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The Adequacy of Alvin Goldman's Reliabilist Theory of Justified Belief

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> A philosopher ... says again and again "I know that's a tree," pointing to a tree that is near us. Someone else arrives and hears this, and I tell him: "This fellow isn't insane. We are only doing philosophy."
>
> Wittgenstein, *On Certainty*

Introduction

The twentieth century was a noteworthy period in the history of epistemology. There were many new developments that changed the way epistemologists approached the traditional questions in this field. One of these significant developments was the emergence of a school of thought by the name of reliabilism, which concerns the reliability of belief-forming processes. Reliabilism itself was a natural result of certain other developments that predated it. Initially only several theorists were working from within this new framework. One of these epistemologists was the American philosopher Alvin I. Goldman, who is currently the Board of Governors Professor of Philosophy at Rutgers University, New Jersey. Goldman used the theoretical tool of reliabilism to supply the necessary and sufficient conditions for knowledge and justified belief.

It is important to realize the significance of Goldman's work on justified belief. His theory of process reliabilism amounts to a novel epistemological theory. In this sense Goldman was offering an alternative to foundationalism and coherentism. At the time Goldman penned his theory of process reliabilism he was a relatively young philosopher. Since then the number of advocates and followers of reliabilism as a whole, and process reliabilism in particular, has burgeoned. Today Goldman's reliabilism is taught in analytic epistemology courses in many parts of the world and Goldman has been described by his peers as one of the eminent epistemologists of our age.

This paper analyzes the adequacy of Goldman's reliabilist theory of justified belief. The contents of this paper are important to me since I wish to assess whether Goldman's process reliabilism is indeed an alternative to the theories that have dominated epistemology until now. I want to examine the points on which it differs from traditional epistemological theories, how it claims to overcome some of the notable counterexamples to those theories, what its core features are, and how it responds to the challenges raised against it. The intended aim of this paper is therefore to determine whether process reliabilism is the cogent theory its advocates have claimed it to be or whether it has the same weaknesses as its competitors. In this sense process reliabilism must be an adequate theory of justified belief. This means that it must specify the necessary and sufficient conditions for justified belief that satisfactorily capture the concept of justification as well as fending off possible counterexamples. Moreover, those beliefs we think are justified should satisfy these conditions as set out by process reliabilism. If, in the course of our analysis of process reliabilism, it turns out that it does not satisfy these conditions for what constitutes an adequate theory of justified belief, then epistemologists should look elsewhere for a satisfactory theory of justified belief.

The determination of the adequacy of Goldman's reliabilist theory of justified belief is made more complex in that his work on this topic extends over a protracted period of time and, moreover, his stance on critical points changes with the years. His first work on justified belief appeared in 1979 and he occupied himself with this question until 1992, in which time he wrote three major papers and one comprehensive book on the issue. Owing to the duration of this period I shall divide my analysis of Goldman into two periods. The Goldman of 1979-1986 I term the 'early Goldman' whilst the Goldman of 1988-1992 I term the 'later Goldman.'

I shall track the developments of the theory through each of these stages and deal with the major challenges put forward to the theory. In chapter 1, I shall lay the theoretical groundwork for the paper as a whole. In that chapter, I introduce the theoretical elements of epistemology, briefly examine the history of epistemology, and establish Goldman's place within that history. Chapter 2 covers Goldman's initial paper on justified belief. The components of process reliabilism will be explained with particular attention paid to the novelty of the theory. Chapter 3 contains the first of the three major challenges to process reliabilism—the clairvoyance problem. Chapter 4 examines the form of reliabilism adumbrated in Goldman's work *Epistemology and Cognition*. The second major challenge is the generality problem, which will be the topic of chapter 5. Chapters 6 and 7 are devoted to Goldman's two final papers on justified belief. Thereafter I conclude my assessment of Goldman's work on justified belief. The final and most important challenge raised against process reliabilism is the evil demon problem. This problem will be dealt with throughout the paper, most notably in chapters 6 and 7.

My bipartite analysis of Goldman will reveal that the work of the early Goldman is superior to that of the later Goldman. This is the thesis that lies at the heart of my dissertation. I shall explain why I favor the early work and why I find the later work inadequate. From my critical analysis of Goldman's work on justified belief I shall make the qualified conclusion that Goldman's theory of process reliabilism is an adequate theory of justified belief. Where the theory is weak I shall strengthen it where I can with the addition of further necessary clauses in the formulation of the theory or by offering my own interpretation of Goldman's position that will explain away these apparent weaknesses. By the end of the dissertation I shall therefore present to the reader a more expanded or fleshed out version of process reliabilism that is a more formidable counterpart to the version with which Goldman has been working. It is this final version that I think is an adequate reliabilist theory of justified belief. This final version is very close to Goldman's own theory and therefore does not constitute a rival version to process reliabilism. My version is merely an attempt to take Goldman's theory to the next level at which it does not suffer from the challenges its current version does.

At this point I wish to mention that I have not addressed the question of skepticism in this paper. I have done this because I think it is important that we first assess whether the theory is an adequate theory of justified belief before we get into the quagmire of skepticism. Skepticism is a question that would require an extensive response of its own. This type of response is beyond the scope of this paper, however.

At the end of the paper I aver that the prospects for process reliabilism are good and that there is much to be optimistic about. I think Goldman has offered the philosophical community a theory of justified belief that is sound in its analysis, penetrative it its theoretical force, and impressive it its diagnostic scope. The popularity that process reliabilism has enjoyed in

philosophical circles in the past decades is testament to my conclusion as to its adequacy as a theory of justified belief. I aspire, by the end of our passage through the history of Goldman's work, to convince the reader to share my favorable view of process reliabilism and make the reader realize that Goldman aptly deserves to be considered one of the most important epistemologists of our time.

Chapter 1

Theoretical Groundwork

The primary purpose of this chapter is to provide some theoretical foundation for the forthcoming evaluation of Goldman's work on justified belief. I will outline some of the characteristic elements of epistemology so that the discussion in the later chapters will not seem to presuppose material essential for understanding my evaluation of Goldman without first covering this material. The secondary purpose of this chapter, which is a natural outcome of the first purpose, is to place Goldman in some context in the long history of epistemology. I think it is important to see exactly where Goldman fits in the larger picture when it comes to the many competing schools of thought in epistemology. Besides, no epistemologist writes in a theoretical vacuum. In writing his theory on justified belief, Goldman is basically replying to epistemologists before him. Goldman's contribution to epistemology is thus best read and understood against that which has come before him.

1.1 *The Elements of Knowledge*

In the history of epistemology many have thought that a justified true belief amounts to knowledge. Thus, when it comes to questions of knowledge the essential theoretical elements of epistemology have been belief, truth, and justification. It seems well-founded to think that

these elements make up knowledge for the following reasons. It would seem strange that you could be said to know that there is a pencil on the table when in fact you do not believe that there is a pencil on the table. How is it possible to know that which you do not believe? It is seems that in order to know something the cognizer would have to have a belief.

1.1.1 *Belief*

Now beliefs are a very interesting topic. There are at least four separate aspects that have to be identified and examined when it comes to the question of beliefs (Goldman 1986: 13-15). The first is that a belief is a mental state. Having a belief *p* means that a cognizer is in a specific mental state.[1] The second is that this mental state of belief has a content to it. The type of mental content that epistemologists have been concerned with when it comes to the question of knowledge is propositional content. This separates mental states like beliefs from other mental states, such as sensations, that possibly lack propositional content. A proposition typically involves a statement that involves a 'that'-clause. Take the example from the previous paragraph. Knowing that there is a pencil on the table involves the cognizer having a belief '*that* there is a pencil on the table.' Propositional attitudes include wanting, wishing, hoping, believing, etc.

The attitude the cognizer takes toward the propositional content of her belief is known as a doxastic attitude, the third aspect of belief. A cognizer would typically take one of the following three attitudes towards a belief—either believing that the proposition is true, believing that the proposition is false, and being uncertain or noncommittal as to the truth or falsity of the belief. In the foregoing case of the pencil on the table, the cognizer would have

[1] At present I shall ignore the difference between current and stored beliefs which might differ when it comes to whether a belief must necessarily be a current mental state.

to take the doxastic attitude that she believes that the proposition 'that there is a pencil on the table' to be true if she is said to have knowledge of that fact.

Finally, there is the question of whether the belief is true or not independent of whether the cognizer believes it to be true or false. A cognizer might believe that the state of New York has a republican majority when in truth the state concerned really has a majority of democrats.

1.1.2 *Truth*

The foregoing aspect of belief leads into the second element of traditional approaches to knowledge—the necessary requirement that the belief *p* be true in order for S to know *p*. Truth is a necessary requirement for knowledge for a cognizer cannot be said to know *p* when *p* is false. Thus, for example, I cannot know that the flower before me is a sunflower when in truth there is no flower before me or that the flower is actually a rose.

Goldman is a realist when it comes to the question of truth. Goldman thinks that the truth of a belief is independent of whether the truth of the belief can be verified by humans. In essence, a belief is true if it corresponds to the fact of the matter or to the reality of the matter. Hence, Copernicus's belief *p* that the planets revolve around the sun is true regardless of whether *p* is verifiable or not. And as we know, at the time Copernicus proclaimed his theory, empirical methods seemed to prove the opposite of his theory.

There are other theories when it comes to the truth of a belief. There will be those who attack Goldman for his realist commitments and who think that having a realist conception of truth

weakens process reliabilism. I shall examine the question of truth, particularly the supposed circularity of definitions of truth, in greater detail in chapter four. It is sufficient for the moment to know that Goldman is a realist when it comes to truth.

1.1.3 *Justification*

The third and final element thought necessary for knowledge is justification. Generally speaking, justification is thought to be the reasons S has for believing *p*. The justification requirement was introduced for two specific reasons. The first was to prevent a lucky guess from being considered knowledge. For example, Alfred says, "I know that horse number ten won the race." But Alfred has no way of getting this information; it was just a guess. However, it just so happens that horse number ten did win the race. In this case, even though Alfred does have a true belief, we do not say he knew that horse ten won the race. It was only a lucky guess. Hence the need for a cognizer to have reasons for believing that which he believes. In Alfred's case, if he did have some sort of justification, for instance if he was the jockey of horse ten, then Alfred might very well have knowledge that horse ten did win the race. This insistence upon justification can originally be found in Plato's *Theaetetus*.

The second reason why justification is necessary for knowledge is borne out by the following example. It is possible for a cognizer S to have a belief *p* which is true, but S has ample evidence to believe that *p* is not true. S, despite the evidence, continues to believe *p*. In this case many would be loathe to say that S knows *p* when S has reasons to believe *p* to be false. S must therefore have reasons for believing *p*, that is have some justification for *p*, which will cancel the impetus for S to discontinue believing *p*. Hence the need for justification.

Over the past half-century many epistemologists have concentrated upon the justification requirement for knowledge. If the necessary and sufficient conditions for a justified belief can be spelt out, then it is a short step to knowledge, for once that justified belief is true, however truth is defined, then the cognizer may have knowledge. Yet epistemologists have found that getting the question of justified belief settled is no easy task. The first problem with justification is that this requirement seems to engender an epistemic regress problem since its seems necessary that the justification of a belief *p* would have to be a second belief *q*. Now *q*, in turn, would have to be a justified belief in order to provide justification for *p*. Now in order for *q* to be justified there will have to be a further justified belief *r* that provides the justification for *q*. And so on. So justification seems to imply an epistemic regress that undermines *q* acting as the justification for *p*.

Certain epistemologists thought that the epistemic regress problem could be solved by a theory that accounted for the structure of knowledge. Here we encounter foundationalism[2] and coherentism,[3] two popular theories of knowledge. Descartes, the originator of foundationalism, thought that beliefs can be divided into basic and nonbasic beliefs. Basic beliefs are noninferential and are nondoxastically justified—these basic beliefs are not justified by other beliefs. These basic beliefs then form a foundation of beliefs for the rest of one's beliefs. Any nonbasic belief receives its justification from a certain relationship to this foundation of basic beliefs. No regress occurs since the foundational beliefs need not be justified in turn since they are already justified in their own right.

[2] Modern foundationalists includes the likes of Russell (1912); Schlick (1978); C.I. Lewis (1929) and (1946); Audi (1988), (1993a), and (1993b); Chisholm (1982) and (1989); Foley (1987); and Moser (1985) and (1989).

[3] Modern coherentists include Lehrer (1974), BonJour (1976), and Harman (1984).

Others thought that if a belief coheres with the rest of a cognizer's beliefs, then that belief is justified. This also prevents the epistemic regress.[4] I shall not get into the strengths and weaknesses of these theories here. Suffice it to say that many thought the regress problem solved.

1.2 *The JTB Theory Exposed*

In 1963 Edmund Gettier showed in his influential paper "Is Justified True Belief Knowledge?" that having a justified true belief is not sufficient for knowledge. According to Gettier, it is possible to have a justified true belief that does not amount to knowledge. For example, Freddy owns one pair of Nike shoes. Today Jonathan sees Freddy wearing a pair of Nike shoes and deduces from seeing Freddy wearing a pair of Nike shoes the belief *p* 'that Freddy owns a pair of Nike shoes.' However, unknown to Jonathan, Freddy is actually wearing his father's identical pair of Nike shoes today. In this case, even though Jonathan's belief *p* is justified—Jonathan has seen Freddy wearing his own Nike shoes before—and *p* is true—Freddy does indeed own a pair of Nike shoes—we do not say that in this instance Jonathan knows that Freddy owns a pair of Nike shoes from seeing him wearing them today for Jonathan deduces *p* from the false assumption that Freddy is wearing his own pair of Nike shoes today. There is something missing between Freddy's owning a pair of Nike shoes and Jonathan forming a justified true belief *p* when seeing Freddy wearing his father's pair of Nike shoes. There seems to be an additional requirement that turns a justified true belief into knowledge. Specifying just what more is needed to avoid the Gettier problem has troubled epistemologists since.

[4] Some epistemologists have pointed out that coherentism does not solve the circularity problem since it might turn out that a belief b_1 only coheres with b_2 because b_2 coheres with b_3 which in turn coheres with b_1. This amounts to a belief justifying itself which is blatantly circular and incorrect.

1.3 *Internalism and Externalism*

One of the responses to Gettier has been Goldman's two theories of knowledge (1967, 1976). Goldman thought that if a belief *p* is caused by the fact *p* or that S can discriminate between the fact *p* and a relevant alternative, then S knows *p*. Regarding the first formulation, S only knows that there is a tree in the garden if S's belief is caused by the fact that there is indeed a tree in the garden.[5] On the second formulation, S only knows that there is a barn in the distance if S can discriminate between a real barn and a fake barn. Goldman's theories of knowledge are intended to rule out accidental true beliefs in such a way that one only has knowledge when there is the appropriate connection between the truth of *p* and the belief *p*. This connection was lacking in the more traditional accounts of knowledge and explains why the cognizer does not have knowledge in the Gettier cases—there is no appropriate connection between the truth of the belief and the cognizer coming to hold the belief *p*. A critical evaluation of these two theories is unfortunately beyond the scope of this chapter.[6]

The important point to notice about Goldman's approach to knowledge, however, is that the nature of justification has changed from the typical way it was traditionally approached. According to foundationalism and coherentism, belief *p* was justified if there was a belief *q* to confer justification upon it. This normally involved the cognizer having to reason with herself by saying that her belief *p* that Armstrong walked on the moon is justified by her belief *q* that pictures taken of the moon-landing clearly show Armstrong walking on the moon (with a foundationalist or coherentist criterion satisfied in the process). This is now called an

[5] Goldman later thought his first theory of knowledge to be problematic (1976).

[6] One of the apparent difficulties with Goldman's theory of knowledge is that it accounts best for certain types of knowledge, particularly empirical or perceptual knowledge. It does not, however, seem to account well for other types of knowledge, viz. moral and religious knowledge.

internalist approach to justification because the factors that confer justification upon a belief *p* must be available to the cognizer upon reflection—her belief *q*. Goldman's theories of knowledge differ markedly from this internalist approach in that the factors conferring justification (J-factors) upon her belief *p* need not be accessible to the cognizer and in many cases are not accessible to most cognizers. Thus, a child may be said to know that water freezes at zero degrees Celsius, but not be able to articulate why her belief is justified. This type of approach to justification has come to be termed an externalist approach since the J-factors need not be accessible to the cognizer.

Goldman is a proponent of externalism. Both his theories of knowledge and his theory of justified belief exhibit the traditional marks of an externalist approach. In both cases it may very well be beyond the cognizer to be aware of whether her belief *p* is justified or whether she has knowledge of *p*. The common feature between Goldman's second theory of knowledge and his theory of justified belief is the reliability of the cognitive processes involved in the formation of beliefs.[7] Reliability is the tendency to produce more true beliefs than false beliefs.[8] Reliability in Goldman's sense of the word is underpinned by Goldman's realist position on truth. By this I mean that if truth is a matter of correspondence to how things are in the world, then, as Goldman has himself said, it may well be beyond our capabilities to determine if a proposition is true or not. Hence if ascertaining the truth of a belief is more than likely beyond the cognitive capabilities of many cognizers, then

[7] Other notable reliabilists are David Armstrong (1973), Fred Dretske (1981), Marshall Swain (1981), Robert Nozick (1981), and William Alston (1989).

[8] In "Discrimination and Perceptual Knowledge" Goldman adds the requirement that a reliable process must also produce more true beliefs than false beliefs in relevant counterfactual situations. For the sake of simplicity I shall ignore for the moment the difference between reliability in actual and counterfactual situations. I shall examine counterfactual reliability when it comes to justified belief in the relevant sections later in the dissertation.

ascertaining the truth ratio of cognitive belief-forming processes is more than likely beyond most cognizer's abilities. From this it follows that a cognizer need not know whether she knows *p* or whether she is justified in believing that her belief *p* is justified—internalism's KK or JJ principle. Thus the factors that determine whether a cognizer has knowledge or a justified belief are external to the cognizer. This is an emphatic rejection of internalism's insistence that such factors need to be accessible to the cognizer.[9]

When Goldman seems to make concessions to internalist concerns in his later works on justified belief, I shall investigate these concessions and question whether they are warranted and how they impact upon Goldman's overall theory. My investigation will conclude with a negative appraisal of these concessions since internalist concerns do not coalesce well with a typically externalist approach to justified belief.

1.4 *Epistemology Naturalized*

Apart from the bifurcation that internalism and externalism initiated in the way epistemologists approached the questions of knowledge and justified belief, there was a second important shift in the recent history of epistemology that is largely attributed to W.V. Quine. This shift amounted to the naturalization of epistemology. Quine thought that traditional epistemology had failed in its quest and that instead of foundering on the faulty paths of the past, epistemologists should instead study psychology to fully understand the way in which the human mind turns sensory input into theoretical output. The failures of traditional (internalist) epistemology inspired Quine to look to the natural sciences for a new

[9] Alvin Plantinga (1993: 81) claims that externalism had earlier roots than internalism and that the contemporary return to externalism merely amounts to a return to the way epistemologists originally approached the questions of knowledge and justified belief.

direction for epistemology. In the following paragraph Quine claims that epistemology should be relocated to the natural sciences and that epistemological questions should be dealt with in a similar way to which questions in the natural sciences are dealt with:

> Epistemology, or something like it, simply falls into place as a chapter of psychology and hence of natural science. It studies a natural phenomenon, viz., a physical human subject. This human subject is accorded a certain experimentally controlled input—certain patterns of irradiation in assorted frequencies, for instance—and in the fullness of time the subject delivers as output a description of the three-dimensional external world and its history. The relation between the meager input and the torrential output is a relation that we are to study for somewhat the same reasons that always prompted epistemology; namely, in order to see how evidence relates to theory, and in what ways one's theory of nature transcends any available evidence … But one conspicuous difference between old epistemology and the epistemological enterprise in this new setting is that we can now make free use of empirical psychology. [10]

Epistemology should thus become part of the natural sciences instead of belonging to the corpus of *a priori* philosophy. Knowledge should be looked at as another phenomenon in the natural domain. This new approach would thus be empirical in nature in contradistinction to the purely *a priori* approach of traditional 'armchair' epistemology. Epistemology would seat itself with cognitive science instead of philosophy. In traditional epistemology a theory was first developed independent of empirical facts and only then applied to the world. Quine reversed the way theories in epistemology should be constructed. Hence the 'naturalized' label is applied to it owing to the way this approach considers epistemological facts to be facts about the natural world.

Goldman picked up on the insights and strengths of Quine's naturalized approach to epistemology. In Goldman's opinion, epistemology has a lot to learn from the cognitive sciences and that a very fruitful relationship can be established between the two fields (1986:

[10] W.V. Quine, "Epistemology Naturalized", in *Ontological Relativity and Other Essays*, 1969.

1-3). Goldman, however, differs from Quine in that Goldman still recognizes the contribution traditional epistemology can make. Goldman, however, moves away from Descartes towards Quine by insisting that traditional epistemology is stunted if it does not recognize the value of the cognitive sciences to its own enterprise. Hence Goldman is a type of bridge figure between the seventeenth-century armchair of Descartes and the twentieth-century lab coat of Skinner.

Goldman terms his multidisciplinary approach to epistemology *epistemics*. It has both a traditional and a cognitive science part. Goldman's epistemics is best brought out in his *Epistemology and Cognition* (1986). The book is divided into two parts. The first part deals with the more traditional philosophical questions of epistemology. In the second part of the book Goldman delves into cognitive science to ascertain whether any cognitive process satisfies his theory of justified belief as spelt out in the first half of the book. Included in this investigation are research results from cognitive science that could influence the way epistemologists approach knowledge and justified belief. In chapter 4 I shall investigate the force of epistemics when it comes to the visual process.

There are those, however, who do not see Goldman as assuming this intermediate position between traditional epistemology and epistemology naturalized. According to Jaegwon Kim (2000: 309), many of those who profess to practice naturalized epistemology are not closely related to Quine's epistemology naturalized. Using Philip Kitcher's terminology of differentiating apsychological theories from psychological theories (Kitcher 1983), where the first refers to traditional normative epistemology and the second to 'naturalized' epistemological theories which make reference to psychological processes, Kim says that the main difference between traditional epistemological theories and those theories influenced by

Quine is that the former would state the necessary and sufficient conditions for justification in terms of the logical relationship between the content of beliefs whilst the latter would state these criteria in terms of the causal properties of beliefs. So whilst psychological theories are not naturalized in Quine's sense, such theories nevertheless do specify the necessary and sufficient conditions for knowledge and justified belief in naturalized terminology. Kim is correct in claiming that psychological theories of justified belief and knowledge do not fully espouse Quine's eliminative project, which rejects the normative role of epistemology in favor of a descriptive theory of human cognition, since many psychological epistemologists are interested in the normative aspects of epistemology as well. Goldman's methodology is naturalistic in this sense in that he specifies the conditions for justification in non-epistemic terms.

