it can be reasonable when unbiased. Judges determine the right relation of case and result, and so need not be unfair or exaggerated. It can be a better answer than mere sameness. Besides, a ratio derives from the precedent or tradition, so that religious practices can properly suit new situations without changing the underlying truth or morality.

7) Inductive forms of the QC as analogical approximations are reasonable and, although tentative, can cover areas of nature, experience, and thought beyond the current reach of strict, formal logic.<sup>356</sup>

In all, this chapter has surveyed the QC's role in early Jewish thought. I suggest that the majority of the *Mishnah's* Rabbis wielded the *dayo* to prevent excess change that would cause Judaism to stray from its unique, cardinal truths of universal importance. While I have exposed several weaknesses in the *dayo* as a sole rule, the issue is not fully resolved. Even if all the objections so far are considerable or compelling, from a religious Jewish point of view, if the *dayo* was a Divine institution, none could be stronger than God's perfect knowledge and judgement. The *Tannaic* consensus was that the *dayo* was

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<sup>355</sup> Sion uses the term "adductive," however, as a prior claim that is confirmed or disconfirmed by the evidence, in *Judaic Logic*, 19-29, 99, 108, 113, 133, 167; also the internet: [www.thelogician.net/3\\_judaic\\_logic](http://www.thelogician.net/3_judaic_logic). Again, this religious perspective is like the theological point of D. Novak, 'Maimonides,' 111.

<sup>356</sup> Likewise, Samely, 175, 177, 181, says that language is an aid as it is not limited to deductive procedures alone.

indeed the Divine solution for the QC and so trumped limited, human reason.<sup>357</sup> Therefore, the only way to resolve the controversy over sameness and proportionality from a religious perspective is to face the matter from the Biblical text itself. In Chapter 4, therefore, a critique of the exclusive *dayo*'s origin will follow a general analysis of Biblical QC conclusions and a specific analysis of the key, Miriam passage. It will show that a Divine interpretation for the *dayo* alone is most unlikely, especially when backed by other pertinent material. That will complete the objections to the exclusive *dayo* and so permit the use of sensible, proportional QC's too.

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<sup>357</sup> From a Jewish perspective, if true, it should eventually hold sway everywhere, when all is properly understood, at a future point when revelation and reason is united in the fullness of Divine wisdom.

## **Chapter 4: Critique of the Exclusive *Dayo* Limit as *Mishnaic* or Divine**

This chapter will show that an exclusive *dayo* conclusion is not the only (as Maccoby) or best (*Mishnaic*) solution for several philosophical, historical, and theological reasons. I shall resolve the philosophical tension created by the *Mishnaic* QC that favours the given, religious tradition over ordinary, rational QC's, where both the same and scaled conclusions are possible.<sup>358</sup> Historically too, some Rabbis in the earlier and later, *Talmudic* period objected to an overly strong *dayo* that bested every ratio. Even today, the issue remains in dispute. Although the *Mishnaic* majority use of the *dayo* permits some proportional latitude, nonetheless, most modern commentators assume or take the *dayo* as the right solution. Because the *Mishnah* claims a special sanction for the *dayo* as correct, a general critique using only non-religious methods does not show that its stand is imbalanced from a theological perspective; so, I need an incontrovertible demonstration from the Bible itself. Since the *Tanach* is the primary, source document of Judaism, it will show that good, proportional QC's are not rare but abundant. In particular, because Jewish tradition refers to the Miriam passage for the *dayo*'s origin, I must present a better interpretation than the one that purports to support it. Together, the overall, Biblical picture and specific example will establish why a minimal, *dayo* sameness cannot be a blanket rule, Divine or logical, but instead is to be regarded as a flexible principle along with degrees. At the same time, underlying truths and principles remain unchanged despite their varied applications. I shall outline these three approaches to disarming the strong *dayo* ruling that will lead up to the Biblical finale.

1) Philosophically, from general logical, moral, and legal perspectives, I have already shown that nothing commends the same conclusion as consistently better than a scaled one. In some applications, it is better, but not always is this so or fair enough. Here I focus more on the Jewish aspects of the philosophical issues, aware that historical and theological aspects inevitably overlap.

a) Initially, I take issue with Maccoby's method to establish the *dayo* as alone right, because what he does is logically and factually problematic, for he merely denies proportions without an actual

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<sup>358</sup> Again, in going about this, I distinguish between a rule that holds complete authority and a principle that allows more latitude in most normal, variable situations. In Jewish eyes, the "holy" (*kodesh*) and the "ordinary" (*chol*) are rightly distinguished, although they have much in common. There is both continuity and a change of state.

disproof. b) Next, in a strictly technical sense, *dayo* universality (that restricts it to the same or lesser feature), should apply to itself and not interfere with clearly unequal cases. c) Further, we encounter another problem when we compare the *Mishnaic* use of the QC analogy with the GS (*G'zera Shava*), for the QC would then reduce to a GS. In combination, these points imperil Maccoby's *dayo* exclusivity.

2) Historically, as discussed, a) various *Tannaim* resisted the *dayo* as perfect. Moreover, b) the *Amoraim* of the *Gemara* and *Aggadot* strengthened the earlier, minority's objection by giving explicitly non-*dayo* QC's. Maccoby charges them with forgetfulness or error; I shall defend them. c) Such contemporary Jewish scholars as Daube, Samely, and Sion do not see Maccoby's view of the *dayo* as right and ratios as wrong. Specifically, for Daube, QC ratios are proper; like Samely, he holds the *Mishnaic* QC's in a positive, rhetorical sense, not Maccoby's negative one reserved for degrees alone.

3) Theologically, a) several acceptable, Biblical QC's show proportions (some that predate the Sinai revelation). To show this as true will involve interpretations of several passages, which is largely a theological enterprise. In addition, b) Divine mercy fits Miriam's case better than does *dayo* sameness. b) Because the contextual details of the cardinal text of Miriam's punishment has more than one given and the same result, the case is highly problematic as a *dayo* paradigm. d) The Bible, as revelation, also does not consistently display an *a priori*, *dayo* solution elsewhere. Similarly, e) serious theological consequences result when God does not always follow personally rendered precedents.

These philosophical, religious, and theological objections will dislodge Maccoby's claim that the *Mishnaic dayo* is always correct, solely sufficient, or even the most appropriate or best choice. On the other hand, although I criticize the *dayo* as improperly exclusive, I acknowledge its vital role as a key principle alongside ratios. Essentially, one would deploy the religious, QC argument to uphold the same revealed, moral truths without compromise or excess. Yet, while the *dayo* has sterling credentials, it is not good enough to hold sway everywhere, let alone religiously. Even the lesser claim of the *Mishnah's* majority use seems to be more a historical phenomenon than a long-range perspective. Sensible ratios are rationally possible, Biblically and religiously evident, and, if need be, practically revisable. I embark now on a culminating critique of the problematic, strong *dayo*.

#### 4.1 Philosophical Objections

##### a) The *Dayo* Does Not Eliminate Proportionality

When two possible answers exist for an argument, in order to conclude a deduction validly and soundly, one must eliminate the other alternate. Similarly, for an induction, one must greatly diminish the alternate's likelihood. If neither is accomplished, the disjunct remains. How does Maccoby establish the *dayo* as alone correct, when alternate answers can satisfy a QC, the same given (D) or a ratio (R)?

First, Maccoby attacks ratios, content merely to deny the rightness of ratios without a good argument or full, factual presentation.<sup>359</sup> That is, although his formal claim is a valid deduction (*D or R, and not R, therefore D*), in the actual case, he has not disproven or greatly diminished the likelihood of the alternate ratio (R). His general assertion of only one of two logical threads is insufficient: it is an unsound, deductive or an improper inductive argument. In effect, he cannot say that logic yields the *dayo* conclusion alone, for a ratio is just as logical, deductively or inductively (as in Chapters 2 and 3).

Second, even the Rabbis admitted that they chose tradition over the degree's greater reasonableness (Chapter 3). The *dayo*'s greater frequency does not show singular use, but rather a *Mishnaic* preference.

Third, such a choice is not deductive, but inductive thinking—in essence, what Sion notes.<sup>360</sup>

Fourth, even if the *dayo* is the *Tannaic* norm, some *Mishnaic* QC's are ratios, as are *Amoraic* ones (in Chapter 3 and to be explored further). Overall, the *Talmudic* evidence shows ratios to be religiously correct. Therefore, contrary to Maccoby, a ratio is not always arbitrary or an inappropriate, negative, or rhetorical attempt at sneaking in something illegitimate. Maccoby's over-confident approval of the *dayo* alone is a hasty generalization—claiming all for a part. The *dayo* is not the obvious victor in an empty field, for he has improperly barred the other, qualified competitor from the game before it even begins.

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<sup>359</sup> While the children's same, basic goodness backs his claim for a fixed element as acknowledged, it is not the only sensible answer, because personal performance may be important too, which is to be graded.

<sup>360</sup> Sion, *Judaic Logic*, (113) 131: the Rabbis “did not clearly distinguish between inductive and deductive stages” and “misconstrued certain applications of the *dayo* principle...” Elsewhere (167), he uses the specific term “adductive.” To cite the thing to which an argument or set of facts points is to adduce it. The process is an adduction. To take the stronger argument or set of facts is an abduction. Both are inductive in nature.

His psychological reasoning is not purely logical; his denials do not constitute disproofs; his attacks on the *Amoraim* are not very convincing.

**b) Untenability and Possible Internal Inconsistency of the Absolute *Dayo***

Aside from Maccoby's unsound argument, three philosophical objections counter the *dayo* as the only solution for an *a fortiori*: 1) differences and changes exist; 2) it seldom works in a greater to lesser case, and 3) a sufficiency rule should maintain strict sameness as sufficient for itself as a minimum.

First, if the *dayo* applies everywhere, nothing really differs—which is absurd, as things differ. What stays the same, as eternal or underlying truths, do so; but what are not, change. Since the *a fortiori* deals with non-equal things ( $A > B$ ), the feature of one can be a ratio of the other (or fail to occur).

Second, as noted in greater to lesser cases (CQ), the severity of the given is seldom allowed in *Mishnaic* conclusions, which opts for a lesser value. This lesser quantity falsifies universal transfers of the same, given, severe precedent. Sameness is not certain. Instead, the lesser from tradition is imposed externally or arbitrarily in the CQ. Yet even this lesser amount recognizes that some ratio is required.

Third, if the key feature of the *dayo* is that it always points to the same or lesser aspect of the given as *universally true*, it should be self-restrictive and act on itself as a minimizing rule or on what is truly the same. A universal, *dayo* rule as a QC feature would say that “the lesser feature or sameness is *always* sufficient.” As a QC: P1: *Dayo* A has minimal sameness; P2: *dayo* A > *dayo* B (or *dayo* A < *dayo* B); so C: *dayo* B has the *same*, minimal sameness (*which is false*). The second premise must be irrelevant or wrong; for if it is true, the conclusion is false and the argument invalid. Thus, the *dayo* above cannot be the *same* (quantity) of sameness (as a quality). For the *same* sameness *always*, we need *dayo* A = *dayo* B. Thus, if a *dayo* fails its own criterion of universality in a QC, it is not always true or minimally the same when genuine differences occur. As a result, a *dayo* cannot escape self-limitation.

A *dayo* as minimal sufficiency must not be maximal, to extend to every unequal case outside its proper scope; for then it can impose ill-fitting solutions from a limited supply of external precedents, (which, as various series, exhibit gradations). Without superior reason or consistent, Biblical use (even by God, as we shall see), it must be limited. Nor should eternal principles lead to inconsistent traditions,

which surely exist, barring *Talmudic* infallibility.<sup>361</sup> Even true, general principles scale their applications to each case.<sup>362</sup> Since the *dayo* possesses no special exemption or higher authority, it cannot exclude a reasonable ratio. Thus, while eternal truths and values remain, actual applications can show ratios. These need not add to or subtract from such truths; but one must apply them carefully to new situations.

Can we determine the *dayo*, as the same or lesser given, to be always rational otherwise? We can look at this *dayo* as (1) *absolutely fixed*, (2) *likely so*, or just (3) *to apply under similar conditions*.

- (1) **Fixed, Same Feature Rule**: *Like things despite minor differences always get same conclusion. A has a feature; B is like A; so surely, B has the **same feature always**.*

Because a ratio (or failure) is possible even in deduction, the rule is too strong. A same, fixed feature is incorrect. Instead, sensible ratios can work too. (Some of the logical options affirm this intuition.)

- (2) **Likely, Same Feature Rule**: *Like things despite minor differences probably get a like conclusion.*

Yet a prior probability would not give this more than 50%. *A posteriori*, this average, 50% ratio (half-alike and half-varied) would likely occur over many cases at best. So again, no good reason points to this weaker, inductive claim either, except in the *Mishnah*, as perhaps a particular, historical anomaly.

That leaves us with similar instances (assuming exact sameness is more theoretical than actual):

- (3) **Similar, Same Feature Rule**: *Ax has a feature; and Ax\* is another A that has no significant differences; so surely or likely, Ax\* has the same or a highly similar feature.*

With no differences, it is true, deductively. With minor differences, it is mostly acceptable, inductively.

If this thinking is correct, a self-consistent *dayo* must abide by its own principle of minimality and hold to a least onerous, QC interpretation. It can work with highly similar cases or when clearly better than other alternatives. When it seeks to replace a better proportion, it overextends its proper scope. In

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<sup>361</sup> Neusner, *Talmudic Thinking*, 170-1, claims as much: “the Mishnah is perfect.” As an ideal, but not in reality.

<sup>362</sup> Unless made particular, the general principle is a problem, for we have no clear way of knowing what the initial given is that applies in a specific case. All we have is the idea of equality or a minimum to some unspecified truth. To what minimum would we refer for an equal, if not the particular? In case A, Judgement J occurs according to some true principle. Yet the particular J may not suit case B. Are we to perceive the general within the particular (by abstraction), to then reapply the general in a new, particular way, J\*? That too is a new proportion. Anyway, it is too convoluted. So scaling is more sensible and normal for individual cases in following the actual given (or closest) precedent. Classed cases can serve for a range of precedents, so that a form of proportionality recurs. To remove proportionality is not possible. Equal results mostly apply with equal cases, ratios mostly elsewhere.



some QC's, therefore, proportional conclusions are permissible, evident, and preferable.<sup>363</sup> Since we often seek what are likely, similar features in comparable cases, we are dealing with a form of analogy.

### c) Ordinary and Jewish Analogies

For any analogy, whether as an ordinary *a fortiori*, a Jewish QC, or a Scriptural GS, the closeness of the constitutive elements in the comparison is often crucial for the hoped for existence of the feature(s) in the new case. In order to see that non-identical, QC conclusions in religious Jewish settings are not only possible but also required in many cases, one must show that the QC and GS analogies differ.<sup>364</sup> Yet, before I tackle the separateness of the QC and GS, where does the GS fit within general analogy?

#### (1) *G'zera Shava* (GS) as a Strong Form of Ordinary Analogy (OA)

As discussed, we make ordinary analogies (OA) to gain an insight about the less known thing from the better known. The OA can give any reasonable result, be it scaled to the given feature, the same, or none at all. Where the same feature(s) is supposed to follow closely, we consider this a strict or nearly identical analogy—a rarer sub-type. In Jewish terms, a strict analogy is a GS between parallel passages. The OA with its larger scope can cover this strict, Jewish GS. Let us now compare the QC and the GS.

#### (2) *Qal VaChomer* (QC) and *G'zerah Shavah* (GS)

First, recall that the common *a fortiori* and the ordinary analogy (OA) are similar in that each compares a known, given case to another, except that the *a fortiori* has a stronger link to the new case, so that a conclusion is more likely to show a similar feature. Second, since Maccoby wants the common *a fortiori* and the religious QC to have the same output, he presents two good children who get the same reward for differing behaviour. As argued, his example is not about logical equality, but about an ethical equality of basic human worth. He ignores the real differences in order to disallow scaled outcomes.

Actually, Maccoby models the *a fortiori* or QC on the *Mishnah*'s majority usage. Yet this still leaves a

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<sup>363</sup> As an exercise, we have these alternatives: (An *exclusive Dayo* {De} or a *limited Dayo* with *Proportionality* {DI & P}: De v (De & P); since it is not an *exclusive Dayo* {De}: ~De, as shown above, then it is a *limited Dayo* with *Proportionality* {DI & P}. Even if we weaken the argument from a deduction to an induction, admitting some cases of De overall, the evidence points in the direction that both (DI & P) are more probably applicable. In general too, what answers more QC's is better than what answers fewer; since the De deals with fewer QC's, while the (DI & P) answers more, the (DI & P) alternate is stronger than the De, so (DI & P) is a better, abductive choice.

<sup>364</sup> Again GS = *G'zera Shavah* = equal/equivalent terms or contexts and, therefore, matching contents/contexts.

serious difficulty for his version of the *Mishnaic* QC: the same, given *dayo*, makes the *Mishnaic* QC function like a strict, Scriptural GS. This effectively erases the separate natures of the religious QC and the Scriptural GS as individual, hermeneutic rules, as promoted by the same *Mishnaic* authorities.

One may still object: only when the QC deals with tradition is it like the Scriptural GS. That is, there are ordinary QC's and religious QC's, and only the religious ones are like the GS. They only parallel each other: when the religious QC deals with tradition and the GS deals with Scripture, they function alike; although they use differing material, they conclude with sameness or a minimal given.

Yet, is not religious tradition related to Scripture? Indeed, Jewish tradition must express the proper sense of Scripture.<sup>365</sup> Then the QC and GS are interchangeable when each result is the same. For all its acceptable, Jewish uses, therefore, such a religious QC reduces to a GS and does not really function as a unique rule of Biblical interpretation as so assumed. If they are distinct rules, equality is problematic. However, if tradition is not the same as Scripture, then we have another problem, for it puts a dichotomy between Scripture and religious tradition. If tradition is only human opinion, albeit Rabbinic, it concerns only ordinary or religious affairs, but not what is Biblically required as true *halacha*. This is hardly acceptable either. More, whatever a QC does with ordinary matters would take it outside of a Biblical or religious purview. Then a religious QC has nothing to say about a good, ordinary *a fortiori*, and thus allows such reasoning separate legitimacy. If much of the *Amoraic* program in the *Gemara* was to relate *Mishnaic* tradition, as *halachically* true, to the Scriptures,<sup>366</sup> then the neat separation of GS and QC cannot stand on *Talmudic* grounds. Anyway, Maccoby admits that the *Amoraim* show scaled QC's. Further, some *Mishnaic* QC's with degrees involve religious truths and moral teachings. In addition, Scripture contains religious QC's and good, ordinary, proportional ones, not all clearly distinguished.<sup>367</sup> In particular, what are we to do with good, scaled QC's accepted or presented by God (as I soon show)? Thus, because traditional *halacha* and Scripture are intimately connected, when a *halachic Mishnaic* QC

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<sup>365</sup> See David Novak, *Natural Law in Judaism* (Cambridge: Cambridge Univ. Press, 1998), 10, 27, 30: reason in traditional understanding is grounded in revelation.

<sup>366</sup> See S. Cohen, 230. Kraemer notes the weakening link between Scripture and tradition in the *Gemara*, 129-138

<sup>367</sup> Options: same, scaled, religious (halachic), and ordinary, Biblical QC's; same, scaled, ordinary, good QC's.

performs like a Scriptural GS, the religious QC is identical to a GS. No hermetic, impermeable division between traditional religious QC's, good Scriptural QC ratios, or GS's is sustainable, therefore.

Maccoby's belief that the *Mishnah* rightly imposes the *dayo* alone effectively quashes what makes the Jewish QC a separate rule of Biblical interpretation. In other words, if the only legitimate conclusion is an exact likeness to the given or lenient aspect of the premise, then the QC acts like a GS and prevents the QC to speak for itself. Under such strict conformity, it suppresses the real differences between the two compared items and permits only one of the QC's two logical and linguistic senses. We already noted its logical impropriety. Linguistically, the premise that one item is greater than the other is also redefined in the sense that it strengthens the same (or lesser) conclusion, while any possible relation to degrees is emptied of significance. Quantitatively too, while the signaling phrase, "how much more," allows variability, this potential is wholly denied. Thus to keep the same *dayo* for religious reasons requires a special meaning—another defect. Additionally, if the QC is sure only with a minimal or same conclusion of tradition, it would be better to rename the QC as "the *dayo* interpretation rule," for the comparative premise is irrelevant. One should be precise in definition and call the rule by its name. In the *Mishnah*, then, if the religious QC functions identically to the GS, it is either the same or a useless foil, masquerading as if different. With nothing more than equal results, this QC is just a misnamed version of the GS. In the end, a fixed *dayo* reduces a religious QC to a GS to make this QC superfluous.

Moreover, if the GS is a stronger argument than the QC, it should come first in the rules of Biblical interpretation, if not displace the QC altogether.<sup>368</sup> However, since the QC is the first rule (of Hillel's seven, or Yishmael's thirteen, and so on), something is amiss. Additionally, if the QC is only a special form of the GS, one should drop all pretence and cancel the QC entirely. Yet, once a GS can support a QC in debate, either they are different or the move is pointless, as they are really the same—and it obviates the need for one or the other. However, because a GS can help a QC in the *Mishnah*, this underscores the understanding that both are distinct rules. To refuse ratios, then, leaves the QC with an ambiguous, signalling term, an empty difference, or a useless duplication. Thus, to enforce the *dayo*

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<sup>368</sup> As designated by Fisch, the primary place of the GS is noted in the discussion of Hillel's use of the QC.

alone seems fatal if the QC and the GS are to be unique in their own rights—all the more so when the QC ranks first in all the lists. If one wants to maintain these rules of Biblical interpretation as necessary, meaningful, separate, and applicable, an exclusive *dayo* is unreasonable, even as a religious QC.

In sum, the *dayo* restriction on the QC has both *formal and Jewish conceptual consequences*. 1) A religious QC can only perform like a Scriptural GS, unlike an OA or a normal *a fortiori* with reasonable variations. 2) Genuine differences are unimportant. 3) The QC and GS rules, although thought separate, actually conflate when both conclude alike. 4) For a religious QC to parallel a GS, tradition equals Scripture as *halacha*; but since valuable, Scriptural proportions exist, these cases are being avoided. 5) It is pointless for a GS to shore up a QC if functionally they are the same. 6) If the GS is so important or substitutes for the QC, the GS should at least precede the QC in the lists of rules, if not eliminate it, especially if it includes the QC within its scope. 7) One would have to deny these rules are individually important or ultimately derive from God, but are only human ideas, and if human, scalable.

In contrast, to maintain the individual QC and GS rules as Biblically right, one can refuse sameness alone and permit degrees in the conclusion. Not only are degrees rational and fair, but also, they are religiously required (even in non-QC rulings and precedents).<sup>369</sup> If the QC is a useful religious rule, it cannot be identical to the GS. As such, the QC rule is unique enough to stand on its own and retain a sort of priority as first in the hermeneutic lists, before the GS. Moreover, since there are good Scriptural QC conclusions with degrees (as we shall see), a religious QC's *dayo* sameness falters here as well.

Did the *Mishnaic* Rabbis formally recognize the QC rule of interpretation as right and then effectively deny it by forcing the QC into a GS by means of the *dayo*? A *dayo* that cancels degrees is unacceptable, either for the persistence of the QC as genuine rule or as a way to defend Rabbinic reasoning. More likely, other factors took greater precedence in an abductive decision that made the *dayo* conclusion the norm of their day, but not necessarily forever.<sup>370</sup> Maccoby is wrong to call for *dayo*

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<sup>369</sup> Deut 25:1-3, a guilty party in a fight gets anything up to a maximum of 40 lashes; each case has its due amount.

<sup>370</sup> Again, the turbulent years in Israel included the rise of Christianity and the disastrous wars of 66-70 and 132-135 CE, as well as the severe Roman edicts against the Jewish people that followed.

exclusivity. Therefore, like the later *Amoraim*, we should opt for a better, QC solution that allows for any rational result: whether a degree, sameness, or a compromise.

## 4.2 Historical Objections

We have seen that the *dayo* as the sole solution for a QC is unacceptable in ordinary and even in much religious thinking. These give us a few likely clues why some early and later Rabbis objected.

### a) Non-Univocity in *Mishnaic* & *Amoraic* Views

Within the *Mishnaic* circle of Rabbis, objections surface against a singular *dayo*. While Maccoby largely ignored the Rabbinic dissenters in his book, he does discuss them in a later internet article, to his credit.<sup>371</sup> Sion mentions Rabbi Tarphon, who “...did not concur, but regarded proportionate inference as permissible, at least in some cases.”<sup>372</sup> Other *Tannaim* too, such as Simeon bar Yochai and Meir of the *Mishnah* (Chapter 3), exhibit examples with greater reward and grief. Moreover, the *Amoraim* show degrees too. Yet Maccoby in his internet article says that the *Amoraic* scholars of the *Gemara* did not take the *dayo* rule as seriously as their *Tannaic* predecessors did. To explain this, Maccoby suggests that the *Amoraim* forgot the *dayo*'s clear use in the *Mishnaic* period. Some replies are in order both about the minority, *Mishnaic* objections to the *dayo* and this, supposed, *Amoraic* forgetfulness or possible error.

First, among their own, the *Tannaim* lacked univocity for the *dayo* and against degrees. While early objectors like Tarphon (or Simeon bar Yochai and Meir) may be dismissed as a mistaken minority, the very fact of disagreement is important, all the more so that the majority admitted proportional arguments were often stronger—except that tradition said otherwise.<sup>373</sup> The minority too were experts in Biblical interpretation (partly by means of the rules, with the QC at the fore). They likely had good reasons to disagree with a sole *dayo*. Although a majority decision of experts is preferable, still it may be wrong.

Recall the case of an animal hurting a person in a public or private domain. Rabbi Tarphon reasons that once traditional fines already allow an increase, proportions exist and can then re-apply in a like

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<sup>371</sup> Maccoby, internet article, “Some Problems in the Rabbinic Use of the Qal va-Homer Argument,” 1, 3-5. [www.art.man.ac.uk/RELTHEOL/JEWISH/qalvahomer.html](http://www.art.man.ac.uk/RELTHEOL/JEWISH/qalvahomer.html).

<sup>372</sup> Sion, 55. Quote for R. Tarpon is in BQ 25a. (*Baba Qama* = Initial Gate or preliminary aspects of Damages)

<sup>373</sup> While the point is noted by Kraemer (146-7) as part of the Bavli Talmud, it can refer to earlier controversies.

manner.<sup>374</sup> While an animal bite/foot wound in public, of severity  $x$ , is not chargeable (for perhaps the person got too close), the same in private carries severity  $x+$ ; and if a goring in public is known to be  $x+$ , then surely, a goring in private is to be  $x++$ . Again, the likelihood is that on private property, given the extra precautions, it is more unexpected than in public; so too, a goring is usually worse than a bite or foot wound. Yet the majority considers this as uncertain, so that the same fine ( $x+$ ) is enough (*dayo*).

In uncertain cases, the majority has a point. Yet a goring is typically worse. Anyway, in theory, because one grants an increase for the lesser wound in the more significant place, reasonably, the more serious goring should get a larger fine there too.<sup>375</sup> This is despite the claim that one cannot advance a new QC based on *halachic* practice or ruling.<sup>376</sup> The idea behind the *dayo* is that one must return to the ultimate source or tradition to find the appropriate or lesser amount. Even if this is religiously required, Tarphon's increase in severity is more sensible given other recognized increases.<sup>377</sup> All the earlier pro-scaling reasons and *dayo* objections would support his view. Further, the *Amoraim* argued that one could in fact learn something new from a QC if all its details were true.<sup>378</sup>

Second, is Maccoby on solid ground when he says, gratuitously, that the *Amoraim* forgot the *Tannaim*'s proper QC use? Although the *Amoraim* might have forgotten *Tannaic* methods and rulings, this need not be so. This is just another unsubstantiated assertion of Maccoby. Rather than this charge of forgetfulness, he should first eliminate or at least substantially lower the likely opposite option—that they did not forget. Surely, the alternative is more reasonable: because the *Amoraim*, as the next, Rabbinic generation, were the commentators of the *Tannaim* (far closer in time than Maccoby), it is unlikely that they forgot, carelessly overlooked, or misunderstood what the prior majority required of the QC. This is all the more so over such an important and clear logical issue that Maccoby takes the

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<sup>374</sup> See Abraham, 34. The actual argument between Tarphon and the others concerns the amount of damages claimable, either for being bitten/stepped on or gored by an animal, in a public or private domain (BQama 24). I disagree with the majority view as well as Bergman and Sion here (as per Sion's chapter 4, part 4, objections, n.10, *Judaic Logic*, 60), even if the *dayo* could work in an actual case. Proportions repeat, not equality.

<sup>375</sup> This complex matter is simplified here. See Chapter 2 for Abraham's formulation (from his article, 33-37).

<sup>376</sup> For instance, Hirshensohn, 50-51, 68-71.

<sup>377</sup> (Bite-foot wound in public) < (Bite-foot wound in private = Gore in public) < (Gore in private). So fines follow: 0 (or  $x$ ) <  $x+$  <  $x++$ . This is a transitivity with true premises based on greater severity of place or wound.

<sup>378</sup> As Abraham remarks on his p30 and in his footnote on 45. Then he shows attacks on transitivity's features where matters do not transfer surely or truly from one to the other (deny consequent, and deny antecedent - MT).

*dayo* to be. To forget remains remotely possible; however, these scholars, so assiduous in their attempts at reconciling the religious ideas and traditions of their predecessors with Scripture (by means of parallel, source traditions, passages, and arguments), probably did not forget at all.<sup>379</sup> Instead, it is more likely that they disagreed with the *dayo* as always right and quietly dropped the matter (for some reason) in favour of their own (better) interpretation, to reaffirm proper, scaled, QC conclusions of the *Mishnaic* minority and the Scriptures.<sup>380</sup> As a practical expression of their beliefs, this is more plausible than that they forgot, erred, or failed to grasp so central an issue. Anyway, Maccoby's excuse of *Amoraic* lax forgetfulness is less likely than that they did not. If one is to declare the winner only after one compares respective merits and weaknesses, and the poorer view defeated, the sole *dayo* has so far not succeeded.

In like manner, Maccoby criticizes these *Amoraic* authors over proportional QC's in the *Aggadot* (homiletic stories). Perhaps in this too, Maccoby's charge of the *Aggadah's* "apparently glaring infringement" is just another unsubstantiated opinion that may not be a "breach of the rule" after all.<sup>381</sup> Could not the *Amoraic* Rabbis, Hananiah and Shimon, that Maccoby refers to, actually be right in their non-*dayo* applications and his claim of a sole *dayo* excessive? Again, he should have argued the pros and cons and not been so one-sidedly "precipitous in judgement" (against *Mishnaic* advice).

Maccoby goes on to say that the *Amoraim* saw the *dayo* as "an arbitrary fiat of the Torah."<sup>382</sup> This implies that the *Amoraim* were probably dissatisfied with a view of Scripture that made it seem arbitrary and thus unworthy. In Judaism, since God is the ultimate author of all that is good in nature, reason, and *Torah* revelation, arbitrariness is a problem to be resolved, not merely accepted. The *Amoraic* addition of proportional examples may well express their disagreement with the arbitrary *dayo* fiat and their

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<sup>379</sup> See Robert Goldenberg, "Talmud," in *Back to The Sources*, 144, 145. The Gemara gives verses for Mishnah.

<sup>380</sup> They may have just added proportionality back in again as a better QC view after reviewing all the evidence and arguments. However, if Maccoby is right, they erred – albeit inadvertently, something hard to accept on the grounds offered and on Biblical precedents. The idea that one adds to past records as a corrective, rather than altering or obliterating it, is also visible in the marginal corrections of Biblical words or letters due to scribal errors in transmission. (The original was special.) Similar processes are evident in later Talmudic versions, where one also finds corrections, crossing outs, and some erasures within the body of the text, as in the Kaufman edition.

<sup>381</sup> Maccoby, internet article, 1, 6-8, from Mishnah Makkot 3:15. *Aggadot* are illustrative stories, non-binding, often somewhat looser in style, but easier for many to relate to, especially the common people.

<sup>382</sup> Maccoby, internet article.

belief in what is a more religiously worthy and logical view. This removal of what seems to be arbitrary is a likely attempt to reconcile reason and religion, and as such, it deserves further comment.

For the *Torah* as an authoritative text to be arbitrary on this point, rather than sensible, would make it incompatible with Divine wisdom. Clearly, the Oral *Torah* (or *Talmud* as *Mishnah* and *Gemara*) is not identical to the written *Torah* (Jewish Scriptures). Yet, as noted, the Oral *Torah* cannot conflict with the written *Torah*. That is, the Oral law of Rabbinic tradition, if a true interpretation, is obtained by means of faithful transmission and proper rules that derive from the written, *Tanach* source.<sup>383</sup> Perhaps, then, because a strict, *Mishnaic dayo* seemed so problematically arbitrary and created an awkward gulf between reason and Divine revelation, the *Amoraim* sought a solution that brought harmony back to how one should understand and interpret Scriptural QC's (and Miriam's case, specifically).

However, one could counter by saying that arbitrariness under one view may be actually consistent under another. That is, for the *Mishnah's Tannaic* majority, to agree with a traditional stance was to be consistent. Yet, the later *Amoraic* commentators could well have viewed things differently: if some past judgement was inexplicable or unjustifiable, it might well be inconsistent or arbitrary; and to be non-arbitrary, it should be consistent with both reason (*sevara*) and Scripture (and other traditions, such as the *Tannaic* minority view). If God was consistent with other, true, Scriptural QC's that show degrees, then there was something wrong about claiming the *dayo* as the Divine solution for all QC's. Maccoby, however, sides with the *Mishnaic* majority, who might have known better the right view that comported with the past. As an initial position, we can grant the *Mishnaic Tannaim* the benefit of the doubt. Yet, if we allow lapses, as Maccoby does, it is possible that the *Tannaim* themselves had forgotten the better or truer, original understanding. The *Amoraim* of the *Gemara*, if a more expert majority, could justifiably

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<sup>383</sup> This is not the most orthodox Jewish view of the Oral law, considered to be an essentially simultaneous explanation by God of the written Torah that Moses received at Sinai. But if so, one does not need to have rules to interpret or argue in order to decide what is correct, for all would be explained. Yet, as noted earlier, the rules can be faithful guides to reconstruct forgotten past decisions or lost records. Still, any interpretation must accord with the written Torah of Scripture. Maimonides held some traditional laws as indisputably given to and by Moses, so not subject to revision. See D. Novak, 'Maimonides,' 104. Also S. Cohen, 229-230: "One item on the agenda of both Talmudim is to connect the laws of the Mishnah to the Torah." Conceptual exploration is evident too (Kraemer, 156-170), whether or not practice is the end purpose of study or study itself is worthy for its own sake.



return to the original or else overturn or revamp a *Mishnaic*, interim claim to suit their better view. One Rabbinic view can correct another.<sup>384</sup> All told, the *Amoraic* position is preferable, for a simple weakening of the strong *dayo* to a principle alongside proportion removes its arbitrary character.

