

## Chapter 2

# Essay #2: Scales of Epistemic Appraisal

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**Abstract** This essay is a discussion of Roderick M. Chisholm's system of a scale of distinct levels of evidential appraisal. In a series of articles over two decades Chisholm developed and continually refined a conceptual scheme and an axiomatic system embodying a system of levels of evidential appraisal. My essay begins with a discussion of how criminal and civil courtroom situations require different levels of appraisal in reaching their verdicts. The scale that Chisholm develops has nine distinct levels of appraisal, with the top four levels representing positive appraisals of a proposition  $p$ , and the bottom three representing negative appraisals of the denial of the proposition  $p$ . At the middle of this scale is the appraisal "counter-balanced", which represents the situation in which neither  $p$  nor not- $p$  is appraised more than the other. The specific scale that this essay explores is as follows: certain, evident, reasonable, has some presumption, counter-balanced, has no presumption, unreasonable, and gratuitous.

This essay has a double purpose. In the first instance it is an introduction to Chisholm's system of epistemic appraisal and a summary of a number of the key features of it. An appendix to the essay summarizes Chisholm's key definitions and derives three of his most important theorems. The essay also has a second and more critical purpose, which is to offer a characterization of Chisholm's system, and then to develop a conceptual alternative to it. The key issue here is how a positive appraisal of a proposition  $p$  should relate to the negative appraisal of the proposition not- $p$ . The essay characterizes Chisholm's system as a "straight steps" system, and it offers by contrast the conception of a "mirrored steps" system. It is argued that there are counter-intuitive consequences to the Chisholmian straight-steps system. A distinct critical issue is whether Chisholm's hierarchy contains a serious ambiguity in the appraisal levels below the counter-balanced.

People are often surprised to learn that different courtroom situations require that juries use different levels of appraisal in reaching their verdicts. In a civil case (tort law) a jury has only to conclude that there is some presumption in favor of one litigant's case in reaching a verdict. In a criminal case, a jury is required to hold that

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its verdict is beyond reasonable doubt. Thus, there exists a scale of appraisals which contains at least two levels, namely “has some presumption in its favor” and “is beyond reasonable doubt”. The exploration of such a scale (or scales) is a primary topic of this paper.

Such scales are those of epistemic appraisal. Epistemic appraisal has previously been systematically discussed by various epistemologists, such as by C.I. Lewis [9]. Three recent writers in this area entitled their article “Reason and Evidence: An Unsolved Problem” [8]. The philosopher who has given this area the most sustained attention is Roderick M. Chisholm, who has appeared on numerous occasions expositing, defending and extending a system of the logic of epistemic appraisal. (See items [1–7] of the References.) At the heart of Chisholm’s system is the extremely important insight that there exists with regard to given propositions for a given subject at a given time, a hierarchy of levels of epistemic appraisal in terms of which such propositions may be appraised for that subject at that time.

Professor Chisholm’s last version of his hierarchy of levels of epistemic appraisal was [3], pp. 226–229, is as follows:

h is certain (absolutely certain)  
 h is evident  
 h is beyond reasonable doubt (reasonable)  
 h has some presumption in its favor  
 h is counterbalanced  
 ~h has no presumption in its favor  
 ~h is unreasonable (unacceptable)  
 ~h is gratuitous

This hierarchy is at once generated by and an interpretation of a formal axiomatic system. Each level of the appraisal hierarchy gets defined in terms of a specific well-formed formula of the formal system. For the benefit of readers unfamiliar with Chisholm’s system, an appendix has been added to this essay which gives an exposition of some basic features of it.

This paper attempts to offer a new perspective upon the nature of Chisholm’s system of epistemic appraisal. It is argued that Chisholm’s system is of the “straight steps” variety. My contention is that a “mirrored steps” system of epistemic appraisal is preferable to a “straight steps” system. This preferability is shown through the consideration of Chisholm’s own illustrations. Finally, it is argued that Chisholm’s hierarchy is actually the result of mixing together several distinct sorts of scales of epistemic appraisal.