I think Kim is correct in his assessment of those theories, such as Goldman's, that are assumedly naturalized epistemological theories. Goldman deals with the typical questions found in traditional epistemology. However, he differs only in that his criteria for justification and knowledge are descriptive and that he deals with psychological processes that have been ignored in traditional epistemology. So Goldman is closer to traditional epistemology than he is to Quine. Instead of separating traditional epistemology from naturalized theories such as Goldman's, I think epistemology should be divided into the two categories that Kitcher proposed—apsychological and psychological. Both of these projects or streams should be included in the field of epistemology as a philosophical endeavor. However, the second stream takes into account the findings of the natural sciences, cognitive science and neuroscience in particular, whilst the first does not. Quine's project amounts to epistemology naturalized and is quite different from what Goldman is doing. So there should be a clear distinction between epistemology naturalized (Quine) and psychological epistemology

(Goldman and others). Psychological epistemologists borrow from the sciences whilst those practicing naturalized epistemology are within the sciences and not philosophy. I think this is the better way of making sense of the position Goldman holds within the field of epistemology after the shift Quine initiated in epistemology. I shall thus be following Kim in this paper by considering Goldman as a psychological epistemologist who has realized the benefits of learning from the natural sciences to improve philosophical investigations in epistemology.

1.5 *Recapitulation*

This chapter has briefly detailed some of the traditional elements of epistemology as well as tracing some of the more notable theoretical developments in the history of epistemology. More importantly, I wanted to highlight the place Goldman assumes in the epistemological field vis-à-vis externalism and epistemology naturalized. Goldman is an externalist and a proponent of descriptive psychological epistemology. These background theoretical foundations are important in that they place the forthcoming analysis of the adequacy of Goldman's reliabilist theory of justified belief in perspective.

Chapter 2

Process Reliabilism (1979)

Goldman first introduced the necessary link between reliability and the justification of a belief in his noteworthy 1979 paper "What is Justified Belief?"[11] This marked an important turning point in the way epistemologists would come to treat the question of justified belief since reliabilism would become a formidable theoretical position on justified belief. In this chapter I shall pay specific attention to the differences that distinguish process reliabilism, the name given to the form of reliabilism outlined in this paper, and other traditional accounts of justified belief. Thereafter I shall examine the theoretical underpinnings of process reliabilism that mark it as a cogent theory of justified belief.

2.1 *Establishing a Unique Approach*

In section 1.4 of chapter 1 I explained how I understand Goldman's position vis-à-vis traditional epistemology and epistemology naturalized. I thought Kim, using Kitcher's

[11] This paper was originally published in G.S. Pappas (ed.), *Justification and Knowledge* (Dordrecht: D. Reidel, 1979), pp. 1-23. I shall, however, be making use of the article as it appears in E. Sosa & J. Kim (eds.), *Epistemology: An Anthology* (UK: Blackwell, 2000), pp. 340-354. Page references used when quoting Goldman refer to the latter source.

terminology, had a better understanding of Goldman's project. Since Goldman's theory of justified belief is a product of a descriptive psychological epistemology, there are several salient differences between Goldman's theory and those theories of justified belief that can be found in traditional epistemology.

Firstly, his account is an explanatory account. This means that Goldman explains what makes a belief justified as opposed to merely providing a set of necessary and sufficient conditions for justified belief. In this sense his account is more informative to the reader than other theories on this question. Though Goldman eventually provides us with necessary and sufficient conditions for a justified belief based upon a reliabilist criterion, his theory is essentially explanatory. Hence we understand *why* it is that if a belief fulfills those conditions it is justified.

Secondly, because Goldman is a psychological epistemologist, his approach to justified belief avoids normative epistemological terms in favor of a descriptive analysis of psychological processes. That which makes a belief justified will depend upon the psychological processes responsible for the belief's formation instead of the logic of the belief. Throughout Goldman avoids the epistemic terms in his criteria for the justifiedness of a belief that have characterized traditional accounts of justified belief. A typical set of epistemic terms that Goldman avoids are: justified, warranted, has good grounds, has reason to believe, knows that, sees that, apprehends that, is probable, shows that, establishes that, and ascertains that. Non-epistemic terms that are allowed are: believes that, is true, causes, it is necessary that, implies, is probable, and is deducible from (340). As a general rule, doxastic, metaphysical, modal, semantic, and syntactic expressions are not considered epistemic.

Thirdly, Goldman is an externalist. Hence he does not assume that when a belief is justified the believer must be in possession of some argument that causes her belief to be justified. Nor does Goldman assume that the believer needs to know that a particular belief of hers is justified. All these assumptions have been assumptions of traditional, internalist epistemology. Since the justifiedness of a belief will ultimately rest upon properties of psychological processes, hence the name 'process reliabilism,' it need not be the case that the cognizer must be aware of when and if one of her beliefs is justified.

2.2 *Inadequacy of Previous Theories*

In order to demarcate the uniqueness of his approach, Goldman runs through some previous theories of justified belief and shows how each fails. Identifying problems facing those attempts will allow Goldman to avoid such theoretical pitfalls in his own approach. I think it is important to examine some of these other theories to get a better understanding of Goldman's approach and to see just how different he is as an epistemologist from those who have come before him.

A theory of justified belief typically involves a base clause specifying truth conditions for 'S's belief that *p* at *t* is justified.' There are several exemplary faults with the attempts epistemologists have made at specifying just such a base clause for justified belief. One of the predominant faults that Goldman identifies is that many of these base clauses include epistemic terms. Such epistemic terms should be avoided in order to avoid definitional circularity. For example, some have thought that if a belief *p* is indubitable, self-evident, or self-presenting to S at *t*, then *p* is justified for *S* at *t*. Even if we ignore the problematic inclusion of epistemic terms, we can imagine cases in which these conditions are met but we

would not want to say the belief is justified. Take the case of a religious fanatic who might be incapable of psychologically doubting the tenets of his religion. Surely we would not want to claim that such a person had a justified belief in these conditions. The incapability to doubt does not seem to attribute justifiedness to a belief. A similar problem arises if we understand 'self-evident' as the impossibility of not believing a proposition if the cognizer understands that proposition. Surely it is incorrect to think that just because a cognizer cannot refrain from believing a proposition if he understands it, that the belief in question is justified. For example, I can understand the proposition *p* 'that there is a moon in the sky this evening.' My understanding of *p*, however, has nothing to do with my belief *p* being justified.

Moreover, a belief cannot be justified just because it is true. Truth does not guarantee justification. Take the case of the belief *p* 'that the time is nine o'clock' being artificially induced into S by a brain surgeon. Even if it is true that at the time *p* is artificially induced into S it is indeed nine o'clock and S believes *p* at that precise moment, we would be hesitant to say that S is justified in believing *p*. There seems to be something wrong or inappropriate with the connection between the truth of the belief and S's coming to hold the belief. The subject has acquired the belief in a way that denies justification. The acquisition of beliefs therefore seems to be an aspect of justification that seems to have been overlooked.

Another reason many would be hesitant to ascribe justification to this patient's belief is that the belief is only true by accident or luck. Chance is something many would wish to avoid when it comes to justified belief. The satisfaction of a substantive set of conditions should result in a belief being justified. If it were mere luck that converted a belief into a justified belief, knowledge would be a very elusive property. And we would like to think that as cognizers we have knowledge of many things under normal conditions. For example, if I

come to believe for no apparent reason that it is raining now and behold, by mere chance, it is raining, then I do not have a justified belief that it is raining. Chance or luck cancels justification. If luck were allowed to confer justification, then there would be no difference between those beliefs we consider lucky guesses and those beliefs we consider to have warrant.

Many of the previous accounts of justified belief fall short for one of two reasons. Either these accounts contain epistemic terms or because upon closer scrutiny there are obvious counterexamples to each. There is a third problem that Goldman identifies with many of these accounts—aberrant causation. And it is this third difficulty that will inform Goldman's approach to the question of justified belief.

2.3 *Causal History and Reliability*

Goldman arrived at the conclusion that some of the more prominent earlier attempts at justified belief have come up empty upon closer scrutiny because the belief in question could just as easily been *aberrantly caused*. If we run through the counterexamples that Goldman proffered for each potential base clause we find aberrant causation of beliefs as a common factor. To summarize, we came across beliefs caused by religious fanaticism, the impossibility of refraining from believing, beliefs based upon manipulatively induced brain-states, luck, and wishful thinking. A belief caused in a problematic way is rotten at the root. A theory of justified belief should therefore concentrate upon the psychological *causation* of beliefs, that is, the cognitive processes that *produce* beliefs. If we can ascertain what constitutes a well-produced belief, then we shall be well on our way to arriving at a set of necessary and sufficient conditions for justified belief.

To answer the question of what type of causation confers justifiedness, Goldman looks first at typical faulty processes of belief formation to ascertain what such process have in common in order to prescribe its opposite as necessary for justified belief. Typical faulty belief-forming processes are confused reasoning, wishful thinking, reliance on emotional attachment, guessing, and hasty generalization. According to Goldman these faulty belief-producing processes all have in common the feature of *unreliability*—they produce proportionately high amounts of erroneous beliefs. On this account there should not be much objection to Goldman's assessment of the core negative feature of unreliability. What then are typical examples of satisfactory belief-forming processes? Goldman thinks that standard perceptual processes, memory processes, good reasoning, and introspection qualify. And what do these processes have in common? *Reliability*—these processes have a tendency to produce a high proportion of true beliefs over false beliefs. Goldman then makes the decisive step of connecting reliability to justifiedness—a belief *p* is justified for S at *t* if *p* has been formed by a reliable cognitive process (345).

Many terms in this base clause require further clarification. Firstly, Goldman considers there to be degrees of justification. For example, we are inclined to say that John who saw an object in clear light, with good vision, and took ample time to attend to the object has a more justified belief than Susan who saw the same object only briefly, in bad light, and without her glasses. Justifiedness comes in degrees and the degree of justifiedness is linked to the reliability of the process.[12] Perceptual processes in John's case are more likely to yield true beliefs whilst perceptual processes in Susan's case are more likely to yield more false beliefs. Hence, the more reliable the process, the more justified the belief.

[12] Chisholm (1966, 1977) stressed the idea of degrees of epistemic status.

A second clarification concerns the question of just how reliable a process has to be in order for it to qualify as reliable. Goldman says, "a precise answer to this question should not be expected. Our conception of justification is vague in this respect" (346). In *Epistemology and Cognition* (104-105)[13] Goldman says that a process with a reliability of less that .50 would not count as reliable. That seems clear enough. Regarding the required level above .50, Goldman writes the process should be appreciably higher than .50 (103). But at exactly what level above .50 does a process then become reliable? Goldman is unsure. It is difficult to pinpoint a satisfactory level of justification. Some would be happy with .75 whilst others might insist on a more significant level, such as .90.

It is important to stress that on Goldman's account perfect reliability is not required for a belief-forming process to qualify as reliable. A reliable perceptual process, for example, may on occasion produce a false belief. Yet the process as a whole remains reliable. Hence, it follows that a cognizer can have a false belief that is justified. When a justified belief is true then we begin to consider the question of knowledge. Truth need not be present for a specific belief to be justified. Under Goldman's analysis, however, a justified belief is frequently true since it is produced by a reliable process. That perfect reliability is not needed follows from the required ratio and degrees of reliability. If a process satisfies the required ratio, then a belief produced by it is justified, but only weakly so. If a process has a high truth ratio of say .94, a belief produced by that process is strongly justified. A process that has a reliability ratio of 1 is perfectly reliable. That such a process even exists is doubtful. But to raise the bar this high for justified belief is beyond the call of duty.

[13]All references in *Epistemology and Cognition* will refer to the 1986 Harvard University Press edition printed in Cambridge, Massachusetts.

A third clarification concerns the word 'tendency' in the phrase "the tendency of a process to produce beliefs that are true rather than false." Tendency can be understood in two ways. One, the long-term frequency of outcomes in actual situations. Two, long-term outcomes in counterfactual situations. Goldman claims that our conception of justification is too vague to adjudicate which meaning is intended (346). On this score Goldman does not offer much clarification. He merely draws our attention to nuances within the base clause. In *Epistemology and Cognition*, however, Goldman is much clearer on this issue. There Goldman follows a counterfactual conception of reliability that concerns the tendency of a process to produce more true than false beliefs in possible realizations.[14]

2.4 *Cognitive Processes*

Goldman understands a psychological process as a *functional operation* that takes inputs and generates outputs. The outputs are states of believing a certain proposition at a specific time. For example, the perceptual process receives inputs from the environment through the sensory organs and generates beliefs about the layout of the environment. A reasoning process takes antecedent beliefs as inputs and produces new beliefs based upon those initial beliefs.

According to the way Goldman has defined processes, belief-forming processes are to be understood as *types*. An instantiation of a belief-forming process is then said to be a *token* of that specific process type. For example, my seeing a dog in the distance and forming the belief *p* 'that there is a dog in the distance,' is a token of the perceptual process type. Goldman interprets processes as types because only types can be statistically analyzed for reliability; only when there are numerous output beliefs can a truth ratio be established. A

[14] See chapters 4 and 5 where I go into this issue in more detail.

truth ratio cannot be established for a single token. Thus, if the perceptual process type proves to generate true beliefs 80% of the time, then we say that token output beliefs produced by inputs from perception are reliable and therefore justified. For reasons that will become clearer in the later chapters, it will be useful to represent Goldman's functional understanding of process types diagrammatically.

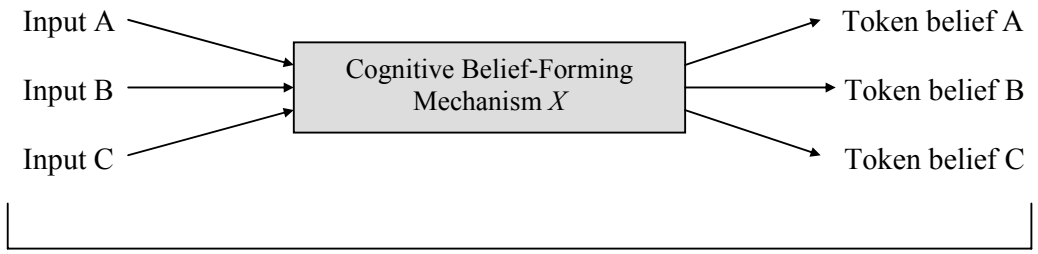


Fig. 2.1 Cognitive belief-forming process type of description *X*.

Take the above diagram to represent the visual process. 'Input A' would be the sensory stimulation caused by the presence of a dog in the distance. 'Token belief A' would be the belief *p* 'that there is a dog in the distance.' In- and outputs B and C would be other visual stimuli and beliefs about the environment. This input-output relation would then exemplify a token of the visual process type. In the second section of *Epistemology and Cognition* Goldman explores what cognitive science has to teach us regarding cognitive mechanisms, here represented by the gray area. In particular, when Goldman applies cognitive science to the epistemology of the perceptual process, we shall get a sense of how important it is for epistemology to learn from what cognitive science has to teach.[15]

2.5 *Generality and Extent*

[15] Cf. chapter 4.

Two further refinements of 'process' are needed. The first concerns the description of the *generality* of the process type. A process type can be described very broadly or very narrowly. This description can influence the degree of reliability of the process. For instance, if described very narrowly, there might be only one token belief of that process which, if true, will make that process type completely reliable, and if false, completely unreliable. So too, if a reliable type is described too broadly it will produce token beliefs that are intuitively unjustified and conversely an unreliable type described too broadly will include beliefs we intuitively consider as justified.

For the sake of elucidation and simplicity, let the process under discussion be the visual process. Now the visual process at a specific instant in time can be describe in different ways, some general or broad and others narrow or specific. For instance, when Anna looks out her window and sees a rose bush and formulates the belief *p* 'that there is a rose bush outside my window,' the visual process type that generated this belief can be described in many different ways. For instance, we could describe it merely as Anna's perceptual process. This would be the most general description of the process operating at that moment. Or we could attempt a very specific description such as, 'the visual process operating on Tuesday 24th February, 2004, at 3pm.' Other specific descriptions are also possible: 'processes that occur on Tuesdays,' 'processes concerning flora,' 'processes occurring at 3pm,' etc.

When a process is described very broadly, the reliability of that process is thereby affected in two distinct ways. Firstly, the reliability of the process as a whole is bound to be much lower than if it were described specifically. Anna's overall visual process probably has a reliability ratio that is not significantly high since on many occasions she forms false visual beliefs, such as when she sees an object at a distance without her glasses on. However, if we describe

the visual process at the time she forms the true belief that there is a rose bush outside her window as 'the visual process operating on Tuesday 24th February, 2004, at 3pm,' then her visual process so described has a reliability ratio of 1. So the way the process is described affects the reliability of the process.

Secondly, we intuitively think that a broadly described process can form both justified and unjustified beliefs. For instance, Anna's visual process, broadly described, can form justified beliefs when she is wearing her glasses and when Anna sees objects in good light, but forms unjustified beliefs when she is not wearing her glasses in bad light. If we describe her process broadly then all her visual beliefs will be either all justified or either all unjustified, depending on the overall reliability of her visual process. This is an unacceptable result since we cannot have some justified beliefs being judged as unjustified or, conversely, some unjustified beliefs judged as justified.

The problem with specific descriptions is that such descriptions will lead to judgments of justification that are contrary to intuition. In Anna's case, if we describe her visual process very narrowly, then, in the scenario where she forms a false visual belief, we will say that her belief is unjustified since that type has a reliability of 0. Yet, had we assessed the justifiedness of that token visual belief against the .85 reliability of her broadly described visual process, we would have judged that token visual belief as justified since her overall visual process is reliable. So beliefs we intuitively think are justified might be assessed as unjustified owing to a process type that is described too narrowly. The converse applies as well.

Lastly, process reliabilists must indicate the manner in which the relevant process type will be identified for each token belief for it is conceivable that a single token belief can be the outcome of many process types of varying reliability working in tandem. According to process reliabilism, the justifiedness of a belief depends upon the reliability of the process type that produced that token belief. If no process type can be identified then no judgment can be made as to the justifiedness of a token belief. This would be an undesirable result for process reliabilists. Taking all these problems into account we can appreciate the gravity of what has come to be labeled as 'the generality problem.'

Goldman proposes to solve the generality problem by describing processes in a content-neutral fashion. A content-neutral process is "required to admit as input beliefs (or other states) with any content" (346). Thus, a belief-producing process type cannot be described in such a way that it only admits beliefs or cognitive states as inputs that occur on Tuesday 24th February 2004 at 3pm. A process type must be described such that it can admit any relevant input. This approach to the problem seems to avoid both of the problems raised above. Firstly, if we are required to describe the relevant process type in a content neutral fashion, then we do not arrive at a process type that is so specific that it is always reliable or always unreliable. This predicament, which results from overly specific description, is prevented by forcing the input side to be content-neutral. I assume that Goldman thinks that a content-neutral description will not be excessively broad that it results in a single process producing beliefs of varying epistemic status such that a justified belief is considered unjustified or an unjustified belief justified.

Secondly, in response to the problems arising from descriptions that are too specific, the only reason that there is a clash with intuition is because the process type is described too

narrowly. The content neutral restriction disallows such specific descriptions. We are lulled into thinking Anna's belief unjustified because of the excessive specifics of the description of her visual type operating at that moment. If Anna's visual process is reliable 85% of the time, then her belief *p* is justified to the degree of .85. [16]

The second refinement of 'process' concerns the *extent* of the process. Beliefs often have a causal ancestry that includes events in the agent's environment. Should such events be included among the inputs of the belief-forming process or should only internal cognitive events be included? Goldman adopts the second approach because the justifiedness of beliefs pertains to cognitive operations more than it does to external events (347).[17]

2.6 *Initial Formulation and Refinements*

2.6.1 *Conditional Reliability*

With these clarifications and refinements in mind, Goldman advances the following base-clause for justified belief:

(1) If S's believing *p* at *t* results from a reliable cognitive belief-forming process then S's belief in *p* at *t* is justified.

(1) contains no epistemic terms and is thus acceptable as a base clause. However, it is too strong. Cognitive processes cannot be expected to be reliable if their inputs are false. A clause of *conditional reliability* has to be entered such that a cognitive process is deemed

[16] The generality problem is discussed in chapter 5. I shall therefore not go into a detailed discussion of it here.

[17] This distinction will become important when I offer a solution to the generality problem.

reliable when a sufficient ratio of its outputs are true given that its inputs are true. There are at least two different categories of processes operating in belief formation. The first takes as inputs sensory stimulation from the environment. The second has beliefs as inputs. An example of the first process would be the visual process whilst an example of the latter would be the inferential process. It is with regard to the second that Goldman is concerned that if the input beliefs are false then it is unlikely that these processes will be reliable. Hence his claim that a clause of conditional reliability needs to be worked into the formula of process reliablism. Formulaically, Goldman distinguishes belief-dependent and belief-independent cognitive processes as follows (347):

(2) If S's belief in *p* at *t* results from a belief-*independent* process that is (unconditionally) reliable, then S's belief in *p* at *t* is justified.

(3) If S's belief in *p* at *t* results from a belief-*dependent* process that is (at least) conditionally reliable, and if the beliefs (if any) on which this process operates in producing S's belief in *p* at *t* are themselves justified, then S's belief in *p* at *t* is justified.

Since the justifiedness of a belief can depend upon the truth of antecedent beliefs, process reliablism is therefore a historical theory. Historical reliabilism differs from foundationalism and some forms of coherentism in that those theories make the justificational status of a belief dependent upon current mental states alone. Tracing the genetic history of a belief is a novel introduction to the question of justified belief. Reliabilism thus stands out as a diachronic as opposed to a synchronic theory of justified belief. Causal ancestry of beliefs is

also a feature of Goldman's externalism since in many cases it is impossible for the agent to know the causal ancestry of a belief.

2.6.2 *Modality*

When it comes to modality across possible worlds, Goldman at the time of writing this paper was unsure of which modal indicator would be best for process reliabilism. For example, wishful thinking is unreliable in the actual world but might be reliable in a possible world *W* where a benevolent demon arranges it such that beliefs formed by wishful thinking are true. In this instance, would beliefs produced by wishful thinking be justified in *W*? Goldman considers three options. One, beliefs formed on the basis of wishful thinking in *W* would be justified. Since wishful thinking produces more true beliefs than false beliefs in *W*, it is a reliable process in *W* and therefore beliefs produced by wishful thinking in *W* are justified. As long as a process is reliable relative to the world in which it is being used, beliefs produced by that process are justified in that context.

Two, justifiedness is the propensity of a process to produce true beliefs in natural or non-manipulated environments. Since the environment in *W* is manipulated, beliefs formed in *W* by wishful thinking are not justified. The third option is that a belief is justified in *W* iff it results from a process that would be reliable in the actual world. We formulate our beliefs about which processes are reliable in the actual world and then apply them to all possible worlds. Since wishful thinking is not reliable in the actual world, it is not reliable in *W*.

The first is the world relative criterion of reliability, the second is normal world chauvinism, and the third is actual world chauvinism. The modal indicator will have to be built into the

final formulation of process reliabilism. At this point in his thinking on justified belief Goldman is not sure which solution is best (349). The debate over these options will occupy us in chapters 6 and 7. I therefore postpone discussion of this issue until then.