#### **b) Possibility of Change and Rejection, Reversion, or Revision**

Further, despite the fact that the Jewish populous were expected to obey their religious leaders, a refusal to abide by a new but impractical ruling left it stillborn. A majority of people could reject such an unreasonable (or wrong) ruling.<sup>385</sup> The exercise of religious authority had pushed through an inappropriate or actually excessive (*undayo-like*) interpretation or practice. On its non-performance, one can assume that things reverted to prior practice (a practical *dayo*). What this shows is that *new renderings were possible*, whether popularly accepted or not, that partly conformed to past tradition, *for nothing would have changed from earlier times to which one could object unless a new application was being made*. Therefore, in making such new rulings over past practices, a pure *dayo* exclusivity cannot be maintained. Any ruling that expanded or approximated a past truth, or tried to settle an unclear issue, or deviated from a former practice, and which might or might not be accepted is, when considered, a sort of proportion or change. At the same time, any new ruling or revision, even if minor or rare, implies a realization that the past ruling was inadequate, wrongly applied, or that new insights were possible.<sup>386</sup>

In that the Rabbis recognized their inadequacies, forgetfulness, disagreements, or errors, they were aware of a temporal, human aspect to some rulings, lasting until a better option or a Divine intervention prevailed.<sup>387</sup> Of course, the Rabbis appealed to the sole *dayo* as just such a Divine truth. Still, they displayed a measure of humility in their openness to correction. These *Tannaim* were even objective in

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<sup>384</sup> Hoenig, 49: "...inasmuch as the Babylonian *amoraim* already had the Palestinian Talmud...their deviant ruling on any matter indicates that they rejected that Talmud's view as unreliable." *Amoraim* corrected other *Amoraim*.

<sup>385</sup> See D. Novak, 'Maimonides,' 105.

<sup>386</sup> Barry Holtz, *Back to the Sources*, "Introduction," 15-17, and Goldenberg, "Talmud," in *Back*, 158-9. Steinsaltz, 248-250, and Jacobs, *The Talmudic Argument*, 12-17, also mention problems, conflicts, and apparent contradictions and how the Rabbis attempted to resolve them. Elman, 2-3, notes the contradictory baraitot (external material) in the Jerusalem and Babylonian Talmuds (whenever they came into existence), 281. See Halivni, 121.

<sup>387</sup> The last point was largely countered by a famous story (B. Metzia 59b) when even the Divine voice was rejected as it altered the majority tradition seen as consistent with earlier revelation ('It is not in heaven' - Dt 30:12). God's affirmation of Eliezer ben Hyrkanus' challenge (Steinsaltz, 27) was just a minority opinion. But a more capable Rabbinic council or the Messiah could do this. Still, the Rabbis had some latitude to interpret laws.

recording the rival proposal: although exposed as incorrect, it still might become correct later, to signify a possible change. Within their own ranks, neither better arguments trounced the dissidents, nor excommunication (always) expelled the conceptually too far afield, but normally just a majority vote that favoured the received tradition. This majority decision was mostly good enough as an interim best. Again, while the *Tannaim* voted for tradition, at the same time, they were cognizant that they stood against the stronger QC's of those propounding varied results. More was likely going on or at stake.

Paralleling the *Tannaic* authority to interpret Scripture and apply it to situations, as well as correct or change errors, and not just repeat a garbled tradition, was the same ability and right of later Rabbinic councils, like the *Amoraim*,<sup>388</sup> provided that they met the conditions of greater numbers, knowledge, and holiness—a difficult condition to be sure. Because the *Amoraim* concluded some QC's as ratios, they understood that the *dayo* was not a Divine truth about all QC's. In effect, the *dayo*'s status was not fixed and unchangeable: neither the majority opinion nor the *dayo*'s greater frequency could wholly convince the *Tannaic* minority or their *Amoraic* successors (likely able to grasp *Mishnaic* QC's sufficiently).<sup>390</sup>

In principle, to hold to the majority opinion as if always true enough would leave a skewed view of truth, for it is wrong to go along with an inadequate or unfair ruling. To insist on continuity with the past despite flaws is problematic and unworthy of complete belief. One might even validly believe something to be true for the wrong reasons; for all that, the argument is unsound. Once one discerns a possible self-deception or error, the commitment to truth should cause a reassessment and correction.

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<sup>388</sup> While, theoretically, the earlier Rabbis left the door open to change by a future majority of religious experts, practically, they made it an extremely remote option. Their desire to temper conjectural tendencies and rein in excessive freedom, both within and outside their ranks, meant imposing a strong limit that left little room for maneuvering. One could take the *dayo* rule as an alarm system or outer barrier, supplementing the traditional fence around the Torah (Law). It reinforced and policed the Rabbinic consensus. We see a series of defences for the Law: traditional interpretations and views, the guardians of tradition, and the manner of applying the interpretive rules. (If a safe can preserve the jewels, and an alarm and a safe are better, then faithful guards, an alarm, and safe are better still, QC.) If no errors were committed, then such means to maintain the traditions were somewhat justifiable. Yet human and actually pragmatic, it was unlikely to be perfect. The logical possibilities could not be avoided any more than people crossing over the cultural borders of Judaism. Guards, alarms, and fences are tempting and useful curbs, but only negative, imperfect defences. For all their weaknesses, fences are better than nothing. The Rabbis also attacked other views in various ways. See Halivni, 51, 92, 97, 115, 122, 153, 163-4.

<sup>390</sup> Numerous controversies fill the Talmud; this required all sorts of extra rules, arguments, and authorities to try to resolve what was or is the correct, halachic tradition. See Steinsaltz, 246-250 and Kadushin, 93-95.

Truth is not a matter of winning or deciding at any cost. The desire for truth resists blind acquiescence and persists until it prevails over a dubious idea or interpretation, even if favoured by a majority.

In that sense too, it is wrong to muffle or throw out of court the voice for variable judgements by a mere legal maneuver or roughshod, majority rule that imposes the *dayo* without a fair trial. A vote cannot void the normative, human and Biblical idea of proportionality, for by doing so it would likely generate unfairness, injustice, and a blatant inconsistency with Scripture (as we shall see). One must uphold and abide by such essential truths as guides to what is right and just in each case.<sup>391</sup>

In practice too, one should “not follow the majority (crowd) to do evil...”<sup>392</sup> The implication, which the Rabbis drew, was that one should follow the majority to do good instead. Yet that moral good connects to truth, not error. Indeed, one should neither add to the truth what was excessive, nor take away what was necessary. Rather, one was obliged to stay with what was stated explicitly,<sup>393</sup> with its right intention, and especially when something was not sufficiently clear (a matter of great importance for any interpreter or translator).<sup>394</sup> In this respect, conformity to the given *dayo* makes excellent sense. However, where proportionality is called for, uniformity does not have total authority, as good, Biblical

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<sup>391</sup> In addition, reasoning is more than logic. Reasoning is a more general tool than only a logical calculus that follows clear rules. Conclusions are not always straightforward, correct answers to neat formulae. Other concerns, factors, and influences guide our thinking too. How we view matters depends to some extent on our feelings about them and the reactions of others. Reasoning has a context as well as a structure. As people, negotiating our way in the world, we need both the wide ability of general reasoning and the sharp focus of logic(s).

<sup>392</sup> Exodus 23:2. Further, it says that (in testifying in a lawsuit) one should not deceive (pervert justice) by siding with the majority (bullied or cowed by a boisterous, intimidating crowd). Yet in matters of justice, one was not to be overly pitiful to the poor in a lawsuit. The facts and basic justice were at issue, not outward appearances, which could easily mislead, or human pressure exerted to twist a matter. After the case was judged properly (who was right and wrong), additional considerations might be admitted to ease the severity of the punishment. In the matter at hand, the majority, merely by being one was not automatically right any more than the minority. Rather, it was an issue of getting at the truth. In cases of doubt, a vote would be appropriate, the majority carrying the higher probability of being true. Certainly, this is sensible. The problem arises in just wielding tradition as normatively true when there is a likely error. Objections should be duly answered not just noted for the record, good as that is. Where proportionality is a better answer – and no one denies it – then it is wrong to just pull out a *dayo* as if it answers the question of justice. See the continuation in Ex. 23:6-8 and Lev. 19:15, which is even more concise. Yet see Jacobs, *Talmudic Argument*, 50-63, for *rubba* as majority or probability as correct.

<sup>393</sup> Deut. 4:2, 12:32. The truths of revelation are not to be changed in any way.

<sup>394</sup> Moshe Greenberg, ed., *Parshanut HaMikra HaYehudit* (Jewish Biblical Exegesis), 6-7: "אין מקרא יוצא מידי פשוטו"

cases show.<sup>395</sup> A sensible proportion is able to tie the conclusion to the given in a way that fairness is preserved. Such a ratio adds nothing beyond what is fair, while sameness may take it away.

Another passage underscores the need for all to do what is right and just: “Pursue justice, justice...” (pure complete justice alone).<sup>396</sup> A majority decision is more likely to be correct after due investigation, but can err when it is improper or suppresses vital facts. Thus, if a majority opinion is likely wrong or might set a potentially dangerous precedent, the ethically right, religious stand is to protest. In this vital area of truth and fairness, the minority likely registered a serious complaint in that the singular *dayo* could fail on either count. The *dayo* could not carry the formidable weight placed upon it by the possible commission of a significant logical, conceptual, ethical, social, judicial, or even interpretational error (as we shall soon see). Fortunately, the *Amoraic* increase in sensible proportions can effectively neutralize or decrease these serious flaws. Indeed, *Amoraic* practice indicates that ratios need not be immoral, too harsh or weak, especially when combined with a limiting principle that upholds moral truths, resists undue favoritism, and mitigates strict justice. It is not a case of “this or that,” as both the *dayo* and degrees can operate in unison.<sup>397</sup> In addition, one can strike a balance between a careful weighing of the actual issues and a majority opinion, to arrive at a reasonable and fair decision.

In sum, as change is both possible and actual, it is safer to say that the *Mishnah’s* Rabbis were well aware that majority decisions upholding the past were not perfect, all the more so when made against the better reasoning of the minority.<sup>398</sup> Although collective votes carried the day, they were likely for the sake of other important issues, beliefs, and preferences. These added factors and respective weightings

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<sup>395</sup> Again, see Dt. 25:1-3. In Lev. 5:5-7, “If he cannot get hold of enough (*dai*) for a ram, then he is to bring...two doves or pigeons...” If the person cannot afford the norm, the birds are good enough (the less is *dai* as a *dayo*, for the same result). Moreover, if the guilty person cannot afford even the birds, he can bring an amount of finely ground flour (Lev. 5:11-13). In Num. 35:8, “The cities that you give [to the Levites] from among the people of Israel, from the more numerous [tribes] you are to increase [proportionally], and from the the less numerous, you are to decrease [proportionally]...” In all, the more able give more, not less, which is good only for the less able.

<sup>396</sup> Deut. 16:20. The doubled term emphasizes its importance.

<sup>397</sup> As stated in Ps 89:14 (& 95:2), “righteousness and justice are the foundations of God’s rule; mercy and truth are both before God.” The first two expressions can refer to a strict but fair outcome; the latter two indicate that mercy moderates strict law. If God holds both together, human applications and governance cannot opt for one over the other, but have to consider both as mutually required to achieve the best. How to achieve this takes skill.

<sup>398</sup> For instance, see Kraemer, 139-146.

shifted the otherwise rational best to the one deemed best in their eyes—an abductive process. The *Amoraic* increase of scaled QC's confirmed the minority, *Tannaic* view, to alter the pro-con tally.

Having pointed out numerous philosophical and past historical problems with a singular *dayo*, Daube, a writer prior to Maccoby, has something to add to the historical view, especially with regard to Maccoby's claim that proportional conclusions are just rhetorical and fallacious.

### c) Daube's View of Rhetorical Reasoning

Let us return to what Maccoby stated were illegitimate, proportional QC's in the New Testament (NT).<sup>399</sup> Interestingly, the NT record of these QC's predate those of the *Mishnah*, although some of the latter sayings occurred earlier. Nonetheless, rather than ratios as inventions of the NT writers, they may well reflect an understanding of the QC from a yet earlier era. (We noted that *a fortiori* thinking was already common in both the Jewish and Roman worlds.) Regarding those very QC arguments, Daube's scholarly views are surely pertinent. Since Maccoby does not refer to his predecessor, I shall.

With respect to the NT examples, Daube considers those QC arguments to be legitimate, in form similar to Roman, juridicial reasoning, although he does not address the *dayo* limit directly.<sup>400</sup> Daube states that at least two, clearly proportional cases display “the methodological elaboration of law and theology by means of the norm *a minori ad maius*.”<sup>401</sup> Indeed, whereas the Tanach's “cases are popular,

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<sup>399</sup> Maccoby, *Rabbinic Writings*, 174. See my Chapter 3 where I quote him (102-3).

<sup>400</sup> Daube, in ‘Rabbinic Methods of Interpretation and Hellenistic Rhetoric,’ from *Collected Works*, 333-355, suggests that much (if not all) of Hillel's 7 interpretative rules might have arisen from Hellenistic rhetoric, not just logic, as well as from its Roman incorporation in jurisprudence. Daube's use of ancient rhetoric includes all of Hillel's methods, while Maccoby's seems to restrict it, pejoratively to QC proportions alone. Whether or not rhetorical *a fortiori* use displays logic and not just persuasion by any means, the argument's logical status is at issue. Rhetoric and logic need not be mutually exclusive. It is better to say that Hillel's rules display rhetorical practices. Daube seems to overrate Greek and Roman rhetorical influences on Jewish rules and on the QC particularly; it diverts attention from the QC's Biblical origin, the ultimate basis for its Judaic, religious propriety. As the QC is evident in the Tanach's earliest pages, pre-dating Greek and Roman rhetoric, it deserves priority; and this is despite any universal appeal, appearance, or subsequent recognition in Greek and Roman reasoning, which might have influenced Hillel's actual arrangement of the rules. If Jewish methods were augmented by a widely accepted, Hellenistic, orderly framework, so much the better. However, the Bible is the main source and pattern for its legitimate use, not commonly accepted models that might or might not hold.

<sup>401</sup> Daube, 348 and footnotes. NT references: Matt 12:10 ff., Rom 5:8. A similar example to the lenient *dayo* is from the Digest of Justinian, no 49, in Albert Gautier, *Introduction to Roman Law for Studies in Canon Law*, (Rome: Faculty of Canon Law, St. Thomas University, 1994), page 154: *In poenis benignior est interpretatio facienda*. “In penalties, the more benign interpretation is to be applied.”

the New Testament ones are technical.”<sup>402</sup> Daube adds that Jesus’ uses are “academic, ‘Halakhic’ applications of Hillel’s first rule of exegesis.” As for one given by Paul that Maccoby dismisses as sheer “rhetoric,” Daube calls it “[n]o less significant.”<sup>403</sup> By Daube’s reckoning, since these QC’s express proper usage, Maccoby’s critical view of the NT writers’ misunderstanding of the QC is largely empty or rebutted. More, Daube disagrees with Maccoby about the general use of rhetoric during that period.

First, rhetoric was a part of Roman jurisprudence. Since rhetoric played a vital part in that legal system, it carried enough rational weight to determine proper rights and judgements. (Despite Rabbinic stories of Roman injustice or the Socratic exposure of false rhetoric, surely not every case was bad.) One could wield rhetoric in various ways, not just to push an illegitimate view, emotionally sway an audience wrongly, win an argument by any means, or make a surreptitious exaggeration, as Maccoby implies for proportions. That is, one must distinguish between the spurious, fallacious attempts at rhetorical persuasion and the accepted methods of general reasoning, fairness, and juridicial thinking, as well as its possible logic. Thus, rhetoric has two senses, one negative and one positive, which Maccoby does not distinguish—which must be, if one wants to play fair. This brings us to Daube’s larger claim.

Daube’s second point is this: he calls *all* the hermeneutical rules of the Rabbis rhetorical (such as Hillel’s seven). While perhaps he overstates his case, the rules can be reasonable in rhetoric’s positive sense. Whether one adopts Daube’s larger claim or not, Maccoby should take account of this possibility, for rhetoric, which covers the QC’s *dayo* too, is not just about proportions. Negative rhetoric Maccoby reserves for degrees, while he either excludes the *dayo* entirely, to shield it from any taint, or else he gives it a positive spin. Once Maccoby uses the term rhetoric pejoratively to demean degrees alone and fails to account for rhetoric as a general field of inquiry that includes the *dayo*, he is inconsistent. Either the QC rule is acceptably rhetorical, as Daube claims, or Maccoby has to justify his unequal denigration of degrees. Maccoby’s suppression of the positive, pragmatic sense of degrees, while foisting on it the

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<sup>402</sup> Daube, 347.

<sup>403</sup> Daube, 348.

negative without sufficient reason, is itself a bad rhetorical point—to bowl over the unsuspecting and a foul play on both counts. Maccoby’s charge that degrees alone are rhetorically negative is undermined.

Likewise, when Maccoby introduces the term “logic,” he enters the realm of general notions in which both the *dayo* and degrees are logical. Just as Maccoby’s claim of the *dayo*’s rhetorical purity and a ratio’s impurity fails, so too does his selective bias about its logical exclusivity. More pointedly, an equal amount is just a special case of a ratio. Since general analogy caters to both equalities and ratios, the QC as a type of analogy is not just about tautologies, identities, or comparisons of highly similar things that call for the same given. As such, knowledge can expand to new areas. Religiously speaking too, Scriptural truths can relate to differing instances with nuanced sensitivity. This analysis of the philosophical and historical aspects of the sole *dayo* brings us to some of its theological consequences.

#### **4.3 Theological Issues**

##### **a) The *Dayo*: A Majority, *Mishnaic* Interpretation**

Plainly, Maccoby bases his claim for the singular *dayo* on the overall, *Mishnaic* tradition of the QC where the *dayo* usually holds sway, rather than on anything else. All his other supports for this *dayo* fall away upon examination. In effect, he would be safer with this lesser claim: the typical religious QC in the *Mishnah* is unlike the ordinary *a fortiori* of human thought. Yet the issue is still not resolved.

In particular, if the religious view looks to priority and authority as paramount, then earlier, worthy, Biblical material has a higher standing than subsequent, *Mishnaic* traditions.<sup>404</sup> While the *Mishnah* lays claim to the *dayo* as the right answer for *halachic* QC’s, this also contrasts with the Biblical and later increase of scaled cases in the *Gemara*. Since the *Gemara* bolsters the minority view or reverts to Scriptural precedents, the balance of authorities vies against the *Mishnaic* majority, as this upcoming diagram shows:<sup>405</sup>

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<sup>404</sup> Even if the Oral Law occurred at Sinai with the written Law, the written has higher authority, for the Oral seeks to explain or interpret the prior written’s proper sense. The Oral tradition seeks justification based on a few texts. That the Scripture takes precedent, see Halivni, *Peshat and Derash*, 152. Yet, it is also clear that the Rabbis often viewed the written Torah through the *Mishnah*, especially where there was a difference. See S. Cohen, *From Maccabees to the Mishnah*, 179.

<sup>405</sup> I am arguing for a majority of main authorities not individuals or case numbers, with the Biblical assumed here.

**Diagram 8: I. Halachic and II. Non-Halachic QC Comparison** (*dayo*: D; proportion: P; either: D/P)

	<i>I. Halachic (Official Teaching or Practice)</i>			<i>II. Non-Halachic</i>
	<i>A. Religiously Required</i>	<i>B. True Claim</i>	<i>C. Forbidden Error</i>	<i>Generally Permitted</i>
<b>1. Biblical:</b>	Divine & Good: D/P	Human & Natural Good: D/P	Human or Evil Source as Wrong/Wicked: as D/P	Human & Good: D/P
<b>2. Mishnaic Tannaim:</b>	Tradition: D	Majority Vote: D	Good Person Avoids it: D/P (more or less)	Minority View: D/P
<b>3. Gemara's Amoraim:</b>	Commentary (Study): D/P	D/P	D/P (more or less)	D/P

In *I*, the forbidden in *C* is *halachically* avoided. The *dayo* (D) of *Mishnaic Halacha* in *A* and *B* is isolated between the D or P proportion in correct Biblical and *Amoraic* uses. In *II*, ordinary goods are permitted. In all, the Biblical and *Amoraic* authorities of the *Gemara* (I {*A*, *B*}, II) with their D or P results outvote a D alone (to be proven).

While one might see the D or P from the Bible and later *Gemara* as an authoritative majority over the *Mishnaic* D, the key, religious issue concerns the highest possible, Biblical authority for the *dayo*—God.

If in traditional, Jewish eyes, the *dayo* limit in the Biblical example of Miriam actually derives from God, the best authority, it sweeps away any other claim. Yet, if this *dayo* is not an indelible, Divine interpretation for all QC's, Miriam's case may be just a particular solution. Moreover, one can presume that the *Mishnaic* minority's and the *Amoraic* use of degrees would indicate that Miriam's case is insufficient to authorize the *dayo* as the correct interpretation for all religious QC's, especially when it is so questionable. What *Sion* says about it in the *dayo*-proportionality controversy is significant: "[T]his example does not by itself resolve the issue incontrovertibly."<sup>406</sup> Since the very passage expects a proportional result, its sameness needs an explanation. The deeper reason could be that God expresses mercy in judgement here as elsewhere.<sup>407</sup> Shortly, we shall explore the wider Biblical grounds and the specific passage to show that the *dayo* is not exclusive and so was probably invoked here as a rule to satisfy another agenda. For now, a discussion about mercy is in order as a possible, alternative explanation to the *dayo*, as either can call for a lesser judgement as sufficient.

### **b) Leniency, Mercy, and the *Dayo***

Are the qualities of mercy, leniency, and the *dayo* related? And if so, what is more basic? One can claim that the *dayo* equality abides by two Rabbinic principles: to be lenient and not hasty in

<sup>406</sup> *Sion*, 55. He also suggests that the *dayo*'s lighter judgement is one of "sheer mercy."

<sup>407</sup> For examples among many, see Ex 34:6-7; Ps 25:6-7; Lam 3:22.



judgement.<sup>408</sup> Yet the *dayo* is not the only way to be lenient or express moderation and restraint. The maxim of leniency is a call for mercy, which also reflects God's nature. A *dayo* may serve well as a minimum sentence in a more severe case—if leniency is required. Yet this lighter sentence of a *dayo* need not be merciful at all: if deployed automatically, mercy just precipitates out. However, it can be wrong when too light. With a prior life sentence for causing death in a fight, in a lesser case of accidental death, one seeks a fitter, more lenient outcome as a substitute. Generally, for an exact match in each new case, one must wade through the (categorized, ranked) precedents<sup>409</sup>—if available (unlikely without excellent memory or records). Even the closest may be inadequate. To be merciful or just, a scaled decrease (or increase) is more pliable or needed anyway, to match outcome to case. Why opt for an often crude *dayo* if leniency is served one way or another by a more sensible, closer proportion?

More fundamentally, in both Biblical and ordinary justice, one would have no need for mercy to temper strict justice if justice is initially and always minimal and lenient. Leniency, sometimes expressed by a *dayo* limit, makes sense only where mercy is called for in the face of a generally expected, strict, proportional judgement.<sup>410</sup> Thus, one presupposes a degree as the prior norm of justice. If a degree, moderated by mercy, still has not mitigated strictness enough, then one can deploy the *dayo*. If a judgement remains unsatisfactory, mercy or strictness can intervene again. Thus, mercy is the cause and a *dayo* only one means to achieve leniency, given the prior reality of proportional justice.<sup>411</sup> Shortly, I shall deal with the interpretation of the Miriam passage and other theological problems that result.

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<sup>408</sup> See Hirschensohn, 49. Also see D. Novak, 'Maimonides,' 125; & n.77: Sanh 79a, 37b, Makk 7a.

<sup>409</sup> As noted, a graded string of *dayos* effectively does the same job as a ratio. When one goes to the next thing along the scale either way, a new match is made between cases and outcomes (according to their severity).

<sup>410</sup> The norm scales outcomes to actions. Such ratios are sensible. (If the norm is less, punishment would not equal the offense.) One must judge fairly, even if it is strict (which I take as the sense of *ain m'rachmim b'din*). Yet mercy (*midat ha-rachamim*) may be desirable – considered when one realizes that the usual penalty is too severe in this specific case. Thus, one stays open to the often competing and compelling human factors, largely squelched by the summary application of any fixed rule. A blind rule, like an exclusive *dayo* or unrestrained strictness, applied without thinking or weighing all the factors, would be arbitrary. (We want fairness for the victim(s) and not just leniency to the perpetrator.) But apart from some residual arbitrariness in deciding more or less, to include the individual peculiarities is often more important than an inconsiderate, cold consistency with the past or a norm.

<sup>411</sup> Sodom and Gomorrah, where God discusses the level of judgement with Abraham, is a case in point that could be fashioned into a QC. Abraham's rhetorical question to God as the earth's just judge has both natural and theological aspects of fairness and an appeal to mercy for the innocent (relatively) that allows protection to the guilty because of collective harm otherwise. *If a natural judge would not let the innocent suffer with the guilty, so*

#### 4.4 Interim Summary of Objections to the *Dayo*

Before I corroborate my claim for ratios in Biblical QC's, I review the objections to a strict *dayo*.

First, a minority of early Rabbis disagreed with an irrevocable *dayo* interpretation. That their objection was overruled takes nothing from the force of the variability implicit in the QC argument felt by the majority, too. Minority compliance may have been for reasons other than the *dayo*'s partial sensibleness: they submitted because tradition was important, majority decisions were preferable, unity in difficult times was critical, their keen protests were recognized, and they feared excommunication.<sup>412</sup>

Second, the fact that the later *Amoraim* did not consider the *dayo* worthy of full comment or support weakens Maccoby's claim for its supremacy. Silence was not endorsement. More significantly, their examples spoke otherwise. This suggests that the *Amoraim* saw the *Mishnah's dayo* claim as applicable under specific conditions only, while their own view worked under others. In any case, their QC's with degrees are stronger evidence of their actual beliefs than Maccoby's presumptions about their alleged forgetfulness, misapprehensions, or misconstruals of their *Tannaic* forebearers.

Third, we can add Jacobs' point that each Rabbinic group had differing foci of interest: the *Amoraim*, largely divorced in time and place from the immediate concerns of the *Tannaim*, were more abstract, theoretical, and academic.<sup>413</sup> What served the purposes of the *Tannaim*—preservation and transmission—was not the same as those of the *Amoraim*—classification and extension. So one expects that the freer *Amoraim* could systematize and generalize more than their predecessors, who needed to remember, record, and reiterate the tradition in times of persecution. Even if the *dayo* was the common, *Tannaic* practice, this did not make it the only or truer solution, as the *Amoraim* examples show.

*sparing the cities, how much more the best judge?* God answers yes - for a minimum number (10). Lacking that, the actual judgement was proportioned to the guilty (although some could take it as excessive), while a measure of mercy was shown to the immediate family of Lot, Abraham's relatives. (In application, just as God, a perfect and all-knowing judge apportions guilt and punishment suitable to each party, so too a human judge makes a ruling based on all the relevant evidence, degree of guilt, and harm caused.)

<sup>412</sup> The last point is my adaption of Fisch's suggestion concerning the *Amoraim*. Overall, Fisch claims that more was involved: a sort of subversive view of the minority, anti-traditionalists responsible for the final layer(s) of editing and commentary, carefully meant to instruct the more perceptive, advanced students, while protecting themselves from excommunication. This he reiterates in subsequent journal articles, defending it against various queries and challenges, even if some of his conclusions alter. (See the *Journal of the Society for Textual Reasoning*. Vol 4. No 2, Mar 06.) There is the famous incident of R. Eliezer's removal.

<sup>413</sup> Jacobs, *The Talmudic Argument*, 21. This partly agrees with Halivni, say 91-95.

Fourth, it is as much an error to conflate reason and justice with politics and religious concerns as to assume that pragmatic matters had no influence on the *Tannaim*. Given these other concerns as likely at the time, they probably factored them into their choice of the *dayo* and tradition. They endeavoured to make the best, abductive choice and left the door open for other, Rabbinic experts, better than they, to do the same.<sup>414</sup> If the *Tannaim* displayed such modesty, Maccoby too should be more moderate and not assume that a majority vote for the *dayo* is necessarily correct in every matter, let alone in logic.

Fifth, reconciliation is possible on various levels with flexible outcomes. One can assume that the *Amoraic* Rabbis reconciled *Tannaic* traditions to right uses in Scripture and to sensible, ordinary reason. Their intergenerational differences are resolvable by a weaker *dayo* that leaves room for good ratios.

Sixth, if mercy is the real issue after all, it diminishes the dual problems of arbitrariness found with the strict *dayo* and inconsistency when degrees occur. Just because mercy is not a simple, logical operation or an easily applied, exact method, does not make it too vague or inapplicable. We must not label mercy as too indefinite, unstable, emotional, or arbitrary, so that it requires the stability of a fixed rule. Mercy weighs the issues; it does not just pronounce the same result—which can be more arbitrary. Mercy is as sensible to the actual realities as it is sensitive to the individual. So in order to decide human affairs properly and to accommodate mercy, we need more latitude than what the *dayo* usually affords.

Seventh, Samely and Daube differ with Maccoby in that both see the QC as acceptably rhetorical and logical, rather than that it is divisible into Maccoby's types of good (*dayo*) and bad (degree).

Eighth, Maccoby's assertions do not disprove proportionality; he only denies it is true, as he waves his rhetorical, red flag over it. His denial is unsustainable thus far. While Maccoby rightly asserts that the *Mishnaic* Rabbis' *dayo* limit is sensible, it does not guarantee correct use everywhere. If Miriam's *dayo* case is one of special mercy, it cannot serve generally. As an inductive fallacy (of composition), the overuse of the *dayo* also misrepresents sensible ratios. The default position appears to be that degrees and sameness together are better than either alone: the broader platform of these dual principles can moderate each other and produce greater fairness.

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<sup>414</sup> Remember, I do not take the idea of revision as a ploy, for if so, we would face insincerity on their part.

Ninth, for his part, Sion is more circumspect than Maccoby in saying that the *dayo* is a sort of minimum. Sion leaves open the quantitative aspect of what is minimal or proportional, to the further analysis of attributive factors. He states succinctly that the QC argument, “from a formal point of view” is compatible both with being equal to the former conclusion, as it is with being unequal or proportional. To decide which is appropriate, whether as an equal or unequal judgement, requires “additional information and other arguments,” none of which Maccoby seriously offers for the *dayo*.<sup>415</sup>

Tenth, as any parent or judge knows, seldom is there only one side to a controversy. To grasp the issues and judge fairly, one hears both sides, gathers key evidence, and weighs the arguments carefully. How the two principles interplay in a situation must be determined thoroughly, rather than superficially according to habit, preference, unsupported claims, or hand waving about the ironclad logic of the *dayo*.

Eleventh, from a Jewish perspective, the Creator of all (that is originally good) encourages correct reasoning in order to grasp truth everywhere. Inasmuch as one reasons to understand Scripture, when such thinking is right, it can make a vital contribution.<sup>416</sup> With the QC too, one reasons to find a right match between cases or else calculates the ratio directly from the given case to the new to get a fair outcome. Either way, as cases proliferate, orderly classifications simplify matters. Even this requires various scales of likeness and difference, stronger and weaker cases. In effect, the *dayo* as the sole arbiter of a QC has not yet justified itself. At the same time, one can insist that underlying truths and moral requirements stay the same despite varied applications, for otherwise their meaning shifts in new cases. Ratios are only new applications of those same basic truths, which do not and cannot change.

In sum, a *dayo* that tries to preserve religious tradition avoids the theological history of *hermeneutic changes*: 1) Interpretations are not identical to Scripture (even if needed, clarifications are many and partly correct). 2) Contemporaneous variants exist, like the external *Baraitot*.<sup>417</sup> 3) New cases can get new rulings. 4) Later, *Amoraic* revisions or expansions indicate that some rulings are temporary.

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<sup>415</sup> Sion, 56.

<sup>416</sup> For instance, see Kraemer, 102-5 (even when wrong or partially right, 122), and as an approach to truth, 123-4.

<sup>417</sup> These are traditions parallel to the *Mishnah*, but excluded from it, perhaps because they were not the consensus view. Still, as part of the tradition, they could be called upon as supportive of a position in the *Gemara*.

Again, Maccoby's sole *dayo* restricts the QC's field too narrowly, for he fails to account for the good reasons that allow ratios. Good ratios can work for religious QC's too: 1) Moral fairness requires them. 2) Good examples approve of them. 3) Leniency presupposes proportional justice. 4) Degrees and sameness are better than the *dayo* on its own. 5) Mercy or fairness can remedy excess or inadequacy. 6) Mercy as the motive explains leniency better than a *dayo* as a means. 7) Mercy is likely the real issue behind Miriam's *dayo* case, to alleviate a yet harsher sentence. 8) *Dayos* are refutable. 9) Traditional cases are gradable into various series. 10) Most importantly, a God of mercy need not be arbitrary with the *dayo* (or inconsistent when using degrees, as we shall see) or expect people to be.