## I

The first counter-intuitive consequence of Chisholm’s system to which I would like to call attention is that a relatively weak positive appraisal of a proposition **h** implies a very strong negative appraisal of the denial of that proposition, i.e.,

**~h.** That this consequence is counter-intuitive may be seen from the following example.

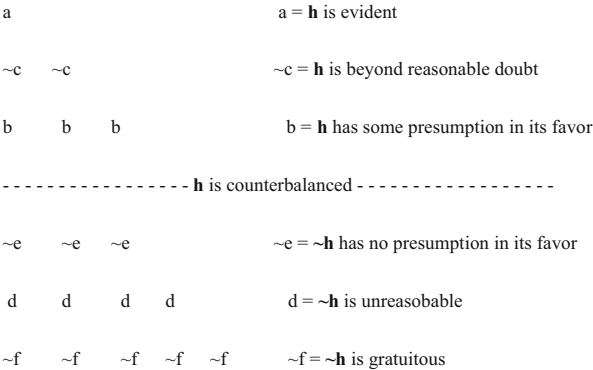
In “On the Nature of Empirical Evidence” [2] and [3] Chisholm offers the following courtroom illustration of the various levels of appraisal in his epistemic hierarchy:

If the state is justified in bringing you to trial, then the proposition that you did the deed alleged must be one which, for the appropriate officials, has some presumption in its favor. If the jury is justified in finding you guilty, then the proposition should be one which, for it, is beyond reasonable doubt. And its decision should be based upon propositions which, for it, have been made evident during the course of the trial. ([3], p. 227)

I call Chisholm’s system a “straight steps” system, because if a given step is true, it follows that all of the appraisals in the hierarchy below that step also are true. Now consider the relationship between the proposition **h** (the defendant committed the crime) and the proposition **~h** (the defendant did not commit the crime). According to Chisholm’s “straight step” system of epistemic appraisal, if the proposition that the defendant committed the crime has some presumption in its favor, then it follows as theorems of the system that the appropriate officials are justified in believing that the proposition **~h** (that the defendant didn’t commit the crime) has no presumption in its favor, is unreasonable, and is gratuitous.

But surely this is counter-intuitive, for one would normally consider that the strongest of these appraisals concerning **~h** would be warranted only after the jury has brought in a verdict of “guilty as charged”. Just because there is some presumption in favor of the defendant’s guilt, it surely should not follow that it is *unreasonable* to believe that the defendant is innocent. In the absence of other evidence, mere circumstantial evidence would suffice to establish that there is some presumption in favor of the defendant’s guilt. But that surely doesn’t make *unreasonable* or *gratuitous* the belief that the defendant is nevertheless innocent.

Part of the purpose of this paper is to characterize an alternative to Chisholm’s “straight steps” system. My alternative to a “straight steps” system of epistemic appraisal is what I call a “mirrored steps” system of epistemic appraisal. The contrast between these two systems can best be seen in terms of a pair of diagrams. Figure 2.1 is a representation of Chisholm’s system. The letters used here are the



**Fig. 2.1** A “straight step” system

**Fig. 2.2** A “mirrored steps” system

X		X = <b>h</b> is evident
Y	Y	Y = <b>h</b> is beyond reasonable doubt
Z	Z	Z = <b>h</b> has no presumption in its favor
-----	-----	----- <b>h</b> is counterbalanced -----
Z*	Z*	Z* = $\sim$ <b>h</b> has no presumption in its favor
Y*	Y*	Y* = $\sim$ <b>h</b> is unreasonable
X*		X* = $\sim$ <b>h</b> is irrational (gratuitous)

abbreviations Chisholm employs in “On the Nature of Empirical Evidence” ([3], p. 228). The main feature of Fig. 2.1 is that implications in the “straight steps” system are **only** downward. If the appraisal at any give step is true, then it implies the truth of all the steps below it, and none of the steps above it.

The key notion in my “mirrored steps” system is that an affirmative appraisal of a given level only implies negative appraisals of a comparable level. In the “mirrored steps” system of epistemic appraisal, if the proposition **h** is presumptive or has some presumption in its favor, then the strongest negative appraisal that follows concerning  $\sim$ **h** is that it is non-presumptive or has no presumption in its favor. In the “mirrored steps” system the defendant’s guilt must be established beyond a reasonable doubt before  $\sim$ **h** is shown unreasonable, and **h** must be established as evident before  $\sim$ **h** is shown to be gratuitous. Figure 2.2 is a representation of the “mirrored steps” system of epistemic appraisal.