2.6.3 *Undermining Cognitive States*

A further revision of process reliabilism is necessary owing to the following counterexample. At this point in the theory a belief is justified if it is produced by a reliable process. However, consider the case in which Jones *reliably* forms a belief *p*, but then justifiably comes to believe that *p* is an *un*justified belief. In such a case we would consider the belief *p* to be unjustified even though it is reliably produced. Goldman's example is as follows:

> Suppose that Jones is told on fully reliable authority that a certain class of his memory beliefs are almost all mistaken. His parents fabricate a wholly false story that Jones suffered from amnesia when he was seven but later developed *pseudo*-memories of that period. Though Jones listens to what his parents say and has excellent reason to trust them, he persists in believing the ostensible memories of his seven-year-old past. Are these memory beliefs justified? Intuitively, they are not justified. But since these beliefs result from genuine memory and original perceptions, which are adequately reliable processes, our theory says that these beliefs are justified (350).

What is wrong with Jones's beliefs about his childhood is that he has failed to use evidence from his parents—a generally reliable source of information. Had he used the evidence he would no longer hold the beliefs he now currently does. Jones has failed to make use of a reliable process that he could and should have used. This failure marks a fundamental change that has to be made to process reliabilism: the justifiedness of a belief is not only dependent upon the process by which it was produced. Justification is further dependent upon reliable processes that the agent could have used in addition to the process he has used. If Jones fails

to use these additional reliable processes, then his belief is unjustified even though it is formed by a reliable process.[18] This engenders a further reformulation of process reliabilism:

(4) If S's belief in *p* at *t* results from a reliable cognitive process, and there is no reliable or conditionally reliable process available to S which, had it been used by S in addition to the process actually used, would have resulted in S's not believing *p* at *t*, then S's belief in *p* at *t* is justified.

This essentially concludes Goldman's account of justified belief.[19] At this point it is advisable to recapitulate the insights and strengths of process reliabilism.

- It does not contain any epistemic terms in its base clause.
- It adequately explains why a belief is justified—justifiedness depends upon the causal connection between a belief and what makes the belief true. Reliabilism is therefore an informative and explanatory theory that does not suffer from the easy counterexamples facing those theories of justified belief that make no reference to the causal ancestry of a belief.
- Reliability and justifiedness come in degrees.
- Since a justified belief is produced by a process that produces more true beliefs than false beliefs, a justified belief can be false. Reliabilism allows for fallibilism.
- Process reliabilism avoids some of the problems associated with the KK or JJ Principle and of internalism.

[18] The details of this condition will be discussed in chapter 3.

[19] The final part of Goldman's paper deals briefly with a second use of 'justified' in which a person would be justified were he to come to hold a certain belief. This feature of *ex ante* belief does not feature in Goldman's later work. I therefore focus on *ex post* justified belief, Goldman's main explanandum.

- As a diachronic theory, it incorporates the clause of conditional reliability to account for the problem of a conditional belief-dependent process that has input beliefs that are false.
- It accounts for defeating cognitive states of the individual.
- It benefits from the strengths of externalism.

2.7 *Recapitulation*

This chapter traced the development and formulation of process reliabilism. The genetic makeup of process reliabilism owes much to the failures of earlier traditional accounts of justified belief. Goldman coalesced the lessons learnt from the failures of these accounts with the strengths of descriptive psychological epistemology to formulate a theory that adequately explains and accounts for the justifiedness of a belief. In particular, Goldman understood that the causal history of a belief is the main point over which these earlier theories fumbled and is the strength of the Quine vision. Drawing attention to the causation of beliefs, Goldman concluded that it is the reliability of belief-forming processes that should be the determining factor of the justifiedness of a belief. Homing in on these processes, Goldman developed the theory of process reliabilism that epitomized the externalist ethos and that contained no definitional circularity with its insistence that the base clause contain no epistemic concepts. Proceeding with this foundation, Goldman has been able to avoid the easy counterexamples that dog other theories of justified belief.

Chapter 3

The Clairvoyance Problem

Chapter 2 closed with a list of process reliabilism's strengths. Nonetheless, despite its apparent merits, critics have found process reliabilism unsatisfactory for several reasons. One of the more serious difficulties raised against process reliabilism is the clairvoyance problem—the topic of this chapter. I shall discuss at length exactly why it is such a serious problem and why Goldman needs to provide a satisfactory answer to the problem. After some preliminary analysis of the problem in the literature I shall show that Goldman provides an adequate solution to the problem.

3.1 *The Problem*

The problem of clairvoyance (clairvoyance being the psychic power to perceive the truth of external states of affairs at a distance) singles out the *sufficiency* condition of reliability for justification. If we can imagine a case where a person has a reliably produced belief that we would judge as unjustified, then we would have effectively demonstrated that reliability is not sufficient for justification. Many think that the clairvoyance cases achieve just this. Laurence BonJour discusses the clairvoyance problem at length (2001: 17-25). Even though BonJour's

target is Armstrong's externalist theory of knowledge, his clairvoyance examples have come to be applied to Goldman's theory of justified belief by others (Pollock & Cruz 1999: 114; Steup 1998: 164, 171) and Goldman himself has considered the potential difficulties clairvoyance might pose for his own version of reliabilism (1986: 109-112). Of the four cases BonJour considers, the fourth case presents the toughest scenario for process reliabilism. It differs from the first three cases in a significant aspect. I will therefore divide my attention between the first three cases and the fourth case.

Since all four cases concern a clairvoyant coming to believe the true belief that the President is in New York City, I shall merely mention the differences between the first three cases instead of quoting each at length. The first case concerns a completely reliable clairvoyant Samantha who believes that she has the power of clairvoyance though she has no reasons for or against this belief. Samantha forms the true belief that the President is in New York City but she also has evidence against the President being in New York City. The second case concerns Casper who is not a completely reliable clairvoyant—he has formed some false beliefs on the basis of his clairvoyant power. Casper has no reasons for or against the fact that he is a clairvoyant. Casper then comes to form a true clairvoyant belief that the President is in New York City. The third case concerns Maud who believes she has the power of clairvoyance even though she has no reasons for this belief. She then comes to form the true clairvoyant belief that the President is in New York City even though she has been presented with scientific evidence against the existence of a power of clairvoyance.

There are two common features that these three cases share. The first is that each cognizer has no reason for or against the belief that he or she has the power of clairvoyance. The second is that each agent has some evidence weighing against the belief that the President is

in New York City. In Samantha's case, it is evidence in the media that the President is in Washington, D.C. that day. Casper has the evidence from past experience of forming false beliefs based on his supposed clairvoyance power. Finally, Maud has scientific evidence negating clairvoyance.

BonJour thinks that each case shows that it is possible to form a true belief based upon the reliable process of clairvoyance yet the consequent belief is not justified. The belief N "that the President is in New York City" is not justified nor counts as knowledge because in each case the cognizer is being highly irresponsible in believing N because of the defeating evidence against the belief N. BonJour concludes from this that if it is possible for a reliable process to produce a belief that is not justified, then reliability is not sufficient for justification. Hence he takes the sufficiency condition of reliability for justification to have been disproved by the clairvoyance counterexamples.

Applying BonJour's case to Goldman, process reliabilism would judge the belief N "that the President is in New York City" to be prima facie justified because it is produced by a reliable belief-forming process. But many might intuitively consider the belief N to be unjustified because in each case the agent has reasons for not believing N. Even though Goldman decides to handle this case with the use of the distinction between *ex ante* and *ex post* belief (1986: 109), the main thrust of his counterargument deals with process reliabilism's non-defeating clause. According to (4), Goldman's final formulation of process reliabilism, if the subject could have used an additional reliable process such that if he had used that process he would not believe his present belief, though justifiably produced, then the first belief is not justified. In each of the three foregoing cases, each agent should have used the additional reliable process of consulting evidence, contrary evidence being the important evidence in

these cases. Hence the failure to use a further reliable process that would have had each agent not believing N defeats the justifiedness of each agent's belief N. This non-defeating clause aligns process reliabilism with the intuition in each of the cases that belief N is not justified. So clairvoyance under these circumstances does not present a difficulty for process reliabilism.

The fourth case of clairvoyance is tougher for Goldman in that there is reliable clairvoyance with no defeating evidence.

> Case IV: Norman, under certain conditions that usually obtain, is a completely reliable clairvoyant with respect to certain kinds of subject matter. He possesses no evidence or reasons of any kind for or against the thesis that he possesses it. One day, Norman comes to believe that the President is in New York City, though he has no evidence either for or against this belief. In fact the belief is true and results from his clairvoyant power, under circumstances in which it is completely reliable.

Before getting into an assessment of this case, I want to make an observation about the dynamics of the case. It is quite inconsequential that the process at work is the process of clairvoyance. It could be any process that the cognizer has no evidence for thinking herself to possess. The more famous example of this type of scenario in the literature is the case of the naïve chicken sexer.[20] This person can supposedly reliably identify the sex of chickens at the stage when the sex is usually unidentifiable via a process that the cognizer is unaware that she possesses. The chicken sexer, like Norman, has a reliable process that she is unaware that she possesses. Is the chicken sexer's belief in the sex of the chicken justified if her sex identification process is reliable? This is the identical question to the question over Norman's belief N.

[20] See, e.g., Lewis (1996), Sainsbury (1996), and Brandom (1998).

Is Norman justified in believing N? BonJour thinks that reliabilism would say that he is whilst intuitively BonJour thinks that many would not think such a belief is justified, which once again challenges the sufficiency condition of reliability for justification.[21] If Norman is not justified in believing N then reliability is not sufficient for justification. So too, if we think that the chicken sexer does not have a justified belief, then once again reliability is not sufficient for justification.

Goldman handles the Norman case, and by consequence the chicken sexer case, as follows. Goldman can claim that BonJour's case is internally problematic and therefore deceptive. If I were uncertain whether I had clairvoyant powers, I would take a belief I assumed was formed by this power and would ascertain through evidence whether it is true or not. Thereafter every time I formed a belief I thought was based upon my supposed power of clairvoyance I would attempt to ascertain its truth or falsity using evidence. If it were true, putting aside inductive difficulties, I would then have evidence for my power and a reason to believe in its reliability. I would then have evidence from my past experiences of beliefs formed by this power that I did in fact have such a power of clairvoyance. Then my clairvoyant beliefs would be justified. Since Norman does not have any evidence for his clairvoyant powers, Goldman says, "he is *ex ante* justified in believing that he does not possess reliable clairvoyant processes. This undermines his belief in N. Thus the undermining clause … handles BonJour's cases" (1986: 109). Since supporting evidence is a reliable process that ought to be

[21] A second response to the clairvoyance problem is that Norman, and by consequence the chicken sexer, does have a justified belief and that the intuition to think that they don't is an incorrect intuition. This is a position suggested by Mark Leon in discussion. This response adequately responds to the type of scenario raised in the Norman case. As long as there is a reliable process responsible for the belief N or the sex of the chicken, then the belief is justified. Since this chapter will be devoted to an exposition of Goldman's response to the clairvoyance problem, I shall not explore the line taken in this second response. I mention it as an alternative to the response adumbrated in the chapter. I think either response is satisfactory. Either way the sufficiency condition of reliability for justification is secured.

used, and Norman has failed to use such a process, Norman would not be justified in believing N. For Goldman, negative evidence against or a lack of positive evidence for believing a certain proposition is equivalent to the believer who has not used the reliable process of consulting reliable evidence for one of his beliefs. This amounts to the negative appraisal of 'unjustified' for Norman's belief, which consequently aligns process reliabilism with certain intuitions that Norman's belief N is unjustified.

3.2 *Clairvoyance Revisited*

Goldman seems confident that the non-defeating clause of simultaneous undermining cognitive states he built into process reliabilism overcomes the problem of clairvoyance. Yet Matthias Steup understands the problem in a manner he thinks indicates the inadequacy of Goldman's response. It is precisely the problematic nature of the non-defeating clause that Steup thinks the clairvoyance problem points out. Steup writes as follows (1998: 165):

> Process reliabilism is supposed to be a naturalistic theory—a theory that allows us to evaluate beliefs without applying evidentialist considerations. However, when process reliabilism is applied to particular cases, evidentialist considerations make their entry through the backdoor. In order to handle cases in which a reliably produced belief is defeated by contrary evidence, process reliabilists must introduce a process such as *taking into account contrary evidence*. And in order to handle clairvoyance cases in which supporting evidence is missing, they must appeal to a process such as *taking into account the absence of supporting evidence*. It could therefore be argued that, to get the right results, process reliabilists must ultimately employ evidentialist considerations. It could be doubted, therefore, that process reliabilism is in fact a genuine alternative to traditional evidentialist theories. (original emphasis)

Steup thinks that process reliabilism is about belief-forming processes. Resorting to the use of evidence should not have a place, therefore, in a naturalistic epistemology such as process reliabilism. Resorting to evidence makes reliabilism no different to those internalist theories of justification that are evidentialist in nature. Hence the non-defeating clause that brings in evidentialist considerations has no legitimate place in the final formulation of process reliabilism. Therefore he thinks that Goldman's solution to the clairvoyance problem does not work.

Without committing myself to Steup's line of argument, let me clarify the implications of Steup's claim for process reliabilism. According to Steup, the use of evidence would be a violation of Goldman's own stand against the JJ Principle regarding justified belief. It is Goldman's position that a subject need not believe that she is justified in believing in order for her belief to be justified. But in his response to BonJour's clairvoyance cases Goldman insists that each clairvoyant should have confirmed or denied the truth of N based upon evidential considerations. Steup would claim that Goldman is insisting that the agent justify a belief formed by clairvoyance. If an agent forms a belief *p* by the process of clairvoyance, then that belief *p* should be justified or unjustified based upon the reliability of that clairvoyance process alone. The gist of Steup's claim is that evidential considerations are not part of the necessary and sufficient conditions for a belief to be justified according to process reliabilism. The use of evidence is a classical case of a subject attempting to ratify a belief formed by another cognitive process. In Jones's case, Goldman insists that Jones use evidence from a reliable source (his parents) to question the justification of a belief produced by his reliable cognitive process of memory. In effect Steup is claiming that Goldman's insistence that the clairvoyants use evidence amounts to *internalism* and exactly the opposite

of what Goldman wished to achieve with his externalist and naturalized reliabilism. The non-defeating clause is out of sync with the ethos of the whole reliabilist project.

Goldman thought he could satisfactorily defend process reliabilism by using the non-defeating clause he built into (4) by means of the Jones example. Yet Steup claims that he has shown Goldman's defense to be unsatisfactory. At the bottom of Steup's charge lies the claim that taking into account evidence for a belief has no place in a naturalistic epistemology.

3.3 *A Second Line of Defense*

These are important arguments against the non-defeating clause. Yet, I think that I can explain Goldman's response in a way that avoids these problems. I shall thus be showing why Goldman's response to the clairvoyance problem is adequate. I shall go one step further than Goldman in adding two further necessary clauses to the formulation of process reliabilism that make the subtleties of Goldman's position more apparent.

My explanation of Goldman's response depends upon an understanding of how the clairvoyance process works vis-à-vis the reasoning process. It is my opinion that the holding of belief N involves two stages. The first concerns the clairvoyance process whilst the second concerns the reasoning process. Let the diagram below represent this two stage process.

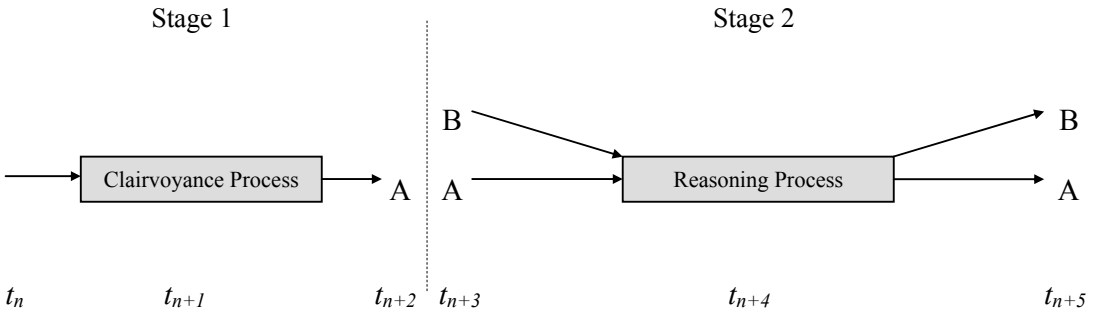


Fig. 3.1

The reason I say that the reasoning process is involved when a belief is formed by the clairvoyance process in BonJour's cases is because beliefs formed by clairvoyance are likely to appear odd to the cognizer. A belief that arises from the ability to perceive the truth of external states of affairs at a distance is likely to raise the cognizer's suspicion. For example, if every time a certain shopkeeper in a different country rang up a product amounting to exactly $4.52, I formed the belief *p* that 'Mario just rang up a product amounting to $4.52,' I think I would become suspicious of such beliefs. This sudden acquisition of belief *p* would cause my reasoning process to come into effect. I would ask myself why it is that I am suddenly acquiring this belief *p* on a frequent basis even though I do not know who Mario is or where he is. So too, I claim, when a clairvoyant comes to acquire the belief N, the reasoning process is likely to be involved, either simultaneously or consecutively to the clairvoyant process, in the consideration of N since N is likely to appear odd or suspicious to the cognizer.[22] The same applies in the case of the chicken sexer. When a chick appears before our chicken sexer and she forms the belief *q* that chick A is female, that cognizer's reasoning process is likely to become suspicious of the belief *q* since the sudden acquisition of beliefs about the sex of chickens based upon no reason whatsoever is quite contrary to the empirically minded nature of cognizers.

Getting back to the clairvoyance process, which probably works in tandem with the reasoning process, such a process delivers an output that then features as an input to the reasoning process. Using our initial diagrammatic understanding of cognitive processes, let the diagram below represent a more detailed account of Maud's reasoning process at the point in time

[22] I do not wish to commit myself to any form of coherentism when I claim that belief N is suspicious relative to cognizer's other beliefs. Whether the reasoning process is likely to identify suspicious beliefs based upon a coherentist criterion is something that would require further investigation. It might well turn out that this is how the reasoning process does work on occasion in which case I see no reason to ignore its coherentist functioning.

when she has to consider the proposition N. For the sake of simplicity, assume that the reasoning process is a belief-dependent process.

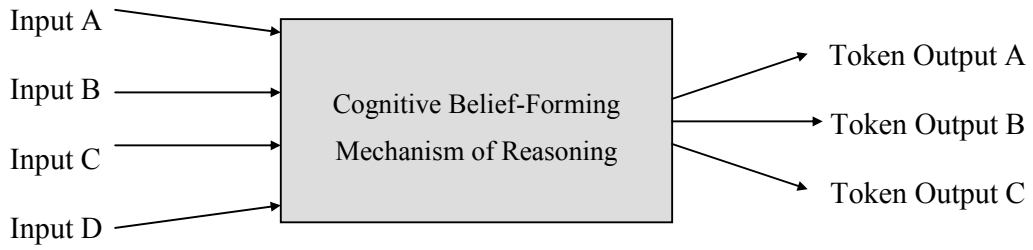


Fig. 3.2

Taking into account the specifics of the case, the following key to the diagram emerges.

- Input A — Maud's belief that she has the power of clairvoyance.
- Input B — Scientific evidence against the existence of clairvoyance.
- Input C — Clairvoyant output N, "that the President is in New York City."
- Input D — Belief Q, "that there is no supporting evidence for belief N."

I think the above key accurately depicts the beliefs Maud is reasoning with at the time. Let there also be a set of background beliefs P that incorporate beliefs that shape the nature of the reasoning process. Beliefs in this set would include the need for evidence to corroborate a belief in the face of contrary evidence, beliefs about what constitutes good reasoning, skepticism towards clairvoyance, the need to be a rational agent, logical truths, facts about the world, etc. Taking into account beliefs A through D, there are several possible outputs that Maud's reasoning process can generate depending on Maud's strength and degree of rationality in reasoning. Possible outputs are:

- Token Output A — Belief N.
- Token Output B — Suspension of belief.
- Token 'Output' C — No belief.

The way I have understood Goldman, and herein lies my defense of his use of the non-defeating clause to the clairvoyance problem, is that the only acceptable output token in Maud's case is C because token C is the conclusion that a rational reasoning agent would arrive at taking into account inputs A through D. Token C is the product of good reasoning—a reliable cognitive process. Token A is the product of bad reasoning—an unreliable process. Hence, in Maud's case, process reliabilism would pronounce Maud's belief N to be unjustified because it is the product of bad reasoning. Maud has effectively taken a reliable cognitive process and distorted its efficacy. Maud's reasoning process is therefore not functioning properly.

By proper function I mean that a process should function in such a way that it does the job it ought to do.[23] A process functions properly when it does that which processes of that type do. Processes have the job of converting inputs I_A, of a certain specification, into outputs O_A, of a certain specification. For example, the reasoning process has the job of taking belief inputs I_B and converting them into output beliefs O_B. How the reasoning process came to have this function need not concern us here. If it is by God's design or evolution is inconsequential. What does concern us is that a process functions properly only if it effectively converts specified inputs into specified output beliefs according to its job specification. If process *x* is responsible for converting input I_X into output O_X, and it does so, then process *x* is

[23] Others, notably Plantinga (1993b), have understood the notion of 'proper function' in different ways. I wish to distance myself from these other ways of understanding the term with the explanation I give of the term immediately in the paragraph concerned.

functioning properly. However, if process *x* converts input I_X into output O_Y then process *x* is not functioning properly. In Maud's case her reasoning process functions properly iff it would have Maud not believing N taking into consideration inputs A through D with background beliefs P.

Maud's belief is thus unjustified because she is not reasoning properly. It is not because she didn't use evidence or that she has failed to justify her clairvoyant belief. Rather, her token belief N is unjustified because the reasoning process was not functioning as it should be. A rational agent would take into consideration contrary evidence or the lack of evidence for his or her power of clairvoyance. Considering that humans are empirically minded about most of their beliefs, such an agent would rationally come to the conclusion of not believing N. Any belief resulting from improper reasoning is unjustified even though it may be true, as it is in the case of Maud's belief N. Process reliabilism then arrives at the same conclusion as our intuitions in judging Maud's belief N to be unjustified. The same applies to the other clairvoyants. Norman, for example, has failed to reason properly; he failed to attempt to corroborate the existence of his power of clairvoyance. This failure to reason properly causes process reliabilism to pronounce his belief N as unjustified. This same line of reasoning applies to Samantha and Casper.

What I have said regarding clairvoyance can be applied to the chicken sexer and shopkeeper cases. Believing that you have correctly identified the sex of a chick based on what appears to the cognizer as a 'hunch' or the sudden acquisition of the belief in Mario ringing up a product amounting to $4.52 amounts to reasoning improperly on the two-stage understanding of the clairvoyance process. A cognizer who is reasoning properly is bound to reason against believing these beliefs. There is therefore a defeating cognitive state undermining the belief.