Based on all that supports variable conclusions and the alternate interpretation of mercy in the Miriam incident, rather than a Divine *dayo* alone, the QC controversy is at least a stalemate (*teiko*).<sup>418</sup> However, this is not a contest: both principles are complementary parts of a judge's repertoire (or anyone's), conditioned by the context, to achieve justice and mercy. However, none of the above settles the issue to the satisfaction of those who maintain the *dayo* rule is an absolute, paradigmatic, Divine rule able to override all fallible, human ideas. Thus, I must convincingly show that no such Divine truth or Biblical ground for an exclusive, *dayo* rule is justified, so that it is non-obligatory. This requires two steps: 1) to determine the overall, Biblical view of acceptable QC's, and 2) to show that the *dayo* as the only religious QC solution causes irreconcilable inconsistencies, not only in the paradigm case, but also in the whole skein of Biblical patterns. Let us now delve into the pertinent, Biblical material that gives rise and sets bounds to the *Mishnaic dayo*, in order to establish the religious propriety of proportions.

#### **4.5 Biblical QC's**

##### **a) Both *Dayo* and Proportional Conclusions**

A survey of Biblical QC's will determine the relative frequency that this revelatory source<sup>419</sup> gives to its conclusions, whether as the same given (*dayo*) or as a proportion. While Jewish tradition regards

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<sup>418</sup> Although I could be inconsistent in not giving the benefit of the doubt in a tie to the *dayo* as the prior, presumed case, I am being charitable in granting equality; nonetheless, the unlikelihood of it being a Divine institution will allow recognition of its place as only one of a pair of equal principles. See Jacobs, *The Talmudic Argument*, 12.

<sup>419</sup> As the Oral Torah bases its authority on the written (Ex 34:27, *al pi...*), Scripture is still primary.

at least ten, Biblical QC's as primary,<sup>420</sup> several other QC's occur, whether overtly stated or implied, distributed throughout the *Tanach* that are known to the Rabbis and later Jewish commentators.

The Rabbis differentiated and categorized Biblical QC's by types: the best ones belonged to a special class that fixed traditional truths and were fit for moral and religious purposes; others concerned mundane matters, based upon common knowledge; the remainder were plainly wrong or illicit and to be exposed as pernicious. Natural QC's were neutral or in need of help to become good. Yet, because illegitimate or evil QC's could arise from unrestrained natural reason to encourage immoral behaviour, such thinking was suspect. So natural thinking, subject to excessive claims or potential fallacies, needed supervision by corrective revelation and right, traditional understanding. Evil QC's were more obvious and so avoidable. An overtly flagrant QC was that of Lemech (below); a covert, evil one was that of the serpent/Satan tempting Eve. The Rabbis rejected both as QC's of error or darkness, reprehensible illustrations of how the QC could be misused.<sup>421</sup> While all the types were Biblical QC's, for the *Mishnah's Tannaim* it seems, not all were good or good enough for religious instruction, guidance, or social truths, especially if in discord with approved, Jewish, moral practice (as *halacha*).<sup>422</sup>

### **b) Main Biblical Examples**

In the *Tanach* we find an array of recognized QC arguments,<sup>423</sup> designated by a group of typical, signaling or operative terms. (I transliterate and update their senses in English. To indicate the cardinal ten QC's of religious tradition, I use an asterisk\*.) So let us list the twenty-five that I shall analyze.

- 1) Gen 4:24 *ki* = if, *ve* = then
- 2\*) Gen 44:8 *hen* = since, *ve-aich* = then how?
- 3\*) Ex 6:12 *hen*, *ve-aich*

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<sup>420</sup> The official list is given in Gen Rabbah 92:7. These ten do not arise only in the first five Biblical books (Genesis, Exodus, Leviticus, Numbers, and Deuteronomy). Perhaps what sets these ten apart as special is either their revelatory quality, or their promotion of moral behaviour, or that each had some unique character.

<sup>421</sup> In passing, Lemech's *unjust use* (Ge 4:24), is an early example, a biased valuation, improperly offered as an excuse or defense of his crime. Morally, it is rejected by the Rabbis as an unacceptable claim, an excuse for evil or darkness (*choshech*). Satan offers one (Gen 3:1-5), based on the terms, *af-ki, loh*. See Hirschensohn, 40-41, 60-61.

<sup>422</sup> There is considerable, detailed material on this in Hirschensohn, 39-60 and Ostrovsky, 56-60. Again, QC's of natural reasoning are *d'savra*, as reasonable speculations, while binding forms are *d'dina*, according to acceptable, authoritative, Biblical sources and interpretive rules.

<sup>423</sup> Sometimes English references are a verse off from the Hebrew. Much of this is Sion's, 66-85. My emphasis, however, concerns the dayo/proportions analysis. Looking carefully at the *Tanach*, Sion lists actual instances over and above those officially given by the Rabbis. A few more could be classified as QC arguments.

- 4\*) Nu 12:14 *ve, halo* = should it not [be that similarly]?, or cannot but, or must affirm  
 5\*) Deut 31:27 *ki-hen* = (if) *since* (*beh* =while), *ve-af-ki* = so then how much more  
 6) 1Sam 14:29-30 *reu* = see, *ki* = that, *ki* = because, *af-ki* = then how much more, *ki* = then  
 7\*) 1Sam 23:3,<sup>424</sup> *hinei* = look [if], *ve-af-ki* = so then how much more if  
 8) 2 Sam 4:10-11 *ki* = if, *ve* = and, *af-ki* = then how much more if, *halo* = should it not [be that]?, *ve*= and  
 9) 2 Sam 12:18 *hinei-beh* = look, [if] when, *ve-aich* = then how [now that]  
 10) 2Sam 16:11 *hinei* = look [if], *ve-af-ki* = so then, how much more, *ve* = *and*, *ki* = because [perhaps]  
 11) 1Ki 8:27 & 2 Ch 6:18 *hinei* = since, *loh* = not, *af-ki* = how much less  
 12) 2Ki 5:13 *halo* = would it not be that, *ve-af-ki* = so despite that...[should it be]  
 13) 2Ki 10:4 *hinei...loh* = look [if]...not, *ve-aich* = so then how  
 14) Job 4:17-19; 15:15-16; 25:5-6 *hen* = look, *loh* = [if] not, *u've* = and in *or* although, *af* = so neither  
 15) Ps 78:20 (which I find problematic, despite the *hen...ve* = if *so*, *hagam...eem* = so also...can [he not?])  
 16) Ps 94:9-10, *halo*... = [if *or* as]...is it not also? *eem...halo* =if...is it not also? *Halo*=[if/as]...is it not also?  
 17\*) Prov 11:31, *hen...af-ki* = look [since]...so also  
 18) Prov 15:11, *af-ki* = is it not also?  
 19) Prov 19:7, *af-ki* = *so too*  
 20) Prov 19:10, because *af-ki* is also used, as in 19:7  
 21) Prov 21:27, *af-ki* = *so too*  
 22\*\*) Jer 12:5 has two, *ki...v, v'aich* = if...with, then how?, *u'v...v'aich* = and if in...then how?  
 23\*) Ezk 15:5 *hinei...loh...af-ki* = look, when it...not...how much less?  
 24) Dan 2:9, from Hebrew of Aramaic, *ki-eem-loh...al-ken...ki-achen*, for if you do not...so then...surely then  
 25\*) Esth 9:12 *be...mah ohsu...* = [if] in...what will be?  
 Note: Esther 7:4 is an implied QC,<sup>425</sup> as others;<sup>426</sup> but they are not included, as the above, main ones will suffice.

These twenty-five QC's (some of which Sion lists separately) have various types of conclusions. In order to evaluate each type, let *D* stand for the *dayo*, *P* for a proportion, *T* for a tie of either type, *G* for a good (moral) one, *N* for a natural matter, and *W* for wrong (or wicked) thinking. I tally the results later.

1) The first, overt QC<sup>427</sup> occurs in the first book of the Bible, Genesis (Gen 4:24). However, as noted, it displays a perverse, self-centered bias: "If (or since) Cain is avenged seven times, then (surely) Lamech [ought to be avenged] seventy-seven times." This highly disproportionate self-justification is a mere excuse for killing a young man who harmed him. As an extreme and entirely unjust claim by Lamech, this QC does not grant any authoritative warrant for its use.<sup>428</sup> The argument moves from the lesser, Cain, to the supposedly greater, Lamech, who claims far more respect for his assumed greater status. Lamech's QC abuses proportionality in self-defense. Lamech was not murdered; murder is not

<sup>424</sup> In Hirschensohn, 40, the verse is likely a typo, given as chapter 22, instead of the correct one, 23.

<sup>425</sup> For this QC, see Daube's comments, 'Damnum and Nezeq' in *Collected Works*, 255-6.

<sup>426</sup> An implied one is in Isa 49:15, where God and mothers are compared in terms of their memories and concerns. An abductive comparison is in Gen 29:19: "...better to give her [in marriage] to you than to another...."

<sup>427</sup> Actually, by means of the terms often associated with the more obvious QC's (by means of GS analogy) even earlier ones are claimed by various Rabbinic authorities as QC's. One is the temptation of Eve (due to *af-ki, loh*) in Gen 3:1; another is found after God's comment, "behold (*hen*) humans have become like God" in knowing good and evil (yet as a unique experience for them). To prevent something even worse, they are expelled (Gen 3:22-24).

<sup>428</sup> See also Hirschensohn, 41.

justified for a mere wound; so the cases are not alike and his QC incorrect. In his attempt to excuse his evil, excess behaviour, he uses fallacious, QC reasoning with unrelated cases rather than good, natural argumentation. (Yet the reference to Cain does raise a point about degrees: God counts Cain as deserving special protection (from vengeance) by means of a threat of punishment that is disproportionately large, perhaps to act as a deterrent; the proportionate justice of lesser exile that Cain himself recognized as due, he still wrongly thought as too harsh (Gen 4:14-15).) Lemech's faulty QC gives us a clue as to why the Rabbis wanted to close off degrees and promote only the *dayo* as sufficient. To grant a similar, unrestrained proportion could allow a QC argument to go overboard in the hands of unjust or less judicious people (even one's disciples or successors who forget the prime source and thus missed its best understanding or interpretation). Thus, the Rabbinic call for equal judgement with the *dayo* makes eminent sense. In any case, we can reject the overly biased QC as an *N/W-P* type.

2\*) A more convincing QC is found when Joseph's brothers go to Egypt to buy grain a second time during a severe famine in the Middle East (Gen. 44:8, after about 1850 BCE).<sup>429</sup> Joseph, now second in command under the Pharaoh in Egypt, tests his brothers because of their earlier jealousy, having sold him as a slave about 22 years before. Through a servant, during their prior purchase, Joseph had secretly returned their money; but this time, along with all their money, he had placed his special, expensive goblet among their goods. Sending his servant to hail them back for theft, they now have to defend their innocence. They rely on an argument that they felt would carry sufficient weight with anyone of a reasonable frame of mind: "Look, the money we found in our bags, we returned to you, [having carried it all the way back] from Canaan, how [less likely now] would we steal from your master's house silver or gold?" They remind this same man that on arrival they repaid the previous money; so a new charge of

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<sup>429</sup> This probably occurred when the Hyksos settler/invasers had conquered Egypt for a while and preferred another, unwelcome foreigner, who was conversant with the Egyptians, to deal with the people and trade. Later, the old Pharaonic dynasty defeated these Hyksos, re-established their rule, and imposed state repression upon any foreign populace, particularly, the potentially dangerous Israelites. The Israelites' large population increase led to slavery (work the men to early death) and later, male infanticide, in order to assimilate the females, in order to remove the undesirable threat of being overthrown by these non-Egyptians. Soon, the economic prosperity and new monuments of Egypt became bound up with advantages of having cheap slave labour (food not being a general problem). Eventually, the confluence of suffering and other events bring about the exodus under Moses.



theft is that much more unlikely. As a QC argument, we can accept this as a claim for their equal innocence in both incidents. When the goblet turns up as incriminating evidence, their argument is apparently defeated. However, they were framed. Thus, their QC was correct. As a QC, even if they implied greater innocence to counteract the charge of greater guilt, I can accept this as a *dayo* claim on their part. That is, innocent then, surely now too. Still, it is also natural reasoning as an *N-D*.

3\*) Then we have Moses' complaint to God in Exodus 6:12: "If the Israelites have not listened to me, how much less [will the] Pharaoh?" This bases itself on the fact of his people's rejection and his being seen as a rebellious inciter with a criminal record that challenges the king of Egypt.<sup>430</sup> I believe the impression one receives is not just that the king will refuse to respect Moses' authority in the same way as the Israelites did, but that he will reject Moses even more now that he is not even honoured by his own people as their representative who has failed to deliver them. Thus, *to the same extent as the Israelites reject me, surely Pharaoh too will reject me too*, is weaker than, *Pharaoh will reject me all the more*. However, I am willing to see this as favouring neither point and allow the *dayo* as a default.

Still, some Jewish commentators see this as an unacceptable QC, because God refuses to agree with Moses. However, I believe they miss the point.<sup>431</sup> The Israelites would not listen to Moses on two counts: a) they were disappointed and disillusioned when he failed to deliver on the promise of freedom and b) they ended up even more severely oppressed. Pharaoh had already rejected him too. These are good reasons to see the QC argument as fine. Nor does God necessarily reject Moses' QC as if he wrongly stated the known facts, but rather that Moses wrongly conceived the situation: God wants to have a showdown. God will show who is the true king and judge in the face of Pharaoh's intransigence, his chief advisors' pride, and the Egyptian regime's enormous strength. This will be even more striking given the Israelites' weakness and dashed hopes, and the evident frustration of Moses. Moses' excuse is rational, but it does not yet have God in view. Now God has entered the equation, to overturn those ordinary expectations and arguments—unexpectedly and extraordinarily. It is not a matter of defeating

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<sup>430</sup> As an improper, revolutionary representative of the despised, uncouth Israelites, he is unfit to come into the inner court, without its due protocols, rules, official requests, and obeisance to the supreme, Egyptian monarch.

<sup>431</sup> Hirschenson, 54.

the argument, but one of defeating the stronger human powers. One can counterbalance the claim that Pharaoh has even more reason to reject Moses after the Israelites' rebuff by saying that his refusal will be the same. While I think Moses claims more as an *N-P*, I can accept an *N-D* too; yet overall, it is a *T*.

4\*) Since Numbers 12:14 is the controversial centerpiece of the entire discussion about Miriam's punishment, introduced before and to be analysed in depth later, I only requote Maccoby's rendition: 'If her father had but spit in her face, should she not be ashamed seven days? Let her be shut out from the camp seven days, and after that let her be received again.' Simply stated, this conclusion is a *dayo* (*D*) as it stands, but not necessarily a *dayo* by which one can formulate its exclusive use. It is a *G-D*.

5\*) While the above passage is a family criticism of Moses, this is just the "tip-of-the-iceberg." Although liberated from Egypt (miraculously), the people's ongoing reactions to the uncertainties and difficult desert conditions are anything but a happy story. The natural, human attitude to extreme testing (Divinely ordained), especially from these former slaves, is brought out vividly in their numerous complaints. They blame God and Moses for the lack of normal provisions and security (although God spared the people from having to fight their way through powerful Egyptian garrisons and Philistine armies had they gone on the direct northern route).

Even weeding out the older generation over forty years did not mean that their descendents learned or were less humanly resistant. So by the end of the book of Deuteronomy (the fifth book of the Law), Moses, approaching death, has a final few words to say about his leadership experience and what this likely means for the future. In fact, Moses' QC argument concerning the past and future is based on the prediction that God had just made earlier (in Deut. 31:16-21). This is Moses' QC (Deut. 31:27, my paraphrase): "... if while in my time of living with you, you were so disobedient to God, how much more after my death?" Moses declares that since the people were so rebellious under him (as the strong leader with revelations and miraculous help), they would be "all the more so" after he died (with lesser leaders and miracles). Rephrased: *If when I was with you, you were bad, surely you will be worse after I die*. Yet Moses seems to imply that it is less about the human leader, although influential, and more about the human tendency to avoid God and become immoral. More generally stated: *People at stage A*

*have been bad despite strong, spiritual leadership; strong spiritual leadership at A is better than a secondary (inherited) leadership at B; and because people tend to move away from God towards immorality, people at stage B will be worse.* The same state of affairs or worse is likely (as being better is unlikely). Yet the future is normally undecidable (other than that God's prediction is true). If we can accept the claim of a typical moral decline upon the abandonment of God and a diminished influence of good religious and political leadership, then, this is sociologically likely (apart from revelation).

Even if general history justifies Moses' QC as likely, in terms of specific Jewish history, was it true? This requires a check of the, as yet, future evidence. Regarding this Jewish history, I think that most would agree that, morally, things worsened and led to catastrophic national defeats and the major exiles to Assyria and Babylon. This is worse than the rebelliousness and forty years of judgement during Moses' time. (Biblically speaking, had the generation to whom Moses spoke been as bad as their descendents, they would not have entered the land of promise, but would have died in the desert like their parents.) So this is a good (*G*), proportional (*P*), QC conclusion, backed up by subsequent history: past and present disobedience is being compared to a likely, projected, greater one (perceived by Moses from God's prediction), when the vices of idolatry would permeate Jewish society.<sup>432</sup> Mark it as a *G-P*.

6) During the time of Israel's first king, Saul (rule ca. 1046-1006 BCE), there were several battles with the Philistines (who had settled along the coastline after being unable to conquer Egypt, mainly during the 400 years of Israel's slavery in Egypt and their later, desert wanderings). The Philistines often attacked the Israelites in the eastern hills. In one of these battles, about 1030 BCE, Saul's son Jonathan had been active in securing a victory. Unfortunately, his father (already erratic) had foolishly demanded (with a curse) that no soldier should eat until the enemy was fully routed. Jonathan did not hear of this strange demand and proceeded to eat some honey in the forest that had spilled from a nest. On being told of his father's curse for disobedience, he complains about its disturbingly opposite effect. Having been strengthened by that food, Jonathan makes this QC argument (1 Samuel 14:30): "If the people had eaten food today captured from the enemy, would not the defeat of the Philistines be even

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<sup>432</sup> The defeat of the Canaanites was due to the horrific practices and diseases of their virulent idolatry.

greater now?” When exhausted people pursued the enemy, people strengthened by food would have made the enemy’s defeat even greater. In other words, we have this QC: *Unfed soldiers are weak, but still win; fed soldiers are stronger than unfed; surely stronger soldiers can win more.* More simply: *A does F, B is stronger than A, B can do more F.* This is clearly proportional, even if it is a hypothetical assertion or an assumption. It is more likely true than not, because most people, weak from lack of food, are generally known to perform more poorly than those strengthened by eating. So the given, poorer victory, is compared to the greater, potential victory, now largely forfeited. Although it can be termed as natural reasoning, it acknowledges God’s part in the entire victory, initiated through Jonathan, but interfered with by an authoritative king’s irrational demand. It is N or G, while also an obvious P.

7\*) A few years later (ca. 1020 BCE), David killed Goliath. Yet David soon falls into disfavour with Saul (now his father-in-law) who had become insanely jealous of him; as a result, he flees for his life. Continually on the run, he and a band of outcasts even seek temporary refuge among their enemies. On receiving a report that the Philistines were attacking an Israelite village, he gets a response that God wants him to defend it. However, David’s men protest (1 Samuel 23:3): “Look, if while we are in the Judean wilderness we are afraid, how much less should we go to K’eylah against the Philistine army?” They, very humanly, resist the idea of attacking the far better trained and armed Philistines, probably more numerous too, given that they already flee their own weaker people. The QC as I see it is this: *We run from our own, poorly equipped men; the Philistines are stronger than the Israelites; all the more reason should we stay away and not attack the Philistine army (band).* Simpler: *We flee A; B is stronger than A; surely we should flee (and not fight) B.* David hears his men’s protest and makes sure that he understood God’s will. Whether their fear is the same or greater is unclear, although my sense is that it is greater. Yet, I will take it as an undecided tie. Still, the men reason naturally, although sensibly, not from a Divine perspective or God’s clear direction. I judge this conclusion either way as *N-T*.

8) Eventually, Saul dies in a disastrous battle with the Philistines. A mercenary, Amalekite soldier in Saul’s army informs David that he had killed Saul (although at Saul’s request, when already severely wounded, rather than to be killed by the Philistines). The soldier probably expected a reward for ridding

David of his persecutor. But David has the man executed instead (apparently for his willingness to kill the king rather than die defending him, as he was likely sworn to do, especially as his family had found shelter among the Israelites).<sup>433</sup> Somewhat later, a civil war erupts between the ten Israelite tribes supporting Saul's lineage and the Judean tribe (with the Benjaminites) under David. It finally ended when the Israelite general made a deal with David. (Unknown to David, his own general then killed the Israelite general, in fear of a trap—although the Israelite tribes still pledged their support.) In a show of loyalty to David their new king, two Israelite officers killed Ishboshet the last son of Saul (the former king of Israel). Again, these men expected a reward from the David for eliminating this potential rival and opponent. King David (ca. 1006-966 BCE) responds (2 Samuel 4:10-11): “If for the executioner of Saul, I [David] called for the death penalty, how much more should it be the same for the assassins of an innocent son?” Put more simply: *A is executed for killing the king (going to die anyway); B kills an innocent son of the king (in a less excusable way), such that B is worse than A; so even more should B be executed.* Because death cannot be surpassed normally (as torture and death, or unjust collective punishment would be evil and excessive), it is the same, maximum result. David's QC clearly favours a *dayo* interpretation. As a *G-D*, it is a just penalty for the wicked deed and fulfills the Mosaic Law.

9) Years later, David has a messy affair. According to the law, David faces death for adultery with Batsheva and for her husband's murder (deliberately abandoned in battle). Even David calls for the death penalty in a similar parable. Yet instead of his demise, he receives mercy on confession of his guilt. However, God publicly exposes the serious nature of such acts by their consequences (immediate and long term) for David's rule and family.<sup>434</sup> The child of the affair becomes deathly ill. David, in deep remorse, pleads and fasts for the innocent child; but it succumbs, nevertheless.<sup>435</sup> With this sad turn of events (2 Sam. 12:18-19), David's servants fear his probable response: “When we spoke to him while

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<sup>433</sup> 2 Samuel 1:1-16.

<sup>434</sup> I am paraphrasing the story, without twisting the basic meaning or going beyond the sense of what is stated.

<sup>435</sup> God judged the forbidden acts of David (adultery and effective murder of the husband in a battle betrayal), by allowing the child's sickness and death, not answering David's request for its life. Although David does not die as required by the law, the greater family disasters that follow make clear that God's mercy is also limited. Evil, deliberately committed - especially by representative leaders - has consequences. Mercy is not always impunity.

the sick child lived and he was unwilling to listen, how can we tell him now that the child is dead, prompting a worse reaction?” *When it was sick and hope of recovery existed, he grieved severely; but death is worse than sickness; surely, with its death, he will be in a worse state.* More simply: *A was bad and he grieved; B is worse than A; surely, with B, his grief will be worse.* This expectation exceeds sameness. The QC goes from the less serious to the graver state, anticipating a correspondingly more acute response. That the king acted uncharacteristically is another matter. In fact, he was less troubled, not equally or more so, contrary to normal expectations. The QC failed, not due to its unreasonableness, but due to David’s acceptance of God’s judgement. The theoretical claim is *N-P*.

10) We see another result that David’s immoral behaviour set in motion in 2 Sam 16:11. One of his sons turns against him and tries to usurp the kingdom. On fleeing the capital to avoid a military defeat, a man curses him as deserving this fate. Not only is David shamed by fleeing, the abuse adds insult to the rebellion of his own son. David’s bodyguard wants to kill the man; but David accepts the compounded shame instead. He reasons by a QC: “If my own son wants to kill me, how much more is it permissible for this Benjaminite to curse me, if God told him to?” Slightly altered: *A wants me dead, but I flee in shame; B cursing me is less serious than A; so I flee in shame from B too.* The argument is an incidence of an equal acceptance of shame despite the unequal standing of the antagonists and the ability of his bodyguard to kill the man (while unable to defend the palace). One could argue proportionality in that the man is less important than his son; but David asked that his son be spared death too, making the matter of shame equal (although the son is later executed in battle by David’s general). Here the QC works from greater to lesser, with the conclusion calling for similar leniency. If the general had his way, one could assume that both men would have died equally despite their unequal acts (actual revolt of Avshalom versus just the cursing of Shimei, a relative of Saul). David sees a likely G here, so *N/G-D*.

11) Prior to David’s death, Solomon (another son with Batsheva) is made co-regent (rules ca. 966-930 BCE), and is commissioned to build a central place of worship in Jerusalem. In due course, Solomon completes the task. Upon dedicating the Temple that God is to inhabit, King Solomon recognizes the paradox (1 Kings 8:27): “If the heavens and the heavens above these cannot contain you,

how much less this house...?”<sup>436</sup> Even if we restrict the lower heavens to the earth’s atmosphere and the upper heavens to the region of the stars, rather than what is beyond the universe, the implication is clear. We face an obvious proportion here to a superlative, not an equal, degree. The QC has a ranked series: God (G) is greater than the universe (U) that is greater than the atmosphere (A) that is greater than a building on earth (B). Since God is uncontainable by U, how much more is God uncontainable by B? As a transitive series:  $G > U > A > B$ . Almost as a QC:  $U > A > B$ ; U is insufficient for G; also A is insufficient for G; so surely, B is insufficient for G. One can contend that since God is non-spatial and non-physical, the comparison fails. Yet the argument still works with the difference in quality (if not quantity). *Even the universe, made by God, is too small or too unlike, so surely a mere building is much less capable of containing or capturing what is in essence spiritual.* Still, if God’s essence cannot be encompassed by the universe, is it *not the same* with respect to a building? First, that is not the sense we get; but second, any human fabrication, no matter how splendid, is less than the universe God created (essence of U > essence of B, even if they differ in kind). Differing creations (God’s U to man’s B) reflect differing degrees of God’s essence/presence, as Isa 66:1-2 shows (by GS): Heaven, *throne* > earth, *footstool*; so a *human house* is a less adequate place for God (and reflects progressively less of God’s greatness). This theological truth is an impeccable proportion: *G-P*.

12) Over 100 later, during Israelite King Yoram’s reign (852-841 BCE), foreigners utter a QC (2 Kings 5:13). For the context, Aramean general Naaman (who likely beat Assyria at Qarqar, 853 BCE) seeks healing for leprosy from Elisha an Israeli prophet. He expects to do a great deed to warrant this special favour. However, when Elisha sends a servant with a surprisingly simple requirement, he reacts angrily at the lack of honour shown. His pride piqued, he leaves in a huff. Naaman’s servants appeal to him: “If the prophet had told you to do some great thing, would you not have done it? How much more then [should you do it] when he tells you ‘Wash and be cleansed’?” *If you would have done the harder thing for the result, fulfill the easier one for the same result.* Although the mere fact of an act and the

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<sup>436</sup> Since 2 Chronicles 6:18 is a passage that parallels the previous one, it is not counted. (If we reverse the direction, the differences are emphasized: If earth could exist (*per impossibile*) without the universe, a creator of earth and sky would be less than the universe’s Creator.)

result are the same, the lesser act is physically easier while also psychologically harder for this proud man—so I opt for proportionality on both counts. The harder act demands more effort, the easier less; the harder is more honourable, the easier is not. *If the harder act you would do with much (pride and) effort, you should surely do the easier one with (humility and) ease.* Act A you would do with pride and effort; Act A is less humiliating and more difficult than B; surely you should do Act B with humility and ease. Although offered by Gentiles, and so natural, is not this QC right? The prophet would have said so. More importantly, God honoured it. Even if an *N*, it is also a (practically) approved *N/G-P*.

13) Israel the northern kingdom deteriorated morally over the years, worsening under Ahab and Queen Jezebel, and then their son Yoram, after Ahab's death. The prophet Elisha instructed his disciple to commission a military man Yehu to be the new king of Israel (ca. 841 BCE). In short order, he killed Yoram (and executed the southern king of Judah). After getting rid of Jezebel, he challenged the capital city Samaria to either fight under another son of Ahab or else surrender. The city officials (2 Kings 10:4), facing a crisis, argued in this way: "Look, if two kings could not stand against him, how [much less] shall we stand?" That is: Yehu beat Yoram, Israel's most experienced, military king (who is stronger than any or all of Ahab's remaining sons {known by experience}) and Ahaziah, king of Judah (and presumably any troops with them); plainly (without a better military leader of our own and Yehu's general popularity and troops), we have less chance of fending him off. Simply: *Yoram and Ahaziah were stronger than we are; Yoram and Ahaziah could not stand up to Yehu; surely we cannot stand up to Yehu.* The idea is not just that they will be similarly beaten and killed, but one can assume, even more severely, such that resistance is worse than futile and would incur far greater harm. Surrender is not the same as being conquered, as the overall loss is less than the destruction and likely death in a fight. This is not a *dayo*. Even if renderable as an *N-P*, it is also part of the larger matter of justice meted out upon evil rulers (although Yehu committed excesses later) and not just a natural analysis in the end.

14) In the book of Job, there are complaints, conversations, speeches, arguments, and explanations concerning Job's seemingly inexplicable state of personal disasters and terrible suffering. The QC passages (4:17-19; 15:15-16; 25:4-6) are those of his friends who intend to answer Job's bold charge of



Divine injustice. Job proclaims his innocence as a good man who ought to be free of what appears to be a series of unjust punishments from God; instead, he wants God to account for His own actions. All of Job's friends suggest some hidden fault in Job that God exposes. In essence, they repeat this same sort of refrain: *If the angels have faults, and even the heavens are imperfect, how much more so are mortal, morally failing humans?* As a QC: The highest created things are (now) faulty (perhaps in that only God can be perfect in every way or that rebellion has damaged all creation in some way); even (good) angels (and heavenly bodies) are greater than the best human; surely even the best human is faulty. In another form: *all things, even unseen, are (now) infected by evil; good things close to God are higher than humans; surely, every human is infected (including Job).* More generally: *All creation is now damaged; the higher is greater than the lower; surely then, the lower is damaged.* Yet one could argue that the highest angels need not be infected or damaged, but only affected by specific rebellion, so that the "all" of creation need not apply in the same way. While we could read human failings here as in effect equivalent to less than perfect angels or imperfect nature, they differ in kind. Except for imperfection in all existence, each is imperfect in its own way, indicating that these are incommensurables and judged by differing standards. Regarding any common lack or fault, humans are only proportional to angels and nature, not really the same in the same ways. However, if the emphasis is on the mere fact of general imperfection in relation to God, and the greatness of the difference drives home this indubitable fact, then a *dayo (D)* is a better, more basic understanding. However, this would still not account for Job's suffering as far worse than what many gross criminals suffer in this life. Clearly, as a good person, he suffers excessively. Whatever one might surmise about angelic evil or punishment, in comparison, Job suffers proportionally, not equally. The mere fact of punishment is qualitatively the same; but the reality is unequal quantitatively. The QC as a general, theological claim of just punishment for universal faults just misses Job's point of blatant, personal injustice. Universal fault and punishment do not explain the unfair, excess suffering experienced by the innocent. One would have to argue that matters are eventually redressed, as indeed they are (to some extent only) when Job ends up gaining double what he

lost (outwardly) and apparently is now a better man (inwardly), despite the tragedy that befell him. As a poor, theological QC, it is a *D*; but it is *P* too; so I make it a *T* overall (repeated arguments not counted).

15) When the Israelites left Egypt, they went through the Sinai Peninsula and crossed the Red Sea on a (miraculous) bridgehead that developed; however, the water returned upon the pursuing Egyptian army. On the east side, the people of Israel faced further desert trials. Soon lacking water, they also tired of the special supply of desert food (manna). Psalm 78:20 recalls this famous test concerning God's provision. Although on the surface it is hard to see why it is a QC, especially given its question, the signaling terms seem to justify it. I formulate the basic charge in this way: "If by hitting the rock, water flowed out..., [why is it not all the more] possible that meat too be provided for the people?"<sup>437</sup> That is, water is good, but God seems unable to provide or else is neglectful of the meat we want (as the manna is too monotonous). In effect: *Water and manna are good, but not enough; meat, water and manna are better than water and manna; thus meat, water, and manna would be good enough.* As given, this not so much a logical problem as a bad attitude. In response, not only do the people get the added amount, they also get much more than they desired. God accepts the human reasoning by providing the meat; yet, God's punishment indicates his displeasure at their grumbling demands and ingratitude.<sup>438</sup> (Had they asked for the extra food with a good attitude, they would surely have received it without the penalty, since they already received it with a bad one—also by QC reasoning.) This is an *N-W-P*, but still accepted by God, despite the reproof and ensuing judgement.

16) David's psalm<sup>439</sup> (Ps. 94:9-10) includes an argument against those who commit injustice and think that when hidden crimes are unknown, they are free of consequence. It goes partly like this: "The one who planted the ear—is it not that he can hear? The maker of the eye—is it not that he can see?" Filled in and rearranged: *If the created, human hearer can hear, surely, the Creator can hear; and if the*

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<sup>437</sup> The reference is to Ex 17:1-7 as the water from the rock at Rephidim/Horeb, prior to the law at Mt. Sinai. The incident with the meat, after leaving Mt. Sinai, is in Num 11:4-23, 31-34.

<sup>438</sup> This bad attitude is of course familiar even as a joke: "Hey, the free tickets and 4-star vacation are nice, but you are really a cheapskate, because you could have flown us first class and given us a 5-star hotel!"

<sup>439</sup> Psalms are poems, often rhyming and with parallel verses that are (were) chanted and accompanied by instruments, whose themes usually relate the person, group, nation, nature, or circumstances to God.

*created eye sees, surely, their Maker can see.* Although not in a QC form, it can readily have one: *Humans have abilities; the Creator is greater than humanity; surely, the Creator has abilities.* One need not take this as a gross anthropomorphism, for it expresses a truth of the Creator’s ability to know everything (rightly, as well as to be Judge).<sup>440</sup> (Like Maimonides, we could say, negatively, that God is not able not to know.) The context brings proportionality again to the fore. Indeed, to claim equal ability would be to miss the entire meaning (and similar to the QC of verse 11) of God’s necessary, superior ability. This QC is theologically excellent, not a mere human thought. It is a proportionally good *G-P*.