The conventions are slightly different for interpreting the implications in Fig. 2.2. Above the counterbalanced the interpretation is the same in that if an appraisal at a given step is true, then it implies all the appraisals below it, respectively concerning **h** above the counterbalanced, and concerning  $\sim$ **h** below the counterbalanced. The convention for all the items below the counterbalances is different in that a negative appraisal implies those other negative appraisals above it up to the counterbalanced, but not above that. Thus X\* implies Y\* and Z\*. Y\* only implies Z\*, and Z\* implies nothing whatsoever. Thus, on the “Mirrored steps” system *irrational* (gratuitous) is the strongest negative appraisal, and *evident* is the strongest level of positive appraisal. On the “straight steps” system there is some ambiguity as to what is the strongest negative appraisal, although perhaps a case can be made for thinking that *has no presumption in its favor* is the strongest negative appraisal. That case would be that, below the counterbalanced, the appraisal “ $\sim$ **h** has no presumption in its favor” implies all the other negative appraisals, but none of them imply it.

Consideration of another example will reinforce my previous claim that Chisholm’s “straight steps” system is counter-intuitive. In “A System of Epistemic

Logic” [6], which Chisholm co-authored with Professor Robert G. Keim, we find the following example:

Consider, for example, the proposition expressed “There are now at least two people in the President’s office”. For most of us, this is counterbalanced: there is nothing to be said in its favor and there is nothing to be said in favor of its negation. But for one who has read that the President plans to hold a conference there at this time, the proposition may have some presumption in its favor; for one who has heard an official announcement that the conference is now taking place, it may be acceptable; for the guard outside the door, it may be beyond reasonable doubt, and for the President himself, either it or its negation may be evident. ([6], p. 99)

Consider the epistemic situation of the man who has read that the President plans to hold a conference, and thus for whom the proposition **h** has some presumption in its favor. Chisholm’s system implies that for this individual the proposition  $\sim\mathbf{h}$ , that there are not now at least two people in the President’s office, has no presumption in its favor, is unreasonable, and is gratuitous. But surely it would not be either unreasonable or gratuitous for this man to believe  $\sim\mathbf{h}$ , even though **h** has some presumption in its favor. My claim is that it is counter-intuitive to think that  $\sim\mathbf{h}$  must be either unreasonable or gratuitous for S at t, just because **h** has some presumption in its favor. But what support is there for this claim?

What is amiss in Chisholm’s system is that only a strong positive appraisal of a proposition **h** ought to imply a strong negative appraisal of the denial of that proposition. It seems to me that a “mirrored steps” system of epistemic appraisal, in which it follows that positive appraisals of a given level only imply negative appraisals of a comparable level, is much to be preferred. The major difference between the straight steps and the mirrored steps system of epistemic appraisal is that the former assumes that all of the negative appraisals must be true on every occasion that a positive appraisal (no matter how weak) is true. But at least in the examples that I have been examining, it seems wrong or counterintuitive to make that assumption. The problem reduces to the question – Why must  $\sim\mathbf{h}$  be unacceptable, unreasonable or gratuitous for the subject, just because **h** has been seen to have some presumption in its favor?

A distinct critical point would be that it seems to me that Chisholm’s appraisal hierarchy contains a serious ambiguity in the appraisal levels below the counterbalanced. The ambiguity concerns what it is that is being measured on the negative half of the scale. When a weak negative judgment is compared with a strong negative judgment, what is the scale upon which the comparison is being made?

There are three scales from which the answer here can be drawn. They are: (1) a scale which measures the strength of one’s reasons for withholding  $\sim\mathbf{h}$ . (2) a scale which measures the strength of one’s reasons for refraining from believing  $\sim\mathbf{h}$ . And (3) a scale which measures the strength of one’s reasons for disbelieving  $\sim\mathbf{h}$ . The first scale mentioned above isn’t really a serious option for use in interpreting Chisholm’s hierarchy, since a scale of strength of reasons for withholding  $\sim\mathbf{h}$  is just as much a scale of strength of reason for withholding **h**. If this were the scale at work below the counterbalanced in Chisholm’s hierarchy, then positive appraisals

of **h** above the counterbalanced would be implying reasons for withholding **h**. But clearly that isn't the case!