This brings me to the two important additions I wish to make to process reliabilism: the *proper function* and *clashing* clauses.

3.4 *Proper Function*

In order for this interpretation and defense of Goldman to work, however, it needs to be built into the final formulation of process reliabilism. A clause needs to built into (4) that requires that the cognitive process at work function properly. One cannot say that a belief is justified merely because the process at hand is reliable 85% of the time. For example, I think Goldman would be loath to pronounce the unsound belief "that the supermarket does not sell eggs because last time I went there they were out of stock" as justified if that belief is produced by a generally reliable reasoning process. Just because the supermarket was out of stock on my previous visit does not lead to the conclusion that the supermarket no longer sells eggs. Goldman should be interpreted as meaning that a belief is justified if it is produced by a reliable process that is functioning properly, as it is when it produces more true output beliefs. If an agent reasons properly, yet arrives at a false conclusion, then Goldman would say that that belief is a justified belief, albeit false. In the case of the agent who uses the reasoning process improperly but who produces a true belief nonetheless, Goldman would claim that the output belief is unjustified. This measure of proper function could be built into (4) as follows.

(5) If S's belief in *p* at *t* results from a reliable cognitive process, *this process functioning properly in the production of p*, and there is no reliable or conditionally reliable process available to S which, had it been used by S in addition to the process

actually used, would have resulted in S's not believing *p* at *t*, then S's belief in *p* at *t* is justified.

This formulation of process reliabilism has three distinct parts; one main clause and two non-defeating subordinate clauses. The main clause being, "If S's belief in *p* at *t* results from a reliable cognitive process … then S's belief in *p* at *t* is justified." The first non-defeating clause is, "this process functioning properly in the production of *p*," whilst the second is, "and there is no reliable or conditionally reliable process available to S which, had it been used by S in addition to the process actually used, would have resulted in S's not believing *p* at *t*."

It is important to stress at this point that my proper function clause should not be read as suggesting an internalist stance. There are internalists who use the language of responsible use when talking of justification.[24] There is a difference between responsible use and proper function. I think responsible use makes the agent more in charge of their cognitive processes than does proper function. Proper function is more of an externalist concept in that an agent need not be aware of whether his cognitive processes are functioning properly or not, assuming that it is even possible for an agent to be aware of this. Proper function is assessed from the "God's eye" point of view. But an agent is likely to be aware of whether or not he is using his cognitive processes responsibly or not. Responsibility, by definition, implies a degree of being in charge or control of something or someone. Proper function has no such implication. Proper function merely implies the ability to achieve the desired result by the appropriate means.

[24] See, e.g., BonJour 2001: 12.

With regards to its place in process reliabilism, proper function can be thought of in a similar way to Goldman's realist approach to truth. It is probably beyond an agent's power to access whether his cognitive processes are functioning properly. As long as the process concerned achieves the desired effect of producing the belief that the concerned process should produce under the circumstances,[25] then the process is functioning properly. This understanding of proper function means that 'proper function' should not be understood as an epistemic term, which fits neatly with Goldman's eschewal of epistemic terms in his explanans. Hence, I think it is safe to use the language of proper function without the fear of being misunderstood as backing an internalist perspective of proper use.

The insertion of a proper function non-defeating clause successfully defends reliabilism (and externalism) from the very point BonJour was getting at in his paper by bringing the clairvoyant cases—that an agent could reason irresponsibly yet succeed in having justified beliefs according to reliabilism. BonJour writes (2001: 17):

> The intuitive difficulty with externalism that the following discussion is intended to delineate and develop is this: on the externalist view, a person may be ever so irrational and irresponsible in accepting a belief, when judged in light of his own subjective conception of the situation, and may still turn out to be epistemically justified … This belief may in fact be reliable … But such a person seems nonetheless to be thoroughly irresponsible from an epistemic standpoint in accepting such a belief, and hence not justified, contrary to externalism.

Goldman would presumably agree with BonJour: an agent cannot be said to have a justified belief if such an agent is epistemically irresponsible by reasoning badly. The proper function non-defeating clause protects process reliabilism from such a charge. Proper function and responsibility are closely related terms—two agents, the one using a process responsibly and

[25] For example, if there is an apple on the table, the visual process should produce the belief that there is an apple on the table.

the other having his identical process functioning properly under identical circumstances, are likely to arrive at the same belief. It is thus possible for process reliabilism to avoid the agent who internalists call the irresponsible agent without having to commit itself to internalism if process reliabilism insists that the process operating does so in a proper manner. Process reliabilism achieves the same end as the internalist who approaches the problem from the (internalist) perspective of responsibility. The process reliabilist approaches the problem from the (externalist and realist) perspective of proper function.

The following example bears this difference out. Take two agents both looking at an apple on a table. Agent A is an internalist and agent B is an externalist. Both form the belief *p* "that there is an apple on the table." A says his belief *p* is justified because he has responsibly used his perceptual process. B is unsure whether his belief *p* is justified or not since a cognizer is not normally in a position to assess whether his or her processes are functioning properly. However, if it turns out that his belief *p* satisfies the conditions of (5), one of them being proper function, then it is justified. As we can see from this example, the two agents may well end up having a justified belief *p*, but each gets there by a different route. So we see that process reliabilism can include the responsible use of cognitive processes but in a way that is more in tune with the externalist ethos, namely by the inclusion of a non-defeating clause of proper function.

The understanding of Goldman evinced by this additional clause adequately responds to Steup's objection. The use of evidence does *not* act as a *post facto* metajustification of an earlier belief. Rather, evidence is part of the reasoning process that is *clashing* with the memory process, as in Jones's case, or the clairvoyance process, as in BonJour's cases. Jones has a belief *p* that his childhood memories are true. His reasoning process, the process by

which his mind is assumedly governed, then attempts to make sense of this belief from memory. Jones's reasoning process then judges that it is not prudent thinking to believe *p* owing to contrary evidence from his parents, a reliable source of information. The reasoning process should then have Jones not believing *p*. If this is the way the mind works, then the use of evidence does not constitute internalism. Jones and the clairvoyants in BonJour's cases are not involved in metajustification. They are involved in the clash between one reliable process against another. In the inevitability of such clashes Goldman is of the position that reasoning, if functioning properly, should be victorious in such a clash, especially if there is contrary evidence against the belief generated by the opposing process.

My interpretation of Goldman's response to the clairvoyance cases can be summarized as involving six steps. I will use Maud's case as the prime example. One, when a reliable clairvoyant acquires a belief by the clairvoyance process, the cognizer will become aware of such a belief since it is formed in a way other beliefs are not. This will initiate the reasoning process to consider the belief. Two, Maud is not reasoning properly since the only acceptable token output belief given inputs A through D with background beliefs P is not believing N. Three, Maud had available to her a more reliable process, i.e. proper reasoning, that would have had her not believing N. Four, this would amount to a clash of beliefs by two reliable processes. Five, this clash would be adjudicated in the favor of the reasoning process which would have had Maud not believing N. Six, therefore Maud's clairvoyant belief N is not justified because her reasoning process was not functioning properly and because if she had used her reasoning process properly there would have been a clash with the reasoning process that would have been adjudicated in the reasoning process's favor.

It might appear to some that my proper function clause is the same as Plantinga's theory of proper function as spelt out in his *Warrant and Proper Function*. There Plantinga claims that a belief has warrant if it is produced by a cognitive mechanism that is functioning properly, according to design, in the intended environment, with a high truth ratio. Whilst the term 'proper function' does come from Plantinga, I am proposing a different understanding of that term. Plantinga is offering a rival theory of justification to Goldman's.[26] I have no intention of doing such with the addition of the proper function clause. I have added the proper function clause to make more obvious some of the subtle points in Goldman's thinking. I am working from within Goldman's framework to strengthen Goldman.

To end this section on proper function, I wish to show that Plantinga's understanding of proper function is not necessary for justification. According to Plantinga, a process is functioning properly if it is functioning according to design in the environment for which it was designed (Plantinga 1993b: 3-17). Yet it is possible to have a justified belief produced by a process that is not functioning according to design. Consider the following case.[27] A person has a brain lesion such that the lesion causes the person to believe that he has a brain lesion. The person has no evidence for believing that he has a brain lesion. This process is completely reliable as every time it produces a belief, the belief is true since the production of the belief is causally linked to the truth of the presence of the brain lesion. On Plantinga's account these beliefs would not be justified since the cognizer's brain is not functioning

[26] For the reasons why Plantinga finds Goldman's process reliabilism inadequate, see *Warrant: The Current Debate*, chapter 9, section III. Moreover, Plantinga considers the generality problem to be a debilitating one for process reliabilism (1993a: 198-199, 1993b: 28-29). If I can show that the generality problem is not as serious as Plantinga suggests it is, then there is no reason to move away from Goldman towards Plantinga. Coincidentally, Goldman thinks that the generality problem troubles Plantinga's theory as well (Plantinga 1993b: 29). So moving towards Plantinga might merely amount to a swapping of one set of problems for another.

[27] A similar case is brought by Plantinga against Goldman (Plantinga 1993a: 207; 1993b: 4). I will alter the case slightly to use it against Plantinga.

according to design. Yet it seems evident enough that these beliefs would be prima facie justified since the process involved is reliable. The cognizer has 'acquired' a novel process that is more reliable than most of his other cognitive processes. Therefore proper function according to design is not necessary for justification.

On my account of proper function these beliefs are prima facie justified since the process by which they were produced reliably produces true beliefs. That process reliably produces the true belief that a brain lesion is present. According to my understanding of proper function it would appear that it makes no difference whether the process is functioning as designed. As long as the process reliably produces true beliefs, its output beliefs are prima facie justified.[28]

3.5 *Clashes and a Final Reformulation*

A final word about clashing processes is needed. If two reliable processes produce opposing beliefs, then the reasoning process, functioning properly, should adjudicate which position vis-à-vis the contested belief should be taken. For example, if my visual process generates the belief *p* that there is a swimming pool on the university campus, but my memory process generates the belief ~*p*, then my reasoning process must adjudicate the clash. This would typically involve the use of evidence either way, checking the disputed site, checking campus maps, etc. The reasoning process will then decide which belief should be held. If there is a clash between one of the processes and the reasoning process, functioning properly, I would say that the belief generated by the reasoning process should be held by the agent. This can be effectively incorporated into process reliabilism as follows:

[28] For reasons why I think Plantinga's proper function *in the appropriate environment* is incorrect, see chapter 5, section 5.5.

(6) S's belief *p* at *t* is justified if and only if:

a) S's belief in *p* at *t* results from a conditionally reliable belief-dependent cognitive process or an unconditionally reliable belief-independent cognitive process;
b) This process functions properly in the production of *p*;
c) There is no other reliable process available to S such that if it had been operating in addition to the process operating in the formation of belief *p*, S would not believe *p* at *t*;
d) The clash between this additional reliable process and the first process, or the reasoning process, is adjudicated by the reasoning process; the operation of the reasoning process suitably restricted by the proper function clause (b).

The final clause (d) is needed because there seems no reason why a clash between two reliable processes should be decided either way. The third clause requires the fourth clause to specify how and why such a clash must be decided. My emphasis on the supremacy of reasoning explains why in Jones's case his parents' testimony overrides his memory, both being reliable, and why the clairvoyants' belief N is unjustified. (6) also remains true to Goldman's project; it contains no epistemic terms, it concerns psychological processes, is true to externalism, diachronic, and pays attention to the causal ancestry of a belief.

3.6 *Recapitulation*

This chapter devoted attention to the clairvoyance problem. It seemed at first that Goldman could easily counter BonJour's clairvoyance challenge with his non-defeating clause, the

impetus of which was the Jones case. However, Steup showed why some might think Goldman's defense inadequate as the clairvoyance problem not only challenged the sufficiency requirement of reliability for justifiedness, but that it also managed to bring into question the very legitimacy of the non-defeating clause. The use of evidence in the non-defeating clause is supposedly contrary to reliabilism's ethos.

I endeavored to provide a solution to this objection that would amount to a definitive defense of process reliabilism against the clairvoyance problem. This defense rests upon an interpretation of Goldman's initial response to the clairvoyance challenge, which involved undermining cognitive states and the use of evidence. My response has two phases. The first concerns proper function whilst the second concerns clashes between beliefs produced by two reliable processes. I averred that Goldman could be understood to mean that the reason process reliabilism deems the respective beliefs of Jones and of BonJour's clairvoyants to be unjustified, despite such beliefs being produced by reliable processes, is because in each of these cases we have an instance of bad reasoning. And bad reasoning amounts to the improper functioning of the reasoning process. When an agent does not use their mental faculties in a way that would be classified as proper, then even if that belief is true and produced by a reliable process that belief is deemed unjustified. This is why I thought it necessary to add a proper function clause into the final formulation of process reliabilism. Furthermore, if the clairvoyants had reasoned properly, then there would have been a clash between the reasoning process and the clairvoyance process. In such instances when two reliable processes produce true beliefs that are in opposition to one another, the reasoning process, functioning properly, should adjudicate the clash. If the clash is with the reasoning process, the belief produced by the reasoning process, functioning properly, should be the

belief that the cognizer eventually holds. With these two additional clauses I feel confident that the clairvoyance problem can be satisfactorily handled by process reliabilism.

Chapter 4

Rule Reliabilism (1986)

Goldman's reliabilist theory of justified belief reaches its theoretical zenith in *Epistemology and Cognition*. There process reliabilism is developed within a rule framework; hence the name 'rule reliabilism' associated with the reliabilism adumbrated in that work. Rule reliabilism is a more embellished form of process reliabilism with a few theoretical amendments to account for difficult cases. Even though the two theories are essentially the same, I have divided my attention between process reliabilism and rule reliabilism into two chapters in order to impress upon the reader the development in Goldman's work over the years.

In the second part of *Epistemology and Cognition* Goldman investigates the findings of cognitive science to ascertain whether there are cognitive processes that are reliable in the sense that he has stipulated in the first half of the book. Together these two parts of the book constitute epistemics—Goldman's multidisciplinary conception of epistemology. With regards to the second part of the book, I shall concentrate upon Goldman's investigation of the way cognitive science understands the perceptual process to assess the importance of his project of epistemics. This assessment will establish whether there is anything which

cognitive science can teach traditional epistemology, and, if there is, what impact might be made on the latter.

Epistemology and Cognition is a book that would require an extensive response to account for all its insights, arguments, additions to traditional epistemology, and its novel treatment of issues from cognitive science. Such a response is unfortunately beyond the scope of my project. This chapter will therefore concentrate upon those areas that are most pertinent to the project at hand. Since the theoretical foundations and formulations of Goldman's reliabilist approach to justified belief have already been covered in chapter 2, this chapter will cover, in particular, theoretical embellishments and additions to process reliabilism such as an analysis of the shortcomings of other criteria for justification; a clarification and defense of the truth-linked character of rule reliabilism; Goldman's introduction of a modal operator for reliabilism; and the levels of justification, all of which are significant elements introduced in *Epistemology and Cognition* that demand our attention and evaluation.

4.1 *Justification and a Rule Framework*

There are several reasons why it makes sense to approach the question of justified belief in terms of a rule framework. The first reason amounts to Goldman's impression that such a framework is warranted for semantic reasons (59). A cognizer can be said to have a justified belief so long as he has followed the correct procedure in arriving at that doxastic state. In deontological language, the cognizer has 'permission' to hold that belief after following the rules pertaining to doxastic states.

Secondly, a rule system acts as a neutral framework by which theories of justification can be compared. A rule framework is thus a useful analytical tool. Lastly, a rule framework allows for instructive parallels between moral, social, and epistemic evaluation. As justification features in all these domains, having a common framework helps clarify parallel and contrasting aspects of justification in these three areas that would not be as easy without a common analytical structure. The first two reasons are adequate for our purposes. Goldman's interesting comparison between justification in these three areas is impressive but unfortunately beyond our scope. Suffice it to say that Goldman's sensitivity to the use of the word 'justification' in other areas of philosophical interest means that his analysis of it in the epistemic arena is more enlightened and in tune with our general use of the word.

The following principle represents the rule framework for justification (59):

(P1) S's believing *p* at time *t* is justified if and only if

S's believing *p* at *t* is permitted by a right system of justificational rules (J-rules).

(P1) expresses a semantic truth about the language of justified belief that is largely a neutral principle and one which epistemologists from different persuasions would probably find acceptable. Remember, (P1) is a semantic and analytical tool that is intended to structure talk of epistemic justification in such a way that makes the theories surrounding epistemic justification more ordered and collated. A full theory of justified belief would have to go well beyond (P1).

4.2 *Rightness Criteria for J-Rules*

The history of epistemology is laden with a variety of different rightness criteria that epistemologists have thought makes a belief justified. These criteria give us a sense of the field of justified belief and the type of opposition Goldman's theory is up against. Such rightness criteria (R) for J-rules include (66):

(C1) R is a system of rules derivable from logic (and probability theory).

(C1*) R is a system of rules that would be chosen by someone who believes all truths about logic (and probability theory), but is ignorant of all contingent facts.

(C2) R is a system of J-rules accepted by the players of one's language game.[29]

(C2*) R is a system of J-rules accepted by members of one's disciplinary matrix.[30]

(C2**) R is a system of J-rules accepted by one's peers.[31]

(C3) Conformity with R would guarantee a coherent set of beliefs.[32]

(C4) R permits doxastic attitudes proportioned to the strength of one's evidence.

(C5) Conformity with R would maximize the total number of true beliefs a cognizer would obtain.

A brief summary of why Goldman finds each unsatisfactory is worthwhile. The first problem with criteria (C1) and (C1*) is that they are incomplete. Deductive logic cannot provide a complete set of J-rules. And nondeductive logic is too problematic to fill the lacunas of

[29] Wittgenstein (1953).

[30] Kuhn (1977).

[31] Rorty (1979).

[32] C.I. Lewis (1946) and Roderick Chisholm (1977).

deductive logic when nondeductive inferences are warranted.[33] Secondly, Goldman is pessimistic about the epistemological application of probability theory and of logic to rules of belief formation (67). Two further difficulties with the (C1) approach come to light. One, formal logic is silent on the question of psychological states. But such states are the very object of J-rules; the psychological transition to belief states (82). Two, the truths of logic are considered to be descriptive statements about facts. In contrast, J-rules are normative statements. The two fields therefore have an opposing character that prevents truths of logic acting as correct J-rules.

The criteria in the (C2) family make the justification of a belief dependent upon what is deemed acceptable by the standards of the cognizer's community. The obvious difficulty with this family of criteria is why such a community should hold a privileged position vis-à-vis what confers justification upon a belief? Why should the positive appraisal of my peers eventuate in one of my beliefs being justified? History has taught us that previous generations have been wrong on many issues. Surely Einstein had a justified belief that the measurement of space and time are relative to the observer even though his contemporaries initially thought he was wrong? Hence, a belief does not acquire the status of being justified if approved of by those in one's social environment.

(C3) represents the coherence approach to justified belief. Since coherentism is comprised of a group of loosely related approaches to justified belief all sharing the principle of coherentism, it is difficult to pinpoint one general weakness of that family of theories. And it would be too lengthy to pry each apart for its Achilles' heel. But Goldman thinks that on

[33] According to Goldman (389), Rudolph Carnap's (1962) attempt at formulating an inductive logic was the most systematic. Yet, many philosophers do not regard even this attempt at an inductive logic as very promising.

some level the fantasizer difficulty—logical consistency or coherence is possible amongst the fabricated, paranoid, and demented beliefs of a deluded person—is the general weakness of coherentism that makes us wary of this kind of theory (99-100). In other words, it is possible for a person to have a coherent set of beliefs none of which are true. Coherence does not entail truth. This is an unacceptable consequence for Goldman.

The problem with (C4) is that it contains the epistemic term 'evidence,' which we know from "What is Justified Belief?" is to be avoided in a naturalist approach to justified belief. Goldman's main gripe with this type of approach is found elsewhere, however. Goldman claims that no matter how great the extent of the evidence supporting a belief, we can always question what understanding the cognizer has of the relationship between the belief and the supporting evidence (90). This would require us investigating how the believer came to acquire this belief which will ultimately concern the process by which the subject came to acquire the belief. If the cognizer does not understand this relationship, then it would be absurd to judge such a belief as justified. For example, Henry might form the true belief that the area of a circle is πr^2. Henry might very well be able to rattle off the proof for this theory. Yet Henry came to acquire this belief merely by copying it down from a friend's notes without attending the lecture in which the proof was explained. Henry would similarly have formed the false belief that the electron has a positive charge if he had copied it down from his friend's notes. Henry has not *acquired* the belief in the correct way even though there is ample evidence for the belief. The acquisition of beliefs, which is dependent upon psychological processes, is therefore more important than the evidence supporting beliefs. Hence, supporting evidence is not sufficient to guarantee that a belief will be justified. It is

the process by which a cognizer comes to believe a certain belief that is important, not the abstract existence of evidence backing up such a belief.[34]

Finally, (C5) might be problematic for one reason and unacceptable for another. Some might claim that a truth-linked criterion raises the old question of circularity that would consequently make it rather difficult to ascertain which system of J-rules would satisfy the truth criterion. Since Goldman does in the end adopt a truth-linked criterion, it is important to see just how his truth-linked criterion is different from the typical sort and how it overcomes some of the old difficulties facing questions of truth.

A cognitive process is reliable if it produces more true beliefs than false beliefs, an adequate ratio being specified and satisfied. But this criterion might be difficult to apply since criteria involving truth notoriously involve charges of circularity and vacuousness. Hilary Putnam, in considering just such a charge, says that many consider the definition of truth as 'rational acceptability' (1983: 231). But if we replace this definition in a typical sentence such as "a rational agent is likely to discover what is true" then we end up with the rather empty and unhelpful statement that "a rational agent is likely to discover what is rationally acceptable." If Putnam is correct in supposing that truth is something like rational acceptability, then a reliabilist theory of justified belief would be circular or vacuous if it means that a belief is justified if it is produced by a process that produces more rationally acceptable beliefs than not.

Goldman avoids this scenario given that he accepts a realist conception of truth. Goldman follows an account of realism according to which a proposition is true if it correlates to a

[34] The correct acquisition of beliefs or methods by processes will be discussed in section 4.5.

reality that exists independent of our knowledge of it.[35] Thus, a proposition can be true regardless of whether we are able to verify its truth-value or not. By adopting a realist conception of truth, Goldman is backing a conception of truth that does not make truth an epistemic matter. There are two important concepts that need to be differentiated—truth and verification. The latter requires that we be able to verify a statement, the former does not. Hence a belief may be true or false but we may not be able to ascertain whether it is or not.

Realism differentiates between truth and verification. Externalism makes a similar distinction between being justified in believing a proposition and knowing that one is justified in believing that proposition. This makes the adoption of a realist conception of truth appropriate for externalism, of which rule reliabilism is an example. Moreover, realism is a framework from within which many internalists and externalists work. A realist conception of truth is therefore an appropriate and satisfactory position to adopt when dealing with the question of justified belief.