17\*) Some QC’s are found in the pithy, collected wisdom of the book of Proverbs (largely written by Solomon). Proverbs 11:31 says approximately this: “If the upright person is rewarded in this life [or for what is done on the earth], how much more will the wicked and one who fails to live rightly [receive what is their full measure too].”<sup>441</sup> In a clearer QC form, we have: *A good person gets what he should; a good person is better than a bad one; surely, a bad person gets what he should.* Concerning this, Rabbi Malbim calls this a non-*dayo*, while Sion objects. Personally, I think Sion is incorrect here, although we can give both Malbim and Sion their due, for both proportionality and a like outcome are claimable. Yet it would be hard to say that the good and bad are simply the same and treated equally, as if on a balance, such that gain and loss do not matter or that the amounts are equal but opposite. At most it is a general statement of an ideal matching of either reward or punishment to acts committed, although only fulfilled adequately in a life after death.<sup>442</sup> Other than the notion of a general fit between act and consequence, as reward or judgement under a regime that is both fair and just, the actions (A) and consequences (C) differ in kind and measure. (If A+, then C+; A+ > A-; so for A-, then C-.) This QC too is a *G-P*.

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<sup>440</sup> The point of the argument is that while some humans do what they want thinking that God (if he even exists) is little more than a deaf, blind idol, the Creator of the universe and humans can hear, see, and penetrate even hidden matters to expose evil and folly. One need not jump into anthropomorphism of physical eyes and ears any more than a computer robot could “claim” that human engineers are also silicon, plastic, and metal of similar form and construction to themselves. This is a metaphoric analogy.

<sup>441</sup> Because of the terse phrasing, translating requires some interpretive expansion, and an explanation of some likely nuances. While one hopes that the good person gets due reward in this life and that all evil is punished, some crimes are not or cannot be adequately rectified in this life, requiring a future balance. Thus a better way of taking the Hebrew “ba-aretz” would be to refer to earthly deeds (or also internal states) in this life to also be paid after it.

<sup>442</sup> Even if descendents benefit, that hardly recompenses for personal imbalances in this life, which do occur. Similar ideas about non-equal value of the innocent and guilty in the Mishnah are proportion (as in Chapter 3).

18) Proverbs 15:11 reinforces some of the ideas stated or implied in earlier QC's: "If the grave and loss [or the place of the lost] are open (realities) before God, so [much more] are the inner qualities of humans." The emphasis is on the otherwise hidden (evil) states that are known to God. If the harder mystery (death) is known to God, so too is the lesser (thought).<sup>443</sup> *A knows X; X is harder than Y; A knows Y.* We can take this as an equal awareness—a Biblically true *dayo*, *G-D*.

19) Proverbs 19:7 presents this QC: "[If] all the brothers (or relatives) of a poor man 'hate' him, it is [obvious] that his friends distance themselves from him." *Relatives stay away; relatives are (typically) more caring than friends are; so surely friends stay away.* In ancient Jewish culture, this is largely true, even if at times some friends are better than one's relatives. It is a factual, inductively likely QC. Again, this favours the *dayo*, as more sure, despite the differing groups, mainly because of the common Hebrew parallelism involved.<sup>444</sup> It is an insightful observation about human behaviour and so an *N-D*.

20) Proverbs 19:10 is omitted in some lists, perhaps as it is better as an analogy or that its claims do not always hold. Despite the change of predicates, we have the same signaling terms (*af-ki*) as above, and so apply here, by analogy. As an analogy, it runs like this: "Just as it is unsuitable for the fool to live in luxury, it is also incongruous for a slave to rule princes." Rephrased as a QC: *Wealth is unsuitable to the foolish person who does not know how to use it well; a prince, who (usually) knows how to use authority and wealth well (otherwise he would cease to be a prince) is (usually) more capable than a slave, who is in turn more capable than a fool; but comparatively, surely a slave with authority over princes is unsuitable, as he does not know how to use such authority as well, any more than the fool can manage wealth properly.* For unsuitability (*lo-naveh*), the *dayo* is right. This is also a piece of natural experience, not a deductive argument. Yet it can be worse for a slave to rule over more able and trained people; and he may cause more damage than some fool who merely squanders wealth. Even if some

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<sup>443</sup> This "awareness of" or "exposure before" (*neged*) God can be a full knowledge rather than an experiential sort.

<sup>444</sup> Still, the semi-rephrased portion need not merely repeat, as something may be added or clarified.

slaves are worthy and more capable of managing than princes, it is (was) not the norm of experience and was socially incongruous at that time.<sup>445</sup> While it can be an *N-P*, I award it an *N-D*.

21) Proverbs 21:27 states: “[If] the offering of an evil person is detestable, how much more is it when brought with a wrong motive?” *OE is bad; WM + OE is (negatively) more than OE; surely, WM + OE is worse than OE*. That is, the bad intent of the evil perpetrator makes his offering an even more unacceptable sham, rather than just a reinforcement of the same degree of badness. It is as if a person wants to be a more cunning thief by also deceiving people to get even more ill gotten gain. A thief is bad; a cunning one is worse. This is a *QC* of degrees—a *G-P* of religious thought and morality.

22\*\*) Jeremiah the prophet lived before and after the Babylonian conquest and exile of the southern kingdom of Judah. He complains about the moral decline and his suffering for speaking out. God tells him that (predicted) disaster is fast approaching. Prior to that calamity occurring, in answer to his personal troubles, God warns him in a *QC* argument that these attacks will mount, not get easier. The *QC* in Jeremiah 12:5 contains a double analogy, although the second one is more difficult to understand (and requires parallel ideas with rarer meanings): “If running with footmen has tired you out, how will you compete with horses? And if in an orderly, familiar place [things are already hard going], what will it be like in [running through the torrents and thickets of] the overflowing Jordan?” Conflating the two *QC*’s into one, the point is this: *Current problems are hard to bear; future problems will be worse than current ones; surely, future problems will be even harder to bear*. It would be strange to claim that the passage’s intent was to underscore the same sort of difficulty when the future situations are clearly going to be worse.<sup>446</sup> God offers no *dayo*, but rather, more difficulty: a Divine, true *G-P*.

23\*) Another Jewish prophet, Ezekiel would go into Babylonian exile with the remaining Judean populace (by 597 BCE, reduced to Jerusalem only). God gives a parabolic *QC* to argue that prior to the destruction, since the people failed to live by God’s standards and so were unqualified for God’s

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<sup>445</sup> I do not see this as a pro-slavery argument, given the Jewish past in Egypt. It is likely an issue of experience with the typical slave, who sold himself into servitude due to an inability to manage his own affairs well.

<sup>446</sup> The point is that Jeremiah needs to learn, is to accept and cope with the less trying circumstances, as yet greater troubles will come. Set in today’s context, we could say this: if you can’t make it through the easier practice, you aren’t going to make it on the field with your opponents – because it will only be tougher, not the same or easier.

enduring purposes, after the disaster, they would be less worthy, perhaps weakened by added bitterness. Ezekiel 15:5: “When [vinewood] is still useable, it is not employed as material for [solid] construction; so, all the more is it unfit for such construction after it is burnt and charred beyond all use.”<sup>447</sup> *Dry V is not good for S; charred V is worse than dry V; surely charred V is not good for S.* This is a *dayo*, because one cannot go beyond the least uselessness. If when vinewood in its best state cannot be a part of solid construction, it cannot serve in a deteriorated state.<sup>448</sup> As given by God, this QC is a *G-D*.

24) Some years later, the Babylonian Emperor, Nebuchadnezzar, who conquered the kingdom of Judah (ca. 597 and Jerusalem destroyed in 586 BCE) has a disturbing dream. He insists that his counsellors tell him the dream and its meaning. Of course, they object saying, “first tell the dream and then you can have it explained.” But the king threatens destruction and death if they do not obey his command. The king argues for his point in Daniel 2:9. I reconstruct it as follows: “Were I to tell you the dream, you would delay interpreting it to buy time; also, I could not be certain that your version was correct; so it is all the more necessary that you tell me both the dream and its meaning, so that I can trust your interpretation.” Paraphrased: *If I tell, then you can claim the meaning is right (majority opinion), but it may not be; to know and explain it is more certain than me telling you and getting any possible answer; so surely, by telling me the dream, your answer will be right.* Simply: *If I tell, then answer  $A_1$  is uncertain, but if I do not tell, answer  $A_2$  is certain; certainty is stronger than uncertainty; surely then, I do not tell and  $A_2$  is certain.* The crazy request and huge threat point to a very disturbed king. Still, because the strange dream was believed to have grave significance (some cultures took dreams as portents), it was doubtless magnified by his agitated mental state. Despite his apparent unreasonableness, a measure of reason remains: If the dream as told might be interpreted wrongly, yet still claimed as true, one who knew the dream (supernaturally) would surely be able to interpret it

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<sup>447</sup> I use the terms “solid construction” for *malacha* because vine branches can be used to make temporary things like woven baskets, garden furniture, fences, shady trellises and so on when bound together – which those who understand the word would not consider enduring things, as they fall apart in a few years or can be burned easily.

<sup>448</sup> This is a metaphoric analogy for Jerusalem, the people, or nation before and after the Babylonian destruction: if not good construction material then, not now.

properly (by getting the right answer too). Why should the king not demand this from his state-supported counsellor/diviner/soothsayers, supposed experts in this sort of stuff, on pain of having to face the fate of their present inabilities and probable past, false manipulations? For their part, they offered what was humanly reasonable (the line between counselor and diviner not easily drawn then). Yet their sensible reasons only enraged the king further. At the end of the day, the argument he offered was that certainty was better than uncertainty, which he demanded—normally unjustifiable in such mystical matters, but reasonable nonetheless. To tell the unknown dream and its meaning made its truth sure. The king wanted an unassailable interpretation rather than merely a likely one. In this incident, no minimal interpretation is allowable to the king.<sup>449</sup> This is a *P* claim of ordinary (*N*) thinking; nonetheless, it is honoured by God in that Daniel gets both the correct dream and its true interpretation.<sup>450</sup>

25\*) Last, we have Esther 9:12. At this point, the Jewish people have defended themselves in the capital against official attacks that Haman instigated. So King Achashverosh (Xerxes) wants to know what more can be done for Queen Esther: “If in the capital, Shushan (as lesser), 500 attackers died and Haman’s sons as ringleaders are captured, surely more have occurred in the rest of the king’s countries (as greater).” *If in the capital, quantity x, and many lands are greater than the capital, surely in many lands there are much more than x.* We can take the king’s statement in two ways: as a dissuasion (“Isn’t all this enough?”) or as a genuine assessment mixed with ongoing concern for her people (“Despite all this, what more needs to be done?”). Whichever was intended, Esther’s reply implies the same response: “Not enough” (*loh dai* = not yet a *dayo*). What were the likely reasons for her response? Inasmuch as the Jewish people would face continual danger in the capital if further measures were not taken (due to the earlier edict of the king, which was legally irrevocable), the queen asks for another day to deal with

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<sup>449</sup> Had the king’s regular counsellors offered something, out of the enormous number of possibilities, the likelihood was that they would get it wrong; so they did not take the risk. With the chances of guessing the dream close to nil, the interpretation even less likely. No one dared to risk his life on such an unrealistic stab-in-the-dark guess over the better appeal to the king’s reason. They claimed that it was not fair and it was unreasonable to expect such knowledge from men. We might say that the king wanted what was for him either equal to or better than deductive certainty, or else such inductive assurance that the answer was not subject to any real doubt.

<sup>450</sup> As just noted above, to get the right dream is virtually impossible, and it is unlikely that Daniel was extremely lucky or that clever. Also, it is highly doubtful that the king would have let it slip, given his suspicion and threats. Either Daniel’s success is just a fanciful story or a special revelation (barring time-travellers and space spies).

the remaining attackers, execute its ringleaders, and send a strong message to any other, would-be troublemakers. While the king's QC speaks of outward facts and likelihoods, and is a clear proportion of natural reason (N-P), for the Jewish people, the hidden aspect is that God accomplished, through extraordinary circumstances, all that the events entailed. That is, although not actually mentioned in the book, God is behind this natural QC, and so it could be a G-P. Esther's claim is an N-P at least.

Because the above, Biblical QC's already show enough good proportions in the conclusion, I do not need the added support of Esther 7:4.<sup>451</sup>

**c) Biblically Good Reasons for Proportionality**

In the upcoming chart, I list the distributions of the conclusions of the twenty-five, Biblical QC's as proportions, *dayos*, or ties, and whether they are natural or else morally good in a religious sense. I also discuss the comparable quantities of proportions to *dayos* in order to appreciate their significance in the entire discussion of majority and minority views about how one is to interpret the QC.

**Diagram 9: Results of Biblical QC's Surveyed**

	Proportions (P)			Dayos (D)		Ties (T)	
	Natural/Wicked	Natural	Good	Natural	Good	Natural	Good
1	N/W-P						
2*				N-D			
3*		N-P or		N-D		= N-T	
4*					G-D		
5*			G-P				
6		N/G-P					
7*						N-T	
8					G-D		
9		N-P					
10				=	N/G-D		
11			G-P				
12		N/G-P					
13		N-P					

<sup>451</sup> The likely QC of Esth 7:3-4 would add to proportions. Esther accuses Haman (the counselor-protector of the king's goods) of either folly or evil (as *hatsar*, a reference to his poor payment or his evil person), in that he is unequal (*ayn...shaveh*) to the damage he will cause the king by the pogrom and ensuing enslavement that he paid the king to incite (in the fact that the loss to be incurred will be greater than the bribe). Folly of payment: *Whatever benefit may accrue to the king's treasury by Haman's action against the Jews, the incurred losses will be greater, and thus not worthwhile. The positive gain from act X is less than the negative gain (i.e., loss) from act X (so unequal). P1: Act X has a positive gain and seems helpful and not hurtful to the king; P2: Act X is a negative loss, with loss > gain; C: so it is really more hurtful than helpful.* The initial premise's feature reverses, for the total result is worse. Or if the sense is that Haman is evil in really acting against the king's best interests: *Haman seems good; but he causes total loss > total gain; surely Haman is not good.*



14							D or P = T
15	N/W-P						
16			G-P				
17*			G-P				
18					G-D		
19				N-D			
20				N-D			
21			G-P				
22**			G-P				
23*					G-D		
24		N-P					
25*		N-P					
Tot.	2 N/W-P	4-7 N-P	6 G-P	3-5 N-D	4-5 G-D	2 N-T	1 G-T

**In Sum:** 6 Good Proportions > 5 Good *Dayos* (max); 6 Natural Prop. > 3 Nat. *Dayos*; **12 Proportions > 8 Dayos**

As analyzed, the QC tally rejects two as outrightly evil, has twelve proportions, seven to ten (maximum) *dayos* (more likely eight), and up to three ties. The tied QC's (#3, #7, and #14) can go either way; but I do not see more ties. Even if one adds the three ties to the *dayo* ledger, proportions top *dayos* (by 12 to 11). (The special ten fare as: 5 P, 3 D, 2 T.) A liberal approach to the QC's might increase the *dayo* beyond 50%, but I doubt that degrees dissipate altogether. Even one Divine case (#22) overthrows the exclusive *dayo*. Let us now refine these results and remove what is just natural from clearly good uses.

If we eliminate all natural proportions (N-P), then six good ones (G-P) remain. In contrast, if we add the ties (#3, 7, and 14) to N-D's, then we have up to eleven QC's that can support the *dayo*. However, on the same grounds that we drop ordinary N-P's, we should drop the N-D's (#2, 3, 7, 10, 19, and 20) too. Further, in cases of uncertainty (#14), we should not favour the *dayo* by default, as a degree is equi-probable (or more likely). As such, we array up to five (or six with #14) G-D's against six G-P's. Since at most, the *dayo* claim has no majority, its exclusivity is unjustified and its jurisdiction to be limited. Thus, religiously acceptable, proportional, Biblical QC's are correct, if not surer than *dayos*. In particular, God promotes one (#5) and plainly employs another (#22 with Jeremiah, actually worth 2 points), besides the theological truths of others (#16 and 11). (If we add Esther 7:3-4, ratios rise.)

Since the Bible shows ratios to be often correct in key religious matters, and especially as God expresses at least one and approves of others, no denial or disparagement of its proper place is justified. That is, a given premise's amount does not and cannot solve every ordinary *a fortiori* or religious QC.

To relegate ratios to ordinary matters alone and the *dayo* to religious ones is simply incorrect.<sup>452</sup> Even to find the lesser aspect within the stronger, to match the new exactly, would require as many precedents as new cases—clearly unlikely. A closest available match may not be fair enough; so, one may need to scale for the best answer anyway. However obtained, both the best match and the ratio are proportional to the given.<sup>453</sup> In all, good Biblical QC's of religious value affirm sensible, variable conclusions.

#### **d) The Key Passage for the *Dayo***

Up to this point, I have argued against an exclusive *dayo* from general practice, basic logic, the need for fairness, justice, and leniency, a swath of Jewish objections, and now the Biblical record. The controversy is not over a suitable *dayo* conclusion, here or elsewhere, but over its sole use in every QC. Even if the *dayo* restriction is correct for many religious judgements, it does not necessarily mean that every good, religious QC must follow, let alone be right, unless required for some superior reason. One must investigate all the factors and results, as well as any serious, alternative view, before one assumes that this *dayo* applies in all religious QC's. We have shown that several morally proper, Biblical QC's are non-*dayos*. Not only do these Biblical cases prove a lack of univocal affirmation, other serious problems crop up for the *dayo* conclusion as the definitive, QC answer, as we shall soon see. While I believe that the Biblical facts are conclusive, so that scaled results, even in Jewish QC's are correct, some people would still object from a religious perspective. This is due to the unique, ultimate justification for the *dayo*—that God definitely gave the *dayo* rule its official, exclusive status in *halachic*, Jewish issues. Thus, to show that the ordination of the sole *dayo* as the authoritative, Divine interpretation of a QC from Miriam's case is not just questionable but also untenable, I must provide a sufficiently compelling account of its incorrectness. I shall demonstrate that despite the traditional

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<sup>452</sup> This will be elaborated in some key, Biblical judgements, which are not all QC arguments; however, they would normally set precedents that one would be able to utilize, or else they could be put into QC forms.

<sup>453</sup> Even if, initially, one can sort each case (by the overall type in which it falls, graded by its relative severity, and judged ideally or correctly), inevitably a new matter appears that fits neither this nor that. One must make an adjustment of the closest match, according to some true, core principles. This too becomes a precedent. At the end of the day, the various judged cases are effectively proportions of some archetypes or ones within differing types.

linkage of the *dayo* to the QC with Miriam, this is just a special, *dayo* case due to God's mercy, which actually lessens the expected, proportional judgement and so formulates no exclusive *dayo* requirement.

The context of this special QC concerns a challenge to Moses' leadership (Num 12:1-2) by Miriam and Aaron, Moses' elder siblings. It is an assault and an insult to Moses and indirectly to God, who chose him. In turn, God judges Miriam: "If her father had spit in her face, should she not be ashamed seven days? Let her be shut out from the camp seven days, and after that let her be received again" (Num 12:14). Thus, God renders what seems to be an authoritative, "eminent," *dayo* interpretation of a QC, in that Miriam's punishment lasts the same period as an offence against her father. This equally sufficient judgement is the *dayo*. Yet a preliminary question arises whether this is a QC at all.

The Rabbis claim that this passage is a QC argument, although the actual, Biblical text is not that clear. It rests on the common, associated terms, noted as signals of a QC, *v'... halo* (= if... is it not? = should she not?), and the other clue of the repeated seven days.<sup>454</sup> Thus, it is better to take it as an implicit QC, rather than as another analogy. Support for this comes from a commentary, the *Sifre* to Deuteronomy (Jewish, religious literature outside the *Talmud*), which puts it in these, parallel ways:<sup>455</sup>

1. 'If so to that righteous woman, Miriam, I did not show favor in judgment, all the more so to other people!'
2. 'Another matter: now if Miriam, who gossiped only against her brother, who was younger than herself, was punished in this way, one who gossips against someone greater [older] than himself all the more so!'
3. 'Another matter: now if Miriam, who when she spoke, no person heard, but only the Omnipresent alone, in line with this verse, "And the Lord heard..." (Num 12:2), was punished, one who speaks ill of his fellow in public all the more so!'<sup>456</sup>

If we accept this first claim, it would close off the possibility of mercy. However, this is impossible: for, if unrighteous Cain received mercy prior to the law and King David after the law, then "righteous"

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<sup>454</sup> Sion, 66-7. The main instance that has *halo* plus *af-ki* with QC operator *ki-af* is in 2 Sam 4:10-11; the other, Ps 94:9-10, with only *halo* and the operator *eem*. Although these 3 are about 10% of the total 31, I have not checked the Biblical occurrences of *halo* that are not QC's. Still, from the evidence, one can say it is acceptable.

<sup>455</sup> *Sifre* to Dt 8, although ca. 400 CE, it may express earlier views. Quoted from Jacob Neusner, *Judaism and the Interpretation of Scripture* (Peabody, MA: Hendrickson, 2004), 113-4. The Miriam incident is not clearly a QC; so the claim for it as a Divine, Biblical QC might be doubly out of place. However, inasmuch as the Rabbis take it to be an implicit QC, with God's ruling, they must justify it as one. If it was not Divinely intended to be a QC, then it could have come from a GS. In their defense, I can certainly see the possibility of constructing the QC from the evidence and typical terms. What I do not see is any sole, *dayo*, sufficiency rule crystallized here.

<sup>456</sup> It looks like QC's 2 & 3 are opposites: gossip is public; but a private utterance is not public. Yet both are *dayos*.

Miriam could receive mercy too, despite the law. This move to disallow mercy seems to be just an unwarranted, tactical defence of the *dayo* (perhaps raised against early challengers). Therefore, we need to evaluate the same, seven-day result that God transfers from their father's to Moses' case.

To start, the context of the incident presents numerous details. In fact, Miriam and Aaron are both complicit in their complaints against Moses.<sup>457</sup> First, they accuse Moses about his dark wife, called a Cushite (actually a Midianite). This accusation of poor judgement on Moses' part seems to be a matter of prejudice too. Second, they attack Moses' uniqueness as Divine spokesperson, citing their own inspiration. In response, God rebukes Aaron and Miriam, which could serve as the actual, initial given or weakest minimum (Num 12: 4, 8). Yet more severity falls on Miriam than on Aaron (Num 12:10).

If Aaron could get away with just a lesser rebuke, why did Miriam get more: a rebuke, leprosy, and seven days of separation? Not even Aaron could fathom why she got these heavier strokes. Nor did it appear right to Moses, who accepted Aaron's plea for their sister and asked God for a lessening (or healing). In other words, both men thought that she had received considerably more for no apparent reason, perhaps reasoning that a rebuke should be enough (*dayo*) for her too. Their incomprehension occasioned the answer from God in a QC: her offence was to be equated to one against her father (although not directly involved), calling for the same, seven-day separation.<sup>458</sup> In essence, Divine revelation required *more than* Aaron's judgement, not the same.<sup>459</sup> God's-eye-view trumped human thinking that took Aaron's, lesser precedent as governing. If this actual, prior given is not binding, how can the *dayo* arise from Miriam's case?

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<sup>457</sup> Num 12:1-9.

<sup>458</sup> In Deut. 24:9, the law of separation/quarantine for leprosy (being infectious) is noted about Miriam too.

<sup>459</sup> Aaron and Miriam's criticism have personal and perhaps political motives. The political part of the incident may have been that Aaron and Miriam (and later others) wanted a more egalitarian, less hierarchal structure—surely a good thing when top leaders often fail (tragically exemplified by many, later, Jewish kings). Underneath, it may have been about gaining personal influence. But there was also a tinge of jealousy—after all, he was their younger brother whom Miriam had rescued and Aaron had helped in the past. Moses' "black" (Midianite) wife, darker than the average Israelite, made him less appropriate as the leader. Yet Moses was unique: privileged and able to hear and know God, he was appointed to convey the Divine will and Laws to the people. Due to her attack on Moses' authority, some sort of reprimand or punishment was called for, even if it was to be as light as possible to achieve its desired effect. This could also be construed as an attack upon God's theocratic rule through Moses, desiring a wider form of participation, although not necessarily a call for democracy. (What pass for theocracies in the Muslim world, however, are more often autocratic, human tyrannies.)

According to God, justice requires isolating Miriam for a week, as would have been the case of shame for an equal (potential) offence against her father (somehow relatable). Of course, God states this is what she deserves. Yet, to equalize the offence between Moses and their father still does not explain the unequal sentences between the co-participants. Why does their father's theoretical, intermediate case of offence not work with Aaron as well? Commentators seem to ignore all of these disparities.

Miriam clearly accumulated more punishment than Aaron in every way as the following shows:

**Diagram 10: Miriam's Judgement is More Severe**

Cases:	1. Aaron's Possible Precedent	2. Father's Theoretical Precedent	3. Miriam's Case (Amount)
Results:	Rebuke, R	(Implied Rebuke) (R) Spit, S Seven days quarantine, Q	Rebuke, R (same as R in 1) Leprosy, L (more than S in 2) Seven days, Q (same as Q in 2)
Total:	R	(R) + S + Q	R + {L > S} + Q (3 > 2 > 1)

One could argue that the shame of being spit upon and getting leprosy are equivalent (S = L). Still, the difference in kind and degree stand out. A psychological effect is one thing, the actual stroke quite another. Perhaps in this, God aimed at the same level of shame by being more severe, given Miriam's *chutzpah*.<sup>460</sup> That is, God struck her harder in order to induce equal shame. Yet even if this is true, it shows a quantitative change of progressive increase. So, one would also have to claim that she bore greater guilt, mentioned first as instigator, gossip, and even bully of her weak-willed brother Aaron.

Yet Aaron's rebuke for disrespect, as the greater person, should have been sufficient (*dayo*) for Miriam, the lesser. Perhaps because Aaron was the High Priest, he received less, not that he deserved it or that he was simply a male (assuming no patriarchal chauvinism here).<sup>461</sup> On the other hand, should not Aaron have been held more responsible as the next, most senior official to Moses, representing God and influencing the people,<sup>462</sup> especially after the bitter lesson of the golden calf where so many died when he failed to stand against their idolatrous demand? The greater one gets less and the lesser more!

<sup>460</sup> *Chutzpah*: effrontery, impudence, unabashed boldness, lack of a sense of decorum.

<sup>461</sup> One might argue for the equal penalties as follows: since it is dishonouring to their father to show disrespect for Moses as leader, Miriam could not get more punishment for having dishonoured Moses. Yet that does not explain why she actually got more than the spit and Aaron less. Another reason, such as his high and holy office, would have to be invoked. Yet, his sons could have filled in temporarily or permanently (as they do on his death).

<sup>462</sup> The case has ranks: God, then Moses as God's servant, then their father, then Aaron, and lastly Miriam.

Thus, if the Rabbis take this case as the perfect QC and *dayo* solution, the actual disparities are most puzzling: leprosy not spit (from her father’s case); rebuke, leprosy, and a week’s exile versus only rebuke (with Aaron). Objectively, Miriam’s judgement is more severe—a clear non-*dayo*—as much as the leprosy is harsher than the hypothetical spit. In addition, if Miriam, as instigator, sets the tone for the *dayo*, Aaron should get the same. However, if the given is spit, for an indirect insult to her father as intermediate benchmark, leprosy is more for a direct insult against Moses as the national father figure. If the *dayo* is universally true, such unequal outcomes are not possible. We have too many anomalies.

In trying to assess this, it is more reasonable to say that each one is judged minimally, in some way suited to their own circumstance, guilt, and character. Thus, this supposed, perfect *dayo* looks highly suspect. To account for these differences, something else is the real key, such as Divine mercy. This leaves the *dayo* as non-normative, only sometimes applicable to the QC for the sake of leniency.

Is it better to understand the passage as a case of Divine mercy then? Some commentators say that Miriam deserved more punishment, equal to her misdemeanor, as fourteen days instead of seven, but got less due to Divine mercy (and perhaps other reasons).<sup>463</sup> In this regard too, Sion sees Miriam’s case as one of sheer mercy for attacking Moses (or challenging God), with special revelation countering the normal degree expected (which occurs elsewhere).<sup>464</sup> The discernable differences in the context between

<sup>463</sup> Maccoby, internet art., 4-5, quotes fourteen. Sion notes it is worse to parents, 58, or infinitely towards God, 55.

<sup>464</sup> Sion, 51-52, analyzes it, making explicit what would be understood from the text, the form suited to his method. Again, it is laid out in his simplest, *subjectal*, positive form.

Major Premise: *Divine disapproval is more serious than a parent’s.*

- (i) “Divine disapproval” (signified by the punishment of leprosy) = P,
- (ii) is “more serious disapproval” than = R more than
- (iii) “parental disapproval” (shown by being spit in the face) = Q;

Minor Premise: *Parental disapproval causes 7 days of isolation in shame.*

- (iv) if Q is serious (R) enough to “cause 7 days of isolation in shame” (= S),  $Rq \rightarrow S$

Conclusion: *Divine disapproval causes 7 days of isolation in shame.*

- (v) then P is serious (R) enough to “cause 7 days of isolation in shame” (= S).  $Rp \rightarrow S$

If parental disapproval results in shame:  $Rq \rightarrow S$ , surely, Divine disapproval does too:  $Rp \rightarrow S$ .

Putting the premises into quantificational, predicate form: P (Divine disapproval), and Q (Parental disapproval), and “Divine Disapproval is more serious than parental,” as the greater relation R,  $Ryx$ . Then for some case of parental disapproval, since seven days of isolation (as S) is appropriate  $\{\exists x (Qx \ \& \ Sx)\}$ , so in this case, Divine disapproval is minimally the same  $\{\exists y \exists x (Py \ \& \ Sx)\}$ . This last statement could be proven in QPR logic. One could argue on the basis of the order of the commandments and the overall tenor of the Bible that God is primary and people secondary, thus making offense against God greater than human offenses. But while it certainly seems reasonable that  $Ryx$  is true, it may be that God considers disrespect for parents to be worse ( $Rxy$ ) or equal to

the various persons (Aaron, not just the father) and the results (a rebuke, spit, and leprosy, not just spit and seven days) reinforce the need for the alternate explanation. Mercy can temper strict, proportional justice. Since God shows equal mercy (seven days only) and proper justice (leprosy over spit) to suit Miriam, these are the likely, basic motivations behind this *dayo*. Since mercy and scaled justice are as evident as sameness, to base a *dayo* on the Miriam passage as if the only solution is highly problematic.

In all, God expresses several things with Miriam: a) a difference in judgement (rebuke not spit); b) a *dayo* (seven days), perhaps due to mercy; and c) more severity (leprosy not spit). God tailors this entire outcome to Miriam, in support of degrees and a non-universal *dayo*. Thus, it is better to see this as mercy in judgement (although possibly due to major, social concerns too, such as education, as the *Sifre* comments imply). Logical necessity is not evident, however, in this *dayo* as a QC paradigm.

One might still attempt another defense of the *dayo*: it does not work backwards (such as to Aaron), only forwards from Miriam. If so, the *dayo* is *non-universal*. In any case, even if one might propose a *dayo* rule forward from Miriam as precedent, no consistent, Biblical use occurs later on.<sup>465</sup> Let us check.

#### **e) Does the *Dayo* Work in All Later, Biblical QC's or as a Precedent?**

If the *dayo* works in largely similar, future cases, we should find them in Biblical cases, especially where God renders similar judgements, whether these are overt QC's or not. For Biblical QC's, we need only recall our survey: all six of the good proportions occur after Miriam's case against only four good *dayos*. Thus, Biblical *dayos* do not operate alone from this incident onwards. Do precedents hold then?

Since a legal QC uses a precedent, Miriam's case could also serve in similar cases, even if not QC's. Yet a number of telling, Biblical examples of the inability of the *dayo* idea to serve even generally as a precedent appear in incidents subsequent to Miriam.<sup>466</sup> Merely four chapters on in Numbers 16, a new

disrespect towards God (or  $y=x$  as true). (If there is doubt over which is truer,  $Ryx$  or  $Rxy$ , there is all the more reason to stick with the same result.) However, the emphasis of the passage is that the actual challenge was against Moses' authority directly and towards God only indirectly. As a position of authority over the nation, Moses is below God but above parents, so that as the God-appointed, spiritual leader, Moses is owed greater respect than a natural parent. Yet the result is the same. However, is it absolutely the same for every QC? As I show, it is not.

<sup>465</sup> After Miriam (Num 12) are the incidents of Numbers 14, 16, and 21:4-9, some of which I treat in the text.

<sup>466</sup> As for the Nu 14 case, Moses appeals to consistency with God's former promises and ultimate purposes. When the people face potential resistance by powerful, Canaanites forces, they want to return to Egypt, reversing the

complaint brews against Moses (and Aaron) similar to that of Aaron and Miriam. Here Korach, Datan, and Abiram lead a group of other leaders, charging Moses with self-promotion, disastrous leadership (loss of Egypt's goods and desert deaths), broken promises, and abuse of power. Again, God is judge.

These men would have felt reasonably safe in challenging Moses' leadership, given the precedent-setting examples of Aaron and Miriam, for even if these men might have been wrong, the worst-case scenario was not that severe. Since Korach too was a priest of the same Levitical tribe as Aaron, nothing worse than a lenient rebuke should happen. As for Datan, Abiram, and the others as appointed leaders, the worst possible outcome would be a seven-day exile with leprosy. Surely, if these men thought that much worse was in the offing, they would have desisted. Perhaps they too, like the majority of *Tannaim*, thought that the precedent of Miriam's case was at least as normative as the *dayo* limit. This is a sensible assumption of consistency from the past to a similar present—if one derives equal rulings from like precedents as the purported, Divine *dayo* would show. Surprisingly, they were terribly mistaken.