My contention here is that Chisholm's hierarchy is ambiguous between scales two and three. Chisholm's hierarchy above the counterbalanced is no doubt a scale which measures the strength of one's reasons for believing **h** in the sense that the higher on the scale an appraisal falls, the more (or better) reason one has for believing **h**. Scale (3) is quite similar to this in that disbelieving  $\sim\mathbf{h}$  is equivalent to believing  $\sim(\sim\mathbf{h})$ . When Chisholm defines " $\sim\mathbf{h}$  is unreasonable" as "withholding  $\sim\mathbf{h}$  is epistemically preferable to believing  $\sim\mathbf{h}$ " he seems to be working with a type (2) scale which would measure strength of one's reasons for refraining from believing  $\sim\mathbf{h}$ . So, "being unreasonable" would seem to be an appraisal on a "refraining" type of scale. When Chisholm defines " $\sim\mathbf{h}$  has no presumption in its favor" as "it is not the case that believing  $\sim\mathbf{h}$  is epistemically preferable to believing **h**", he seems to be working with a type (3) scale. Thus, "having no presumption" would seem to be an appraisal on a "believing" type of scale. My intuition is less clear as to which of these types of scale the definition of "gratuitous" ("believing  $\sim\mathbf{h}$  is not epistemically preferable to withholding  $\sim\mathbf{h}$ ") belongs, although perhaps a case could be made for a type (2) scale. In any case, given the way the implications go in Chisholm's hierarchy, having no presumption in its favor would seem to be the strongest negative appraisal, being unreasonable would be a weaker appraisal, and being gratuitous would seem to be the weakest negative appraisal. Chisholm's choices here are puzzling to say the least, for it seems counter-intuitive to say that being unreasonable is a weaker negative appraisal than having no presumption in its favor.

Yet another feature of Chisholm's systems that I would question is the fact that his system implies that every proposition for any individual at any time, will always have either a very strong positive appraisal or a very weak negative appraisal. The feature to which I'm here referring is Chisholm's theorem that every proposition is either **evident** or **gratuitous** (the two poles of the hierarchy). This fact follows directly from the law of the excluded middle and Chisholm's definitions of the levels of appraisal. That is: (1) **p** or  $\sim\mathbf{p}$ ; (2)  $(\mathbf{B}h \mathbf{P} \mathbf{W}h)$  or  $\sim(\mathbf{B}h \mathbf{P} \mathbf{W}h)$ ; Hence (3) either **h** is evident or **h** is gratuitous. The disjuncts in step 2 are the definiens for the appraisals given in step (3). In a similar way, it follows as a corollary that every proposition is either beyond reasonable doubt or unreasonable. In all the versions of Chisholm's system prior to [3] it was also a theorem that every proposition **h** is either acceptable or unacceptable.

The fault that I find with these theorems is that they purposefully turn appraisals which one would naturally consider contraries into contradictories. Chisholm's system precluded the possibility of there being a proposition **h** which is (a) neither evident nor gratuitous, of (b) neither beyond reasonable doubt nor unreasonable, or (c) neither acceptable nor unacceptable. Each of these exclusive disjunctions seems to me to be counter-intuitive.

I conclude that a "mirrored steps" system of epistemic appraisal is preferable to a "straight steps" system. No attempt has been made in this paper to present an axiomatic version of such a system. So, it remains an "open question" of

philosophical logic to construct a simple and elegant version of a “mirrored steps” logic of epistemic appraisal.

## Appendix

For further information concerning issues in the Appendix refer also to items (3), (5) & (7) of the References.