Roderick Firth, however, identifies two challenges facing rule reliabilism for its truth-linked criterion for justified belief (1981: 19):

> Each of us decides at any time *t* whether a belief is true, in precisely the same way the we would decide at *t* whether we ourselves are, or would be, warranted at *t* in having that belief … if we are rational we must assume … a correlation between warrant-conferring rules and true beliefs … in order to identify true beliefs. Our reasoning is obviously circular if we then use beliefs so identified as data for inferring a correlation between warrant-conferring rules and true beliefs.

Firth's first circularity challenge entails the claim that in order to identify the correlation between J-rules and true beliefs, such true beliefs are used to identify the correlation. We use

[35] For an explanation of such a conception, see Dummett (1982: 55).

warrant-conferring rules to identify true beliefs on the assumption that by following such rules we will identify true beliefs. We then use such true beliefs to show that there is a correlation between warrant-conferring rules and true beliefs. Abstractly put, we follow rule *x* to identify *y*, and use *y* in turn to show that rule *x* is correlated to *y*. This gives no indication that these J-rules are appropriate rules since any truth-linked criterion will adequately identify true beliefs and then use such beliefs as evidence for the appropriateness for those rules. Firth is saying that backing a truth-linked criterion of justification is circular because we use true beliefs both as the means of identifying correct J-rules and for proving that there is a correlation between J-rules and true beliefs.

To counter Firth's objection, Goldman claims that Firth is wrong in thinking that we first observe a set of warranted beliefs and then deduce some type of correlation between those beliefs and their truth-value (118). Such an initial 'observation' is not needed. We could stipulate hypothetical beliefs that are produced by unreliable processes and assess whether we would think them justified or not. No actual beliefs and truth-values are needed. So no criterion is presupposed in the initial identification of the correlation between justification and truth. The point is that reliabilism is a metaphysical theory that adjudicates the justification and truth of beliefs from the "God's eye" perspective. Hence, as a theory it need not in the first place specify which beliefs are justified and true. It need only specify what would make a belief justified under certain conditions. Thus no correlation is drawn between warranted beliefs and truth thereafter used in a circular manner.

Firth's second circularity challenge questions whether it can be determined which rule-system satisfies a truth-linked criterion (1981: 17):

> [If by] 'warrant-conferring rules' … we mean statistically reliable rules … is there any way to decide rationally whether or not a particular set of rules … is or is not warrant-conferring? To decide this, which involves predicting the future, would require an inductive argument based on the past failure or success of those rules in generating true beliefs. But if we are rational, how can we identify true beliefs except by assuming, explicitly or implicitly, that some particular set of rules is warrant-conferring?

The challenge states that in the process of identifying which system satisfies the criterion of being truth-linked, one must assume that one already has such a right rule system in place that enables one to pick out such a system. For example, I can identify which objects in a set are green only if I already know what a green object looks like. Similarly, one can only claim to have determined that rule system *r* satisfies the criterion if one's cognitive system already satisfies such a criterion. If one has a faulty rule system in place then one's determination of the correct J-rule system will be incorrect. Correct determination presupposes the possession and use of the correct rule system.

In defense of a truth-linked criterion, Goldman makes the point that this supposed circularity does not only dog epistemological theories that embrace a truth-linked criterion for identifying a correct rule-system (118). The identification of any system satisfying a rule system implies the use of cognitive processes, including the very processes one is trying to identify, that could affect the choice of the rule system. So truth-linked theories are no worse off than any other criteria when it comes to determining a rule system.

Goldman further disagrees with Firth's identification of an inductive difficulty. According to Firth, the correct determination of a rule system would assumedly entail that one ascertain from past experiences which processes have a sufficient truth ratio and thereafter inductively

predict that those processes will maintain such a ratio in the future. Hence, a truth-linked criterion faces a nasty inductive obstacle since those processes may fail to be reliable in the future. I think Goldman adequately refutes the force of this argument when he says that the application of a reliabilist criterion does not involve predicting the future (118). All a reliabilist need do is determine from past experiences under which conditions or stimuli an individual process is likely to produce a true belief and infer from this assessment that in normal worlds this process is likely to have a continued reliability of degree *x*.[36] No events in the actual world are needed to stipulate the reliability of the process. Beliefs produced by this process in the future will therefore continue to be justified to degree *x*. Reliabilism involves no prediction of actual future events. Firth is thus wrong in his negative assessment of reliabilism.

A more precise answer to Firth would be that reliabilism is a metaphysical theory that states that if a process were to produce more true beliefs than false beliefs then that process would be reliable. The process may not have been used as yet.[37] Nor may the reliabilist be able to verify the truth or falsity of the beliefs produced by that process since reliabilism is a theory that rests on a realist conception of truth. Thus problems of induction are not of immediate concern to the reliabilist since those problems concern the verification in actual circumstances whilst reliabilism is a metaphysical theory that states what would make a belief justified under certain hypothetical or counterfactual conditions.

Goldman is correct in saying that just because truth-linked criteria are harder to apply to the selection of a rule system does not mean that truth-linked criteria cannot be correctly applied

[36] For my discussion of normal worlds, see section 4.4.

[37] Cf. section 5.2 in chapter 5 for my discussion of why a thermometer can be said to be reliable even though it has never been used.

(119). The mere possibility that a truth-linked criterion can theoretically be applied is sufficient grounds for Goldman to choose a truth-linked criterion upon which to base reliabilism. The foregoing responses to Firth, I think, are enough to show that Goldman's decision to use a truth-linked criterion for the selection of a J-rule system is defensible. I see no weakness in process reliabilism that it is truth-based. Whilst there are generally philosophical problems associated with the use of truth as a structural component in any theory, these problems are not unique to reliabilism. Reliabilism is in no worse position than any other theory that is truth-linked. I think Goldman has adequately addressed the relevant problems associated with truth.

4.3 *Reliabilism*

Goldman has shown why he thinks many of the proposals for a correct J-rule system do not work. What then is Goldman's proposal? Goldman claims that a correct J-rule system must establish criteria that focus on cognitive processes and the truth of beliefs formed by such cognitive processes. One of the weaknesses that all criteria (C1) through (C5) share is the absence of comment on cognitive processes. If a belief is aberrantly formed no additional criterion can rescue its problematic genesis. Moreover, there is no point to a process that is justified according to other criteria but fails to produce true beliefs over the long run. So Goldman proposes that a J-rule system is correct if it permits processes that produce more true beliefs than false beliefs.

A clarification of truth needs to be introduced here. A verific consequentialist process criterion can be concerned with either the total *number* of true beliefs produced by a process or the *ratio* of true beliefs produced by a process. Goldman favors the ratio option since it is

possible to believe a large number of true beliefs but not be justified in believing them. For example, believing every true proposition and its negation would yield a significant amount of true beliefs. But Goldman does not think one would necessarily be justified in believing them (103). From "What is Justified Belief?" we learnt that a belief can be false yet still be justified. So the quantity of true beliefs is not what Goldman is after. In chapter 2 I discussed what percentage of total beliefs qualifies as a satisfactory ratio. A level appreciably higher than .50 is Goldman's standard.

So what is the feature of cognitive processes that produce a high truth ratio of beliefs that Goldman believes makes such processes unique? *Reliability*. Cognitive processes that produce more true beliefs than false beliefs are reliable. We already know from "What is Justified Belief?" the theoretical foundations of reliabilism and which processes typically exemplify this quality of reliability. With all these specifications in place Goldman presents his criteria for a correct J-rule system (106):

(P2) A J-rule system R is right if and only if

> R permits certain (basic) psychological processes, and the instantiation of these processes would result in a truth ratio of beliefs that meets some specified high threshold (greater than .50).

4.4 *Actual and Normal Worlds*

One of the main additions to process reliabilism that features significantly in rule reliabilism is Goldman's introduction of the modal determination of reliabilism. Whilst the issue of modality did come up in "What is Justified Belief?" regarding the discussion of the evil

demon problem, Goldman made no theoretical amendment to process reliabilism in response. Nor did he commit himself to any definitive position on the modality of process reliabilism. Rule reliabilism, on the other hand, has such a theoretical amendment in place. The significance of this amendment will become very clear when the evil demon problem is discussed in chapters 6 and 7. However, I shall briefly mention the details of this amendment here so as to make our discussion of rule reliabilism complete.

A process could be reliable in one possible world and unreliable in a different possible world. For instance, the perceptual process is reliable in the actual world but might be unreliable in another world *W*, viz. the evil demon world. Goldman needs to decide under which modal conditions he wishes to stipulate reliabilism. The Goldman of *Epistemology and Cognition* makes the claim that a belief is justified in any world just in case that belief is justified in normal worlds. Our general beliefs about the reliability of cognitive processes in this world form a set of beliefs that make up what are called normal worlds. The essential idea is that we take the world to be a certain way such that most of our beliefs are true and produced by reliable processes. Hence, if we believe that process *x* is reliable in the actual world, then process *x* is reliable in normal worlds. Thereafter, any belief formed by *x* in any possible world is justified if it would be justified in a normal world. For example, in the case of the victim in the evil demon world, his perceptual beliefs are justified if they would be justified in normal worlds. Since beliefs formed by the perceptual process are justified in normal worlds, this being the case because it is our belief that the perceptual process is reliable in the actual world, the victim's perceptual beliefs are justified. Rule reliabilism therefore takes on the modality of normal world chauvinism.

In contradistinction, actual world chauvinism would entail that a belief *p* produced by process *x* is justified just in case process *x* is reliable in the actual world regardless of whether process *x* is reliable in the world in which *p* was produced. Finally, a world relative criterion of reliability states that a belief *p* produced by process *x* is reliable if process *x* is reliable in the world in which *p* is produced. The justifiedness of a belief, therefore, has nothing to do with what we believe to be the case in the actual world, which is the impetus for both actual and normal world chauvinism.

As Goldman's work progressed after rule reliabilism he came to reconsider normal world chauvinism in favor of a world relative criterion of reliability, which in turn would come to be rejected in favor of actual world chauvinism. These amendments to the modality of process reliabilism will be discussed at length in the forthcoming chapters of this dissertation.

4.5 *Levels of Justifiedness: Processes and Methods*

In *Epistemology and Cognition* Goldman expands his conceptual analysis of the cognitive operations involved in belief formation. Goldman's focus until this point has been on primary epistemology, which concerns the operation of cognitive processes. Secondary epistemology, which concerns the correct use of methods such as algorithms, heuristics, skills, and techniques of various sorts, now needs to be incorporated into reliabilism to make it a more complete theory.

Full justification would require more than being justified on the primary level alone. To facilitate secondary epistemology, Goldman distinguishes two further levels of justifiedness. *Primary justifiedness* (P-justifiedness) results from the reliable operation of cognitive

processes whilst *secondary justifiedness* (S-justifiedness) results from the use of reliable *methods*. This distinction of levels of justifiedness involves a further level distinction Goldman made elsewhere. Goldman distinguishes between first-order processes and second-order processes. Second-order processes are processes that oversee the production of new processes and methods or the acquisition of new methods (94). A second-order process is reliable if the processes and/or methods under its jurisdiction produce more true beliefs than false beliefs (115).[38] This tripartite level system of justification can be diagrammatically represented as follows:

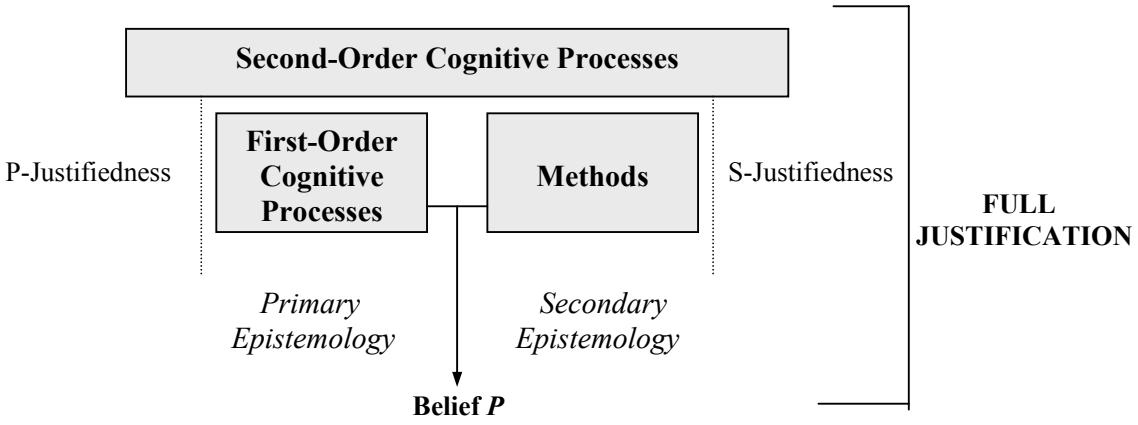


Fig. 4.1

Though *Epistemology and Cognition* does not focus on methods, Goldman does have the following to say about the use of methods (94-95). In order for a belief *p*, which involves the use of a method *m*, to be fully justified, the method *m* must be correctly and adequately acquired by a second-order process. The cognizer can fail in this selection of a suitable method because she chose an incorrect method. These founderings can be blamed on either poor retrieval processes or poor reasoning processes. This point is important since it connects

[38] Several possible criteria are offered for the reliability of second-order processes or metareliability (115-116). Goldman does not favor or select one. For the sake of simplicity, I have chosen the one that is most similar to the reliability criterion for first-order processes.

with the argument I made in chapter 3 for the inclusion of a proper function clause in the final formulation of process reliabilism. Here Goldman denies the judgment of 'fully justified' to a cognizer who has not made proper use of methods. In chapter 3 I made the claim that the judgment of 'justified' should be withheld from a cognizer whose (first-order) cognitive processes are not functioning properly. Whilst Goldman does not explicitly make the same claim regarding (first-order) cognitive processes, the similarity of my approach to the proper function of (first-order) cognitive processes with Goldman's stance on the proper use and selection of methods by second-order cognitive processes bodes well for my interpretation of Goldman and my insertion of a proper function clause into process reliabilism since Goldman does seem to recognize the necessity of the proper functioning of cognitive processes. If Goldman is likely to criticize a cognizer for not using or selecting the proper method for the formulation of a belief, then he should have a similar negative appraisal of the cognizer who fails to have first-order cognitive processes that are functioning properly.

Since Goldman focuses primarily upon first-order cognitive processes, an amendment of (6), my final formulation of process reliabilism in section 3.5 of chapter 3, is needed. A similar amendment of (P2) would be necessary. Full justification requires reliability on both the first-order and the second-order levels of cognitive processes plus the proper selection and use of methods. A distinction therefore has to be made between full reliabilist justification and partial reliabilist justification. Since secondary epistemology and second-order processes do not constitute Goldman's focus, I shall overlook the need for a formulation of S-justifiedness at present. To simplify matters for our analysis of justification, let it be assumed that the methods used in conjunction with first-order processes have been properly and reliably selected by the relevant second-order processes. This would generate the following formulation of justification:

(7) S's belief *p* at *t* is justified if and only if:

a) S's belief in *p* at *t* results from a conditionally reliable belief-dependent cognitive process or an unconditionally reliable belief-independent cognitive process;

b) This process functions properly in the production of *p*;

c) There is no other reliable process available to S such that if it had been operating in addition to the process operating in the formation of belief *p*, S would not believe *p* at *t*;

d) The clash between this additional reliable process and the first process, or the reasoning process, is adjudicated by the reasoning process; the operation of the reasoning process suitably restricted by the proper function clause (b).

e) The cognitive process operating and/or method used in the formation of *p* at *t* results from a correct choice and application of such a process and/or method by a metareliable second-order cognitive process.

4.6 *Cognitive Science and the Perceptual Process*

Epistemology and Cognition is divided into two parts. The first part contains Goldman's metaphysical account of the conditions under which a belief would be justified. The second part details Goldman's attempt to ascertain whether any cognitive process we possess is reliable in the sense he has specified in the first part of that work. There is thus a division of labor in Goldman's project. Moreover, the second half is devoted to showing how cognitive science can influence epistemology and that a multidisciplinary approach to epistemology is therefore desirable. The chapter on perception will suffice to show that Goldman has a

significant point in insisting that epistemologists should reach out to cognitive science to augment and improve their philosophical endeavors in epistemology.

"The strict role of primary epistemology is to borrow the results of cognitive science and assess the epistemic repercussions of these results" (Goldman 1986: 182). Since perception features in many discussions in epistemology, it is a worthy starting point for an explication of Goldman's epistemics. It is Goldman's understanding that the output of perception—the percept—is a depiction of part of the cognizer's environment that can be classified as a doxastic state or a perceptual belief. How then might what cognitive science has discovered about the perceptual process influence material in epistemology? The influence might work as follows. Two different approaches to the perceptual process have dominated cognitive science. The first is what can be termed a *bottom-up* approach. Theories in this class claim that perception picks out little pieces of information from the environment and builds them into larger units. An example of this approach is feature analysis. The letter *A* of the English alphabet is recognized by the combination of certain of its features, these being two lines at a 45-degree angle plus a joining horizontal line. A cognizer recognizes this pattern and comprehends it to be the letter *A*.

The second approach is what can be called *top-down*. In this approach background beliefs influence the interpretation of what the perceptual process takes in from the environment. It is quite easy to prove that the cognizer's mind can 'interfere' with the perceptual process. Goldman uses the following diagram to show this.[39]

[39] I refer the reader to Fig. 9.1 on page 186 of *Epistemology and Cognition*. This figure, though appearing in *Epistemology and Cognition*, is redrawn from O. G. Selfridge (1955: 92).



Fig. 4.2

Many read the stimulus as *THE CAT*. Yet, if you look closely, the middle figures of each word are identical. The mind, however, perceives the first middle figure as the letter *H* and the second middle figure as an *A*. Goldman says that our 'higher knowledge' regarding the adjacent letters and common letter sequences accounts for this strange phenomenon of seeing identical figures as different figures (186). The background beliefs of the cognizer cause the cognizer to see something that is not there.

It is now apparent how the different approaches to the cognitive science of perception can influence findings in epistemology. Some might argue that top-down processing can decrease the reliability of the perceptual process. If that is true, as Fig. 4.2 shows, then if top-down processing does decrease the reliability of perceptual processes, then a J-rule system would have to exclude perceptual beliefs based on top-down processing. If other cognitive processes can add something to the visual stimulus before it is generated into a doxastic percept, then such interference could decrease the reliability of the perceptual process. A bottom-up process will then be preferable and permissible in a correct J-rule system. However, Goldman thinks that this is a hasty conclusion (190). Several experiments prove that for certain tasks top-down processing can improve reliability.[40] A more detailed analysis of the bottom-up and top-down approaches is needed in order to make a final decision as to the influence of either

[40] See Reicher (1969), Wheeler (1970), and Tulving, Mandler, & Baumal (1964).

approach to the reliability of the perceptual process. This is merely one instance in which the findings of cognitive science can have an influence on positions in epistemology.

A more telling instance that establishes the importance of epistemics is the case of high-affect perception. It is known that a cognizer is more likely to identify a pattern in the visual environment that matches a pattern stored in memory which has significant emotions, positive or negative, attached to it. High-affect patterns are more likely to be recognized visually than low-affect patterns. Goldman's example of high-affect perception is the case of the lost child (193). A lost child is likely to 'recognize' several women in the distance as her mother since the child has a strong desire to reunite with her mother. If it is true that affect can influence the truth-value of percepts, then a right system of J-rules might not permit high-affect perceptual belief formation. Here again we see that findings in cognitive science can have an impact on traditional epistemology.

It is perhaps regarding the debate over the structure of knowledge that the importance of cognitive science for traditional epistemology is clearly established. How we understand perception in cognitive science can coax an epistemologist into backing foundationalism over coherentism, or visa versa. Foundationalism is the doctrine that there are some basic beliefs that are immediately or directly justified. Then there are other beliefs that are justified in virtue of a certain relationship with these basic or foundational beliefs. Coherentism is the doctrine that a belief is justified if it coheres with the cognizer's other beliefs. A holistic coherentism claims that the entire corpus of beliefs is the standard against which a belief must cohere. A nonholistic coherentism requires that the belief cohere with only a certain portion of the cognizer's doxastic corpus.

The perceptual process can bear upon this debate in the following manner. We know that Goldman thinks of percepts as beliefs. The question then arises: are these perceptual beliefs justificationally basic beliefs? Or do these beliefs take into account other beliefs as inputs? In other words, are percepts justified according to the foundational criterion or the coherent criterion? If perception is top-down, this bodes well for some form of coherentism since perception takes into account some or all of the cognizer's background beliefs. But if perception is bottom-up, then it is more likely that some form of foundationalism is more appropriate, at least when it comes to perception that is. Cognitive science has taught us that there are at least two distinct ways to understand how perception works. The one takes into account other doxastic states as inputs whilst the other does not. Deciding either way implies which doctrine on the structure of knowledge one should then champion.

I think the strength of epistemics is clear from this example. If what Goldman has said is true, then he has a compelling claim that epistemologists are the worse off for ignoring cognitive science. Whilst one example from cognitive science does not prove beyond doubt that epistemology will benefit from a close relationship with cognitive science, it surely indicates that there might very well be much good that will come from such cooperation. The eight chapters in the second half of *Epistemology and Cognition* testify that there is much that epistemology can learn from cognitive science. As cognitive science develops and epistemology draws closer to it, time will tell whether epistemics is the promise-laden route Goldman thinks it is. I feel confident that time will prove Goldman correct and endorse him as a prescient epistemologist in this regard.

4.7 *Recapitulation*

This chapter has covered a range of topics. The essential items that have been discussed are rule reliabilism, truth, modality, levels of justification, and epistemics. The chapter began by discussing Goldman's rule framework for a justified belief. He analyzed several rightness criteria for justification and found each to be lacking in some important way. Goldman proposed that a truth-linked criterion of justification, one that concerns the reliability of cognitive processes, is a better candidate for a rightness criterion for justification.

Once Goldman had shown how his criterion worked and why it was better than previous attempts, Goldman then proceeded to qualify certain aspects of reliabilism. The first qualification was the introduction of normal world chauvinism. I did not examine this aspect in detail since it will be discussed at length in chapters 6 and 7 when I deliberate upon the evil demon problem for reliabilism.

The levels of full and partial justification were then introduced as a second qualification of reliabilism. If both processes (primary epistemology) and methods (secondary epistemology) were acquired by a reliable second-order process, then a belief formed by the operation of such first-order processes or the use of methods is to be considered fully justified. For the sake of simplicity, I decided to consider for all further examination of process reliabilism that the process and methods operating in belief formation were correctly chosen by reliable second-order cognitive processes.

The importance of the relationship between epistemology and cognitive science was then investigated. In particular, Goldman showed us that the way the perceptual system works

according to the findings of cognitive science can have an effect on the theory an epistemologist could hold concerning the structure of knowledge. If perception is a top-down process, this bodes well for coherentism. However, if perception is bottom-up, then perhaps foundationalism is the better account for perceptual knowledge.