To those who would hold to a universal, minimum *dayo* as an example of unscalable precedents, the much harsher judgement that fell upon these men should come as a shock. Not only did these leaders die, but because their jealousy and dissatisfaction spilled over to their families, they too received the same, maximum penalty.<sup>467</sup> This is no universal *dayo*-type precedent with the same, lenient, or minimal judgement. The men and their families received the sternest punishment for their behaviour and complicity. This harshest of penalties on all must surely seem especially unfair, unjust, and excessive.<sup>468</sup>

Two possible escapes from this problem are realizable. One is to say that this case is not a QC and so does not apply. This is true. Yet, as long as the QC employs precedents, the QC is a specific type of general argument that uses precedents and so not free on that count. The other exit strategy is to separate this case from its parallel predecessor (Aaron and Miriam): this is not a mere personal complaint against

entire exodus. God suggests ending their lives and making a new start with Moses. Moses correctly perceives this as a test, which his intercession averts. While the majority of Israelites challenge God's ability, consistency, and reputation, Moses upholds these. God acts in mercy, although the unfaithful perish in the desert over forty years.<sup>467</sup> There were other instances of apparent collective punishment that seems disproportionate to the offense – as in the defeat and death of many, because one person took what was forbidden. The *dayo* rule is inexplicable here too.<sup>468</sup> Many would contend that the punishment was exceptionally excessive, more fitting a peevish deity than a God who judges perfectly in each case, fitting the punishment to the crime.



Moses, but a more serious revolt by an organized group that might spread into full rebellion. That is, the cases are only superficially alike with key differences. Although classifiable as challenges to Moses' authority, it has crossed a red line between former mistakes, ameliorated by mercy, and the latter's high-handed rebellion that requires a fresh analysis and judgement.<sup>469</sup> Critical, national issues are at stake. Indeed, the entire exodus is endangered (in their desire to return to Egypt and slavery), all the more so based on previously enunciated and demonstrated Divine displeasure at Aaron and Miriam's folly. This new, false criticism is worse, heightened by a treasonous power grab. As such, the maximum penalty falls without any mercy upon this insurrection against Moses (and God)—a key lesson. Yet to realize that the two incidents of criticism differ is to acknowledge that the general rule of a binding precedent, in which the *dayo* participates, is insufficient here. Even with a more severe precedent, the change from the lesser to the greater is, in effect, a well-justified, proportional judgement after all. (Most people would agree that an arbitrary ruling is entirely inappropriate for a truly just God.)

If it is not clear enough that Miriam's case fails as a general precedent-setter, the continuing saga in the desert underscores the point. Soon a far larger mass of complainers threatens a wider revolt against Moses and Aaron (Num 16:41). They react to what appears to be the excessive punishment in the immediately prior case of Korach et al. Yet here again, God's maximum penalty falls upon this greater number (and their entire families, probably implicated by tacit or active agreement). Only later do we see mercy and restraint, which follow upon Aaron's response to Moses' instructions to abate the strict penalty. As for *dayo* sameness, we can now refer to the Korach example. But then, forget about Miriam as the actual precedent. The *dayo* as a precedent principle applies when suitable, as here with Korach.

The upshot of all this is that we find various judgements against those opposing Moses' leadership: one for Aaron (the least), another for Miriam (more severe), a further for the "gang of three" (far more severe), and lastly for a much larger group (considerably more sufferers, although to the same degree as the three ringleaders and their families). Our check for some forward-working, general precedent from Miriam's case, as if demanding equality, reveals it to be at most semi-operational. While the *dayo* as a

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<sup>469</sup> Some relevant difference allowed the Rabbis to deal with apparent contradictions in an issue.

precedent works in the last two cases, it includes gradations (progressively more people). In these, God as a just judge does not recognize any supreme, fixed restriction. No Divine command says how any sort of challenge to authority must always follow the given precedent as if the same or weaker *dayo*. On the contrary, the ongoing challenges faced the most stringent and severe judgement—death. If anything, these examples reinforce a severe (*chomer*) principle: use the *same, severe precedent* when the case is a clear challenge to authority (or another cardinal issue). Only when it is right, leniency for the sake of mercy (with a *dayo* or not) is possible. If one must account for potential mercy, then it appears to be the decisive factor with Miriam and some other cases.<sup>470</sup>

Other Biblical passages underscore mercy, when allowable, as the operative factor, based on God's character, to scale down the otherwise natural and normative law of "Measure-for-Measure." David was guilty of death under two official, Biblical Laws after he committed adultery with Batsheva and indirectly murdered her husband, when he had him abandoned in battle. Since Jewish kings represented God's just rule and Laws, David's acts were worse than if committed by just anybody, although both king and people faced the same Laws and judgements.<sup>471</sup> Told a similar parable, David even affirmed the death penalty upon the guilty party. Yet while self-condemned, David was not executed, exiled, or dethroned. Instead, David received mercy on confession of his guilt. In effect, with true confession, God's mercy could overturn or lessen what would justly fall according to the Law.

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<sup>470</sup> The very challenges to Mosaic authority (revealed in the Miriam incident and the rebellion of Korach), whose authority the Rabbis felt they inherited and now carried in such trying times, likely led them to justify this effective means to maintain their views and position. (See Sion, 175-9.) The same judgement would befall all challengers to tradition, marked as undesirables, to be put out of the community. So too, reasoning that challenged the authorized traditions would meet the same fate, outside the pale of Jewish thinking. In sum: similar challenge, similar result. Whether or not they would have preferred all challengers to meet a more severe fate is not at issue here. The preferable solution was a compromise, as in Miriam's punishment (a middle position, neither the most lenient (Aaron) nor the most severe (Korach et al)), was enough for those within the fold of Judaism; the social stigma and interim exile would threaten any human or intellectual challenges to their leadership or views – at least as a first step. In giving them the benefit of the doubt, they chose the safest, abductive, and equivalent course. Yet the *dayo* could be wielded the other way too, if one allows a maximum as the initial position, it makes execution for certain crimes possible. Perhaps this latent threat of exclusion kept the latter Amoraim within bounds, like what Fisch claims about their, apparent, subversive reasoning.

<sup>471</sup> Regarding David: 2 Sam.12:1-13 & Ps 51:3. (A constructed QC: *If an ordinary person commits adultery and murder, the Law says death; the king, as chief upholder and representative of God's Law and rule, is more important than an ordinary person; surely, surely, the king should die for the same offences.*) This *dayo* claim, countered by the actual result. Others examples of mercy: Ex. 34:6-7; Ps. 86:5, 13, 15; 103:3-18.

#### 4.6 Earlier, Key Biblical Cases Do Not Serve as Precedents

If the *dayo*, as a type of precedent, does not always hold sway after Miriam's case, do precedents always hold Biblically before it in the past? Again, as in cases of justice, the main use of the religious *dayo* is that prior cases can set precedents upon which to base subsequent, similar cases. The earliest cases with God directly involved as evaluator and judge should carry extraordinary weight, even if not QC's. Adam and Eve's judgement is partly the same; but against that, other cases have unequal results.

The first case of murder is that of Abel by his brother Cain. For that capital crime, God's judgement is exile, rather than an equivalent expectation of life-for-life, later spelled out in the Law.<sup>472</sup> That is, while one might expect an equal balance between offence and consequence as the fairest outcome, God's sentence is to some degree less. Without a precedent, God's mercy operates. Although this is not a QC, it can serve as a paradigm and legal precedent for murder in other, like cases.<sup>473</sup> As a Divine judgement (the highest possible court for a religious Jew), it is all the more authoritative. Whether or not we have a minimum sentence, this first ruling for murder is exile; and exile is not the same as death. Let us set up the potential GS {equal ruling} that we expect in the future: *Past murder: exile results; so new murder, exile too*. Yet again, to our surprise, God largely avoids that very self-set precedent later.

In stark contrast to exile, in the later Noachic command (Gen 9:5, 6) and the official, Sinaitic Code, God spells out that the general requirement for murder is to be execution (Ex 20:13, 21:12; Nu 35:16-21,30-31). The principal idea now is to achieve or restore the normal balance between act and effect (or "measure-for-measure"). The original, lenient ruling (*in murder, exile is enough*) is overturned by the stricter ruling (*in murder, despite possible exile, execution is to be the norm*). The Divine command

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<sup>472</sup> As the earliest judgement against a capital human offense, exile seems like an astonishingly progressive idea, if one takes the position that humanity was once barbaric and has only advanced in time to less cruel practices. The later call for execution thus looks like a regression. Incarceration, as a form of exile, is in some ways more severe than exile. Regarding execution, only after investigation of witnesses and evidence, and correct judgement of the guilty, was the sentence carried out quickly by the public. For accidental death, flight and exile was permitted {in the Mosaic Code} to a city of refuge, all the while vengeance by the victim's relatives was still a threat (and the High Priest lived). Apart from that exception, there were other cases of apparent leniency: the accidental death in a fight {or that of a purchased slave}, or the accidental death of an unborn child. In most such and lesser cases, monetary fines were exacted, considered less severe than premeditated murder or other acts requiring death.

<sup>473</sup> See Appendix on Cain.

calls for the death penalty for proven murder of an innocent, although later judges did not always carry out this maximum.<sup>474</sup> Especially in cases of doubt, one wants to be as merciful as possible (Hos. 6:6).

However, if execution is the true, normative, Divine Law, why did it not apply to Cain? In some cases only, exile or flight to cities of refuge is possible; but still, a trial and execution followed for non-accidental death (Ex 21:14; Nu 35:11, 12). Anyway, Cain intentionally murdered Abel. Thus, his exile is even more striking and contrary to the later, God-ordained norm.<sup>475</sup> God does not always stand by the self-set, strictly equal interpretation of *lex talionis* (Ex 21:23-25) as the fixed, just settlement for murder.

We can summarize our findings. Cases before and after Miriam reveal irregularities: God judges some worse crimes leniently, some similar ones more severely; and some like ones alike. When God does not follow any self-made ruling as a potential precedent, a supposedly set *dayo*, when non-binding, makes God inconsistent. No Divinely initiated sameness principle, precedent, Law, or *dayo* exclusivity can explain these cases as non-arbitrary, permissible exceptions; but Divine mercy and grace to ease strict justice can.<sup>476</sup> If God does not always respect self-established, original, precedent-setting cases or *halachot* (religious practices), why jump on Miriam's case just because it is a QC? It seems to be an excuse at best. A sole *dayo* that engenders Divine inconsistency *cannot* be true. With God as speaker and final judge in all the above incidents, it is wiser to avoid any supreme *dayo* from Miriam's case or anywhere else. Fortunately, the *dayo* is not the only interpretation possible, theologically or otherwise.

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<sup>474</sup> The Rabbis would not charge God with inconsistency, so they would look for essential differences, to claim these as unrelated cases. Cain's exile was sufficient for murder committed in a fit of jealousy. For a new nation of former "slaves," Israel required stricter, social order and justice, such that capital punishment meant a generally higher sentence for murder, even if not always meted out. If fairness is universal, for equal crimes, punishment should be the same - a GS (equal judgement) in equal cases fits. If God knows all and can be appropriately lenient, human judges know less and only render a more severe sentence for clearly deliberate murder. As a deterrent, it can work too. But with humans, due to possible lack of facts or serious error, a less severe outcome is often better. (Despite Cain's complaint that even exile was too severe and he feared future retribution for his crime, this is like almost any guilty party insisting on one's innocence or claiming overly harsh treatment.) Anyway, a call for sameness that might derive from Miriam's case is countered by a possible precedent of mercy from Cain's case.

<sup>475</sup> I am not saying that exile cannot serve as an equivalent of death in his situation (or in the expression "to be cut off from the people" and from God), only that it is not exactly equal to immediate execution.

<sup>476</sup> Exile did not establish a precedent for God as the norm for murder. God had good reasons for leniency with Cain—namely mercy. A consistent "measure for measure" of justice is otherwise normal; but arbitrariness is inappropriate for God. If leniency or strictness does not apply, neither need a *dayo*. A sole *dayo* is misconceived.

This is not the place to argue the merits and demerits of punishment versus incarceration or whatever. Given the need for social harmony, safety, and justice, when one includes the human and economic costs, the Biblical view is reasonable, particularly with its leniency in cases of doubt and allowance for special circumstances.

Besides Divine justice (Ex 34:7b), there is Divine mercy (Ex 34:6-7a). When applicable, mercy (or God's favour) is the underlying factor that best solves the quandary of the otherwise arbitrary or inconsistent applications of precedent, Law, and the QC. If God knows what is right and appropriate in each situation, mercy can soften the normal stringency (or kindness may add undeserved good), as occurs in the cases of Adam and Eve, Cain, David, and others.

Since self-set precedents and Laws do not bind God, we cannot exalt a QC *dayo* either. In its effect too, a religious QC is weaker than God's explicit ruling or law: *A Divine ruling is stronger than any QC ruling; even God's law allows mercy to scale-down outcomes; so surely religious QC's must allow it too (as a dayo).* (Likewise, favour may increase a reward.) Thus, once an absolute *dayo* is untenable, appropriately like and scaled decisions are both feasible.

Nowhere in the Bible does the QC *dayo*, a form of governing precedent, carry Divine sanction, consistency, or total application, even by God. If God does not use it solely, neither should anyone else. Therefore, a *dayo* alone is simply insupportable as the *raison-d'être* of leniency and is an inappropriate, singular interpretation of *halachic* or other QC's. As a result, the disparities we find in the several, Divine judgements are non-arbitrary, because justice is consistent with the intervention of mercy.

If we assume that the Rabbis are not more merciful than God is, then their choice of leniency by means of the *dayo* may well be a confession of their own lack of knowledge or ability to decide many things in the way that only God can. (*God knows everything and can be rightly strict or lenient; humans are less knowledgeable and able than God is; so humans should be mostly lenient, for they err.*) Of course, this is wise. If so, this is a proportional recognition (of less ability) with respect to God's perfection. Yet to call for an exclusive *dayo* rule as always able to satisfy human imperfection is out of place, for it holds only sometimes as a principle or precedent, not everywhere, generally or religiously.

Whatever else the *Tannaic* Rabbis had in mind, it is unlikely that the decision to establish the *dayo* can rest upon Miriam's case or other Biblical facts, precedents, consistent judgements, or logical necessity. As arbitrariness is inappropriate and strong-armed imposition is not acceptable when clearly unfair and wrong, we must see mercy as the key, operative factor of Biblical leniency. As such, the *dayo*

principle and proportionality cooperate when right in Biblical, religious, and naturally conceived QC's, with mercy often possible where overall good results can be achieved.<sup>477</sup> As the *Gemara* restores good, proportional QC's, religious usage can and should follow suit.

#### 4.7 Summary

If Miriam's case is so disputable and too weak to sustain the theological, legal, or logical weights imposed on it, why bother with it as the paradigm for a binding *dayo*? Doubtless, more was at stake for the *Mishnah's* Rabbis. Likely, because this QC had the semblance of Divine authority, it had the best credentials to serve as a perfect *dayo* in the first five books of Moses, and so was exalted as the defining, "impeccable" case, in order to justify another, critical *Mishnaic* agenda. Since the ordinary QC might lead to proportional conclusions outside the bounds of accepted Jewish ideas, the *Mishnaic* majority probably limited the argument, by means of the *dayo*, to support the recognized, Rabbinic tradition. This prior tradition, taken as right and true, was best for a QC, for it closed off those routes that might deviate from their view of normative Judaism.<sup>478</sup> Conformity with specific, past understandings also maintained religious continuity and consistency. Thus, the Rabbis wielded the *dayo* to direct Judaism along the path they saw as correct, to avoid the dangers they perceived, to uphold true values, and to guard the tradition under their authority. To them, such a *dayo* was essential. Although one might want to rationally stretch or shrink the QC's conclusion, *dayo* dominance tried to block that move: God, *Mishnaic* tradition, and majority rule put a limit on general logic, in an attempt to pre-empt and even forbid proportions.

Yet, Maccoby does not merely uphold the majority, *Mishnaic* tradition for the QC; he claims the *dayo* as its only logical solution. Maccoby's *dayo* case, however, is only a probability argument: it rests on a majority, *Mishnaic* use, itself only a possibility. In contrast, we discover that a *dayo* is but one

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<sup>477</sup> Either a judge begins with a personal predilection or a neutral outlook; however, either approach can be lenient, flexible, or severe. Yet it is best not to pre-judge a matter; one must adequately understand and digest it. Some cases call for mercy towards the guilty (typical of Hillel's party), while others may be better served by more severity (Shammai's party). The Rabbis' maxim leaned towards leniency (although not always). Still, one must not rule out the flexible, middle ground that links the two. In other words, begin as neutrally as possible, hear the matter at hand, and only afterwards respond suitably to allow fairness, mercy, and justice for all parties concerned.

<sup>478</sup> I am reading in a motive rather than a mere choice, collective preference, or assumed, authoritative tradition.

option and sometimes factually untrue or actually unfair. Maccoby also argues improperly: his denial does not disprove the disjunction's alternative; and his charges of forgetfulness, rhetorical trickery, or error by those upholding degrees are just *ad hominem*s. An equal *dayo* also entangles the QC with the GS, confusing each and needlessly duplicating one or the other. In the end, all depends on a purported God's *dayo* ruling with Miriam, taken as if true for every religious QC.

However, the institution of a Divine *dayo* is most unlikely, given our study of Biblical QC's and detailed critique of Miriam's case from which the strong *dayo* is articulated. Indeed, Biblically good, proportional QC's prove to be numerous. Critically, because a sole *dayo* leads to Divine arbitrariness and inconsistency, it is most likely a human interpretation unworthy of acceptance. Even with God-established precedents, neither these nor the weaker *dayo* operate backwards or forwards in every Biblical instance. Rather proportions and mercy are always possible when God metes out varied judgements. Cain is exiled not executed (as later expressed in the (Noahic and) Mosaic Law), and David's confession brings forgiveness, not exile or death. In these, it is better to say that God acts consistent with justice and mercy that may soften the normal, scaled result. Miriam's case fails to establish the fixed *dayo* as if a Divinely authorized QC interpretation, while mercy explains the issues better. Thus, this incident is a just another case of mercy in judgement that balances concerns for each person, and the need for general justice and social order. Such mercy applies towards Aaron, Miriam, Adam, Cain, David, and others. It is simply a mistake to substitute the *dayo* for mercy. At most, the *dayo* is a necessary QC principle, but is unable to displace morally right degrees.

In sum, the entire analysis of the paradigm, QC case of Miriam has cast the most serious doubt on a Divine *dayo* solution alone as correct. A fixed *dayo* overly constrains even religious interpretations: 1) Several Biblical precedents and Laws of wider application than the *dayo* do not follow regularly as expected. 2) It ignores good, Biblical degrees, one even directly from God (emphatically doubled). 3) It fails to see the priority of proportional justice before leniency can operate. 4) It does not credit mercy as the better explanation for the changes. 5) It is a forced interpretation in Miriam's case, a rather unique incident, which shows degrees too. 6) It refuses QC ratios along with sameness as right, rational, and

Biblical. 7) Finally, it makes God arbitrary and inconsistent. Indeed, no exclusive *dayo* can be attributed to a consistent God, for it is neither Biblically normative nor procedurally obligatory. The favoritism towards the *dayo* is perhaps pre-determined, *to justify another agenda* important to the *Tannaim*. Continuity with traditional rulings, as upheld by a Rabbinic majority, to retain a Jewish, social and moral lifestyle in the face of numerous pressures and threats are more at issue than the logic involved.

At best, the *dayo* is a principle that applies to the same case or where uncertainty leaves it as a better choice. It can be a means to a merciful lightening of a proportional sentence, when one duly considers all the relevant factors to achieve a higher purpose (such as basic, individual worth, possible equality, educational value, social order, human reform, permissible exile, less vengefulness, and so on).<sup>479</sup>

If what I have said is substantially correct, we find no good reason of a logical, textual, or even a religious sort to support a maximal interpretation for the *dayo*, as if necessary. Sufficient counter-arguments and other, religious principles negate its inflexibility as a rule.<sup>480</sup> These particular points are now well established: 1) Proportional QC's are viable and valuable: they are normally reasonable, practically acceptable, morally right, legally likely, Biblically evident, and truly worthy in religious matters. 2) The *Mishnaic* minority's challenge of the majority and the implicit *Amoraic* practice stand against the exclusive *dayo* that Maccoby claims for the *Mishnah*. 3) Since the strong *dayo* leaves many issues unanswered or unacceptable in the cardinal incident of Miriam and elsewhere, while the alternate interpretation of mercy explains more of what actually occurs, mercy is the preferable explanation.

So in all, it is far more sensible to conclude that God never established an exclusive *dayo*, either in practice or in theory, only a circumspect *dayo* principle applicable in the light of a normal, proportional justice, guided by a "Measure-for-Measure" principle (of act to outcome, not just equal to a prior given).

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<sup>479</sup> We could say the same for reward: do what will achieve the best overall result for everyone (immediate and for the future, as far as possible to expect).

<sup>480</sup> "Justice, justice alone shall you pursue" (Dt 16:20). That would require the right solution for each case. One must not accept a weak ruling to lessen justice that requires what is reasonably more. "Do not accept a bribe that perverts justice" (Dt 16:19) could apply to any judicial prejudice. Moreover, "each is to suffer for his own crime" (Dt 24:16; Ez 19:19-20). Although a son is not accountable for a father's crime (in God's eyes), even so, most likely, the son still suffers due to the residual effects. Although hopefully free of debts, the son's emotional suffering can be worse than the physical results. So too, fairness apportions goods according to the value of each.



That way, mercy could possibly lighten or cancel the retributive blow.<sup>481</sup> For human judges too, without good reasons to show leniency, a sentence scaled to the given is the default. Likewise, a suitable award can be right in some contexts to recognize performance, as long as one duly appreciates prior cases too. A demand for a *dayo* alone does not serve justice, because it cannot always find cases that are sufficiently alike. It would be an instrument to encourage insincere, poor, or bad efforts, while it discourages good ones when it gives the former too much and the latter too little.<sup>482</sup> Wisdom is needed, not a fixed rule to the complete neglect of balance. To judge rightly, one combines past precedents with ethical (and religious) principles that allow appropriate degrees of application. Both sameness and scaling principles can and should interact, so that the first restrains excess or insufficiency as much as the second eases rigidity or reduces unfairness. To conclude a valid and sound QC, one starts with a relative proportion of the outcome to the given, and when in doubt, moves to a *dayo* or makes mutual adjustments where needed or possible. That way, leniency, sameness, similarity, and stringency form a repertoire of appropriate solutions in the pursuit and preservation of fairness, justice, and mercy.

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<sup>481</sup> Here I speak of punitive methods, although others may be in order: corrective, rehabilitative, reconciliatory. Whatever method is chosen as appropriate for the best outcome, a harm committed requires some balance as a kind of fairness equation. Only afterwards does one show leniency as required to accommodate other issues.

<sup>482</sup> That good done for its own sake is its own reward (as bad its own injury) is beside the point for required justice.

## Conclusion

The purpose of this dissertation has been to determine the reasonableness of the *a fortiori* argument and its parallel Jewish QC. Although the *Mishnaic* tradition sought to limit QC use to religious matters, in essence, it is the same as the *a fortiori*. Through the course of the argument's explication, I studied its strengths and weaknesses, to progressively isolate and resolve its problems. As an induction, the argument is a sensible analogy; as a deduction, its validity depends upon continuums and fixed properties, with heritable features of perfect induction a bridge between the two main types.

For comparisons (theoretical or actual) of one item greater than another, a transfer of the given feature can work either as a proportion or as an equality (which is a unique proportion). If the argument depends on facts, it is subject to refutation or failure in the particular case, so that one must exercise due caution before accepting the apparently confident claim. When properly drawn, the *a fortiori* argument can conclude probably or actually as an induction or else validly and soundly as a deduction.

Since Jewish thought employed and explored the QC for millennia, its religious ideas and specific restrictions needed extensive treatment. In particular, Maccoby's insistence that a *dayo* conclusion alone was logical prompted a detailed analysis. In all, Maccoby's attempts to dismiss degrees proved unsuccessful. This brought out what I think were more historical, social, and theological than logical reasons to account for the *Mishnah's* frequent *dayo*. In the later *Amoraic* period, when the crises and dangers to Judaism were somewhat less acute,<sup>483</sup> proportional QC's increased. The obviously possible option of mercy solved the theological inconsistencies and logical difficulties created by a sole *dayo*, with the further benefit that it reconciled both the argument's religious and proper, everyday forms.

In more detail, the introduction set out the *a fortiori* as a commonly used argument. As an inductive analogy, it was *prima facie* rational and often successful, despite specific failures. In Chapter 1, I sampled a number of standard definitions and examples, which were only partly adequate. Most did not cover the large scope of informal and formal *a fortiori* arguments. After laying out a range of variations, I offered a more inclusive definition for both its inductive and deductive forms. Then in Chapter 2, I

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<sup>483</sup> See Steinsaltz, 53-4, for the differences between Israel and Babylon for the Jewish people during these periods.

outlined various fallacies and cleared away most of the preliminary objections to the *a fortiori*'s reasonableness, first about its basic usefulness, second about its inductive likelihood, third as a best option among competing answers, and fourth about its deductive validity in strict cases. I also compared degrees and sameness for their advantages, disadvantages, and mutual interplay. This freed me to focus on its Biblical background, particular Jewish uses, and religious concerns in the second half of the thesis from Chapter 3 on. There I presented Maccoby's position for the *dayo* as the only logical, *a fortiori* conclusion, as if required by the *Mishnah*. However, Samely found that most, not all, *Mishnaic* QC's were *dayos*. For the proportional examples, he (as others) said that they were not obligatory. This idea proved unsatisfactory, for the degrees in these applicative stories still expressed true *Tannaic* beliefs. While Maccoby's equal reward thesis underscored the point that people have the same, intrinsic, basic worth, despite unequal behaviours and abilities, nonetheless, one must account for performance levels and behaviour too. Indeed, fair reward and punishment were often dependent upon such distinctions, not just a common starting point. This left the *dayo* as a religious restriction that relied mainly on one Biblical case, pursued in Chapter 4. There I also addressed the material that Maccoby slid over too quickly in his truncated treatment, in order to expose both the weaknesses of a singular *dayo* and his unsubstantiated dismissal of degrees. First, philosophically, Maccoby's denial of degrees was untrue; even if his argument was formally valid, it was still factually unsound. I also argued that a rule that demanded the same given or lesser amount in a prior severe one, must limit itself to minimal sameness to be always true and not extend beyond to clearly unequal cases where it can fail. In addition, Maccoby's sameness *dayo* made the religious QC into a GS. This perplexing identity of a QC and a GS led to the effective elimination of the QC; but this clearly conflicted with the *Mishnaic* point of view where each rule of Biblical interpretation was distinct. Consequently, this plethora of problems reduced the strong *dayo* claim to one: that only proper, religious QC's conformed to the given, *Mishnaic* traditions. Historically, as a second point, a number of ancient and modern Jewish authors vied against even this lesser claim. Indeed, changes occurred from Biblical to *Mishnaic* times and onwards, with a shift towards more variable conclusions in the *Gemara*. Moreover, contrary to Maccoby's assertion, it

was less likely that the *Amoraim* forgot the correct *Tannaic* QC solution. This left the *Mishnah's* QC *dayo* as a preferred opinion or majority decision for that difficult period. Others, like Daube, did not hold Maccoby's negative attitudes towards degrees. Third, theologically, the alternate of a *dayo* due to mercy (as Sion noted) could be a better contender than the *dayo* as a standard, QC interpretation. Despite the general and religious critique of the stringent *dayo*, I still had to culminate with an analysis of Biblical QC's, for the Scriptures were the highest authority with the greatest antiquity from which the underpinning of the *dayo* as a Divine rule arose. We discovered that proper, Biblical QC's proportions outnumbered or equaled those with the same given. In fact, God stated an excellent QC to Jeremiah, whose conclusion increased. If God did not conform to the same given of a premise, Miriam's QC could not qualify as a paradigm. When duly studied, Miriam's punishment turned out to have a mixed conclusion—at once the same, proportioned, and restrained. Her case was isolated and unique. All the counter-evidence required a better understanding of this main incident: God had not made a binding *dayo*, but instead judged by a qualified mercy—and was not inconsistent or capricious in doing so. Conceptually, mercy was preferable to a sole *dayo* that left too many anomalies. Any difference between the justice deserved and the judgement received depended upon God's mercy. God could judge more strictly or leniently in similar cases to overturn his own precedents. Indeed, even Mosaic Law, as the *sine qua non* of Divine, authoritative rulings, could yield to mercy. God governed fairly so that mercy could moderate or modify the prior norm of proportional justice when it advanced the overall good. Mercy (or generosity) did not offend unalterable ethical standards—a religious lesson of utmost value.<sup>484</sup> Further, Divine mercy bridged the gap between what transpired in right reasoning, normal justice, and its religious counterpart found in correct, Rabbinic tradition and decisions. No justification remained for a Divine *dayo* interpretation as the last word on any religious QC. The strong *dayo* was not a sole logical or religious truth—Biblically, historically, or theologically. Instead, good practice,

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<sup>484</sup> If anything, leniency or mercy, which the inflexible *dayo* only expresses crudely, is not limited to a QC. Mercy explains the cases of Adam and Eve, Cain, Abraham's plea to spare the innocent (of Sodom and Gomorrah), and Aaron, despite the norm of equivalence of judgement to act made official in the Noahic "Code" and Mosaic Laws.

Rabbinic use, moral instruction, Biblical, and Divine examples demonstrated QC ratios. In the end, both sameness and proportions could cooperate, with allowance made for kindness and mercy if appropriate.

In sum, Miriam's case, assumed as a Divine *dayo* institution, lacked vindication: a) Sameness and degrees mixed in this very case. b) Good, Biblical degrees existed elsewhere, some approved of or even provided by God. c) Similar cases did not always have like results. d) Divine precedents and Laws, both stronger than QC's, had exceptions. Finally, e) such changes made God inconsistent, unless God operated justly, wisely, graciously, and compassionately. This left both the same precedent and ratios as possible conclusions of an *a fortiori*. Either way, enduring moral truths applied to new cases.

The remainder of the conclusion expands upon some key points, beginning with a definition.

As stated in Chapter 1, official definitions of the *a fortiori* argument are limited in scope as they do not attend to both its informal and formal possibilities. Most seek formulations for the *a fortiori* that display only its logical, deductive validity, but fail to appreciate its analogical, inductive probabilities as often true and thus acceptable, as in other areas of speculative and scientific reason. Given the result of my analysis of the numerous difficulties and complexities inherent in the argument, no simple definition is possible. On these suppositions, my reworked definition includes both its inductive probability and its deductive certainty for a qualified range of strict cases:

*The a fortiori argument compares two ranked items in a continuous, common category, one of which has a key feature, to conclude that the other likely has a form of the feature, which only in heritable cases is deductively valid and sound in that it surely has the same feature or its reasonable ratio.*

The less certain form of the argument bases itself on the analogical notion that if something has a feature, *more often than not* an appropriately compared, sufficiently similar item might have as much as, less than, or more of it. On top of this, the *a fortiori*'s ranked items make it stronger than an ordinary analogy, so that the feature (or a degree) is more likely to obtain. As long as we do not insist upon guaranteed results alone, the inductive *a fortiori* argument can be reasonably accurate in its predictions. Long experience and critical experiment (checked in enumerative and eliminative tests) strengthen the inductive form, to give it a high probability, reaffirmed with (or proportioned to) each success. While unusual facts can upset expectations, the record sets a statistical trend. For the ancestrally structured,

heritable cases of perfect induction, we have the certainty associated with deduction. While algebraic proportions and transitivity relations offer deductive validity when non-circular, they tend to lack the explicit, extra feature of the usual *a fortiori*. In deductive formulations, true claims are obtained in fixed cases where the answer(s) necessarily follow. For those unsatisfied with the typical *a fortiori*'s inductive reliability, heritable and deductive forms can quell doubts about the argument's potential validity.

As is clear from the thesis, the QC is fundamental to Jewish tradition, which in the *Mishnah* held the conclusion's quantity more to a concensus view than to purely speculative reason. While Maccoby argues that all QC's require *dayo* sameness in order to be logically correct, the *Mishnah* has only a majority of religious cases, while the subsequent *Gemara* promotes more proportions. (It would be of interest to compare the *Gemara*'s cases, as Sion suggested.) When the *Mishnah* invokes a tradition (religious or legal), it leans towards a pre-set agenda, so that its results appear consistent with past truths. This is a factual, precedent-based method, not what one expects of a general logical deduction, where consistency requires conformity to the internal givens alone (although background knowledge is required). The *Mishnaic* approach may be a logic peculiar to the majority (as per Guggenheim), but not necessarily of the *Gemara*'s scholars nor of the Scriptures. If my interpretation of the Biblical QC's is substantially correct and Miriam's particular case is a *dayo* of mercy, then the QC and the *a fortiori* coincide with both sameness and degrees as possible conclusions. This understanding would remove the theological, logical, and practical problems that plague the *dayo* as if sufficient for every QC.

By its use, the *a fortiori* is widespread and pervades human thought from antiquity to today, through sensible analogies, pragmatic solutions, scientific thought, and in special instances, deduction. Although a particular inductive *a fortiori* can fail (due to non-heritability), a higher than average confirmation of the feature justifies the argument form as reasonable and not too risky. When the claim is weak or fails, it lessens or virtually eliminates that case's credibility. Whether one argues for or against a thesis, strong, background evidence or theories can justify one's confidence that the feature does or does not pertain. The informed person is unlikely to redeploy the same case that fails: *If it did not have the feature, and evidence counts more than assumption, it is all the more likely to lack it now.*

For *a fortiori*, inductive sub-forms, we have identified the abductive and conductive ones, despite their rearrangements. An abductive type is acceptable as a best choice when done fairly (not to justify a bias). The better case usually has more of the desired feature(s), even if we err or go astray by wrong valuations. *If a thing is good, its goodness is due to some factor(s), whereas a better has more of the factor(s), all else being equal.* Abduction analyzes actual cases, *a posteriori*: *A has the factor(s); B has the factor(s) to a higher degree with lower deficits; surely B is better.* Conduction leads to a plausible, *a priori* conclusion: *In desiring some feature, a solution with more of it (and lower deficiencies) would be better; likely A has more of the feature rather than B.* Clearly, conduction is weaker than abduction.

Informal *a fortiori*'s are indispensable in both pragmatic and speculative situations. As a result, inductive analogies, so central to life and science, will not disappear from human thought; so too, the *a fortiori* will persist in its various analogical forms. All told, acceptable *a fortiori*'s range from high probability inductions (preferably over 50%) up to certainly true deductions.