This appendix summarizes Chisholm’s key definitions and derives three of his theorems. Chisholm’s single primitive is the two-place relations predicate “... is more reasonable than —“or”... is preferable to —”. Here “preferable” means epistemically preferable rather than ethically preferable. It relates three basic epistemic attitudes, viz. (1) believing, (2) disbelieving, and (3) withholding or suspending belief. What is being appraised is always a believing, a disbelieving, or a withholding *by a particular subject at a particular time*. And when various attitudes are being ranked it is presupposed that the subject and time are constant throughout. Act of believing and acts of disbelieving differ only in having contradictory objects. *Withholding* is defined by Chisholm as the compound attitude of refraining from believing and refraining from disbelieving ([5], p. 88)

There are six ways that these basic attitudes may be related, taking them two at a time. And then if we switch to the relation “... is not epistemically preferable to —”, there are then six more combinations making twelve in all. Chisholm defines the basic elements of his vocabulary of epistemic appraisal in terms of these twelve combinations. Here is the 1973 definition of each item of the appraisal vocabulary. (1) *h* is *evident* for *S* at *t* =<sub>df.</sub> believing *h* is epistemically preferable to withholding *h* for the subject *S* at the time *t*. (2) *h* is *gratuitous* for *S* at *t* =<sub>df.</sub> it is not the case that believing *h* is epistemically preferable to withholding *h* for the subject *S* at the time *t*. (3) *h* is *unreasonable* for *S* at *t* =<sub>df.</sub> withholding *h* is epistemically preferable to believing *h* for the subject *S* at the time *t*. (4) *h* is *reasonable* (beyond reasonable doubt) for *s* at *t* =<sub>df.</sub> it is not the case that withholding *h* is epistemically preferable to believing *h* for the subject *S* at the time *t*. (5) *h* has some *presumption* in its favor for *S* at *t* =<sub>df.</sub> believing *h* is epistemically preferable to disbelieving *h* for the subject *S* at the time *t*. (6) *h* has *no presumption* in its favor for *S* at *t* =<sub>df.</sub> it is not the case that believing *h* is epistemically preferable to disbelieving *h* for *S* at *t*.

In the system of 1966 [5] Chisholm constructed his system with just three axioms. In later writings, versions of these three axioms remain the core of an expanded set containing seven axioms. The first two spell out logical properties of the primitive predicate “... is epistemically preferable to —”. The first is an axiom of transitivity. It says that if one act of believing (withholding, etc.) is epistemically preferable to a second such act, and the second epistemically preferable to a third, then the first is epistemically preferable to the third. Again, a strict statement of this axiom would specify a constant subject and a constant time ([5], p. 95).

Chisholm's second axiom states that "... is epistemically preferable to —" is an asymmetric relation. It says that if one epistemic attitude is epistemically preferable to a second, then the second is not epistemically preferable to the first.

A third axiom differs from the first two in that rather than specifying some other logical property of the primitive relation, it specifies an entailment that holds among the basic epistemic attitudes of Chisholm's epistemic vocabulary. It says that if withholding a proposition **h** is not epistemically preferable to believing **h**, then believing **h** is epistemically preferable to disbelieving **h**. That is, if **h** is beyond reasonable doubt, then **h** has some presumption in its favor. Chisholm has illustrated this axiom thus: "If agnosticism is not more reasonable than theism, then theism is more reasonable than atheism." ([5], p. 95)

Consider now three of the most controversial results of this system of epistemic appraisal. They are the derivations of the three theorems that follow from the appraisal that **h** has some presumption in its favor. That is, if **h** has some presumption in its favor, then: (1)  $\sim\mathbf{h}$  has no presumption in its favor. (2)  $\sim\mathbf{h}$  is unreasonable. (3)  $\sim\mathbf{h}$  is gratuitous.

Take '**Bh**' as 'S believing **h** at t'; '**B $\sim$ h**' as 'S believing  $\sim\mathbf{h}$  at t' or 'S disbelieving **h** at t'; '**Wh**' as 'S withholding **h** at t' and ' $\dots\mathbf{P}\text{---}$ ' as ' $\dots$  is epistemically preferable to —'. The first theorem is then: If (**Bh** **P** **B $\sim$ h**) then  $\sim(\mathbf{B}\sim\mathbf{h}$  **P** **Bh**). This first theorem is an immediate consequence of Chisholm's second axiom, which asserts the asymmetry of ' $\dots\mathbf{P}\text{---}$ '. The second theorem is: If (**Bh** **P** **B $\sim$ h**) then (**W $\sim$ h** **P** **B $\sim$ h**). The proof is:

- |          |   |                            |
|----------|---|----------------------------|
| 1.       | If $\sim(\mathbf{Wh}$ <b>P</b> <b>Bh</b> ) then ( <b>Bh</b> <b>P</b> <b>B<math>\sim</math>h</b> )                               | Axiom #3                   |
| 2.       | If $\sim(\mathbf{W}\sim\mathbf{h}$ <b>P</b> <b>B<math>\sim</math>h</b> ) then ( <b>B<math>\sim</math>h</b> <b>P</b> <b>Bh</b> ) | Substitution into 1        |
| 3.       | If $\sim(\mathbf{B}\sim\mathbf{h}$ <b>P</b> <b>Bh</b> ) then ( <b>W<math>\sim</math>h</b> <b>P</b> <b>B<math>\sim</math>h</b> ) | 2, Transposition           |
| 4.       | If ( <b>Bh</b> <b>P</b> <b>B<math>\sim</math>h</b> ) then $\sim(\mathbf{B}\sim\mathbf{h}$ <b>P</b> <b>Bh</b> )                  | Axiom #2                   |
| Thus, 5. | If ( <b>Bh</b> <b>P</b> <b>B<math>\sim</math>h</b> ) then ( <b>W<math>\sim</math>h</b> <b>P</b> <b>B<math>\sim</math>h</b> )    | 3,4 Hypothetical Syllogism |

The third theorem to be proven is: If (**Bh** **P** **B $\sim$ h**) then  $\sim(\mathbf{B}\sim\mathbf{h}$  **P** **W $\sim$ h**)

- |          |  |                            |
|----------|--|----------------------------|
| 1.       | If ( <b>W<math>\sim</math>h</b> <b>P</b> <b>B<math>\sim</math>h</b> ) then $\sim(\mathbf{B}\sim\mathbf{h}$ <b>P</b> <b>W<math>\sim</math>h</b> ) | Axiom #2 Asymmetry         |
| 2.       | If ( <b>Bh</b> <b>P</b> <b>B<math>\sim</math>h</b> ) then ( <b>W<math>\sim</math>h</b> <b>P</b> <b>B<math>\sim</math>h</b> )                     | Previous Theorem           |
| Thus, 3. | If ( <b>Bh</b> <b>P</b> <b>B<math>\sim</math>h</b> ) then $\sim(\mathbf{B}\sim\mathbf{h}$ <b>P</b> <b>W<math>\sim</math>h</b> )                  | 1,2 Hypothetical Syllogism |

These are the theorems which show Chisholm's system a "straight steps" logic of epistemic appraisal, in which a weak positive appraisal of **h** implies a strong negative appraisal of  $\sim\mathbf{h}$ .

## References

1. Chisholm, Roderick M. 1969. On a principle of epistemic preferability. *Philosophy and Phenomenological Research* XXX: 294–301.
2. Chisholm, Roderick M. 1970. On the nature of empirical evidence. In *Experience and theory*, ed. Lawrence Foster and J.W. Swanson, 103–134. Amherst: The University of Massachusetts Press.



3. Chisholm, Roderick M. 1973. "On the Nature of Empirical Evidence", a revision of [2]. In *Empirical knowledge*, ed. Roderick M. Chisholm and Robert J. Swartz, 224–249. Englewood Cliffs: Prentice-Hall, Inc.
4. Chisholm, Roderick M. 1957. *Perceiving: A philosophical study*. Ithaca: Cornell University Press.
5. Chisholm, Roderick M. 1966. The principles of epistemic appraisal. In *Current philosophical issues: Essays in honor of Curt John Ducasse*, ed. F.C. Dommeyer, 87–104. Springfield: Charles C. Thomas.
6. Chisholm, Roderick M., and Robert G. Keim. 1972. A system of epistemic logic. *Ratio* XIV: 99–115.
7. Chisholm, Roderick M. 1966. *Theory of knowledge*. Englewood Cliffs: Prentice-Hall, Inc.
8. Lehrer, Keith, Richard Roelff, and Marshall Swain. 1967. Reason and evidence: An unsolved problem. *Ratio* IX: 38–48.
9. Lewis, C.I. 1946. *An analysis of knowledge and valuation*. La Salle: Open Court Publishing Company.

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