At this juncture in my analysis of Goldman's theory of justified belief it appears that process reliabilism emerges as a theory of justified belief that promises to resolve many of the problems facing its forebears in traditional epistemology. Goldman's careful placement of process reliabilism within a truth-linked framework and with its addendum refinements makes for a formidable theory of justified belief. This optimism must be tempered, however, by the fact that we still have to investigate the generality and evil demon problems, the latter a potential counterexample to Goldman's theory. Only once we have assessed how Goldman's reliabilism fares against those challenges will we be in a better position to make a final judgment on the strength of Goldman's reliabilist theory of justified belief.

Chapter 5

The Generality Problem

The generality problem was discussed briefly in chapter 2. In "What is Justified Belief?" (346) Goldman proposed that if cognitive processes are described in a content neutral fashion then the generality problem would be solved. Goldman made no thorough argument for the adequacy of this proposal. The same lack of thoroughness characterizes Goldman's treatment of the generality problem in *Epistemology and Cognition* (49-51). There Goldman took the position that the relevant type is the 'narrowest type' used in the formation of the belief. This proposal, like its predecessor, is vague and has no real substantive argument in its favor. As far as I am aware these are Goldman's only responses to the generality problem. Goldman's limited attention to the problem might indicate that he does not consider it to be a serious one. This chapter will investigate whether Goldman is correct in this assessment. I will show that there are significant difficulties involved in the generality problem that require attention by the process reliabilist.

5.1 *The Problem*

I think closer attention should be paid to the premises upon which the generality problem is based and exactly what it is about process reliabilism it attacks. If we can achieve a better

understanding of exactly what it is about the generality problem that threatens process reliabilism, then I think we shall be in a better position to ascertain the strength of the difficulty it is purported to pose.

The following points make up the structure of the generality problem.[41]

1. Reliability is a term most accurately applied to a process type.
2. The reliabilist must then proceed to identify the relevant process type that will be assessed for reliability. This is not an easy task since a token belief can be the product of many process types each with varying degrees of reliability.
3. If the relevant type is described too narrowly there may be only one token of that process type. If the lone belief is true then the process will be justified and if false the process will be unjustified. In the eventuality that all true beliefs and all false beliefs are the lone tokens of process types, then all true beliefs will be justified and all false beliefs will be unjustified. But we already know that it is possible to have a justified false belief. This is known as the *Single Case Problem*.
4. On the other hand, if a process is described too broadly it will result in the conclusion that beliefs formed by that process will be either all justified or all unjustified. But we intuitively think that a process can produce beliefs some of which are justified and some of which are unjustified. For example, we think certain beliefs produced by the visual process are justified and others unjustified. But if the visual process is described broadly then all beliefs produced by it will be equally justified or equally unjustified depending on the overall reliability of the visual process. There will then be no distinction between intuitively justified visual

[41] Much of what is said in these points presupposes material covered in chapter 2. These points are a synopsis of a portion of a paper by Conee and Feldman (2000).

beliefs and intuitively unjustified visual beliefs. This is known as the *No Distinction Problem*.

5. The reliabilist must therefore identify and describe the relevant type in such a way that it is not too narrow so as to avoid the single case problem and not too broad so as to avoid the no distinction problem. The difficulty involved in providing just such an account is called the *Generality Problem*.

This list provides a more detailed account of the generality problem than was encountered in chapter 2. The conclusion that follows from these points is that if the reliabilist cannot provide just such an account of the relevant process type to be assessed for reliability, then process reliabilism is a dead-end. Without the possibility of ascertaining the reliability of a process type, so it is claimed, Goldman's reliabilism cannot provide a verdict on the justifiedness of a belief and therefore cannot help us in recognizing the presence of knowledge either. Such a scenario would make Goldman's process reliabilism an inadequate theory of justified belief and knowledge. Hence the gravity of the generality problem and the need for reliabilists to provide a solution to it.

Before getting to the generality problem in the literature, I want to propose a quick solution to the generality problem that might explain why Goldman has not devoted extensive attention towards the problem. Opponents of process reliabilism seem to have forgotten that process reliabilism is a metaphysical theory that specifies the counterfactual conditions under which a belief would be justified. The theory therefore does not concern itself with the identification and specification of the relevant cognitive process in specific cases. All process reliabilism need do is make the claim that a belief is justified if it is produced by a reliable cognitive process, this process amply identified and described.

If what I have said is correct, then the generality problem does not really arise for process reliabilism. It is true, however, that the generality problem is one Goldman is likely to encounter in the second part of *Epistemology and Cognition* since it is there that he attempts to ascertain whether any of our cognitive processes are reliable in the way he has specified. This task implies an identification and description of cognitive processes, the precise steps that lead towards the snare of the generality problem. It is in light of this latter consideration that it is worth exploring the generality problem in its fullness thereby allowing Goldman's opponents their say.

The treatment of the generality problem has had quite an interesting history in philosophy journals. John Pollock (1984) and Richard Feldman (1985) are credited with the first thorough treatments of the problem. Goldman's proposal in *Epistemology and Cognition* is basically a response to these two papers. Since then many philosophers have backed Feldman's critique of Goldman and others have attempted to defend Goldman.[42] I shall only examine those papers that are most pertinent to the problem at hand, that is, those papers that will help focus on the essential elements under dispute. Thereafter I shall provide a solution of my own to this problem.

[42] For a solution to the generality problem that draws upon the environmental context of the cognizer, see Heller (1995) and Sosa (1991). Comesaña (forthcoming in *Philosophical Studies*) develops a solution that depends on the basing relation to evidence. For a solution based upon a more detailed account of the relevant type, see Adler & Levin (2002). For a response to their paper, see Conee and Feldman (2002). Baergen (1995) uses psychology to form a solution. For other treatments of the generality problem, see Plantinga (1993), Pollock & Cruz (1999), Schmitt (1992), Sosa (1991), Steup (1998), and Wallis (1994). The problem with some of these papers is that the solutions put forward to the generality problem often end up swapping one difficulty for another. Reponses to these 'solutions' then take us off the essential track of the generality problem. For a general critique of solutions to the generality problem, see Conee and Feldman (2000).

When it comes to the generality problem, a good place to start is with the necessary conditions for a legitimate response (Conee & Feldman 2000: 373).[43] By approaching the problem this way we get a feel from the outset of the avenues that are not open to reliabilists as solutions. In this way the bar is raised against the reliabilists. Any solution passing this standard therefore qualifies as a possible solution to the generality problem. I think these conditions are fair and that reliabilists would accept them as binding.

Firstly, reliabilists must identify the specific process type that produces the belief in question such that the reliability of that specific type will determine whether that token belief is justified or not. Without such an identification no conclusion can be reached as to whether a belief is justified or not. The lack of such an identification of the specific type relevant in each specific case of a token belief would leave Goldman's process reliabilism incomplete. This identification of the relevant type cannot be done on an *ad hoc* basis. Identification on a case-by-case basis is not a satisfactory way to go about things. Process reliabilism needs a general principle that will apply to all cases across the board.

Secondly, there must be an acceptable match between type and token belief. This means that there must be some connection between beliefs we intuitively think are justified or unjustified with types we intuitively think are justified or unjustified. It would be rather irregular if process reliabilism were to identify a type we think unjustified as being responsible for the formation of a belief we think is intuitively justified.

[43] Hereafter C&F.

Thirdly, reliabilists should specify under which conditions the functioning of a process type should be considered in deciding whether that type is reliable or not. The reliabilist must decide between the functioning of a type in actual or in counterfactual circumstances.[44]

Finally, the solution must stay true to the ethos of process reliabilism. This means that it is the reliability of a *process* that is the main concern. A satisfactory identification principle therefore cannot bring other considerations into the selection process, viz. evidentialist considerations. It must pick out something about the process of belief formation alone disregarding any other epistemic considerations. This is not an unfair prerequisite for the identification principle since Goldman's process reliabilism is supposed to be a descriptive psychological theory of justified belief that ignores other considerations in favor of the truth-linkedness of psychological processes.

5.2 *Alston and the Generality Problem*

5.2.1 *Counterfactual Tendency*

One of the better treatments of the generality problem is by William Alston (2000). Alston's paper is intended to challenge the underlying assumption of the generality problem that the relevant process type cannot be adequately identified for each token belief.

[44] Though Goldman seems unsure in *Epistemology and Cognition* of which is preferable, process reliabilism is a metaphysical theory of justified belief that concerns the counterfactual level. The application of the reliability criterion to actual instances is riddled by the problem of induction since a process could be reliable until time t_n and be unreliable from t_{n+1}.

Alston's counter to the single case problem is as follows. Drawing on Goldman's definition of tendency, Alston insists that the reliability of a type is to be understood as a process's tendency or propensity or disposition to produce more true beliefs than false beliefs. The actual track record of the token beliefs produced by the type is not what is at stake. Rather, reliability is better understood as a tendency. Goldman was not as strong on this point as Alston is. Regarding the notion of tendency, in "What is Justified Belief?" Goldman wrote that 'tendency' could refer to the type's propensity to produce token beliefs in *actual* or *counterfactual* situations (346). Goldman took no stand as to which he thought it is.

Taking a more decisive stance than Goldman, Alston claims that our ordinary use of the word 'reliable' indicates that we understand reliability to be that of a tendency in possible or counterfactual circumstances. For example, the reliability of a thermometer is not dependent upon how many times it has given the correct temperature. Rather, the tendency of the thermometer to read the temperature correctly in possible circumstances is what is important. Hence, we say a thermometer is reliable if it were to read the temperature correctly when used. Therefore we can say of a thermometer that has just come off the assembly line that it is reliable for if it were to be used it would read the temperature correctly.

With this understanding of reliability in mind, Alston tackles the single case problem by saying that a process type would not have only one token which, if true, would make that process completely reliable and if false completely unreliable. Rather, reliability concerns a type's tendency to produce beliefs "in a suitable range of instantiations"[45] (358). As I understand Alston, he is saying that the single case scenario would not arise if we consider reliability as a tendency to produce many beliefs over time. The one-instant token then is not

[45] A suitable range of instantiations is understood to mean "situations of the sort we typically encounter" (Alston 2000: 359).

what reliability is about. The single case problem arises on the actual not the counterfactual level of analysis. Process reliability concerns process types that would produce more true beliefs than false beliefs in the right conditions. True, if one were to analyze process reliabilism on the actual level, that is the application of the reliability criterion to actual instantiations of the process, then the single case problem could present itself. But reliabilists are not working on that level. Rather, process reliabilism is a metaphysical conception of what confers justifiedness on a belief. So the extreme case of all true beliefs being justified and all false beliefs being unjustified does not arise.

5.2.2 *Natural Kinds and Function*

Alston has a lot more to say about the presupposition that no unique type can be identified. It is Alston's claim that a specific type can be identified that does not entail either the single case problem or the no distinction problem. At the base of Alston's claim is his belief that whilst any item can be said to belong to any number of classes or categories, there is a membership to a certain class that is more fundamental than the membership to other classes (360). For example, whilst a single human can belong to many classes, e.g., objects weighing more than one hundred pounds, objects that can move, objects that breathe, etc., there is one class that humans fundamentally belong to more than others owing to the way we are similar to one another in the way the others are not, this being the class of humans since that is the natural kind to which we belong. So too, when it comes to a token belief, certain considerations will show that there is a fundamental type it belongs to, its 'natural kind.' If Alston is correct about this, then reliabilists are well on their way to passing the first obstacle of the generality problem—selection of the correct type for each token belief from the many possible types of varying reliability that could have produced that token.

The considerations that result in the identification of the relevant type stem from Alston's interpretation of Goldman's description of cognitive processes. In "What is Justified Belief?" Goldman writes (346):

> We need to say something more about the notion of a belief-forming '*process*.' Let us mean by a 'process' a *functional operation* or procedure, i.e., something that generates a *mapping* from certain states—'inputs'—into other states—'outputs.' The outputs in the present case are states of believing this or that proposition at a given moment.

Alston wants to stress the functional nature of belief formation. Belief formation seems to involve the realization of a psychological function. Working off this functional understanding of belief formation, Alston thinks that certain features of the input activate a specific function that will initiate the generation of a specific token belief. The function determines the relationship between input and the propositional content of the output belief. Applying the functional nature of belief formation to the generality problem, Alston claims that "the function determines the relevant type" (363). Alston reasons that the process type working in the formation of a belief is precisely that type that embodies the function between inputs of this nature with doxastic outputs of that nature.

Let us see how Alston's understanding of belief formation works with a practical example. I look at my desk and see a piece of paper lying there. I then form the belief *p* that 'there is a piece of paper on my desk.' Certainly, this token belief can be associated with many possible types of cognitive processes. But according to Alston, there is something particular about the inputs in this case that will initiate a particular function that will generate the token belief *p* with the propositional content that it has. It is precisely this function that will determine the relevant type *r* that is said to be responsible for the token belief *p*. Descriptions of the process that play no part in the formation of a belief (viz. formed on certain days at certain times

etc.), would be done away with. To assess, therefore, whether belief *p* is reliable or not, reliabilists would say that if type *r* would generate more true beliefs than false beliefs then belief *p* would be justified. Thus, in this case, there is something about the specific perceptual input of a piece of paper with certain characteristic marks and colors that will initiate a specific function that forms a token belief with the propositional content 'there is a piece of paper on my desk.' Therefore, it is possible for reliabilists to identify the relevant type and, referring to Alston's previous comments on the single case problem, avoid the single case problem. The identified type will then presumably not generate beliefs of significantly varying epistemic status. Thus the no distinction problem seems to dissipate as well.[46]

5.3 *Evaluating Alston's Account*

In the first instance, Alston is correct in claiming that the reliability of a process is determined counterfactually. As I said early in 5.1, process reliability works on the counterfactual level. On this level the generality problem can be avoided.

However, there are elements in Alston's response that are problematic. As Conee and Feldman correctly point out (377), there is no reason to think that there is one natural kind type to which each token belief must belong. Perhaps the concept of natural kinds cannot be aptly applied to token beliefs and process types. Taking this one step further, there is no apparent reason to think that there is only one function that determines the relevant type. It is reasonable to think that when I look at the piece of paper on my desk that there can be a number of possible functions that can operate with the specific inputs to produce the same token output belief. The function, according to Alston, is initiated by certain aspects of the

[46] Alston does not say this specifically. I have interpreted him in this fashion on the basis of his statement: "The function defines the epistemically relevant type and we can forget about the rest" (364).

object of vision. In our example, aspects A and B, viz. the color and angle, of the piece of paper on my desk may initiate a function of a narrow description that will pick out the relevant type for the output belief with the propositional content that there is a piece of paper on my desk. However, aspects C, D, and E of the paper, viz. the writing on the paper or the similarity of the object to other pieces of paper or the shape of the paper, will initiate a broader description that will also pick out the type with the token output belief of the identical propositional content. Conee and Feldman are claiming that Alston has provided no argument given for the instantiation of *one* function and its determination of the relevant type. There are many functions that are potentially operative at any one moment of belief formation that can be responsible for the identification of the relevant type. The task then remains for the relevant function to be identified.

This is both a theoretical and an empirical problem. On the theoretical side, Conee and Feldman think that from a pretheoretical point of view an account along Alston's lines is bound to run into the trouble of more than one function being involved in the formation of a belief. This entails the appearance of the generality problem at the level of functions. On the empirical side, I think that it might be empirically true that there may be several functions involved in the formation of a single belief. If this is the case, then Alston's account must respond to the empirical facts of the matter. However, if we learn from cognitive science that there is only one function involved in the formation of a token belief, then Alston's account is satisfactory and therefore adequately assist's Goldman in warding off the generality problem.[47]

[47] I thank Mark Leon for pointing out the difference between the theoretical and empirical responses to Alston's account.

Finally, it is possible that after the function has determined the relevant type, that the beliefs produced by that type might vary significantly in epistemic status, some being justified and others not. Let us assume, for example, that the type determined by the function involved in my formation of the belief *p* that 'there is a piece of paper on my desk' is the perceptual type. Surely not all of my perceptual beliefs have equal epistemic status? Some might have been formed under conditions conducive to the formation of true beliefs and others not. The no distinction problem then rears its head again (E&C 375).

My final evaluation of Alston's account is this. One, if it is empirically possible that a psychological function can identify the relevant type, then Alston has adequately solved the first part of the generality problem. Two, Alston's solution to the single case problem is adequate and correctly responds to the problem. However, the objections mentioned in the foregoing paragraphs in this section propel me to propose a solution of my own to the generality problem that does not suffer from these objections. I proceed with this proposal in the next section.

5.4 *A Second Look at the Generality Problem*

Alston has a salient defense strategy for the generality problem. He claims that if theoretical weaknesses in the premises of the generality problem can be exposed, then reliabilists are on their way to overcoming the problem. I think that such theoretical weaknesses can be identified in the premises of the generality problem. If my arguments are cogent and successful, then I think it might be fair to conclude one of two things: either the generality problem is not as severe as its proponents think it is or that it no longer poses a problem for process reliabilism.

5.4.1 *The Role of Cognitive Science*

I think the first point that needs to be emphasized is that future developments in cognitive science will most probably have the final say on the identification of process types and hence the generality problem. When more is known on how the brain works and the systems that are used in belief formation, then the debate on generality might be swayed in one direction or the other. Whilst the role of cognitive science is not to provide a justification for reliabilism, its findings on which specific processes, if any, are reliable will have an effect on reliabilism's value as a theory. It is difficult at this point with our present knowledge of the functioning of the brain to resolve the generality problem. It is not theoretically wishful to think that in the near future we may be able to pick out a unique process that is responsible for the formation of a token belief. At this point such an identification is unlikely. If in the future we are to discover that no unique type is responsible for a token belief, then reliabilists would be in a quandary since no type is available to ascribe reliability to and hence justifiedness to a token belief.[48] However, even if in the future cognitive scientists are able to identify a unique type that can be evaluated against the reliability criterion, reliabilists would then still have to jump the hurdle of the single case or no distinction problems since it might be the case that the relevant process identified will be either too narrow or too broad thereby instigating the single case or no distinction case problems. Either way reliabilists are still on the defensive.

[48] Even if cognitive science establishes that a single belief is produced by a conglomeration of process types, which is the first horn of the generality problem, the process reliabilist can say that a belief is justified if the net truth ratio of beliefs produced by that specific combination of types is significantly higher than .50. Yet it is not necessary at this time to commit to a position when cognitive science has of yet not necessitated such a position.

5.4.2 *Necessary and Contingent Properties*

For the sake of inquiry, let us assume that a unique type can be identified for any token belief. Now let us see how reliabilists might fare on the single case problem and the no distinction problem.[49] I think there is something to say to blunt the edge of the generality attack. Let me begin with the single case problem. Here I am going to follow Alston's track but not his line of argument. Alston believes that a belief belongs to a type in the way an object belongs to its natural kind. I think this association is too strong. No doubt, process types can be described in many ways. But to think that it is possible to line up each belief with its natural kind type is taking the issue too far. It might well turn out from an empirical point of view that there are many functions involved in the formation of a single belief. All that needs to be done to avoid the single case problem is to show that describing a type in a narrow way such that it results in only one token belief is an unacceptable way to describe cognitive processes.

If Samantha touches a cube of ice and forms the belief *p* that 'this is a piece of ice,' the process responsible for this can be described as follows: "the perceptual process, on Tuesday the 19th of October 1978 at exactly noon, concerning objects below zero degrees Celsius that stand in the right-hand hemisphere of the cognizer's orientation, the object being felt by the right hand, etc., etc." This process will have only one token and will lead us directly into the single case problem. However, if we think along the line of natural kinds we realize that the method of determining which natural kind an object belongs to involves separating the *necessary* and the *contingent* properties of that object. That a lion has the genetic code of

[49] This is where Alston's account and my account differ. Alston attempts to identify the relevant type and then proceeds to tackle the single case and no distinction problems. In contradistinction, I leave the question of the identification of the relevant type to cognitive science and then proceed to solve the single case and no distinction problems on the assumption that a relevant type can be identified.

being a lion is a necessary property of being a lion. Having fur of an orange hue is not. We know that a lion can have white fur, for instance. Yet we still call such 'white lions' lions because they still have the necessary property of the lion gene even though they do not exhibit the same external properties of typical lions.

So too, I believe, a process should be described in such a way that its necessary properties are given emphasis whilst its contingent properties are ignored. Take our example at hand. Samantha's coming to believe *p* has some necessary properties and some contingent properties. For example, if Samantha touched the ice cube at noon plus one second, it is plausible to assume that she would still have formed the belief *p*, all things being equal. The time that the belief is formed is a *contingent* feature of the process at hand. If we vary or change the contingent properties the belief would remain the same. If we vary or change the necessary properties then the belief would change. I think this is a pretty innocuous assumption. A skeptic might well say that Samantha's perceptual process was only working correctly at the exact instant of noon and not before or after. I'm not interested in refuting skepticism at present, however. Let us maintain the working assumption of a properly functioning cognizer. So too, the date in the description is also contingent. If it had been the 20th of October and the conditions were the same, I think we can safely assume that Samantha would have formed the belief *p* as well. So we can dispense with the date as well. It is my contention, then, that if we move away from the contingent towards the necessary properties of the type responsible for a token belief, we will move towards a more general description and hence avoid the problem of the narrow type that has only one token, i.e. the single case problem.

I think that my argument is well aligned with our common practice when describing things. When I see the painting "La Premiere Sortie" on a gallery wall, I say it is a Renoir. I do not say to my companion: "It is a painting by the French impressionist Pierre Auguste Renoir, who was born in 1841 to a tailor and who died in 1919, who broke his arm twice, the painting that is on a canvas of 65 x 49.5cm, that hangs in the Tate, and is the possession of *y*, and that is now priced at *z* dollars." A person who described the painting thus would be said to be overdoing it. Rather, our practice of description tends towards the more general.

If we maintain our consistency and follow this practice when it comes to describing cognitive processes, we will be able to avoid the single case problem quite easily. Take our example of my belief *p* that 'there is a piece of paper on my desk.' The process type involved should not be described such that it involves descriptions of the time, date, or place of the belief formation. These are only contingent properties of the process at hand and play no part in belief formation. If we ignore these contingent properties we will avoid the scenario of only one token belief per process type. In other words, we will manage to avoid the single case problem.

5.4.3 *The No Distinction Problem Revisited*

If what I have said about the single case problem is correct, the reliabilist would then have to face the no distinction problem. Concerning this difficulty I think that there are several possible theoretical avenues open to the reliabilist. I will mention four such possibilities. The first possibility allows for the refinement of process descriptions according to the variable epistemic status of output beliefs. The other solutions deny the necessity of such refinements and instead opt for a broader description of process types. Solution two questions the very

premise of the no distinction problem. The third solution introduces the need to recognize the quality of sensory inputs. Finally, the fourth solution returns us to the proper function of processes. The four solutions do not cohere with one another. Each solution takes a unique approach to the problem. Any of these solutions would suffice to defend process reliabilism against the no distinction problem. At present I favor solution three whilst recognizing that solution one is the quickest and easiest solution.