For each of the *a fortiori* conclusions, whether as the same given or a ratio, we see advantages and disadvantages. The same given maintains the known truth, while the ratio utilizes it in new ways. Past knowledge guides us into the future so that core truths and ethical values remain (if true), all the while that scientific truths and facts can increase. Past and current good practices are preferable to poorer, new ones, especially where shortsighted tampering lacks sufficient prior knowledge or skill. In this sense, we can appreciate the *Tannaic* insight that refuses to surrender the highest values to what purport to be better but which can end up worse. So in general, the combined wisdom of several judicious experts, who can argue through each course's merits, benefits, likely dangers, and defects, can choose what is thought best for a community. Yet, while the past may be good, it is not always good enough, expert consensus or not.<sup>485</sup> An unmodified given, imposed on a superficially like case can be a cause of error, unfairness, or injustice. Former solutions do not always fit every new case, while applied principles can. Nor can the past mean that things are not improvable, just that one must exercise foresight and care

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<sup>485</sup> While majority decisions may be best for most, they are imperfect, as problems can remain or be created.

during conscious change. Because numerous problems attend the *Tannaic* sages' *dayo*, what likely reasons can we offer for their preference?

It is fair to say that the Rabbinic majority of the *Mishnah* exercised a measure of religious, judicial, and intellectual control over the Jewish community, to prevent the erosion of Jewish values and its cardinal truths.<sup>486</sup> Upon the destruction and loss of sovereignty in Israel in 70 CE, along with the consequent absence of much that made the Biblical laws applicable as specific, religious duties, with time, their practice became more a fading memory than a reality. Religious requirements gave way to theoretical reasoning about them. With greater reliance upon the conceptual aspects, the range of interpretations would increase and tend to stray. Too much latitude, even if well reasoned, would likely incur unacceptable ideas, change, errors, or else bring yet worse problems in tow. Since the preservation of Judaism, its truths, and the people, as an overarching desire, would be uppermost in the minds of the *Tannaim*, it seems that they made a pre-emptive decision to protect these for a future era when God would perfectly settle all issues.<sup>487</sup> Until then, as little change as possible was the right policy. This meant that the best path was to limit reason to prescribed bounds. To that end, they promoted the *dayo* as a Divine rule and utilized an otherwise sensible majority vote to make this social and religious regulation the norm. Thus, in order to protect and govern, rather than permit the intrusion of social upheaval, foreign politics, strong individuals, competitive groups, or even unrestrained reason and passions to lead astray, we can understand the *dayo* restriction. Overall, the *Tannaic* setting of the QC *dayo* was an abductive choice to maximize Jewish concerns during a difficult time, so that sameness scored higher than an often rationally stronger proportion. (Even this is a value scale.) Theirs was more a sociological and religious approach than a matter of ordinary justice, pure logicity, theological truth,

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<sup>486</sup> S. Cohen notes that the Rabbis' influence within the Jewish community and beyond grew over time, 219-222.

<sup>487</sup> While the *Tannaim* had their specific reasons, later Rabbis followed suit with similar concerns, because this was general religious Jewish attitude.



or even Scriptural evidence.<sup>488</sup> One can describe their decision as authoritarian (*shrirut*), to limit the variety of QC interpretations to what conformed to a specific, narrow, but safe range of Jewish tradition.

At the very least, the motives of the *Tannaic* majority were right—to keep the highest values for all and prevent interpretations that would likely deepen the crisis in which the Judaism of the day found itself. In one sense, this was positively prudent; in another, it was the middle ground of expert reasoning (if neutral and benign); but negatively, it bred other problems or persistent errors. As I stated, the majority often used the *dayo* in an all too human way, to cajole, coerce, and control.<sup>489</sup> Such methods are manipulative and even fallacious; and most people disapprove of anyone who resorts to them. One should appeal instead to truth and ethical values. However, realistically, this requires patient leaders and respectful people—both rare. The times were bad. Religious and political paternalism their tactical use of the QC might be, but human, nevertheless, pursued for weighty reasons. What is truly best requires a long, historical, comprehensive, carefully studied perspective. Then one can examine the treasures in the conceptual strongbox, verify their value, include equal or better ideas, clean and repair what is tarnished or broken, and, if necessary, remove any fakes.<sup>490</sup> Truly good things can always co-exist.

For the *Mishnaic* Rabbis, a fixed *dayo* had several advantages: a) it expressed Divine authority, b) promoted Jewish uniqueness, c) honoured and preserved tradition, d) ensured controllable, tried and safe, long-term results, and e) had majority, expert approval. Such a majority decision, enforced by the *dayo* as the best solution, based on a higher and holier past, charted the future course of Judaism through the then challenging, external dangers and internal struggles. Jewish survival was the priority.

Although respected, QC reasoning became subservient to tradition (as revelation) rather than its master—if reason meant cutting loose from key Jewish ideas and values. Whether or not it was entirely

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<sup>488</sup> The Talmudic Jewish attitude and treatment of issues differs from the philosophical Greek ones. The Jewish view is that humans understand only some revealed, Divine truths; and practice is closely connected, because mental grasp is insufficient. (Rambam would lean towards pure mental truths, without neglecting practices, so that people do not stray too far.) Yet both ideas and applications must be consistent, ideally, even if humans decide when clear explanations are lacking, as best one can. For the Greeks, rational thinking was essentially primary, the mind taken as man's highest faculty. If Socrates raised ethical concerns, it was still a rational, ideal procedure.

<sup>489</sup> A contrast between religious truth and common practice dissolves here. If the Rabbis do what everyone else does to get their way, then a religious QC and human QC are not so different after all.

<sup>490</sup> An unexamined box may not be worth all it is touted to be (An apology to Socrates).

right, logic had to take a back seat, especially given human, rational limitations and inevitable ignorance. Only if tradition lacked an example could one argue from Biblical passages, principles, or a parallel tradition. Still, the right answer in essence was known, not entirely new. This constrained reason to align itself with known religious truth. The *dayo*, then, served as an outer fence around the inner one of tradition, to guard the vital core of Biblical truths. However, this also placed the QC under the opinions of a group instead of being open to wider debate and rationally objective, common criteria.<sup>491</sup> Even if this was what the *Mishnaic* Rabbis thought was the best course, it conflicted with the obvious sensibleness of degrees. A possible interpretation, the *dayo* was; a binding, theological truth of revelation, it was not.

In all this, I believe that the likely reasons for the *Tannaic* deliberate push to uphold tradition by means of a supposedly, Divine *dayo* can be simplified to four points. The majority of these Rabbis wanted to a) define and b) retain what they viewed as orthodox Judaism. This required them to c) curtail the range of possible options by d) the exercise of religious control at a critical time. In so doing, they wielded a QC, abductive principle (an expert majority usually knows best) to limit QC latitude (some theoretical, rational best), by pegging the conclusion to the given, Rabbinic tradition.

However, as the complexion of the present altered, the largely unpredictable future required some adaptations. Even if hedged and limited, the Rabbis were open to slight, regulated change, as long as the new was consistent with underlying, revealed truths. Principles of past truths, sometimes abstracted from particulars, allowed new forms and rulings.<sup>492</sup> Nuances and compromises, incorporated into the ongoing tradition, extended Biblically rooted, ethical principles. Any such movement, even slightly from a former case to a more relevant one, meant that a form of proportionality cropped up indirectly.

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<sup>491</sup> An insightful comment is in Toulmin et al, 255-6: "Context determines criteria." However, if we take this statement as relative, then it should be set in terms of some higher context that considers everything – which for the Rabbis would be God's point of view, ultimately, whether or not they saw themselves as speaking in God's authority as official representatives. A majority interpretation was to speak the truth. But surely, if it was plainly wrong, contradictory, or unsupportable, a majority or tradition could not make it right, especially not an eternal truth. The possible revision by a later majority could replace the former with the minority view as true. (See also Halivni concerning this reversal, 113, 163-4, and the non-maximalist view of halachic d'rash.) And as I have demonstrated, the *dayo* rule is not universal or supported by Scripture, just a specific ruling or Tannaic norm.

<sup>492</sup> There is some similarity to Platonic forms or ideas expressed temporally in the multiplicity of reflected forms.

In addition, the QC debates were not mere academic, futile exercises forever coinciding with former rulings. A vote after a real debate indicates that the *dayo* conclusion was not automatic, but determined on a case-by-case basis. Significant differences the Rabbis would concede, which led to a new evaluation, precedent, modified judgement, or an unresolved tie. Latent problems had solutions. Since a vote for a traditional view might repeat an error or aggravate issues, a future, more venerated, Rabbinic court of greater wisdom and numbers could rescind, correct, or reinterpret past rulings, based on a better understanding of revelation or tradition. Such a procedure did not make every prior, Rabbinic, majority decision poor or wrong, just potentially revisable, because of a possible imperfection.<sup>493</sup> Beyond these, proportions were not just theoretical or mundane ideas, they appeared in the *Mishnah*<sup>494</sup> and *Gemara*.

Under somewhat less intense conditions, the *Amoraic* scholars re-examined and explored issues. Without stating why they shifted from the *Tannaic dayo* norm, they simply added scaled examples, to readjust the imbalance so that it correlated with the *Tanach's* earlier range of proper QC's. By the end of the *Talmudic* period, then, to "be moderate in judgement" and in argument meant that proportions were restored. Logically and judiciously applied, QC ratios also reflected and respected tradition.

Although an evolving superstructure of tradition is evident, it remained tethered to firm ethical and theological truths.<sup>495</sup> If revelation transcended time and circumstance, the written *Tanach*, as the ultimate fountain of truth, could reach continually into every, new, future situation via its eternal principles. In this way, the past still prevailed.<sup>496</sup> As Biblical injunctions required reasoning, in this sense too, reason was not contrary to revelation.<sup>497</sup> This also required that the Rabbis act responsibly, to interpret and adapt Biblical truths to each new situation in the ongoing, human drama. So while some things changed (the impermanent, as human rulings), the basic, revealed, authoritative truths did not (in

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<sup>493</sup> In a restored nation partly, and only in the Messianic age fully, could matters be raised to the level of a Biblical truth consistent with pure reason or perfect logic (whatever that might be). Despite advances in modern logic (including mathematical), we have not yet arrived at an encompassing, perfect logic. For the perfect truth of the Messianic law/interpretation, see Gen Rab 98:9 and Eccl Rab 11:8.

<sup>494</sup> Seen as earlier, examples are mSan 6:5 (II), mMak 3:15 (IV).

<sup>495</sup> For the fact of Rabbinic innovations in halacha (reading in, harmonization), see Halivni, 15, 33-39, 51, 93-8.

<sup>496</sup> Again, Halivni 26-7.

<sup>497</sup> Both Kraemer and Halivni advocate that, besides the fact that both are interdependent.

theory). As the Rabbis referred back to the Scriptural source through the “Oral” tradition handed down (*massoret*), they showed that past truths were alive and able to invigorate new applications (*chidushim*).

At the same time, unrestrained ratios are clearly extreme; we can easily recognize and then reject them as unjustified, unlikely, or invalid claims. Overly harsh judgements or immoral claims (like Lemech’s) are just disproportionate abuses of the QC. As such, we do not require *dayo* supremacy to keep us safe from rampant proportions; we just need a healthy skepticism that insists on rational and moral restraints. In any case, inexactness is as much a problem for degrees as it is for sameness, despite the definiteness of the *dayo* or tradition. While even experts can err in proportional decisions when too lenient or severe, these find remedy in fairness or mercy, rather than a pseudo-accurate sameness that can exhibit the same faults. Ordinary reason can be reliable, while traditions do not always suit.

We can value the contribution of each outcome type and avoid its dangers. Consistent and sensitive justice denies all arbitrary, unfair, unreasonable, forced rulings. To be rational is to suit the right ratio to each case. Potentially and undeniably, the *dayo* principle can apply in almost every case, but not as a superior rule over all and sundry. While leniency may warrant a *dayo*, it is a means of mercy in a strict ruling. Anyway, flexibility can balance rigidity. In its origin, the *dayo* belongs to the inclusive, QC set of dual solutions (degrees and sameness). Combined as mutual moderators, a result may be minimal, the same, scaled, or maximal. Then we can rank and judge performances, appreciate basic worth, and not bow to favoritism either. The resultant both preserves the past and copes with the present.

In its lack of consistent, Biblical rulings, the *dayo* alone or as a best choice in the service of tradition is too strained and limited. Clearly, Maccoby pushes the half-truth of the QC *dayo* too far. Miriam’s *dayo* is particular, not a paradigm. Effectively, the *Mishnaic* majority’s *dayo* only bears a measure of interim authority. In the *Midrashic* story, after affirming the minority view, God laughs at losing to a majority vote,<sup>498</sup> but from a longer historical view, the *Amoraim* may have outvoted their *Tannaic* predecessors to restore the Divine order. In some “ideal” state, every issue has an exact, past answer; in

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<sup>498</sup> Again, BMetzia 59a, b, based on Ex 23:2 (“Be not with the majority to evil” = be with the majority for the good) and Deut 30:12 (“It is not in heaven.”). See Daniel Gordis, “Revelation: Biblical and Rabbinic Perspectives,” in *Etz Hayim* (New York: Jewish Publication Society of America, 2001), 1398.

reality, ratios work. *A fortiori* ratios are linguistically appropriate, eminently sensible, logically possible, empirically and religiously evident, and Biblically abundant. Thus, an exclusive *dayo* is an illusion. We can conclude that the general and Jewish *a fortiori* arguments allow both ratios and sameness as complementary, not contradictory principles. The same and proportional conclusions are both required if the *a fortiori* argument is to be sufficiently general in its scope; but each is insufficient on its own as the sole solution for every case (especially when sameness emphasizes a primary quality and quantity, while proportion a related quantity). Since proportionality and the *dayo* principle can offset the potential weaknesses of each other, fair and appropriate outcomes are attainable—as best one can.

Doubtless, more work on the *a fortiori* would prove fruitful, whether about its general deductive or inductive forms, a further investigation and refinement of the Jewish *Qal VaChomer*, or into what were the likely motivations of the *Tannaim* concerning the *dayo*. For now, this is enough (*dayo*).

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## Appendices

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### A.1. The *a Fortiori* in Comparison or Competition

Although not explicitly stated as an *a fortiori* in their discussion, the authors, Toulmin, Rieke, and Janik, point out some qualifications about arguments that are pertinent (quoted with their own italics):

In addition, we need to consider in what cases and in what conditions one argument can be judged *better than* another argument....Given any two arguments, does it *always* make sense to ask which of them is stronger?...If we say that P2 is a better argument than P1, what does this assertion mean, and how can we justify it?...Specifically, does the reasoning in P1 or P2 do *more to support* the claim....We are trying to judge the *rational merits* of P1 and P2 to see whether either one gives us *better reasons* for deciding....<sup>499</sup>

In an opposing set of legal claims, we see similar considerations, even when the actual content of what is better changes with the legal context:

The question is again *not* which of the two speakers is the more deserving. It is rather, which of the two speakers has the better case[?]...In these...statements, the central aspects in which L1 is a *better argument* than L2 are indicated by reference, first, to the grounds (a signed contract is *better evidence* than oral testimony about an alleged verbal promise), then to the warrant (the current law of contract provides *better authority* for the enforcement of written contracts than of verbal promises), and finally to the backing (both the acts of the state legislature and the currently accepted code provide *better backing* in the one case than in the other). In the legal situation, therefore, the question is *not* whether the *conclusion* of L1 or L2 is in fact the more reliable. That is a legal matter, and it might yet turn out that in some jurisdictions (for example, Scotland) verbal promises may be as enforceable as written contracts. The question is only whether, as they stand, the *rational merits* of L1 and L2 are open to comparison. And in this regard, it is once again clear that there is no problem in *making sense* of questions about the relative merits of different legal arguments.<sup>500</sup>

Taking these questions and qualifications into account can keep us from granting the *a fortiori* “carte blanche” validity too quickly. But their examples raise our trust in it being mainly a correct reasoning method. The authors employ unmistakable *a fortiori* comparative reasoning without formally recognizing it as a distinct type, perhaps

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<sup>499</sup> Toulmin, Rieke, and Janik, *An Introduction to Reasoning*, New York/London: Macmillan, 1979, 245-7.

<sup>500</sup> Toulmin et al, 248-9.

because it is such a natural way of arguing. In their work are further applications of the *a fortiori* principle and argument in scientific theory displacement.<sup>501</sup>

## A. 2. Ordinary and Scientific *a Fortiori* Matters

In both everyday and scientific affairs, the quality of the facts, correctness of the procedure, and reduction of mistakes, all affect the rightness of our conclusions. If attending to some matter with basic care bears good results, then, more often than not, added, thoughtful planning is better. Hopefully by experience, we learn to judge each factor well and thereby achieve more correct results. More information gathered and greater accuracy of details generally proves better than partial data and rough approximations, even if adequate in other situations. (To be remembered too, is that we often face practical limits in trying to do things better: time constraints, the difficulty of the greater efforts required, inadequate techniques, or the lack of skill or resources.) When an estimate is adequate for an acceptable solution, more details and sharper calculations may not always guarantee better results, although these are the more proven means of attaining greater success.<sup>502</sup> But no matter how good the facts are, if the methods used are faulty, arriving at the right conclusion is less assured, all-the-more-so if we are prone to err. Learning involves verifying the methods, ideas, and facts.

Because for many things no perfect standard is available to measure against, we can apply *a fortiori* thinking to those areas, to determine what is relatively better. And for less successful things, it is often true that one can still find something of greater worth.<sup>503</sup> In life, even if there are no obvious upper or lower limits, we have that internal sense that something can be better or worse, especially when we are so attuned to what is better (and worse). Comparisons are made against similarly known items, developed rules, or our internal ideal, intuitive, “value-meter.” In comparing the quality of works of art, some are judged better than others; and even if perceived as good on their own, many can be improved.

Extrapolating from experience is an inductive process. Induction’s demonstrative strengths are confirmed by iterative, repeated, crucial testing. The probability of statistical results depends on the numbers and accuracy of the data. Non-representative samples, inadequate population counts, and bias usually yield less accurate results than those free of those faults. Yet often, both the premises and the conclusion are empirical rather than *a priori* or analytic, provable truths or certainties, such as in mathematics. Although induction may not lead to certainty, it can lead to very high probability in science, as in the high degrees of accuracy of Quantum Mechanics.

Additionally, many rules-of-thumb regarding simple formulae reflect principles of theory preference and choice, and are accepted as virtually good enough in the sciences and technical matters. As quick ways of estimating, where long calculations would be laborious and unnecessary, they can be viewed as *a fortiori* arguments in such enterprises. But many complex expressions can be made compact and, hence, more general. The following heuristic principles relate to each other too:<sup>504</sup>

- a. A simpler formula is better than a more complex one, if it does the same job. (Efficient)
- b. A formula that works with more variables may replace another one that does less. (Effective)
- c. A more general theory is more encompassing than a more particular one. (Inclusive)
- d. A fruitful theory leads to more useful results in new areas with less wasted dead-ends than a theory that cannot explain those extra phenomena. (Productive)

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<sup>501</sup> For indications of the preference for the better argument, Toulmin et al, *An Introduction*, 15, 38, 40, 65.

<sup>502</sup> For some things, a full understanding may never be identical to what is being investigated. Variety and creative art need never be exhausted despite the fact that some work are better than others. Metaphor has its value, analogy its uses, and the *a fortiori* argument can be seen in either, besides its value in science or stricter forms of inference.

<sup>503</sup> While one may talk of redeeming values in horrid things that may have some semblance of good, there is the other side of their overwhelming bad qualities, which must not be forgotten. Seldom do bad things have sufficient good points to raise them to an acceptable level. But when we talk of relative goods, there is room for discussion. So too, we have Popper’s distinction between the more valuable though false theories and less valuable ones (Cohen, *An Introduction to the Philosophy of Induction and Probability*, 182). Also Popper expresses another *a fortiori* with the greater versus lesser grasp or slice of the truth (Cohen, *An Introduction*, 183).

<sup>504</sup> See Peter Ochs, *Peirce, Pragmatism and the Logic of Scripture* (Cambridge, UK: Cambridge University Press, 1998), as he quotes and comments on Peirce about Galileo’s preference for the simpler hypothesis (not necessarily logically so, but “the more facile and natural...” says Peirce), 323-4.

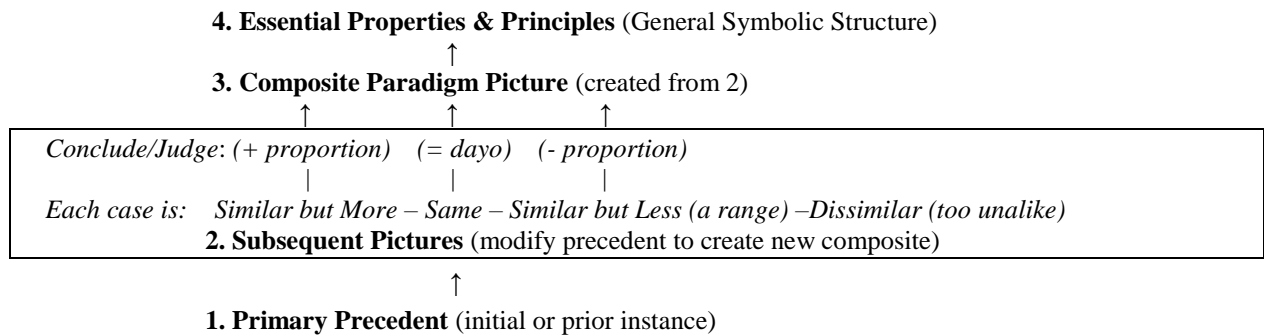
- e. A solution answering more problems on more points with fewer problems is better than other alternatives and is to be preferred and picked as the best. (Abductive)

We can make a general comment about the best choice as an *a fortiori*. What is thought best, or really is best, in some context may be disavowed in another. Additionally, the discriminating rules for what is the best can shift, depending on the judgements made and criteria employed. Yet, while actual choices change, the principles of better and best are permanent as general notions. The fact of some choice about what is the best, better, equal, worse, or worst shows our evaluations are made according to some scale. Despite inconsistencies, the idea of the best (worst), as better (worse) than other known ones, joined on a common basis, is a general truth.<sup>505</sup>

## B.1. Past Examples as Analogues

The diagram below helps us visualize the various relationships of prior examples or analogies and new cases that arise. Any existing item, object, case, idea, form, or process can serve as an initial example or analogue for another. Each may stand alone, or both the past case and the new one can also overlap or interact due to similarities to form a new standard. A process develops by comparing a subsequent example to a former one, the result often being a mutual modification or settling on some new composite average or compromise. This main movement upward shown below begins at the bottom with any first example within a class of things, as an instance, precedent, paradigm, or typical case; it then proceeds by combinations, stepwise, to a maximal composite of all the typical key factors. This can then be further abstracted to a minimal set of essential properties, principles, and operations, hopefully capable of being symbolized. These essentials include all the necessary aspects and conditions, which in a simplified, symbolic structure can be more easily treated as a logical form. (We can also scale things in various ways from the particulars to the maximally inclusive, composite case, or to a more theoretic, general form.) Separately, on their own, each example fills the middle region, distributed by their having more or less of some key features found in the current composite. If we can rank the key features, then whatever place any one displays in the current composite or compromise, the varying amounts of each situate the examples around that middle space. We can do this both quantitatively and qualitatively.<sup>506</sup> So the upcoming diagram should be read from the bottom up, as the process by which a composite or even a general picture is built up through incorporating previous instances.

**Diagram 11: General Pattern from Specific to General**



From the initial precedent (1), we progress through various examples (2), to making an overall composite (3) that has all the essential features that may be generalized (4). Ordinarily, the primary instance serves as a precedent, even as a paradigm. But this jumping upon the initial experience as a paradigm is seldom possible or

<sup>505</sup> Decision-making in a complex of human factors and varied conditions with alternative solutions is amenable to abductive thinking that seeks the most appropriate answer. In this choice, one compares things that are more or less alike, as in analogy. Similarly, for preferences, one joins the idea of what is better among compared things.

<sup>506</sup> This is more complex than it may appear, for the individual placement depends upon valuing each key feature, which, where more than one exists, may vary up or down on a scale, rather than in a simple, global ranking. These multiple factors of several key features, each varying, are readily handled under an abductive analysis, where we can grade the total values of each individual example that makes up the current set, itself an overall compromise. The abductive result can include the frequency of each case within the total pool, also analyzed numerically.

even recommended at the outset, although this tendency is evident, as in imprinting. (Initial experiences are important for that reason; generally, it is primary—although modifiable—in establishing a child-parent relationship of care when good, or neglect when not.) In that repeated process, every new instance becomes an object compared to the former composite, as the prime analogue that applies to the new case. After several examples, we can piece together a fuller picture, especially once new elements or oddities cease to crop up. Until then, we make do with the precedent or current composite. We check to see if the new instance is basically the same, similar, or increasingly dissimilar in various ways. If too unlike or strange, we may reject it or sideline it as an anomaly for later review. In line with the degree of similarity or difference, we also assess what the conclusion in the new case should be: greater, the same, or lesser.<sup>507</sup> As stated, this can be generalized into principles; then it can be possibly symbolized for easier manipulation by various formulae, logical or mathematical.

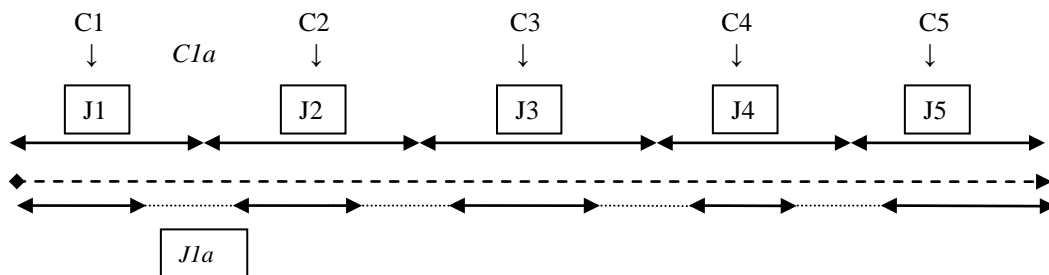
## B. 2. Precedent, Chunking, and Subdivision

“Chunking” items together in groups of largely similar things, explains both how one looks to precedents which are needed for *a fortiori* arguments, a way of understanding the *dayo* limit, and how we get increases in classes (or decrease by employing hierarchies).<sup>508</sup>

We can consider elements individually, or as parts of groups, or everything as a whole. For the sake of simplifying a large array, similar items are often grouped or chunked together. Classifying things in this manner makes their relatedness evident and other associations easier to see. However, it might suppress crucial differences that must but duly noted and sorted out. All the more so, if momentous decisions are dependent on the crucial differences. Indeed, in making decisions, seldom is there a “one-size-fits-all” answer, but those made according to the situation’s details. What suits one case may not suit another. One aims to match right judgements to each case, either the same or really diverse.

We arrange a grouped series of cases along a continuum of increasing severity; and we also divide cases (the C’s), along with their corresponding judgements (the J’s). This continuum is pictured below in the middle of the diagram as a dotted line. Demarcated below too are the matching judgements, J’s, as consequent decisions or outcomes of the case types, the C’s: to C1 is J1, to C2 is J2, and so on to C5 with J5, all an ordered set. If some random case and initial judgement was later set as C3-J3, their numbering was arranged relative to the strengths of the others. Although not shown within each chunked case (C), outstanding sub-factors underly this ordered pattern.<sup>509</sup> An average, mean, median, or composite judgement derives from from the grouped, case precedents.<sup>510</sup>

**Diagram 12: Continuum-Chunking** Category of Cases & Corresponding Conclusions/Judgements<sup>510</sup>



Of course, this diagram is just the general chunking principle, the “tip of the iceberg.” Things get much more complex the more one delves deeper.<sup>511</sup> One can also look for comparable judgements where the same key issues

<sup>507</sup> Things of major dissimilarities are largely or entirely unrelated and so cease to affect the composite.

<sup>508</sup> Chunking is a term for putting things together in groups, in the sense of like things, as “a chunk of...”

<sup>509</sup> Outcomes can differ from legal or evaluative judgements. Cases, as initial states, are “causative” in some sense.

<sup>510</sup> With finances, the amount of interest to be gained (the outcome J) on a deposit in a plan, is often set by the category of amount (C) deposited for a standard period, and only at the rates being offered for each sub-category (C1-C5), rather than what might be the highest rate possible outside of this particular, designated plan category. If we considered the overall category as investment rates per period, each numbered C’s would be a range of amounts that yielded corresponding different rates of the numbered J’s.



stand out, while trying to be consistent and keeping the cases simple, or else one re-evaluates the matter based on first principles. Reasonable compromises can adjust existing cases, or a new case may be added as seen fit.

A lack of clarity occurs at the borderlines, however, where overlaps or gaps between cases are possible. Notably too, special internal factors may add complications in need of resolution. First, the difficulty associated with overlaps/gaps may be solved by going either way: to the immediately more severe or less severe case, as being most like the analogue under consideration. Or else, a new position as a group may need to be established somewhere in-between. This would be either a finer gradation or sub-category, more suitable to the actual situation. Thus J1a (on lower line) would fill the uncertain area that might otherwise be overlap of J1 and J2. Once we accept finer gradations, we easily end up multiplying the number of judgements. Secondly, to cover some of those extra, internal differences, we could again subdivide the applicable cases and judgements (so the C1a and J1a can stand for those too), positioned under C1. This would be repeatable as much as recommended for ever finer distinctions. Each process need not end, whether between every minor difference or within the overlap.<sup>512</sup> But since a subdivision process with too many minor distinctions can put undue strain on everyone, a countervailing chunking preference of categories holds sway. Some level of category precedent is “good enough” to serve as an analogue. Finer tuning would continue apace as possible and practical. Minor twists in cases are left to adjustment or exploitation. Only completely new cases are put in a wholly new class.

### C.1. General and Specific Rabbinic Argument Forms<sup>513</sup>

#### a. Sugiyot/Debates (in theoretical and practical reasoning):

The Rabbis of the Talmudic period put their arguments into debate-like formats. Challenges and defenses of positions clashed over opposing facts (specifically Biblical), various traditions (past rulings), differing authorities (Scholars or Schools), interpretations (hermeneutic possibilities), or reasoning (rules), or even common practice (acceptance). In Rabbinic arguments, opposition to some QC reasoning might take the form of questioning the solidity of the relationship of the prior case to the one being compared. Sometimes one was really talking about differing things. That way, a blatant contradiction could be avoided. At the end of the day, after the adequate presentations of each side employing the same logical methods and strenuous differences of opinion by opposing experts, majority rule was usually invoked to favour the accepted tradition. Consistency was important, for sure, even if it was for prior rather than apparently logical truth. Where no ruling was available both positions might be accepted as tied (*teiko*), perhaps temporarily. If the reasoning was stronger in favour of one, it held sway, unless outranked by a vote.

#### b. General Structure of a Debate:

1. Topical Issue X: has 2 types of acts (positive (Do) and negative (Don't)), which yield 4 cases:  
**All:** Obligatory; **None:** Forbidden; **Some:** Permissible/exempt; **Some Not:** Liable
2. Rabbi A (or Tradition of School A) says P, while Rabbi B (or Tradition of School B) says Q = ~P (= not P). Interim Problem: A and B seem to disagree over issue as P or ~P (= Q).

<sup>511</sup> How are we to compare a simple theft of grabbing, say \$50, to an armed robbery of \$50,000 with a loaded pistol, all other things being equal? And how does that compare with wielding a knife or a machinegun? What if these were just toys? Clearly, other factors can quickly multiply too: if the person is a minor, a first offender, a repeat offender, was violent and so on. The next footnote looks into some of this.

<sup>512</sup> In a legal system based on precedents and categories (and a critical, new case possibly a precedent), the many complications of new cases need resolution. To consider the multiple variables in a situation, there are various ways to treat each case without making everything wholly unique. One can add the typical individual judgements for each factor of a case, or scale things down from the maximum for the worst under the category, or apply some formula that would fairly account for all the factors. One can apply the above diagram in this way: for a violent crime, the specific judgement on such a violent act might carry a J4 penalty, adding some dangerous weapon would incur an extra amount as seen under a J4d, a second offence a further J2a, and for being a theft on top of that an additional J1 sentence. Perhaps extenuating issues might permit a lessening or require increasing the final judgement. After resolving what is deserved, the actual sentence meted out may be another matter.

<sup>513</sup> A. I. Reisner, ‘The Character and Construction of a Contrived Sugya, Shevuot 3a-4a’ in *New Perspectives on Ancient Judaism*, Vol 4, edited by A. J. Avery-Peck, 1989, 50ff. See also Kraemer, *The Mind of the Talmud*, for dispute form with no reactive element, 99, and the argumentation form (Neusner calls them debates), 102-3.

3. Rabbi A: (for an act) Act a → Judgement b;  
(for failure to act as required) Non-act ~a → Judgement c, by tradition t1 & t2 or some claim M.
4. Rabbi B: Act a' → Judgement b';  
Non-act ~a' → Judgement c' by tradition t3 & t4 or claim M\* (or argument).
5. Resolution: While at times, one option is preferred as the victor, often an attempt at reconciliation is made. That is, it is an argument about differing cases, P or Q (and not ~P), so it is not a problem; or if not resolvable, it was an interim tie to be later resolved by the Messiah.

One can substitute for the Act/Not-Act in the above other options to explore the religious-legal theory and practice: Known & Intentional; Knew but Forgot; Not-known (& so Unintentional); Correct/Not-Correct. The emphasis on action is striking. Of course, action reflects habit and belief, but not always.

The Rabbis regularly asked questions, such as who, where, when, what, how, but not so much why things were done. God's acts were doubtless the best; human ones displayed many inadequacies and failures. To gain standing with God, one needed to know what to do (*halacha* =), how to live or behave as being of upright character. So the answers found or settled through the debate format tended to be more practical, and less concerned with theoretical issues, essentially settled by text and tradition.

### c. Maimonides and Scaled Actions:

For Maimonides, the practices were viewed somewhat differently.<sup>514</sup> While still upholding traditional practice, it was held as a lesser good, keeping people within prescribed bounds (occupied and out of trouble); but he was more concerned with what they thought in possessing correct knowledge, and so explored the higher, theoretical issues more, as these were truly spiritual.

With respect to actions, Maimonides displays a scale of these in nature, going from the least to the greatest (Guide to the Perplexed III: 25, 502-3).<sup>515</sup>

1. Futile: undertaken with no end purpose.
2. Frivolous: low ends (unnecessary or little use).
3. Vain [Inadequate]: aim not achieved.
4. Good and Excellent: noble, necessary, and useful [& doubtless achieved].

The laying out of the scale allows Maimonides to point out that God's 'actions' are of the best kind (the last on the list).<sup>516</sup> Still, I would suggest a need for an extra category of 'Partial', human actions (incomplete but still

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<sup>514</sup> Yet, the early Rabbis were not alone in this search for the best or right view among many, Maimonides later being a special proponent of his intellectualized Judaism in the light of religious and philosophical competitors. Because it is an important but secondary point and not the main focus of this paper, as a continuing attitude regarding the place of reason, I relegate the discussion of Maimonides' use of reason to this Appendix.

<sup>515</sup> Daniel Rynhold, *Two Models of Jewish Philosophy* (Oxford/NY: Oxford, 2005), 9.

<sup>516</sup> We might want to include negative actions, increasingly bad or destructive before 'Futile' if we wanted a complete list. However, we would have to qualify expressed Divine judgements, displayed in natural events, from ordinary disasters that have more general theological questions attached to them. Perhaps Rambam (= Maimonides) did not want to enter into that debate here, although the general sense conveyed by his Aristotelian Judaism is that lower intellects and brute stuff fail to be perfect and so cause harm collectively and individually. For the positive side, Rynhold (9-11) also quotes, Maimonides, GP II: 48, 409-10, in saying that God is the ultimate 'First Cause of all things', although judgements could be included here, not natural death, disease, and disasters – which would have to be due to the inadequacy of the crude, corporeal stuff, incapable of rising to perfection. Because this makes God unable, despite an attempt at preserving static 'perfection', I find this problematic – as explained elsewhere. Likewise with respect to the commandments (and for Rynhold too in his discussion), if the ritual laws in their expression are just human and accommodate human weaknesses, the eternal part is abstracted, negatively it seems. But then, the laws as they stand, are not necessary or ('probably not') sufficient (43), for their end is a purely rational (and negative statement) contemplating of the 'perfect' (idea of) God. Whatever advantages may hold for Rynhold's thesis of priority of practice (PoP) over theory (PoT) particularly for Judaism (although applicable to most other areas), there is another alternative: that they both are intertwined – which seems to be what Rynhold admittedly does in his argument (239-41), even if one can separate out practical reason (as inductive or abductive or otherwise) from universal theory. Kraemer states that Rambam

useful and valuable) after ‘Vain’ and before ‘Good and Excellent’, because many human actions would be of this sort, being imperfect, but still worthwhile when partly realized, so not complete failures. And even with his last category, I would subdivide it into ‘Initial’, ‘Interim’, and ‘Ideal-Ultimate’ aspects. The division would specify that creation is complete in one sense (initial acts/works), but incomplete in another due to subsequent evil occurring, requiring certain temporary correctives (interim measures), that will eventually be perfected (ideal-ultimate acts). This expansion makes for a better appreciation of the Rabbinic notion of *tikkun olam* (a sort of Divine and human cooperation in fixing the damaged and incomplete to bring about a best state).<sup>517</sup>

More, God’s works also have rational purposes, with the subset of “the commanding of laws” being also rational, says Rynhold, by analogy. To show that, we could construct a parallel list of promulgated laws. Comparing the Divine actions with the stated laws, analogously, we would be able to see a latent *a fortiori*: If God’s greater and more general actions have rational ends, God’s lesser and more specific laws, also have rational ends as ‘good and excellent.’

Some important points to be stressed in this regard are the following: The Noachic laws as understood in Rabbinic literature are precursors to the Mosaic laws and consistent with them. They form a bridge between natural law or general human reasoning about nature (and right human conduct), where correct, to the fuller revelation given via Moses. Thus we have a series in a process that can be seen in terms of precedent and subsequent laws: Divine works (along with natural law, properly understood), Noachic laws, and then Mosaic Law. According to Rabbinic thought too (derived from Scripture), there is also Messianic Law. How the Rabbinic idea that God uses the Law (*Torah*) to create the world fits in is not clear, although we could take it in Maimonides’ sense that God employed the Torah’s essence or truths. He seems closer to the notion of ultimate principle in this regard. Of course, Maimonides does not want to say God is constrained by these principles, just that He is not inconsistent. We can also grant that creation is less than the perfection (non-imperfection) of God alone, the (not untrue) Principle of principles.<sup>518</sup>

#### d. Specific Debate, Methods of Analysis, and Resolution:

For a sophisticated Mishnaic argument based on lesser and greater values, the *a fortiori* is just part of the preliminary. The problem presented is how to resolve an issue of materials supplied to a workman that were improperly worked, as specifically given in the case of dyeing (from M BQ 9:4 G-K).<sup>519</sup>

Value: U =Undyed Wool, R =Red-dyed Wool, B =Black-dyed Wool;

Dr =Red-dyeing cost, Db =Black-dyeing cost.

Problem: Either 1.  $R > B > U$  or 2.  $B > R > U$ .

Meir says: *The dyer pays the owner the value U of the wool dyed wrongly*; so he proposes: *Workman pays for the mistake and perhaps may later sell it.*

Yudah says: *Pay the difference of values for a: (R-B)-Dr or (B-R)-Db is paid to the dyer;*  
*b: Dr-(R-B) or Db-(B-R) is paid to the owner.*

This may or may not be fair, but Yudah’s idea is accepted: *Work out the relative differences and pay for the loss, assuming that the added costs were agreed upon and verified on the agreement.* This also assumes that the relative difference between R or B is not an issue other than cost. However, this may not always be the case, and yet Meir’s position is rejected and Yudah’s is accepted, based on the tradition. Perhaps the idea was that mistakes were rare and that the actual difference in value was at issue, colour being of minor significance.

rejected the Aristotelian sense of the First Cause because of R. Akiva’s principle of a free human will that allows rational thought (114).

<sup>517</sup> I do not offer my reasons here why I think that allowing evil a possible place within the world is a better first step than preventing its appearance completely, although it has to do with moral choice for beings such as us.

<sup>518</sup> Evident within the Jewish tradition, that tension between its past and the wider world did not abate, but reached its apex in Maimonides (1135-1204), a key figure, who in turn influenced Aquinas and other, Western, Christian thinkers. Not only he, but a number of Jewish scholars, mainly Rabbis, conversant in philosophy (and the day’s science), maintained that lively exchange, sometimes directly with scholars of other faiths. While Jewish attitudes to reason had a spillover effect, reinforcing what was already taking place among Christian scholars who also were discussing the various roles of reason, they were largely unaware of Jewish interpretative methods, and with the QC particularly, except for what they picked up from the Bible (and the New Testament) or secular uses.

<sup>519</sup> See Neusner, *Talmudic Thinking*, 152-4. (M BQ = Mishnah, Baba Qama)

## C. 2. Samely's Analogical Resources for the *Mishnah* <sup>520</sup>

Samely uses a list of resource families of hermeneutic or linguistic categories with typical family names for what is being done by the Rabbis in this early compilation of Jewish lifestyle issues. He notes the complex features of actual Rabbinic, analogic procedures, rather than what is claimed, as how the (7, 13, or 32) interpretative rules are supposed to be practiced. The Rabbis themselves did not define them.

**Analogy 0:** Analogical transfer between two subjects without reliance on Scriptural wording. 13 occurrences: mErub 4:6, mPes 6:2 II(5), mPes 6:2 III(5), mYT 1:6 I (2), mShebu 3:1, mEduy 6.3 III (4?), mZeb 1:1, mYad 4:2, mZeb 7:6 II (2), mMen 12:5, mArak 4:4II (4), mTem 1:11 (3), mTem 2:2, mYad 4:3 I (3).

**Analogy 1:** Selection of a situational or substantial similarity (or dissimilarity) between a biblical subject and a non-biblical one (particularly Topic2) in order to determine the apodosis of a Mishnaic protasis-apodosis unit. (6x)

**Analogy 2:** Selection and transfer of a substantive feature between two subjects defined as related on the basis of textual proximity of their biblical representations, with Scripture providing a shared or parallel linguistic treatment for them. (15x)

**Analogy 2.1:** Selection and transfer of a substantive feature between two subjects defined as related on the basis of textual proximity of their biblical representations. (mHul 8:4 II (3))

**Analogy 3:** Selection and transfer of a substantive feature between two subjects linked by a biblical expression of a common feature, comparison, or metaphorical similarity. (10x)

**Analogy 3.5:** Selection and transfer, on the basis of equality of relationships, of a substantive feature between two subjects linked by a biblical expression of a common feature, comparison, or metaphorical relationship. (2x)

**Analogy 4.1:** Inference by analogy that the protasis of norm *m* has the apodosis A, in the following manner: if the protasis *n* which belongs to the category N, which category is lower on scale X, has apodosis A; then the protasis *m* which belongs to the category M, which category is higher on scale X, logically also has apodosis A (or: logically must have an intensification of the apodosis A). (14x)

**Analogy 4.2:** Inference by analogy that norm *m* possesses predicate A, in the following manner: if norm *n* which belongs to the category N, which category is lower on scale X, has predicate A; then norm *m* which belongs to the category M, which category is higher on scale X, logically also has apodosis A (or: logically must have more of the quality A). (5x: mPes 6:2 I (5), mMak 1:7 VI (6), mBek 1:1 II (2), mArak 8:4, mYad 4:8 I (2).)

**Analogy 5:** Inference by analogy that predicate A applies to subject *m*, in the following manner: if subject *n* which belongs to the category N, which category is lower on scale X, has predicate A; then subject *m* which belongs to the category M, which category is higher on scale X, logically also has predicate A (or: logically must have more of the quality A). (3x)

**Analogy 8:** Transfer of a (substantive) feature from the more specific to the more general of two Scriptural subjects mentioned in norms of statements which are substantively identical or receive a shared or similar linguistic treatment in Scripture, and are textually contiguous. (8x)

**Analogy 8.1:** Transfer of a (substantive) feature from the more specific to the more general of two Scriptural subjects mentioned in norms of statements which are substantively identical or receive a shared linguistic treatment in Scripture. (mTem 1:6 III (3))

**Analogy \*.5:** Selection and transfer, on the basis of an equality of relationships... (as explained on his 209).

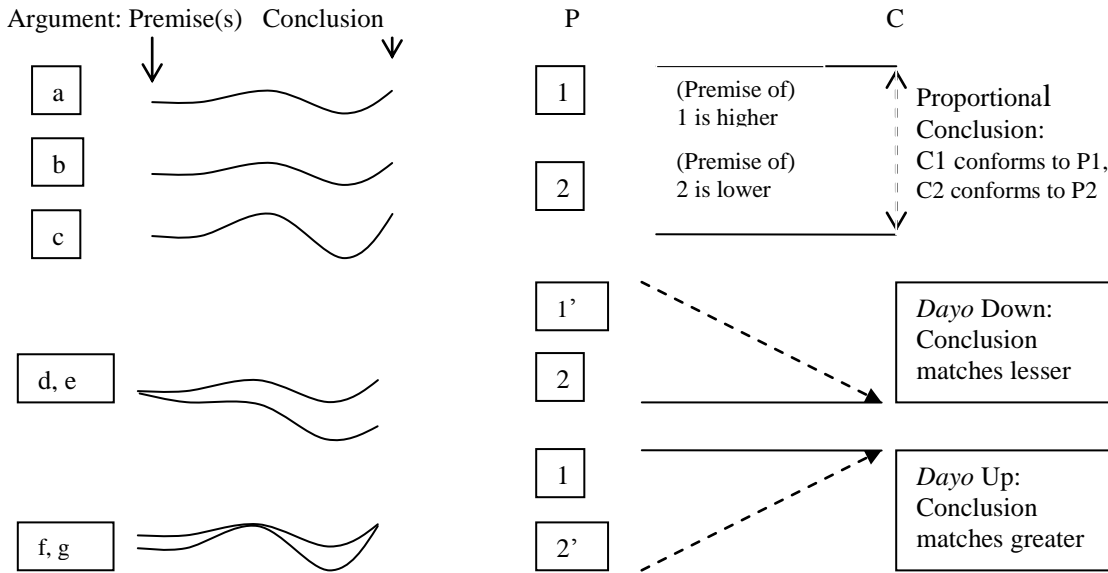
## D.1. Depiction of Various Common and Other Types of Analogies

The following illustration compares various ways of viewing the ordinary analogy and the *a fortiori*. First we look at patterns where one thing is thought to explain another. These are the wiggly lines, where **a** (the analogue) is compared to **b** or **c** (the targets), taking **b** or **c** as conformational types, the **b** more closely and **c** more distant. These can be viewed as arguments, each beginning with a premise P (the left side), which might progress through to another premise, and then come to a conclusion C. To their right (cases 1, 2) are shown, with the higher and lower parallelism of the proportional *a fortiori*, and below, the intersections of the limiting, *dayo* (cases 1', 2 and 1, 2'). The *dayo* cases intersect in the conclusion, rather than showing the regular parallelism of what one expects in a strict analogy.

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<sup>520</sup> Alexander Samely, *Rabbinic Interpretation of Scripture in the Mishnah*, 414.

**Diagram 13: Analogies Pattern or Development Displayed**



For all intents and purposes, the first analogue, **a**, and the target, **b**, are exactly homologous, by tracing the same paths as curves or straight lines (not shown as straight, although like 1, 2). One could fit perfectly over the other (identical as say exact copies or photons). But **c** is not totally like **a**, but more analogous to **a**: some aspects are greater or lesser; yet, the two remain similar. Due to the complexity of the similarities and differences, special care must be exercised so as to draw a proper conclusion.<sup>521</sup>

In the diagram, to the immediate right, is the *a fortiori* case: **1** is a horizontal line, but higher in rank than **2**. Accordingly, the conclusion should be proportional (whether going from the stringent to the lenient or vice versa). We can add complicating kinks or curves to the lines with additional features along the way, but the general parallel pattern should follow with the conclusion also proportional.

A condensed argument: “*Having the orchestra accompany the vocalist will surely produce a richer musical experience than the piano alone.*”

Then, below (1, 2), there are two *dayos* that intersect at the conclusion. The *dayo* down case goes from the stringent (1') to the lenient (2) judgement/conclusion (as say, “*the instruments are too loud and should be lowered to the volume of the singer*”). The other, the *dayo* up is the lenient (2') case which may end with the more stringent (1) (as, “*the singer’s voice is melodic but weak and should be raised at least as loud as the accompanying instruments*”).<sup>522</sup> As an abductive-pragmatic *a fortiori* for Instruments and Voice: Loudness of options i)  $I > V$  or ii)  $I = V$  or iii)  $I < V$ ; ii) is better; so, to achieve it, if I too loud, lower I; but if V too weak, raise V.

Issues brought out by the *dayo* extend our understanding of possible analogies, as in the pictures to the left (d, e and f, g). The analogue and the target may intersect (be the same) at the beginning, conclude, one point (as d, e) or several points (as f, g), because they are alike in some respects while varying in others. (So, for instance, *in a jazz performance, although musicians interact with each other, they do not always maintain the same levels of sound, but at times one is louder than the other.*)

## D.2. Preference and Outcome in Cooperation and Competition

As the Prisoner’s Dilemma is so widely used with preference rankings, we can look it as an example of a practical, abductive argument; in this case, the outcome is more uncertain and usually yields one of the less preferred results. In it, each person weighs up the options of what is a personal best (dominant), which is usually contrary to the overall best for both (cooperating) as a symmetrical compromise. In the series of choices with

<sup>521</sup> We can leave this for mathematical solutions.

<sup>522</sup> In the musical example, performances may vary where both *dayos* might apply in turn, as well as proportionality. Proportionality can be noted this way: *when the point is to emphasize the vocalist, then the singer should be louder than the instruments, whereas when the music is to be emphasized, the vocalist should sing softly.*

payoffs (personal cost versus other’s cost), each actor prefers a) to defect while the other cooperates (1, 8), over b) both cooperating (3, 3), c) both defecting (5, 5), or d) personally cooperating while the other defects (8, 1). Given that both act for self-interest, a) is seen as better than c) or d), their initial, preferred ranking is undermined by subsequent reality. Because each tries to minimize their own cost by defecting, they are worse off than cooperating. The theoretically better, rational option of each one works out as the worst option, which is in effect irrational. The competitive nature of this game for immediate dominance makes the usual result poorer than expected, therefore. Of course, this is often a one-time transaction where either defector can effectively disappear later without serious, personal consequences (rather than a repeating performance where adjusting may be wiser for long-term gains of linked players). Long-term games are more typical in life, where consequences for non-cooperation ensue. Over time, we raise our results by cooperation in the determination of what is better and worse individually and collectively.

### E.1 Preliminary Structures <sup>523</sup>

The square of opposition is typically used for the internal relations of the four types of propositions (*A*, *E*, *I*, *O*) of the categorical syllogism (CS). However, to show a connection with the *a fortiori*, a linear scale better describes the “some” of *I* (or *O*) propositions for the two ranked, particular premises, as more and less, in the middle region between *A* to *E*. *A*: All apples are fruit. *I*: Larger and smaller apples (as some) are fruit. *E*: Apple bits (stem, seeds) are not apples. For the *a fortiori*, analogically, one can do something similar to the CS’s deductive, *A* to *I* move, but as an induction, it is probable.<sup>524</sup>

**Diagram 14: Continuous Range of *I* (or *O*) between the two extreme ends, *A* and *E***

100% <i>A</i> (All) >	(Some)	I / O	(Some Not)	> 0% <i>E</i> (None)
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For the CS, the entire middle is just “some,” no matter how close a collection or part is to either pole. While the larger is “more” than the smaller, each counts as a particular *I*. The higher/greater the item or group within the category towards *A* might be interpreted analogically as having more of a feature; the closer to *E*, the less such may have; but both are only more or less likely, not certain.

While an *A* statement yields an *I* directly by subalternation and an *E* yields an *O*, one cannot go from an *O* to *E* or an *I* to *A* with certainty. The CS does not cope with any *O* and *I* premises (or *I* and *O*), or two *I*’s, or two *O*’s.<sup>525</sup> In all, the CS fails to conclude validly with two, particular premises in the ill-defined, “some-some not” range. As a result, the CS cannot account for the breadth of the inductive *a fortiori* possibilities, which the *a fortiori* seems to count some cases as reasonable probabilities. Therefore, as noted in the earlier definitions, the classical, CS is of limited value for the *a fortiori*. Some structures of the QC argument here are of two types, QC1 and QC2: QC1 is put into the form of a categorical syllogism, and QC2 is analogical and inductive:

<sup>523</sup> The four capital letters (*A*, *E*, *I*, *O*) are used, along with their states, distributed (*d*) for every one (every item in the term’s extension), or undistributed (*u*) otherwise, arrayed in subject and predicate terms. The universals are, for affirmative *all*, *A* (*affirmo*), and for negative *no/none*, *E* (*nego*); the particulars are for *some*, *I* (*affirmo*), and for *some...not*, *O* (*nego*). Standard form: first, Major Premise (*P1*), holding the predicate (*P*) and second, Minor Premise (*P2*), holding the subject (*S*), each with a repeated, middle term (*M*) that drops out in a (Valid) Conclusion (*C*), with the given subject (*S*) and predicate (*P*) included. Here, I use neo-Scholastic, distribution rules.

Syllogistic validity rules: 1. Only three terms.

2. Middle term must appear in each premise and be distributed at least once.
3. Term distributed in the conclusion must be distributed in the premise it occurs.
4. Conclusion follows the weaker, particular premise (and hence it too is particular).
5. A negative conclusion follows from one negative premise (not two, which is invalid).
6. No valid conclusion follows two particular premises (due to alternate possibility).

<sup>524</sup> What this shows us is a way to finagle some things to make the *a fortiori* comparatives as a kind of CS model. As long as we insist that we remain within the same category of things, we can say that the “more than” analogically stands for an *A* proposition and the “less than” for an *I*. Then the feature of the more can transfer to the less, but not from *I* to *A*, essential for such *a fortiori* arguments.

<sup>525</sup> As stated, in modern, quantificational, predicate logic we can prove the argument with particular premises.

QC1 as a CS: *Every live tree has roots* (whether stated or not).

*Tree  $a_1$  has roots.*  
*Tree  $a_2$  is larger than  $a_1$ .*  
*So surely  $a_2$  has roots.*

Once the overall principle is recognized, it works for any particular QC as a CS, A to I statement.<sup>526</sup>

QC1 simplified: *Legend:* A is a category of something                      A: All living trees  
 $a_1, a_2$  are sub-categories within A                       $a_1, a_2$ : small and large trees,  
J is a feature, judgement (or conclusion)                      J: Roots

QC1: Simple inclusion (possession/transfer): P1:  $a_1$  is a sub-category of A,  
P2:  $a_1$  carries/gets J (initial judgement or feature),  
C: so  $a_2$  carries/gets J (as final result/conclusion).

While valid, it does not directly relate the individuals,  $a_1$  or  $a_2$ , to each other, only to the overall category of A. Largeness and smallness of each tree is irrelevant, as are their roots. QC1 is also a *dayo*, limited to the same conclusion. So we need a better, more general form of deduction, which I provide later.

But for now, we have an analogical and inductive sort of QC as well. An example of a QC2 works in both ways with opposite effects. So, for wood as A:

*A pine wood shelf  $a_1$  (of dimensions  $x, y, z$ ) carries  $p$  (kilos on average without bending more than 0.2 cm); pine is weaker than oak  $a_2$ ; so surely an oak shelf will carry more (all things being equal).*

QC2: Analogical/Inductive Proportionality: P1:  $a_1$  carries/gets  $p$ ,  
P2:  $a_1$  is weaker than  $a_2$  in some common aspect of A,  
C: so  $a_2$  carries/gets a weightier  $p$ .

Similarly, we have this in the opposite way: P1\*:  $a_2$  carries/gets  $p$ ,  
P2\*:  $a_1$  is weaker than  $a_2$  in some common aspect of A,  
C\*: so  $a_1$  carries/gets a lighter  $p$ .

The main differences between QC1 and QC2 are these: the categorical syllogism is restricted, while analogical encompasses more options for the argument and its conclusion too.

Trying to write a syllogism, the QC follows the A-I-I (or A-A-A) form, but with a questionable condition (as a greater  $a$ , here  $a_2$ ) does not always include a lesser  $a$  (here  $a_1$ ). So in a syllogistic structure (with  $a_1$  functioning as a middle term):

*Minor premise:* Any  $a_1$  (is smaller than  $a_2$  & contained by it on a continuum) is an  $a_2$ ,  
*Major Premise:* Some thing that has/gets J is an  $a_1$ .                      (*Anything that has/gets J is an  $a_1$ .*)  
*Conclusion:*     Some thing that has/gets J is an  $a_2$ .                      (*Anything that has/gets J is an  $a_2$ .*)

A-I-I is valid, but we just do not know if the  $a_2$  we pick actually has J, so it is not good enough. And for A-A-A, although valid too, it restricts most QC's too much. The minor premise makes a category out of the larger that is not always so, for many cases are analogically different. Also, it hardly works in the other direction to have the larger a sub-category of the smaller; so there is an asymmetry here.

Following Samely's form, we can illustrate a simpler, and as yet unresolved argument:

P1:      $a_2x > a_1x$  in category A ( $x$  being the scale of something within A)  
P2:     Linked to  $a_1x$  is Jx  
C:     So  $a_2x$  has a link to Jx via  $a_1x$ .

<sup>526</sup> Modern validity often uses Venn diagrams. Direct validity: A to I or E to O, when true. With sub-contraries, I and O, the falsity of one implies the truth of the other, although both can be true. See John Woods, Andrew Irvine, and Douglas Walton, *Argument: Critical Thinking. Logic and Fallacies* (Toronto: Prentice Hall, 2000) 170-191.

Diagrammatically:  $a_1x \text{-----} a_2x \text{-----}$  (where any value of  $x$  occurs in category A)  
 $\begin{array}{ccc} | & | & \\ Jx & (Jx+) & \end{array}$  (we could call this the scale of Judgement J for  $a$ )

Note that as long as  $a_2x$  includes  $a_1x$ , anything that  $a_1x$  has,  $a_2x$  has too, although it could have more. So for instance: *A stands for wood,  $a_1$  is pine,  $a_2$  is oak,  $x$  is able to carry, then  $Jx$  is the weight carried.*

Now we have a choice to make, whether the answer is the same amount or one proportional to the given. We usually look for the truer, fairer, better answer. While for  $a_2x$ , the same conclusion  $Jx$  may be correct, if it is unacceptable, proportionality is invoked with  $Jx+$ , because  $a_2x > a_1x$ .

For any specific  $a$  along  $x$ , there is a specific feature or judgement  $J$  along  $a$  that fits ideally, just as a reaction is to an action. In general, if  $a_kx$  then  $J_kx$ , with  $k$  specific (or  $Jx/ax$  so that  $J_2 : a_2$  as  $J_1 : a_1$ ). It is normal for  $J$  to vary with  $a$ . If more than one result is possible, either one can chose the best, make an arbitrary choice, or have good reasons to infer how the given feature might apply as the conclusion.<sup>527</sup>

Yet, one can challenge and defend both equal and scaled results (assuming either is likely).

In the case of a valid QC, the conclusion is the same amount as given, for the supporting reason(s) or authority comes from the premises. The argument is resolved. The *dayo* as a limiting principle applies, if we accept this CS definition for the QC that includes a universal.

## E.2 Sion's Additional Logical Formalizations<sup>528</sup>

Relying on the earlier breakdown, again simplified here, are some of these compound forms.

<p>P is R more than <i>or</i> as much as Q (is R),          and Q is R enough to be S;          so, P is R enough to be S.</p>	$Rp \geq Rq: Rp \rightarrow Rq$ $\frac{Rq \rightarrow Rs}{Rp \rightarrow Rs}$
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We already saw that  $Rp > Rq$  does the job, because it is higher on a continuum. Now if  $Rp = Rq$ , still  $Rp$  implies  $Rq$ , and the same result follows by transitivity.

The next case of a syllogistic form as a secondary mood is valid (as *antecedals*):

<p>Q is R enough to be S,          and P is R, but not R enough to be S;          so, P is less R than Q.</p>	$Rq \rightarrow Rs$ $Rp < Rs: \frac{Rs \rightarrow Rp}{Rp < Rq: Rq \rightarrow Rp}$
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It is valid, as shown by transitivity. In order to clarify, I provide this verbal example:

*Apple Q is Ripe enough to be Sweet,  
 and apple P is Ripe, but not Ripe enough to be Sweet,  
 so, apple P is less Ripe than apple Q.*

To have said that apple P is not Ripe would be incorrect, because it is taken as Ripe to a degree, measured by some taste test or Sweetness grade (as an amount of various sugars). It is just not Ripe enough to be called Sweet. And here we are talking of relative sweetness intermingled with sourness, both of which may have no easily defined upper limit or a bit easier, although vaguer, lower limit.

Another valid form given is exemplified ahead of the simplified general statement:

*Apple Q is Ripe, but not Ripe enough to be Sweet,  
 and apple P is Ripe enough to be Sweet;  
 so, apple P is more Ripe than apple Q.*

1. Q is R, but not R enough to be S,  $Rq < Rs: Rs \rightarrow Rq$

<sup>527</sup> One can have a set fine for a specific crime, traffic violation, late payment, failure to uphold an agreement, or an arbitrary charge by an authority, having nothing to do with differing cases; or else, one may grade severities.

<sup>528</sup> See Avi Sion, *Judaic Logic*, 30-62.



2. and P is R enough to be S;  $R_p \rightarrow R_s$   
 C. so, P is more R than Q.  $R_p \rightarrow R_q$

For this, the transitivity goes from 2 first and then 1 to C:  $R_p \rightarrow R_s, R_s \rightarrow R_q, \therefore R_p \rightarrow R_q$ .

Then Sion shows the *predicatal* forms (resembling the third figure syllogism):

Though some degree of R is required to be Q, S is not R enough to be Q,  
 and [yet] S is R enough to be P;  
 So less R is required to be P than to be Q.

Perhaps the following expression captures this adequately:

*P1: Although some degree of Restraint is required to be Quiet, Sensibleness is not  
 Restrained enough to be Quiet,*  
*P2: and yet Sensibleness is Restrained enough to be Practical;*  
*C: so less Restraint is required to be Practical than to be Quiet.*

Being sensible may require one to speak out rather than remain silent. And to be sensible would be evident in being practical, when saying something would not be helpful.

Again, Sion has negative, invalid versions, the first pair in *antecedal* forms:

P is not more (or not less) R than Q,  
 and P is R enough to be S;  
 so, Q is not R enough to be S. (Invalid, because we don't know anything about Q, which might be equal  
 and thus have a false conclusion with true premises.)

P is not more (or not less) R than Q,  
 and Q is R enough to be S;  
 so, P is not R enough to be S. (Invalid, as it could be equal to Q, thus false again.)

Likewise for the *predicatal* forms, the secondary mood below is invalid:

S is R enough to be Q,  
 and S is R enough to be P;  
 so, more R is required to be P than to be Q. (Invalid, as this conclusion can be false with both  
 premises true; R may be equal or less.)

And Sion extends these invalid forms:

More (or less) R is not required to be P than to be Q,  
 and S is R enough to be P;  
 so, S is not R enough to be Q.

*More (or less) Restraint is not required to be Pertinent than to be Quiet,  
 and Sensibility is Restrained enough to be Pertinent;*  
*so, Sensibility is not Restrained enough to be Quiet.* (Invalid, as it could be Restrained enough to be  
 Quiet, hence a false conclusion.)

More (or less) R is not required to be P than to be Q,  
 and S is R enough to be Q;  
 so, S is not R enough to be P. (Invalid, as Sensibility could be Restrained enough to be Pertinent.)

For negative terms or theses, Sion indicates that "NotP, NotQ, NotR and/or NotS, instead of P, Q, R, S, respectively, on propositions used in *a-fortiori*, do not themselves affect the formal properties of the argument – provided they are repeated throughout it." The mix of positive and negative terms becomes problematic and

incompatible in the premises.<sup>529</sup> Yet for the negative relationships, the situation is mixed, for copulative ('is', 'is not') and implicative ('implies') logical forms diverge, according to Sion. The following copulative arguments are easy to validate:

P is more R than Q,  
and Q is R enough not to be S (= enough to be notS);  
so, P is R enough not to be S (= enough to be notS).

A nice illustration of the above is this:

*Proof is more Reasonable than Quoting (an expert),  
and Quoting (an expert) is Reasonable enough not to be Silly (enough to be non-Silly);  
so, Proof is Reasonable enough not to be Silly.*

But for the next, another example will be formulated:

More R is required not to be P (= to be NotP) than not to be Q (= to be NotQ),  
and S implies R enough not to be P (= to be NotP);  
so, S implies R enough not to be Q (= to be NotQ).

*More Resistance is required to be unPacified than to be unQuiet,  
and the Sense of injustice implies Resistance enough to be unPacified;  
so, the Sense of injustice implies Resistance enough to be unQuiet.*

However, in the upcoming implication arguments, the proposed inferences are invalid:

P implies more R than Q implies,	(P → Rp, Q → Rq, Rp → Rq)
and Q implies R enough not to imply S;	(Q → Rq, Rq → Rs, ~(Rs → S), ~(Q → S))
so, P implies enough not to imply S.	(P → Rp, Rp → Rs, ~(Rs → S), ~(P → S))
(Invalid, as the conclusion P may still imply S, which could be within P's higher range.)	

More R is required not to imply P than not to imply Q,	(~(Rp → P), ~Rp → P, ~(Rq → Q), ~Rq → Q, Rp → Rq, ~(Rq → Rp))
and S implies R enough not to imply P;	(S → Rs, Rs → Rp, ~(Rp → P), ~(S → P))
so, S implies R enough not to imply Q.	(S → Rs, Rs → Rq, ~(Rq → Q), ~(S → Q))
(Invalid, as here S could fall within the lower end in which Q occurs, despite less R.) <sup>530</sup>	

Since permutations (substituting Y1 for 'does not imply Y') are only acceptable in some domains of logic but not others, such as modal (for the modality 'can') and class logic (leading to Russell's Paradox), it is not surprising that, even if some cases of the copulative forms are valid, the analogous, implicational *a fortiori*, negative relationships are invalid.<sup>531</sup>

### E.3. Brachfeld's Mathematical Solution for the QC – according to the Book "Halichot Olam"<sup>532</sup>

Legend: A is a *halachic* topic

H(A) = severity set (*k'vutzat hachumrot*) of A

If  $h_i \in H(A)$ , we will symbolize this by  $h_i(A)$ , otherwise  $\sim h_i(A)$  [i.e.,  $h_i$  is a member of...]

<sup>529</sup> Sion, 44-45, for his explanation as well.

<sup>530</sup> Sion, 45-46, including his analysis.

<sup>531</sup> Sion, 46.

<sup>532</sup> Essentially, this is my translation of Brachfeld's article, with a few explanations or additions, usually in square brackets, from *Higayyon Studies in Rabbinic Logic*, eds. Moshe Koppel and Ely Merzbach (Jerusalem: Aluma). מאיר ברכפלד. הפשטה מתמטית של הקל וחומר – ע"פ ספר "הליכות עולם", בתוך העלון "הגיון".