5.4.3.1 *The Theoretical Flexibility of Goldman*

I think Goldman would not object to dividing types into smaller type units according to the epistemic status of the token beliefs each type produces.[50] Goldman may very well agree with Feldman that there might be one reasoning type for good reasoning, such as reasoning based upon modus ponens, and another reasoning type for bad reasoning, such as reasoning based on fallacies such as affirming the consequent. For Goldman nothing hinges upon this multiplication of types since he was never committed to the Standard View, which broadly describes processes, in any strong way. This would be an adequate solution to the no distinction problem.

5.4.3.2 *Denying the Premises of the No Distinction Problem*

Before I get into a second avenue open to reliabilists in response to the no distinction problem, let me first say something about my position on the generality of processes. I think that types should be described in as broad a fashion as possible, subject to certain constraints that I shall introduce later in this section. If a broad description can adequately account for

[50] This division should not be excessively narrow so as to avoid the single case problem.

the type responsible for the formation of a specific belief in a specific case, then there is no need to insist upon narrower or more specific descriptions of types. In general, it seems that such broad descriptions do adequately account for our understanding of belief formation. For example, when it comes to describing the type responsible for my token belief *p* that 'it is raining outside,' the requisite description of the process type could be 'beliefs produced by the visual type,' or something similar to that. There is no need to insist upon a specific description since the broad description adequately accounts for my belief *p* in this case. To insist upon specific descriptions when broad descriptions are adequate amounts to the unnecessary complication of matters.

We then come to the question of whether the formation of beliefs of varying epistemic status by a single process poses a problem for such a broad understanding of process types. Feldman thinks it does (1985: 170, 172). Feldman claims that since a broad type can produce token beliefs of varying epistemic status, broad types must be divided into several types, some producing beliefs of a high epistemic status and others of lower epistemic status. Feldman's example is the reasoning process which he thinks cannot be viewed as one process because there are token beliefs of good reasoning and token beliefs of bad reasoning that have different epistemic status. Process reliabilism therefore, Feldman argues, cannot adopt the Standard View that describes types broadly since types must be divided into smaller units that produce token beliefs of equal epistemic status.

However, I think Feldman is wrong to argue that beliefs produced by bad reasoning and those by good reasoning requires reliabilists to distinguish reasoning processes because of the varying epistemic status of such beliefs. I propose that there is another way to respond to the no distinction problem. Let us take the visual system as our prime example. It seems obvious

that under different conditions the visual process is likely to produce some true beliefs and some false beliefs. However, if the ratio of true beliefs to false beliefs of the visual system as a whole is significantly greater than 0.50, then *all* the beliefs produced by that type are justified. On this account there is no such thing as beliefs varying in epistemic status *within* a process type. Beliefs vary in levels of justifiedness between process types since one type can have a higher ratio of true beliefs to false beliefs. But within one process there is no such variance. Within a process type there are only *true* or *false* beliefs. There are no beliefs formed by a single process some of which are *justified* and some of which are *unjustified*. Either all beliefs produced by a process are justified or all unjustified. Feldman is confusing the intuitions and assumptions that support his evidentialism with the way justifiedness of beliefs works in process reliabilism.[51] The intuition to think that beliefs can vary in epistemic status within a process type is misinformed. Whilst acknowledging this intuition, I think that there are better reasons to believe that beliefs do not vary in epistemic status within a single process type.

5.4.3.3 *Varying Epistemic Status and the Quality of Perception*

The third solution arises from the distinction between the internal and the external causal history of a belief. Goldman stipulated the condition for belief-dependant processes that requires their belief inputs to be justified in order for their outputs to be justified (Goldman 1979: 347). I think the same concession should be made for perceptual processes. How can we expect perceptual processes, which are functioning properly, to produce more true beliefs

[51] This response takes a much stronger line in that it does not concede to Feldman that a single process can produce token beliefs of varying epistemic status. The third and fourth options that I offer in response to Feldman, though granting that a single process can produce token beliefs of varying epistemic status, open up the possibility that such a concession need not necessitate the breaking up of processes according to the epistemic status of token beliefs.

than false beliefs when the *quality* of sensory input is weak, low, or degraded? My visual process might be working perfectly, but how can I possibly be expected to form more true beliefs than false beliefs based on visual sensory input if I merely open my eyes for one second? How can I be expected to form a correct belief about whether a certain surface is hot or cold when I am wearing thick gloves? In such cases the sensory input to the respective perceptual processes is not of a quality that is sufficient for the likelihood of a true belief being formed, i.e. for the process to operate reliably.

Consider the following case that bears out the point I am making. This case concerns two instances of the visual process, broadly described:

1. Pam sees a pencil on her nearby desk in good lighting conditions, with her glasses on, and pays the requisite time to the pencil to form the belief *p* "that there is a pencil of my desk."
2. Pam is on safari and sees in the distance an animal she takes to be a hyena and forms the belief *q* "that animal is a hyena." Pam, however, does not have her glasses on, it is dusk so the lighting is bad, the distance between Pam and the animal is significant, and Pam only manages to catch a glimpse of the animal before it dashes into the brush.

In Pam's case we might wonder whether the sensory input that her eyes are receiving in the second scenario is of an adequate quality for her to form true visual beliefs. For all we know, her visual process might be perfectly reliable, as it is in the first scenario, but she forms false beliefs about objects in her environment because she is receiving degraded sensory input. Intuitively, Pam's belief *q* is unjustified, even if true, because her belief *q* is the product of

perception in unfavorable conditions. In such conditions Pam could just have easily have formed the belief that the animal is a wild dog. There is no correlation between her belief *q* and the reliability of her visual process as there is between her belief *p* and the reliability of her visual process.

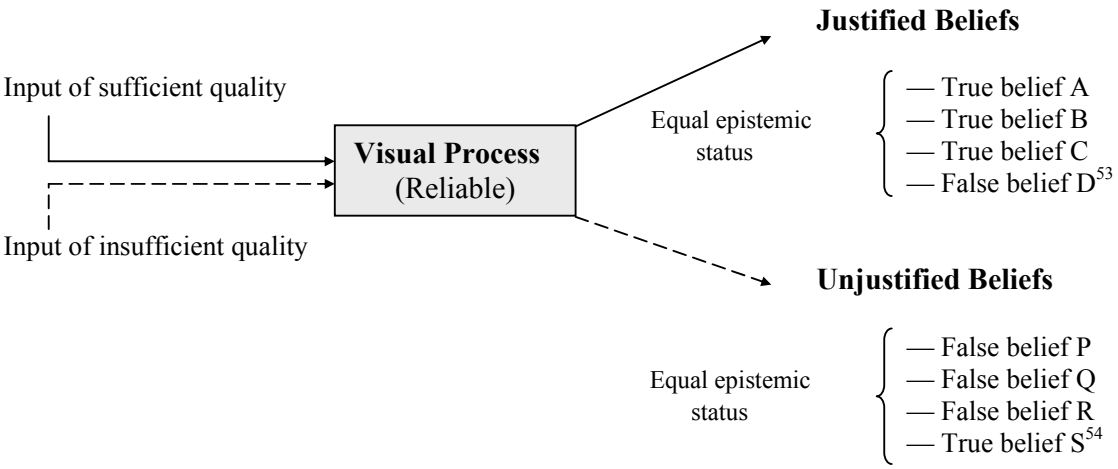
The quality condition then works as follows in response to the no distinction problem. Many of those perceptual beliefs we intuitively consider to be unjustified are the product of perception operating with inputs of an insufficient quality. Under such conditions a true visual belief would probably be a lucky guess. Such perceptual beliefs should be unjustified. However, all beliefs formed by perception with inputs of sufficient quality will share an equal epistemic status. Thereafter the output beliefs of a perceptual process operating reliably will not differ in epistemic status to such a degree that evinces the no distinction problem.[52] Pam in the second scenario has an unjustified belief because of the insufficient quality of the perceptual input, not because her visual process is unreliable. Her visual process, when given the sufficient degree of quality input, will function reliably and all token outputs of her visual process will be equally justified. It is just unfortunate that in the second scenario her visual process is not given what it requires to operate reliably. A broadly described process type will therefore have token beliefs some of which are justified (viz. when the input quality is sufficient) and some token beliefs which will be unjustified (viz. when the input quality is insufficient). Thus not all beliefs formed by a broadly described process will have equal epistemic status; some will be justified and some unjustified.

[52] An unreliable process is typically a process that has a mechanism which operates in a dysfunctional manner so as to turn inputs of a sufficient quality into output beliefs with a very low truth ratio, e.g., wishful thinking or guessing. A reliable process is likely to be a process which if given inputs of a sufficient quality will form output beliefs that have a high truth ratio, e.g., the perceptual process. Thus a process which is given inputs of a sufficient quality will not have output beliefs of differing epistemic status.

If the foregoing is correct, then we can still describe processes broadly and not fear that all the token beliefs have to share equal epistemic status when we intuitively do not think that that is the case. By this I mean that we can describe processes using broad descriptions, viz. the visual process, and thereafter add a rather minor qualification, viz. the visual process operating with the adequate quality of inputs. These minor qualifications, viz. the quality of inputs qualification, prevent the broad description from being susceptible to the no distinction problem. Describing processes broadly therefore need not lead one into the no distinction problem.

The diagram below represents this new understanding of how quality-dependent cognitive processes operate under conditions in which the quality of input varies. Figure 5.1 represents the visual process, broadly described, when it is *reliable* in world *W*. Figure 5.2 represents the visual process, broadly described, when it is *unreliable* in world *W*.

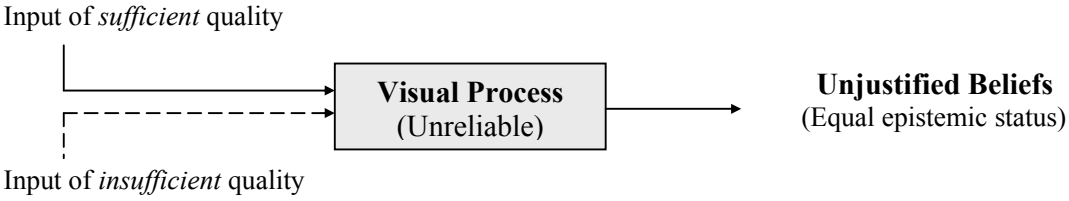
Fig. 5.1



[53] Process reliabilism allows for a justified false belief. Cf. chapter 2 and 4.

[54] Process reliabilism allows for an unjustified true belief. Cf. chapter 2 and 4. In the case of a true belief formed on the basis of inputs of insufficient quality to an unreliable process, the output belief is true by luck. 'Luck' in the epistemic sense can roughly be defined as the fortuitous formation of a true belief such that had the input been different the output belief would have remained the same. The reason why we deem true beliefs formed by

Fig. 5.2



Hence, I am of the opinion that the quality of input needs to be taken into account as a necessary condition for the justification of a belief since we can have a perfectly reliable process working in the formation of a belief but that the inputs to that process are not of a sufficient quality for that process to form true beliefs in that instance.

If we need to take into account the quality of input to a cognitive belief-forming process, which Goldman has not done, then I think we need to add a further clause into the formulation of process reliabilism. Goldman should account for a sensory process that would be reliable if the relevant sensory inputs were of a sufficient quality. A quality clause (f) can be added to process reliabilism as follows:

(8) S's belief *p* at *t* is justified if and only if:

a) S's belief in *p* at *t* results from a conditionally reliable belief-dependent cognitive process or an unconditionally reliable belief-independent cognitive process;

b) This process functions properly in the production of *p*;

---

luck, such as lucky guesses, to be unjustified is that there is no input of a quality sufficient to form that true output belief.

c) There is no other reliable process available to S such that if it had been operating in addition to the process operating in the formation of belief *p*, S would not believe *p* at *t*;

d) The clash between this additional reliable process and the first process, or the reasoning process, is adjudicated by the reasoning process; the operation of the reasoning process suitably restricted by the proper function clause (b).

e) The cognitive process operating and/or method used in the formation of *p* at *t* results from a correct choice and application of such a process and/or method by a metareliable second-order cognitive process;

f) The inputs to a belief-independent sensory process need to be of a sufficient quality required by the relevant belief-independent sensory process to function properly.[55, 56]

I don't think that the inclusion of a quality clause goes against what Goldman has said about the extent of the cognitive process. Nor does it amount to a capitulation to internalist concerns. Rather, the quality clause is merely stating that a process cannot be expected to be reliable and form justified beliefs when it is not given what it needs to form such justified beliefs. What the requisite quality for each of the sensory processes is, needs to be determined by experiment. For example, when it comes to the auditory process, it is possible to form true beliefs based upon very brief sound bytes. On radio stations there are often

[55] There are similarities between my quality clause and Plantinga's view that a mechanism needs to be working as designed in a suitable environment for a belief to be justified. Whilst I note this similarity I am not committing myself to Plantinga's theory. For differences between my quality clause and Plantinga's theory of proper function, see sections 3.4 and 5.5.

[56] The quality clause need not apply exclusively to sensory processes. It makes sense that it could apply to any cognitive process which is input-quality dependent. I merely used sensory processes to make the point of quality since the quality of input is most understandable in cases involving sensory input.

competitions that involve the correct identification of a song with only seconds played of that song. And listeners are very often adept at correctly identifying the song. So for some sensory processes the requisite time exposure to input need not be long. But, referring back to the radio competition example, the sound quality still needs to be good. So whilst I may be able to correctly identify a song by only listening to seconds of it, the volume needs to be high enough for my ears to pick up the sound. My favorite song could be playing but I mistakenly identify it as another song simply because I cannot hear it adequately. So quality of sensory input should be accounted for in process reliabilism.

5.4.3.4 *Proper Function and Clashes*

The fourth option open to process reliabilists in response to the no distinction problem is that Feldman's argument can be countered with the proper function clause I developed in chapter 3. If one wanted to avoid questions of sensory quality, one could say that in Pam's safari case that she is not using her visual process properly. She is forming beliefs without her glasses, in bad light, etc. She is not giving her visual process what it needs to do its job, i.e. to function properly. Pam should have realized that under those conditions her visual process cannot be expected to produce mostly true visual beliefs as it does under normal conditions.

We can further say that her reasoning process should have intervened before Pam formed belief *q* by recognizing that the visual process could not function properly under such conditions. And we know from (8) that any clash between one process and the reasoning process requires that the reasoning process should win. So Pam's belief *q* is not justified because Pam's reasoning process should have told her that it is unlikely that the visual process could function properly in those conditions on safari and that she should therefore

withhold a belief about the identity of the animal in the distance or form a more conservative belief *r* "that the animal in the distance appears to be a hyena but I could be mistaken." Hence not all beliefs formed by the same process, broadly described, share equal epistemic status thereby demonstrating the incorrect premises of the no distinction problem.

There are thus several options open to a process reliabilist when it comes to the no distinction challenged put forward by Feldman. Firstly, processes can be divided into narrower types such that the token beliefs of that process are of nearly equal epistemic status. This solution amounts to agreeing with Conee and Feldman that the descriptions of processes should be refined according to the epistemic status of outputs beliefs. Secondly, if process reliabilists wanted to take the harder line, they can deny that beliefs produced by a single process can have varying epistemic status. Alternatively, process reliabilists could make use of the third and fourth solutions, my quality and proper function clauses, which attribute the varying epistemic status of the outputs of broadly-describe processes to other factors, namely the quality of perceptual inputs and the proper function of the relevant process.

It would appear from the foregoing that there is a clash between clauses (a), (b), and (f) of (8) since it is possible for a belief to be formed by a reliable process yet not be justified. The clash, however, is illusory. The reason why Pam's belief *q* might be said to be unjustified is *not* because Pam's visual process is unreliable. It might be perfectly reliable. Rather, the reason why Pam's belief *q* could be said to be unjustified is because it involves a clash with another process—the reasoning process—or because it is not operating properly with the requisite quality of sensory input. A belief may have prima facie justification when looking at the process's reliability alone. Yet, in conjunction with the other non-defeating clauses that belief may then turn out to be unjustified. Taking this to mind, I think the proper thing for a

reliabilist to say is that Pam's belief *q* is not justified because of clauses (b), (d), and (f). So the reason Feldman's argument for the no distinction problem does not work is that the reason why beliefs of the same process might have different epistemic status is *not* because of the process itself, but because of other necessary conditions for full justification. That beliefs formed by a single process differ in epistemic status does not necessarily require the breaking down of the broader type into smaller specific types that deliver beliefs of (nearly) equal epistemic status. The varying epistemic status of beliefs produced by the same type is not a result of problems within the type but rather a result of the beliefs' relationship with the other necessary conditions for being justified. There is no reason why process reliabilism as a theory should shun the intuition that a single process type can form output beliefs some of which are justified and some of which are unjustified. Whether a token output belief is justified or not depends firstly and most importantly on whether the process that formed that belief is reliable or not. If not, the belief is unjustified. If yes, the other necessary conditions have to be jointly satisfied, depending on the case, before the belief can be finally judged as justified. If the process is reliable but the belief does not satisfy the other necessary conditions, then the belief, though formed by a reliable process, is not justified.

Process types can therefore be described broadly without the worry that such descriptions will be caught in the net of the no distinction problem since a single process can produce both justified and unjustified beliefs. I admit that this goes against Goldman's stance on reliability and is a more complex response open to process reliabilists to the no distinction problem. According to Goldman's understanding of reliability, all the beliefs formed by a single process share an equal epistemic status—all justified or all unjustified. Contrary to this, I say that the beliefs of a single reliable process need not share equal epistemic status. Those beliefs whose input-output functions jointly satisfy the necessary requirements share an equal

epistemic status as all justified. Those beliefs that only satisfy some of the necessary requirements share an equal epistemic status of all unjustified. On my account, therefore, a single reliable process, broadly described, can produce beliefs some of which are justified and some of which are unjustified.

If what I have said in response to the single case problem and the no distinction problem is correct, process reliabilism need not fear the generality problem as some think it should. I have endeavored to show that the premises of the generality problem are not as sound as its proponents think they are. The single case problem can be countered using the distinction between necessary and contingent properties of types whilst the no distinction problem can be countered using clauses (b), (d), or (f). The real test, however, will come with advances in cognitive science and similar sciences. If no relevant type can be identified then process reliabilism might be in trouble.[57] So a final judgment on the generality problem is hard to make at present. If types can be described in as broad a fashion as possible, thus simplifying the entire belief forming operation, then I think that the findings of cognitive science may well vindicate process reliabilism in the future with the specification of process types. If, however, cognitive science comes to teach us that belief formation is much more complicated than we have thought, then the task ahead of process reliabilists is going to be tough.[58] So whilst the jury may still be out on the generality problem, there is much more hope for process reliabilism than was previously thought possible.

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[57] C.f. footnote 8.

[58] The task of cognitive science is not to prove process reliabilism correct. Rather, the findings of cognitive science need to be explored by the process reliabilist to ascertain if the conditions specified from the perspective of a metaphysical theory do in fact hold in the empirical world of cognitive processing. So the findings of cognitive science may come to cast doubt on the theory of process reliabilism. Cognitive science, according to Goldman's epistemics, is therefore not the handmaiden of metaphysical epistemology. Rather, epistemology has to be aware that the findings of cognitive science can have an impact on epistemological theory after the fact.

5.5 *A Note on Context*

Many have noted that the reliability of a process depends upon the context or environment in which it is operating. In our example Pam's visual process is reliable in scenario 1 but unreliable in scenario 2. Does this imply that reliability must be determined relative to the context of the cognizer? Plantinga's theory would imply that such a requirement is necessary for justification.[59] Moreover, Goldman's stance on the modality of process reliabilism further tends toward the conclusion that reliability needs to be specified relative to a certain locale. In this section I wish to offer a solution to the context problem.

The specification of the environment is a notoriously difficult problem. If the environment is described in one way, then the process will be reliable. If described in another way the process will be unreliable. The typical case is of the visual system which is unreliable in the universe in general and reliable under more specific conditions on earth conducive to vision (Pollock & Cruz 1999: 116-119). If we assess the reliability of the visual process in the universe in general to determine whether Pam's belief in scenario 1 is justified, then we will conclude that her belief *p* is unjustified. If we assess the reliability of her belief under the conditions specified in scenario 1, then her visual process is reliable and hence her belief *p* is justified.

What would be an adequate response to this problem? I think my quality clause adequately responds to this problem. We assess the reliability of a process under the conditions according to which the quality of the inputs is sufficient for the process to form true beliefs. The quality of visual inputs in the universe at large is generally not sufficient for the visual

[59] See *Warrant and Proper Function*, chapters 1 and 2.

process to form true beliefs. However, under certain conditions in which the inputs are of a sufficient degree, the visual process will be reliable, viz. in scenario 1 in Pam's case. By focusing on the quality of inputs as opposed to the description of the environment I think it is possible for the process reliabilist to avoid the problems normally associated with the description of the relevant environment. For instance, if it so happens that the eye receives inputs of a sufficient quality to form a true belief in an environment that is normally not conducive to the formation of true beliefs, such as in the universe at large, then the belief formed by the visual process is justified in that specific circumstance because the visual mechanism has received an input that is sufficient in quality for it to operate properly. In this sense I think my insistence on quality as opposed to environment allows more flexibility in my theory which propitiously avoids the problems associated with the description of the environment relative to which the process's reliability will be determined.

I am therefore proffering a form of process reliabilism according to which the reliability of the process at hand is determined relative to the environment in which a psychological process is operating. This context-relative modality is something which I will explore in more detail in chapter 6 and 7 where I espouse a world relative modality for process reliablism that I believe handles the evil demon problem the best. Thus, whilst my version of process reliabilism might have similarities with other forms of reliabilism that do make accommodation for the environment in which a process operates, I do not make as strong a commitment to the environment as say Plantinga does. Rather, my commitment to the environment is indirect whilst his is direct.[60] By this I mean that whilst the quality of the input is normally determined by the environment, it need not be the case in every scenario. As mentioned above, the visual process is not reliable in the universe at large. But if it so

[60] Whilst we both relativized reliability to context, he does so according to the environment for which the process was designed to function and I to the quality of inputs.

happened that the visual process did receive inputs of adequate quality in outer space on repeatable occasions, then a belief formed by the visual process in that case would be justified. I would think that Plantinga and others would tend to regard a belief formed by the visual process in the universe at large to be unjustified because that is not the environment for which the visual system was designed to function properly and reliably. I make the claim that as long as the input is of sufficient quality to form true beliefs, regardless of whether the process was designed for that environment or not, then beliefs formed by that process in those conditions are justified. It will normally be the case that the quality of input will be of a sufficient degree when the environment described is the environment in which the process was designed to function properly. However, as my example of how it can be possible to have a justified visual belief in environments in which the process was not designed to function, the quality of input clause is a more flexible way of approaching context sensitive reliability in such a way that only makes an indirect commitment to the description of the environment thereby propitiously avoiding the problems associated with describing the environment.