**L** will symbolize the item learned (conclusion = *halamed*)  
**M<sub>1</sub>, M<sub>2</sub>...** will symbolize the matters that teach (premises = *melamdim*)  
**d** will symbolize the concluding decision/judgement (*hadin*) we want to impose upon **L**  
 If **M** is the subject which has a decision **d**, we will symbolize this by **d(M)**

Argument:

P1:  $\mathbf{H}(\mathbf{M}_1) \subset \mathbf{H}(\mathbf{L})$  [H(M<sub>1</sub>) is a proper subclass of H(L)]

P2:  $\mathbf{d}(\mathbf{M}_1)$

C:  $\mathbf{d}(\mathbf{L})$

**A. Disproof of the conclusion (me'sofa dedina or the final decision of the argument):**

From premise P1, it follows that  $(\exists \mathbf{h})(\mathbf{h} \in \mathbf{H}(\mathbf{L}) \setminus \mathbf{H}(\mathbf{M}_1))$  [for some h which is a member of the severe class of what is learned, less the severity class of what is doing the teaching], but [also we have the other fact that]  $\sim(\exists \mathbf{h}_1)(\mathbf{h}_1 \in \mathbf{H}(\mathbf{M}_1) \setminus \mathbf{H}(\mathbf{L}))$ . Disproof of the conclusion shows that  $\mathbf{h} \in \mathbf{H}(\mathbf{L})$  is not a reason to impose **d** on **L** when it shows the existence of some other issue **M<sub>2</sub>**, when  $\mathbf{h} \in \mathbf{H}(\mathbf{M}_2)$  [is the case], and we clearly know that **M<sub>2</sub>** does not carry **d**. In other words, the severity **h** is not relevant to the assured imposition of **d** on some specific matter.

In order to symbolize the irrelevant group of severities that [do not] determine the imposition of **d** on some matter, we have this:

$\mathbf{IR}_+(\mathbf{d}) = \{\mathbf{h}: (\exists \mathbf{X})(\mathbf{h}(\mathbf{X}) \wedge \sim \mathbf{d}(\mathbf{X}))\}$

A necessary condition for the QC to work:

$(\exists \mathbf{h})(\mathbf{h} \in \mathbf{H}(\mathbf{L}) \setminus \mathbf{H}(\mathbf{M}) \wedge \mathbf{h} \notin \mathbf{IR}_+(\mathbf{d}))$

So a more accurate representation of P1 would have to be this:

P1\*:  $\mathbf{H}(\mathbf{M}_1) \subset \mathbf{H}(\mathbf{L}) \setminus \mathbf{IR}_+(\mathbf{d})$  [i.e., one removes the irrelevant set of **d**'s from what is learned]

**B. Disproof or Denial of the premise (me'ikara dedina or the essential principle of the decision)**, takes on two, complicated forms, which also involves other QC formulations:

**I. Refutation of the QC by means of denying the premise (P1)** is done by showing that the severity of the premise does not follow in the conclusion. It is due to the fact that we have this instead:

(3.1)  $(\exists \mathbf{h}_1)(\mathbf{h}_1 \in \mathbf{H}(\mathbf{M}_1) \setminus \mathbf{H}(\mathbf{L}))$  [This contradicts  $\sim(\exists \mathbf{h}_1)(\mathbf{h}_1 \in \mathbf{H}(\mathbf{M}_1) \setminus \mathbf{H}(\mathbf{L}))$  above.]

**II. Upholding the QC:**

The assumption of the refutation in **I** is that (3) [i.e., 3.1] allows the possibility that  $\mathbf{d}(\mathbf{M}_1)$  occurs only because of  $\mathbf{h}_1(\mathbf{M}_1)$ . The existence of the QC here contradicts this possibility in that one shows that there is a matter **M<sub>2</sub>** such that  $\sim \mathbf{h}_1(\mathbf{M}_2)$  and yet  $\mathbf{d}(\mathbf{M}_2)$  occurs. Set in a mathematical formulation, we have:

(4.1)  $(\exists \mathbf{M}_2)(\sim \mathbf{h}_1(\mathbf{M}_2) \wedge \mathbf{d}(\mathbf{M}_2))$

This indicates that despite the severity of **h<sub>1</sub>** in **M<sub>1</sub>**, such does not draw with it the reality of **d** in **M<sub>1</sub>**. So one can say that **h<sub>1</sub>** is not relevant to fixing it [**d**] if **M<sub>1</sub>** is more severe than **L** in relation to **d**. The set of severities that are *not irrelevant* in fixing if a *halachic* matter is more severe than **L** in relation to **d** is symbolized by **IR-(d,L)**. What follows will present a definition of this recursive set.

A sufficient condition for the QC to work (assuming  $\mathbf{d}(\mathbf{M}_1)$  [P2 above]):

P1\*\*:  $\mathbf{H}(\mathbf{M}_1) \setminus \mathbf{IR}-(\mathbf{d}, \mathbf{L}) \subset \mathbf{H}(\mathbf{L})$

**III. 2<sup>nd</sup> Disproof:**

This situation has a disproof similar to that of **I**: It shows that severity **h<sub>1</sub>** does not occur in **M<sub>2</sub>** [and] is not in the conclusion [either], so perhaps this is the reason that one has  $\mathbf{d}(\mathbf{M}_2)$ . As such, **M<sub>2</sub>** is not able to serve as an example for  $\mathbf{h}_1 \in \mathbf{IR}-(\mathbf{d}, \mathbf{L})$ . So one has this situation:

(3.2)  $(\exists \mathbf{h}_2)(\mathbf{h}_2 \in \mathbf{H}(\mathbf{M}_2) \setminus \mathbf{H}(\mathbf{L}))$

**IV. QC in another round:**

This new QC is like that in stage II. We show  $\mathbf{h}_2 \in \mathbf{IR}-(\mathbf{d}, \mathbf{L})$  by way of pointing out a matter **M<sub>3</sub>**, such that,  $\sim \mathbf{h}_2(\mathbf{M}_3)$ , yet which has  $\mathbf{d}(\mathbf{M}_3)$ .

(4.2)  $(\exists \mathbf{M}_3)(\sim \mathbf{h}_2(\mathbf{M}_3) \wedge \mathbf{d}(\mathbf{M}_3))$

There are 2 possibilities i)  $\mathbf{M}_1 \neq \mathbf{M}_3$  and ii)  $\mathbf{M}_1 = \mathbf{M}_3$ :

**i)  $\mathbf{M}_1 \neq \mathbf{M}_3$**

One can disprove the QC as before with this:

(3.3)  $(\exists \mathbf{h}_3)(\mathbf{h}_3 \in \mathbf{H}(\mathbf{M}_3) \setminus \mathbf{H}(\mathbf{L}))$

And one can set up another QC by this:

(4.3)  $(\exists \mathbf{M}_4)(\sim \mathbf{h}_3(\mathbf{M}_4) \wedge \mathbf{d} \in \mathbf{M}_4)$ , when  $\mathbf{M}_4 \notin \{\mathbf{M}_1, \mathbf{M}_3\}$ .

We can give a general refutation of the QC by this:

(3.k)  $(\exists \mathbf{h}_k)(\mathbf{h}_k \in \mathbf{H}(\mathbf{M}_k) \setminus \mathbf{H}(\mathbf{L}))$

And on the other hand, we can establish a QC by this:

(4.k)  $(\exists \mathbf{M}_{k+1})(\sim \mathbf{h}_k(\mathbf{M}_{k+1}) \wedge \mathbf{d} \in \mathbf{M}_{k+1})$ , when  $\mathbf{M}_{k+1} \notin \{\mathbf{M}_1, \dots, \mathbf{M}_{k-1}\}$ .

Surprisingly, this recursive series of disproofs and new QCs (that are potentially infinite) are hidden within (P1\*\*) when  $\mathbf{IR}(\mathbf{d}, \mathbf{L})$  is defined as this:

$\mathbf{IR}(\mathbf{d}, \mathbf{L}) = \{\mathbf{h}_i: (\exists \mathbf{X})(\sim \mathbf{h}_i(\mathbf{X}) \wedge \mathbf{d} \in \mathbf{X}) \wedge [\mathbf{h}_j \in \mathbf{H}(\mathbf{X}) \setminus \mathbf{H}(\mathbf{L}) \rightarrow \mathbf{h}_j \in \mathbf{IR}(\mathbf{d}, \mathbf{L})]\}$

This has a number of reference examples in which to eat meat cooked in milk (by Jewish tradition):

(I) It is forbidden to harvest (*orlah*) from [some] trees because it is too early to be fit for consumption.

(II) Leavened [food] at Passover proves it is fit for consumption, but still not to be enjoyed [then].

(III) The consumption of leavened food at Passover carries expulsion (*karet*).

(IV, i) Gatherings from the vineyard prove that one is not expelled, but they are still not enjoyed.

ii)  $\mathbf{M}_1 = \mathbf{M}_3$ : This situation is a return to the original judgement (*v'chazar hadin*).

In this case, the author that Brachfeld quotes describes another infinite chain or loop. In  $\mathbf{M}_1$  one does not have the severity found in  $\mathbf{M}_2$ , and in  $\mathbf{M}_2$  one does not have the severity found in  $\mathbf{M}_1$ . One can exit the loop by declaring another equality (equal side = *tzad hashavah*). We point out that this equality still can occur if  $\mathbf{M}_1 \neq \mathbf{M}_3$  but when  $\mathbf{M}_1 = \mathbf{M}_4$  and so on.

Symbolizing this understanding by means of an equality:

$\mathbf{P}(1^{***}): \cap_i \mathbf{H}(\mathbf{M}_i) \subset \mathbf{H}(\mathbf{L})$  [Brachfeld has the first i under the first symbol, which I cannot do]

$\mathbf{P}(2^{***}): \wedge_i \mathbf{d}(\mathbf{M}_i)$  [“

$\mathbf{C}^{***}: \mathbf{d}(\mathbf{L})$ ”

We point out again that if the intersection in  $\mathbf{P}(1^{***})$  is not realized, the inference is what is determined or found (*mah matzinu*) elsewhere to be the case rather than from the QC. An example follows regarding whether marriage is completed with a payment: The marriage ceremony is the acquisition by means of a QC: What is the money if not the completion of the purchase; so is it not an argument that the completed ceremony [proves] that you purchase?!

(I) What is the money for except as a redemption for the dedicated things and the second title.

(II) Coming in person proves (without belonging to redeemed, holy things, as arrival is acquisition).

(III) What is arrival if not acquisition by the fraternal law of marriage (*yebama*).

(IV, ii) Money proves. So the judgement returns: one does not view this as the same as that. By another equality that joins the two is where one purchases a young woman/virgin so that one purchases here too; so then I bring the ceremony example of purchase just as a purchase of a young woman/virgin.

(V) Disproof of the equality:

Assuming that one arrives at (IV, ii), the author [that Brachfeld quotes] has three types of disproofs:

a) by a standard refutation, b) by means of the severe side, c) by another objection.

a) The Standard Disproof

The usual way to reject the equality is made by finding a common severity of  $\mathbf{M}_1$  and  $\mathbf{M}_2$  that does not occur in  $\mathbf{L}$ .

In other words,  $\mathbf{P}(1^{***})$  does not occur because of the following:

(5)  $(\exists \mathbf{h})(\mathbf{h} \in (\cap_i \mathbf{H}(\mathbf{M}_i) \setminus \mathbf{H}(\mathbf{L})))$

b) From Severity

There are a number of exceptions that contradict the equality coming from the standpoint of severity. In other words, we cannot derive  $\mathbf{d}(\mathbf{L})$  because there is in  $\mathbf{M}_1$  a severity which does not fall in  $\mathbf{L}$  and also in  $\mathbf{M}_2$ , there is [another] severity that does not fall in  $\mathbf{L}$ . This is symbolized as such:

Let  $\mathbf{h} = (\mathbf{h}_1 \vee \mathbf{h}_2)$  with  $\mathbf{h}_1 \in \mathbf{H}(\mathbf{M}_1) \setminus \mathbf{H}(\mathbf{L})$  and  $\mathbf{h}_2 \in \mathbf{H}(\mathbf{M}_2) \setminus \mathbf{H}(\mathbf{L})$

Yet  $\mathbf{h}_1 \notin \mathbf{H}(\mathbf{M}_1) \cap \mathbf{H}(\mathbf{M}_2)$  and  $\mathbf{h}_2 \notin \mathbf{H}(\mathbf{M}_1) \cap \mathbf{H}(\mathbf{M}_2)$

However:

(5\*)  $\mathbf{h} \in \mathbf{H}(\mathbf{M}_1) \cap \mathbf{H}(\mathbf{M}_2) \setminus \mathbf{H}(\mathbf{L})$

Therefore,  $\mathbf{h}$  can serve as a disproof of QC (5).

But we have to note that the existence of  $\mathbf{h}_1$  and  $\mathbf{h}_2$  likewise guarantees that we are still within the stage of an equality; such is only after we have followed beyond (3.1) and (3.2)?! After more comments, we have this:

Nachmanides (a contemporary of Maimonides in the 13<sup>th</sup> ce) claims that the denial of the equality by means of the severe side [(5\*)] is made only when the conclusion is learned from the beginning by means of the equality. That is, if  $\mathbf{H}(\mathbf{L}) = \mathbf{H}(\mathbf{M}_1) \cap \mathbf{H}(\mathbf{M}_2)$ , one counters the equality by the claim of severity [“...because there is nothing in the thing learned that exceeds the given matter, and already we have drawn out from each of them a special grade above that of the conclusion; as such, there is nothing for me to learn from them that would grant this (d) in the

conclusion.”]. If the judgement is learned at the beginning via the QC, that is  $(\exists h)(h \in [H(L) \setminus H(M_1 \cap H(M_2))])$ , it denies the equality only via the common severity [(5)].

c) By Another Objection

Any other feature  $c$  can be something that is neither light nor heavy. Sometimes the *Gemara* rejects any inference from the equality by means of finding another thing that shares  $M_1, M_2, \dots$  rather than a common severity:

(5\*\*)  $(\exists c)(\bigwedge_i c(M_i) \wedge \sim c(L))$  [Again the first  $i$  should fall under the symbol of the empty set]

All this concerns the equality via any other objection. But what of the disproof of a QC—that has not yet risen to that of an equality—by means of another objection?

Brachfeld says that the original author proposes that (5\*\*) can take the place of (3.2), but that (5\*\*) cannot be an alternative disproof of (3.1) or (3.k) when  $k \geq 3$ . The author is also aware of the logical problems that this creates. The same author then offers a mere excuse that just seems to brush aside the real issue, by delivering the comment of Rashi (a famous French Jewish commentator of the 12<sup>th</sup> ce), which says that the rules [including the QC] are handed down to us from Sinai (as revelation).

#### E.4. QPR for Two Particulars <sup>533</sup>

With an ordinary *a fortiori* of two particular premises and for which we have various, possible conclusions, we begin generally and then are more specific and formal in layout and proof:

*An item in a category has a property. So a greater item in the same, continuous category has it too.*

*Ax as an apple is tasty, Px. Ay as an apple is better than Ax. Ay as an apple is tasty (or tastier)* <sup>534</sup>

It is fairly obvious that the truth of Ay as tasty has been built into the comparison by being better.

P1:  $\exists x (Ax \ \& \ Px)$

P2:  $\exists y \exists x ((Ax \ \& \ Ay) \ \& \ Gyx)$

**Prove C:**  $\exists y \exists x (Ay \ \& \ Px)$  as the same tastiness; or proportional **C\*:**  $\exists y (Ay \ \& \ Py)$ ; or **C\*\*:**  $\exists y \exists x (Ay \ \& \ Gyx)$

For C: 3.  $\sim \exists y \exists x (Ay \ \& \ Px)$

(Provisional Assumption of the opposite of the conclusion)

<sup>533</sup> Connectives & Rules in Propositional and Quantificational Predicate Logic (QPR):

Propositional Connect. Primitive Prop. Inference Rules for **In**

		<b>Out</b>
a. <i>not:</i>	$\sim$	ai. From derivation of $B \ \& \ \sim B$ and assumption(s) $A$ , derive $\sim A$
b. <i>and:</i>	$\&$	ao. $F\text{-}m \ B \ \& \ \sim B$ , as 'n(s) $\sim A$ , der $A$
c. <i>or:</i>	$\vee$	bo. From $A \ \& \ B$ , derive $A$ or $B$
d. <i>if...then:</i>	$\rightarrow$	co. " $A \ \vee \ B, A \rightarrow C, B \rightarrow C$ , derive $C$
e. <i>iff:</i>	$\leftrightarrow$	do. " $A \rightarrow B, \ \& \ A$ , derive $B$ (MP)
		eo. " $A \leftrightarrow B$ , derive $A \rightarrow B$ or $B \rightarrow A$

Derived Propositional Inference Rules

ad. Double Negation: From $A$ derive $\sim \sim A$ , or $\sim \sim A$ derive $A$	(DN) or $\sim \sim$
bd. Conj. Arg: From $\sim(A \ \& \ B)$ , & $A \ (\vee B)$ , derive $\sim B \ (\vee \sim A)$	(CA)
cd. Disj. Arg: From $A \ \vee \ B$ and $\sim A \ (\vee \sim B)$ , derive $B \ (\vee A)$	(DA)
dd1. Modus Tollens: From $A \rightarrow B$ and $\sim B$ , derive $\sim A$	(MT)
dd2. Transitive: From $A \rightarrow B$ and $B \rightarrow C$ , derive $A \rightarrow C$	(TA)
ed.1 Arrow: $(A \rightarrow B) \leftrightarrow \sim A \ \vee \ B \leftrightarrow \sim(A \ \& \ \sim B)$ , $(\sim A \rightarrow B) \leftrightarrow (A \ \vee \ B)$ , $\sim(A \rightarrow B) \leftrightarrow (A \ \& \ \sim B)$	(AR)
ed.2 DeMorgan: $A \ \& \ B \leftrightarrow \sim(\sim A \ \vee \ \sim B)$ or $\sim(A \ \& \ B) \leftrightarrow \sim A \ \vee \ \sim B$	(DM)
ed.2 " $\sim A \ \& \ \sim B \leftrightarrow \sim(A \ \vee \ B)$ or $\sim(\sim A \ \& \ \sim B) \leftrightarrow A \ \vee \ B$	"

Predicate Inference Rules

Quantifier Exchange: $\sim(x)Ax \leftrightarrow (\exists x)\sim Ax$ , $\sim(\exists x)Ax \leftrightarrow (x)\sim Ax$	(QE)
Existential Quantifier IN: From any instance of it, derive existential quantifier	(EI)
Existential Quant'r OUT: From exis'l quan'n, derive any instance iff not in arg't symbol or line above	(EO)
Universal Quant'r IN: " " " " " " univ'l " " iff name replaced by variable not arg't sym'l tested, via EO above, its provisional assumption, or universal quantification itself.	(UI)
Universal Quantier OUT: From a universal quantification, derive any instance	(UO)

<sup>534</sup> The term "better" implies tastiness, usually; although tasty enough, it might be better in something else too.

- |                                               |                                                                           |
|-----------------------------------------------|---------------------------------------------------------------------------|
| 4. $Aa \ \& \ Pa$                             | (1, EO) ( <i>arbitrary a</i> )                                            |
| 5. $(y)\sim\exists x (Ay \ \& \ Px)$          | (3, QE)                                                                   |
| 6. $(y)(x)\sim(Ay \ \& \ Px)$                 | (5, QE)                                                                   |
| 7. $\sim(x)(Aa \ \& \ Px)$                    | (6, UO) ( <i>universal includes a</i> )                                   |
| 8. $\sim(Aa \ \& \ Pa)$                       | (7, UO) ( <i>universal includes a</i> )                                   |
| 9. $(Aa \ \& \ Pa) \ \& \ \sim(Aa \ \& \ Pa)$ | (4, 8, &I) ( <i>Assumption 3 leads to a contradiction</i> )               |
| 10. $\exists y\exists x (Ay \ \& \ Px)$       | (4-9, 3 $\sim$ E) ( <i>discharge of assumption 3</i> )                    |
| 11. $\exists y\exists x (Ay \ \& \ Px)$       | (1, 3-10, UI) <b>So here the new apple has <u>the same</u> tastiness.</b> |

- For C\*: 3.  $\sim(\exists y)(Ay \ \& \ Py)$  (Provisional Assumption)
- |                                               |                                                                      |
|-----------------------------------------------|----------------------------------------------------------------------|
| 4. $Aa \ \& \ Pa$                             | (1, EO) ( <i>arbitrary a</i> )                                       |
| 5. $(x)\sim(Ay \ \& \ Py)$                    | (3, QE)                                                              |
| 6. $\sim(Aa \ \& \ Pa)$                       | (5, UO) ( <i>universal includes any a</i> )                          |
| 7. $(Aa \ \& \ Pa) \ \& \ \sim(Aa \ \& \ Pa)$ | (4, 6, &I) ( <i>Assumption 3 leads to a contradiction</i> )          |
| 8. $\exists y(Ay \ \& \ Py)$                  | (4-7, 3 $\sim$ E) ( <i>discharge of assumption 3</i> )               |
| 9. $\exists y(Ay \ \& \ Py)$                  | (1, 3-8, UI) <b>Here the new apple has <u>its own</u> tastiness.</b> |

- For C\*\*: 3.  $\sim\exists y\exists x (Ay \ \& \ Gyx)$  (Provisional Assumption)
- |                                                  |                                                                   |
|--------------------------------------------------|-------------------------------------------------------------------|
| 4. $\exists x (Ax \ \& \ Ab \ \& \ Gbx)$         | (2, EO) ( <i>arbitrary b</i> )                                    |
| 5. $(Aa \ \& \ Ab \ \& \ Gba)$                   | (2, EO) ( <i>arbitrary a</i> )                                    |
| 6. $(y)\sim\exists x(Ay \ \& \ Gyx)$             | (3, QE)                                                           |
| 7. $(y)(x)\sim(Ay \ \& \ Gyx)$                   | (6, QE)                                                           |
| 8. $(x)\sim(Ab \ \& \ Gbx)$                      | (7, QE) ( <i>universal includes b</i> )                           |
| 9. $\sim(Ab \ \& \ Gba)$                         | (8, UO) ( <i>universal includes a</i> )                           |
| 10. $(Ab \ \& \ Gba)$                            | (5, &E)                                                           |
| 11. $(Ab \ \& \ Gba) \ \& \ \sim(Ab \ \& \ Gba)$ | (9,10, &I)                                                        |
| 12. $\exists y\exists x (Ay \ \& \ Gyx)$         | (4-11, 3 $\sim$ E)                                                |
| 13. $\exists y\exists x (Ay \ \& \ Gyx)$         | (1, 3-12 UI) <b>Here the new apple has <u>more</u> tastiness.</b> |

Again, any of these conclusions work as heritable properties (while other, non-recursive cases may fail).<sup>535</sup>

## F. Alternate, Traditional Positions: the *Baraitot*

What we have garnered so far is that the Jewish past was not always univocal and uniform. Many of the earliest traditions (before or alongside the oral precursor to the written *Mishnah*) expressed differing interpretations of many Biblical passages. Early Judaism was (and still is) multifaceted and anything but simple. Indeed, the history of that multiplicity of opinions, either streamlined or neglected, was not fully preserved by the later *Mishnah*, which had selected among them. Some of these were competing traditions, and so did not get equal treatment or else were used as defeated, rejected positions (unsurprisingly), because they did not accord wholly with the overall *Mishnaic* stand. Thus, while we see a desire for consistency, it became, in many cases, limited in its range and less inclusive of many issues, for the sake of more specific, less diversive, and simplified answers.<sup>536</sup> Reflecting a part of this wider range of interpretation, one sees the introduction of the *Baraitot* (external traditions) into later, Talmudic discussions.

These *Baraitot* indicate a broader, traditional understanding than one might believe in the official version of the *Mishnah*. Whether it was unofficially sanctioned by Judah the Prince (head of the Rabbinic council that wrote down the *Mishnah*), or perhaps done in secret by Judah's disciple, or else preserved by other Rabbis of the

<sup>535</sup> I have not bothered to prove universal and particular premises together.

<sup>536</sup> Neusner has pointed out that the typical pattern of Rabbinic argumentation was repetitious. The method of learning the traditions were passed on verbally as each Rabbi trained his students, so deliberately repeated. However, the sheer volume of material militated against saying or commenting upon every point known. Each Rabbi would emphasize some things and ignore or forget others. Some lessons can be learned from information theory in this regard and on how the verbal and written Rabbinic material might have developed.

*Mishnah*, quotes from the *Baraitot* are repeatedly appealed to in debates as an authoritative source over against the official answers or other claims.

However, one must realize that the *Mishnah* as a limited, edited text was not a neutral, academic investigation of every position, outlining each one's strengths and weaknesses, to show the superiority of the decided *Mishnaic* position. That was neither its purpose nor practice. Instead, the *Mishnah* was official, *Tannaic*, Judaism. In any case, these Rabbis had more than enough to deal with, especially at a time when both people and Judaism were under such severe stress.

## G. Legal Analogy and a *Fortiori* Thinking

Aside from deductive, legal reasoning from principles, or the inductive generalization of rules, arguing "by analogy directly from the special norm to another, special norm concerning a 'nearly related' circumstance" is clearly evident, according to Castberg.<sup>537</sup> Under analogical reasoning in the following example, I see that Castberg employs the *a fortiori* argument, although not so stated. He says that if dogs are forbidden on railway trains, one can conclude with strong 'certainty' ("all the more so" in his sense, as legally necessary, rather than strictly logical) that bears are also prohibited. He then refers to this as a "syllogistic mode of reasoning," not just as analogy.<sup>538</sup> Unless he means that a syllogistic form is not categorical, to be a categorical one, he needs to assume that *all* animals, not only ones larger than dogs, are forbidden. But that is rather unclear too. Are live cats, chickens, and fish forbidden too? (One can assume passenger rather than freight trains.) More particularly, are not seeing-eye-dogs blatant exceptions to that rule?

Similar problems with the categorical claim are also found in his other example: if the statute limits the legal speed on ordinary city streets to a maximum of 30 mph, then anything in excess is an offense.<sup>539</sup> As a formal categorical, syllogistic argument (CS), 'anything' is *all* cases over 30 mph are illegal. But we run into some real problems: in saying that this is a strict syllogism, it formally rules out any exception. Yet we can readily see that there might be some special public or government vehicles on official business or other emergencies that is allowed to break this formal bylaw for the sake of a higher law to save and preserve life. So the statement should either read that *most*, not *all*, cases hold true to the bylaw, or else that certain exceptions should be noted as permissible or understood. But as soon as one says *most*, the strict CS is invalidated, because we are left with two particular premises. In order to make the speeding claim deductively valid, these exceptions have to be forbidden or ruled out, unless admitted under some other, overriding clause for those specific cases. We need a statement that *all* police chases, fires, emergencies, and other special exceptions (EE's) for the sake of protecting life override ordinary traffic situations; and as long as all these can travel safely, they are legally permitted to do so above 30 mph. But instead of this additional, clumsy, conditional rule with the requisite escape clauses in a higher rule book, one might as well argue more briefly in an *a fortiori* manner for such understood emergencies and exceptions (EE). We can say that (EE) are more important than normal states of affairs (N). It is not illegal to travel 30 mph under normal conditions; so if safe and needed, it is not illegal to travel proportionally more for the sake of EE's. (*EE is more important than N; 30 mph maximum is permissible for N; a proportionally higher speed is permissible for EE*— as long as safety is ensured.) This leaves the discretion to the on-duty police to waive such cases (as a private person or ambulance rushing to the hospital), where and when the higher speed is not a greatly increased danger. Anyone else would be required to prove such an exception or else face the prescribed penalty.

Leaving that problem, what about the confidence levels of the input information (premises) and outputs (conclusions)? Both the quality of the evidence and the (normally dependent) subsequent legal judgments are seldom if ever absolutely clear or perfectly correct. Lacking certainty, there is a range of results established with more or less certitude. Indeed, "the logic of legal thinking is ruled by the principle of the sliding scale," says Castberg.<sup>540</sup> "Legal statements may...represent all degrees of certainty, and it must be the task of legal science to achieve results that represent the highest possible degree of certitude." "Even the most comprehensive juridical investigation, however, cannot...lead to certain results in all cases. [O]ften (sic) the results we arrive at must give

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<sup>537</sup> F. Castberg, 'Problems of Legal Reasoning,' 1358, in *Lloyd's Introduction to Jurisprudence*, 6<sup>th</sup> ed., M.D.A. Freeman, ed. (London: Sweet & Maxwell Ltd., 1994).

<sup>538</sup> F. Castberg, 'Problems of Legal Reasoning,' 1358.

<sup>539</sup> Castberg, 1359-60, ft 66.

<sup>540</sup> Castberg, 1361.

rise to stronger or weaker doubts.”<sup>541</sup> While certainty is preferred, it is rare in such cases, so there is the desire to reduce doubts concerning less correct judgements, in order to avoid significant mistakes and to achieve a ruling that is good enough. In the whole skein of making legal interpretations and judgements, then, we find *a fortiori* thinking, particularly in making abductive decisions that seek what is the best solution among several.

## H. Cain’s Judgement

Prior to the murder, God had warned Cain that his upset at not being accepted (for disobedience) would lead to serious trouble and that he should correct his reaction and do what was required (rather than doing what he thought best). He did not reform, but instead vented his anger on his brother. The difference between Abel’s acceptance and Cain’s rejection is not arbitrary, but based on the precedent of sacrifice, previously established by God with Adam and Eve after they had rebelled. Whereas, they hid from God behind the cover of vegetation (fig leave clothing and among the trees, Gen 3:7-8), God can be seen to have instituted another (interim) remedy, animal skins (3:21), which meant a sacrifice and shed blood. This is later seen with Noah (8:20-21) and followed by the patriarchs (12:8; 13:18; 22:13; 33:20...), to become essential for the Exodus (Ex 12:5-14), and to be officially affirmed and organized within what are known as the Mosaic Laws (Lv 1). These substitutes covered personal evil, while the Day of Atonement was more general and national (Lv 16) in character. Thank offerings (*mincha*), however, were vegetable (Lv 2), usually, and only allowed for forgiveness when the person was too poor to afford even the sacrifice of birds (as noted earlier). Cain was too proud to exchange his produce for an animal from Abel. Because Cain thought that he could simply offer thanks for his crops, he avoided the matter of his prior need to ask for forgiveness and be covered, which had to be recognized and dealt with in order to receive the fuller mercy of God.

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<sup>541</sup> Castberg, 1362. (There was a grammatical error in the text.)



## Glossary

- A fortiori*: ‘All the more’ is the crucial phrase that typifies the argument. See next & *Qal VaChomer*.
- A minori ad maius*: ‘From the lesser to the greater.’ This is how the *a fortiori* argument often flows.
- Aggada* (sing.), *Aggadot* (pl.): Rabbinic, illustrative stories in the *Talmud*, that are non-binding, often somewhat looser in style than a traditional practice or ruling, but easier for many to relate to, especially among the common people. See also *Haggada*.
- Amora* (sing.), *Amoraim* (pl.): *Amoraic* commentators of the *Gemara* (200-600 CE) followed *Tannaim* of the *Mishnah* (50 BCE-200 CE), tried to tie the *Mishnaic* laws to the written laws of *Tanach*.
- Babylonian Talmud* (*Bavli*): Composed of both the earlier *Mishnah* (itself an edited version of a more varied, oral tradition, recorded about 200 CE in Israel) and a later commentary, the *Gemara*, completed around 520-600 CE in Babylonia (to some extent explaining the connection of the *Mishnah*’s positions to the source, written, Biblical text, mainly its Laws in the first 5 books).
- Baraita*, *Baraitot* (pl): An ‘outside teaching,’ while not part of the official *Mishnah*, a *Tannaic* or yet earlier tradition, still respected and employed as authoritative, especially in the later *Gemara*.
- G’zera Shava*: ‘Equivalent judgement.’ Inference from analogy of words, phrases, or contexts to fill in missing element from one to the other. Second rule of interpretation following *Qal VaChomer*.
- Gemara*: Completing commentary of the *Talmud*, later referring to the entire *Talmudic* corpus.
- Haggada*: Like *aggada*, (a story, usually moral) a non-binding guide or teaching.
- Halacha* (*Halakha*): (walking = living rightly) Binding Jewish practice as law, fixed by the *Rabbis*.
- Jerusalem Talmud* (*Yerushalmi*): Prior to the *Babylonian Talmud*, but with less commentary, completed about 420 CE, in Israel. Useful to compare with the *Bavli*’s developments.
- Karet(h)*: To be exiled, cut off, or die, be executed for deliberate, gross impiety.
- Middot*: Interpretative rules, first listed as Hillel’s 7, later expanded to Yishmael’s 13, and then more.
- Midrash*: Rabbinic explanation, exposition, or commentary on the Jewish Bible.
- Mishna(h)*: (Recitation) Authoritative tradition of binding Jewish practices and laws, collected and edited in (Yavneh) Israel under Rabbi Judah, “the Prince” (= head of Rabbinic assembly in Israel) around 200 CE. Claimed to be derived as the Oral Law along with the written Law (= Torah, as first 5 books of the Jewish Bible compiled by Moses). It is not always clearly related to the Written Torah or Jewish Bible, the *Tanach*, hence, the *Gemara* tries to do that.
- Mishnaic*: Period of the *Mishnah*, during which the *Tannaic* Rabbis discussed and ruled on issues.
- Pesach*: Passover sacrifice that inaugurated the holiday celebrating the means of Divine protection and rescue from Egyptian enslavement (and likely obliteration as a separate people).
- Qal VaChomer*: ‘Light and heavy.’ An inference from the less important case to the more important; it can include *Chomer VaQal*: the opposite direction, from ‘heavy/stringent’ to ‘light/lenient.’
- Rabbi*: Indicating someone as “my teacher.” The *Rav* (teacher) was a scholar/interpreter of Jewish law, as well as local community leader, often training students, himself duly tutored and authorized.
- Savoraim*: Expounders of post-*Talmudic* period, mostly after 600 CE. Works, e.g.: *Sifre* Commentary.
- Talmud*: Either the simpler, earlier *Jerusalem Talmud* or more elaborate, later, *Babylonian* version.
- Tanach*: Acronym for *Torah*, *Neviim*, *Ketuvim* (Law, Prophets, Writings) as the Jewish Bible.
- Tannaim*: *Rabbis*/teachers (repeaters/holders/givers) of the period 50 BCE – 200 CE. (*Tannaic* – of this period = *Mishnaic*), largely the interlocutors of the *Mishnah* traditions that they transmitted.
- Tosefta*: An Aramaic supplement of traditions left out of the official *Mishnah* version, yet a worthy collection and so preserved by Hiyya bar Abba (Judah the Prince’s pupil). In it one found a *baraita*, extra teaching used in debate to support tradition or attack another suggested position.