5.6 *Recapitulation*

In this chapter I have analyzed the generality problem in detail. I focused on the debate between Alston, who sought to respond to the generality problem with an interpretation of process reliabilism, and Conee and Feldman, who think that the prospects for a solution to the generality problem are grim. In particular, I showed that the generality problem is actually comprised of three different obstacles. The first is the selection of the relevant type. The second is the single case problem and the third is the no distinction problem.

Alston attempted to allay these problems one by one. Regarding the first problem, Alston thought that there is a matter of fact which type is functionally operative in each case. The function determines the relevant type which can then be identified to assess its reliability. Alston's response to the single case problem involved the analysis of reliability on the counterfactual level as opposed to reliability in actual cases. By consequence, the no distinction problem would presumably be solved if the relevant type could be identified and it was not too specific.

Conee and Feldman countered Alston's solution by saying that there could potentially still be many functions involved with any set of inputs. Hence there still remains the initial problem of identifying the relevant function. I then proceeded to explain why Alston's functionalist understanding of cognitive processes might be problematic. However, if it did turn out empirically that only one function operates in the formation of a single belief, this function in turn specifying the relevant process type, then Alston's solution would be adequate.

I then offered my own solution to the generality problem that proceeds on the assumption that cognitive science would identify the relevant process type for each token belief. Firstly, I endeavored to show that the single case problem can be avoided by reliabilists if process types were to be described using necessary instead of contingent properties of such processes. Descriptions of necessary properties are bound to result in a broader description of the relevant type that neatly avoids the single case problem. Such an approach to the description of the relevant type is more in line with our common descriptive practices.

Secondly, I argued that there are four avenues open to the reliabilist in response to the no distinction problem. One, the process reliabilist can divide process types such that the tokens

of each type do have equal or nearly equal epistemic status. Two, there is no need to divide processes finely since token beliefs cannot differ in epistemic status within a single process. Three, the quality of input clause and, four, the proper function clause can be used to account for the varying epistemic status of beliefs of a broadly described process. The first response seems to be the simplest of the four and is therefore perhaps the easiest option open to reliabilists.

It is my conclusion then that the sting of the generality problem, thought to be so detrimental for process reliabilism, can be dulled if we follow my proposals. At this point the generality problem does not amount to the decisive challenge many have thought it to be.

Chapter 6

Strong & Weak Justification (1988)

The theory of process reliabilism as set out in "What is Justified Belief?" and *Epistemology and Cognition* encapsulates Goldman's core argument for the dependency of a belief's justifiedness on the reliable formation of the belief. In his 1988 paper "Strong and Weak Justification"[61] Goldman proposes to distinguish between two conceptions or senses of justification. The contents of this paper do not amount to a reconsideration of process reliabilism. Rather, this paper is an attempt by Goldman to apply his theory to difficult cases that have troubled him since 1979. With these two conceptions of justification Goldman makes a minor modification to his theory whilst keeping the whole essentially the same. Goldman thinks that with this structural modification in place, his reliabilist theory of justified belief can handle these difficult cases better. In this chapter I shall examine Goldman's reasoning for the inclusion of these two conceptions of justification as well as his application of these two concepts to these difficult cases.

[61] This paper originally appeared in *Philosophical Perspectives*, *2*, *Epistemology*, 1988, edited by James E. Tomberlin, Ridgeview Publishing Co. I shall be using the version of the paper found in Goldman's *Liaisons*, 1992, MIT Press, pp. 127-143.

There are three parts of "Strong and Weak Justification" to which I want to pay particular attention owing to the importance of these parts for our evaluation of the adequacy of Goldman's theory of justified belief. The first is the strong versus the weak conception of justification. The second is the evil demon problem. The third is Goldman's jettisoning of normal world chauvinism in favor of a world relative criterion of justifiedness.

6.1 *The Benighted Cognizer*

The impetus for the introduction of the strong and weak conceptions of justification is the case of the benighted cognizer. This thought experiment involves the following scenario (Goldman 1992: 127):

> Consider a scientifically benighted culture of ancient or medieval vintage. This culture employs certain highly unreliable methods of forming beliefs about the future and the unobserved. Their methods appeal to the doctrine of signatures, to astrology, and to oracles. Members of the culture have never thought of probability theory or statistics, never dreamt of anything that could be classed as 'experimental method'. Now suppose that on a particular occasion a member of this culture forms a belief about the outcome of an impending battle by using one of the aforementioned methods, say, by consulting zodiacal signs in a culturally approved fashion. Call this method *M*. Is this person's belief justified, or warranted?

In this case, which has probably occurred numerous times in history, many would find that they have an apparent clash of intuitions. In one sense, we might be inclined to say that the belief is unjustified. In another sense, we might be inclined to say that the belief is justified. The origin of the negative inclination towards regarding the belief unjustified is clear enough—method *M* is not a reliable method. Goldman thinks this inclination towards regarding the belief unjustified can be explained in another way. He says that that since few would say that the benighted cognizer *knows* what the outcome of the battle will be, the root

of saying that he does not know is because his belief is not justified, assuming that justified true belief is needed for knowledge (128).

The positive inclination to say that the belief in the outcome of the battle is justified rests upon a sense that the cognizer is using a method trusted by his peers in his cultural environment. He has no reason to suspect that the method is wrong. That is what he has been taught to do in such circumstances. We would want to call the belief justified since we find the benighted cognizer *blameless* or *not at fault* in forming such a belief in the outcome of the battle based upon method *M*.

6.2 *Strong and Weak Justification*

The foregoing suggests that there are two conceptions of justification. The first concerns how a belief is *formed* whilst the second concerns the issue of *blameworthiness* in the formation of a belief. The first conception is stronger than the second in that it has the additional requirement that a belief be well-formed. The second conception makes no such demand. The first conception of justification Goldman calls the *strong* conception and the second he calls the *weak* conception. Alternatively, we may say that there is an objective conception of justification, which concerns the truth of beliefs, and a subjective conception of justification, which is justification from the cognizer's point of view. A belief *p* is therefore strongly justified if it is objectively justified and weakly justified if justified from the subjective point of view.

These two conceptions of epistemic justification are then applied to the levels of primary and secondary epistemology, as specified in *Epistemology and Cognition* (93-95). Recall from

chapter 4 that primary epistemology deals with belief-forming processes whilst secondary epistemology deals with belief-forming methods such as algorithms, heuristics, statistical analyses, etc. A belief that has been formed by the operation of processes and the use of methods is fully justified if and only if the first-order process(es) and method(s) involved in the formation of that belief are reliable and were acquired by a reliable second-order cognitive process. Putting the two conceptions and the two levels of justification together, we get strongly and weakly justified beliefs on the primary level and strongly and weakly justified beliefs on the secondary level. I now turn to a fuller explication of these different levels of justification.

6.3 *Secondary Epistemology*

Strong justification on the level of methods requires that the method used in forming a belief be proper or adequate. Just what constitutes a 'proper' or 'adequate' method is debatable. But Goldman thinks that "[a] natural and appealing answer is a reliabilist answer: a method is proper or adequate just in case it is reliable, i.e., leads to truth a sufficiently high percent of the time" (129). Thus the benighted cognizer's belief is not strongly justified because the method of consulting zodiacal signs is not reliable—such a method does not correctly predict the outcome of war a satisfactorily high percentage of the time.

According to Goldman, however, the use of a reliable method is not sufficient for strong justification. Two further necessary conditions are required. The method used must have been acquired by reliable first-order processes or methods and/or reliable second-order processes.[62] Secondly, the cognitive state the cognizer is in at the moment of her employing a method

[62] See chapter 4, section 4.5, for the details of this relationship.

must not undermine the correctness of the method. In other words, the cognizer must not have reasons to believe that the method she is employing is unreliable or that she is unjustified in using that method.[63]

Taking all the foregoing conditions into consideration, Goldman delineates four conditions jointly sufficient for a belief formed by a method to be weakly justified (131):

> *S*'s belief in *p* is weakly justified (at the secondary level) if:
>
> 1) The method *M* by which the belief is produced is unreliable;
> 2) *S* does not believe that *M* is unreliable;
> 3) *S* neither possesses, nor has available to him/her, a reliable way of telling that *M* is unreliable;[64]
> 4) There is no process or method *S* believes to be reliable which, if used, would lead *S* to believe that *M* is unreliable.

Goldman thinks that weak justification seems to adequately account for our positive inclination in the benighted cognizer case. The cognizer's belief is ill-formed. Hence it cannot be strongly justified. But we are inclined to say that since the cognizer did not think *M* an unreliable method, nor does he have a way to tell that *M* is unreliable, and, lastly, he does not think that there is a more reliable method of telling the outcome of battles, he is nevertheless justified in his belief. Therefore his belief in the outcome of the battle, though ill-formed and therefore most likely false, is weakly justified.

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[63] This non-defeating clause is covered in chapters 2, 3, and 4.

[64] See pp. 132-133 for Goldman's analysis of the words 'possession' and 'availability' as they feature in this condition.

At this point in the paper one can read Goldman as saying that weak justification does not amount to a concession by reliabilism to internalist concerns since Goldman's core theory of reliable formation of a belief remains the same throughout—only when a belief is formed by a reliable process is it fully or strongly justified. Thereafter a belief, strongly justified, may be considered for knowledge. A weakly justified belief cannot be converted into knowledge. Weak justification is merely Goldman's attempt to show that our intuition to say that the benighted cognizer has a justified belief can be accommodated within a reliabilist framework. By bifurcating justification into two conceptions or senses of the term, Goldman thought that the difficult case of the benighted cognizer could be satisfactorily accounted for. In due course I shall explain why I think Goldman is mistaken in thinking that a second conception of justification, namely weak justification, adequately accounts for our intuition in the benighted cognizer's case.

6.4 *Primary Epistemology*

Strong and weak justification make a similar appearance at the level of processes. *S*'s belief *p* is strongly justified on the process level if and only if (1) it is produced by a reliable process, and (2) *S* is not in a cognitive state that undermines her belief in *p*. Weak justification at this level parallels that at the method level. Thus, weak justification in *p* (135),

> *S*'s belief in *p* is weakly justified if:
>
> 1) The process by which the belief is produced is unreliable;
> 2) *S* does not believe that the process is unreliable;
> 3) *S* neither possesses, nor has available to him/her, a reliable way of telling that the process is unreliable;

4) There is no process or method *S* believes to be reliable which, if used, would lead *S* to believe that the process is unreliable.

I have two inclinations towards weak justification. There is my initial inclination to think that weak justification amounts to an unnecessary accommodation of internalist intuitions. Then there is my second inclination to say that whilst weak justification does seem to account for certain inclinations in the benighted cognizer's case, there is a theoretical difficulty it poses that undermines its inclusion in a reliabilist theory of justified belief. Both inclinations are contra weak justification, the first more so than the second. In the next two sections I shall adumbrate each of these inclinations.

6.5 *First Inclination*

I agree with Goldman when it comes to strong justification. Strong justification remains true to his theory of justified belief until this point. A belief is only justified in the sense that it is a potential candidate for knowledge when it has been formed by a reliable process. This is the position Goldman has maintained since he formulated process reliabilism in "What is Justified Belief?"

There is much to say about weak justification, however. Weak justification indicates a rather significant departure from his previous work on justification. If we look closely at weak justification we see that it is possible for a belief to be produced by an unreliable process yet judged to be justified, albeit on the weaker conception. This goes against what Goldman has said in his previous work. Until now Goldman has been arguing that reliability is *necessary* for justification. If it is now possible for a person to have a weakly justified belief yet where

that belief was not produced by a reliable process, then the necessary link between reliability and justification is broken. This is precisely what Goldman's detractors have hoped for all along. It is only the strong conception of justification that captures the necessary connection between reliability and justification. The status of *justified* should be reserved exclusively for a belief formed by a reliable process. Weak justification exemplifies what the evil demon problem is supposed to show—that it is possible to have a justified belief that is produced by an unreliable process and/or method. Goldman should therefore not include the weak conception of justification in his theory of process reliabilism.

A further disturbing element of weak justification is that it is the result of internalist thinking about justification. Process reliabilism exemplifies an objective approach to the question of justified belief. Weak justification exemplifies a subjectivist theory of justified belief. Reliability is a naturalist and externalist theory of justification in that it appeals to the truth ratio of beliefs produced by a process. It does not concern itself with the questions of whether the cognizer is to be blamed or not for forming such a belief. If the truth ratio of a process is below a ratio that is satisfactorily higher than 0.50, then the process is unreliable and hence beliefs produced by it are unjustified. That is the crux of reliability. Other internalist considerations that are not naturalistic are not part of the reliabilist agenda and nor should they be. Once we begin to consider whether a cognizer has questioned whether the process or method he is using at present is reliable or not, we get into internalist territory. Remember, Goldman has said that it is not necessary that a cognizer be able to ascertain whether the process or method he is using at present is reliable or not. This was his rejection of the KK or JJ principle that is the backbone of internalism. By including a weaker conception of justification Goldman has allowed internalist considerations to adulterate the naturalist and

externalist ethos of process reliabilism. For these reasons I think Goldman should jettison weak justification and remain satisfied with strong justification.

What then is the reliabilist to say about the inclination we have to judge the benighted cognizer's belief as justified? Whilst it is true that the benighted cognizer cannot be blamed for forming the beliefs that he does, the unfortunate plight of this cognizer does not warrant a theoretical change to reliabilism. Rather, the reliabilist could say one of two things. One, the benighted cognizer, of which we can be an example, is just unfortunate in that he is in a predicament that fosters the innocent use of unreliable processes and methods.

Two, the benighted cognizer is precisely the case where externalism shows its true colors. Internalists would be more susceptible to a lenient consideration of this cognizer because they would bring into play the J-factors, those factors that determine whether a belief is justified or not, that are accessible to the cognizer upon reflection. Such internalists would take into consideration that the benighted cognizer has considered or reflected upon the reliability of the process of foretelling the outcomes of battles. Externalists do not require such J-factors to be accessible to the cognizer to justify a belief or for the cognizer to know that he has a justified belief. Whilst it is true that Goldman has built into the formulation of reliabilism factors such as undermining cognitive states, such factors do not concern the cognizer's beliefs about his processes or methods in the sense that no metajustification is at work in reliabilism. So when it comes to cases such as that of the benighted cognizer, a process reliabilist is wont to say that the beliefs are unjustified as long as the process by which they were formed is unreliable. No consideration of beliefs about beliefs going on in the head of the cognizer enter into consideration regarding the epistemic status of such a cognizer's beliefs.

Goldman is aware that some might find his inclusion of weak justification within a reliabilist framework as a concession to internalism. On this score he says (139):

> Does my duplex theory of justification amount to an acknowledgement that internalism is partly correct? … I find this hard to answer because the terms 'internalism' and 'externalism' do not have generally accepted definitions … I also doubt whether the weak conception of justification would fully appeal to internalists. Most internalists, I suspect, would like a more demanding conception of justification.
>
> So I do not know whether the duplex theory of justification amounts to a marriage of externalism and internalism. I have no objection to this union, if that indeed is what it is. The important point is that it captures many intuitions about justified belief and does so in a broadly reliabilist framework.

It is rather difficult to make sense of what Goldman is saying here. This confusion is partly because Goldman is noncommittal on the disputed point. It would appear that we could interpret Goldman as saying that if it were true that weak justification could be understood as an incorporation of internalist considerations into reliabilism, that he would not object to such a 'union.' Though he suspects that internalists would not be satisfied with the weak conception of justification, it is possible that some internalists would be satisfied. Then the inclusion of the two conceptions of justification into reliabilism would constitute a union of internalism, of sorts, with process reliabilism, which is a prime externalist theory.[65] The union of such opposites is likely to be theoretically unsuccessful in the long run.

6.6 *Second Inclination*

[65] Goldman eventually wrote a scathing critique of internalism in 1999. This makes me think that Goldman would come to realize that the accommodation of internalist concerns or intuitions within a reliabilist framework is not warranted.

It is true that strong justification remains Goldman's essential account of justified belief. In this sense internalist considerations do not affect the core theory. Goldman has therefore not weakened his account of justified belief. For a belief to be fully or strongly justified a belief still has to be formed by a reliable belief forming process. Instead of weakening the necessary requirement of reliability for justification to account for the intuition to think the benighted cognizer's belief justified, Goldman has merely added a second conception of justification, a weaker one. Therefore the severe treatment of weak justification in 6.5 is not entirely warranted.

Nevertheless, weak justification still remains a problematic concept. The question that now needs to be considered when it comes to these two conceptions of justification is just how similar Goldman intends them to be. It seems as if the two conceptions are intended to capture the same concept, namely justification, but in two different ways—the first objective, the second subjective. But if strong and weak justification are intended to capture justification, how is it possible for there to be a weak concept of justification if Goldman really thinks that the essential account of justification is the strong account? If truth-linkedness is the criterion for justification, how then can blamelessness capture justification? Either weak justification is similar to strong justification or it is not. Dialectically, either answer is problematic. If strong and weak justification are intended to capture the same target concept of justification, then how can they be doing so using two opposing criteria? And if strong and weak justification are different, how can they capture the identical concept of justification?

Justification is that which converts a true belief into knowledge. Weak justification cannot perform this function. Weak justification therefore does not capture the essence of

justification in the way strong justification does. It is thus peculiar that it should be considered as a concept of 'justification' at all. So if Goldman wants to follow the line of argument for strong justification, it seems strange that he would incorporate a weak conception of justification that in the end appears very different from the conception of justification that he thinks is correct. I think that weak justification is a very different concept from that of strong justification and does not capture the concept of justification at all. Blamelessness and truth-linkedness are very disparate concepts. No close association seems viable between the two. Thus the bifurcation of justification into two concepts is theoretically problematic and hence not reasonable.[66]

How then might a reliabilist account for the positive inclination to judge the benighted cognizer's belief as justified? I think the intuition in this case is heavily influenced by internalism's domination of the history of epistemology. Our intuitions contain an internalist bias owing to the influence that typical internalist theories have had on our thinking until recently. With such dominant theorists such as Descartes, Russell, and Ayer being internalists, it is no wonder that we have come to think along the lines of internalism. Once we realize that our intuitions may not be the best guide on the question of justified belief in the benighted cognizer's case, the process reliabilist can respond that there is no need to make some kind of accommodation in the reliabilist framework for these intuitions since these intuitions are biased. As externalism begins to occupy a more central place in epistemology our intuitions on the benighted cognizer may change. We might feel that the cognizer is blameless and could have done no better. But that doesn't mean that he has a justified belief. Our intuitions in many cases may not be clear. Hence an accommodation of our intuition in the benighted cognizer's case may be premature.

[66] I thank Mark Leon for emphasizing the significance of this point to me.

Taking the arguments in sections 6.5 and 6.6 into consideration, I am of the opinion that it would be best if Goldman did not include a weak conception of justification in reliabilism. It brings with it too many accompanying problems. I have mentioned some of them here. I shall discuss some others in the forthcoming section where I deal with strong and weak justification vis-à-vis the evil demon problem.

6.7 *The Evil Demon Problem*

The evil demon problem is the last of the three major challenges facing reliabilism that I am to deal with. This problem has dogged Goldman's theory of justified belief since 1979. Many have noted this challenge facing Goldman.[67] Of the three main challenges dealt with in this paper, the evil demon problem is the most significant problem for it challenges the very necessity of reliabilism for justifiedness. If Goldman's detractors can find a way to show that it is possible to have a justified belief without it being produced by a reliable process, then they have shown that reliability is not necessary for justifiedness. If they succeed in doing this then process reliabilism fails as a theory of justified belief for Goldman has been arguing for the necessity of reliability for epistemic justification. The evil demon thought experiment is precisely the type of counterexample such detractors would use because it accentuates the modality of reliability which can potentially expose a contingent link between reliability and epistemic justification. It is therefore essential for Goldman to show that there is a necessary link between the two by defeating the evil demon challenge.

[67] See Pollock (1984), Pollock & Cruz (1999), Steup (1996), Cohen (1984), Lehrer & Cohen (1983), Ginet (1985), Foley (1985), Plantinga (1993), Comesaña (2002), and Luper-Foy (1985).

The evil demon problem challenge is essentially two problems in one. First, if it is possible to have a justified belief without a reliable mechanism, then process reliabilism is to be discredited. Second, this challenge is essentially a skeptical challenge at heart. The concept of evil demons interfering with the cognitive functioning of people is one typically associated with the challenge from skepticism. However, it is beyond the scope of this paper to deal with the second aspect of the evil demon problem, which is the more specific skeptical question.[68] Each theory in epistemology should make some accounting for the problems identified by skepticism. Goldman has not made this the focus of his version of reliabilism.[69] I shall therefore focus on the internal and theoretical difficulties that the evil demon poses for process reliabilism, i.e. the first aspect of the evil demon problem.

6.8 *The Problem and Goldman's Solution*

The evil demon problem rests upon the following line of reasoning. We can imagine a world *W* in which an agent's perceptual beliefs are produced by processes that are interfered with or manipulated by an evil demon in such a way that all the agent's perceptual beliefs are false.[70] In such a case the agent's perceptual beliefs in the demon world are no different from the justified perceptual beliefs of an equivalent subject in the actual world. In both cases the identical process is operating with identical inputs and outputs. Both persons think they see a dog before them whilst in truth there is only a dog standing before the person in the actual world. The demon makes the victim 'perceive' a dog when there is no dog within the agent's perceptual field. The agent's perceptual beliefs in the evil demon world are therefore always

[68] For a collection of papers that give a good overview of the intricacies of the skeptical challenge, see DeRose and Warfield (1999).

[69] For Goldman's response to skepticism, see *Epistemology and Cognition*, pp. 28-42.

[70] The parallel scenario is the brain in the vat example. I shall keep to the evil demon world case to make the forthcoming analysis simpler.

false and hence unreliable. Yet some would want to claim that the cognizer's perceptual beliefs in the evil demon world *W* are justified because they are identical to the justified beliefs of a cognizer in the actual world produced by reliable processes. There is no phenomenological difference between the beliefs of the evil demon victim and of those of a person in the actual world in which perception is reliable. Thus, if we can imagine a case in which a subject can have justified beliefs which are not reliably produced, we can conclude that reliability is not necessary for beliefs to be justified.

The strong and weak conceptions of justification dealt with earlier in this chapter provide Goldman with a novel way of dealing with the evil demon problem. Goldman claims that the victim does not have strongly justified beliefs because the victim's beliefs are not well formed—his perceptual process is unreliable. Rather, he has weakly justified beliefs since his beliefs, though ill-formed, are blameless since he does not believe them to be unreliable and he has no way of telling that such processes are unreliable. So Goldman's new position on the cognizer in the evil demon world is that such a cognizer has weakly justified perceptual beliefs.

6.9 *Necessity, Contingency, Reliability, and Negative Epistemic Status*

I agree with Goldman in one respect and strongly disagree with him in another when it comes to his treatment of the evil demon problem. I agree with Goldman's claim that the victim does not have strongly justified perceptual beliefs. The basic and most important reason why a process reliabilist should maintain that the victim's perceptual beliefs are unjustified is because the victim's beliefs are produced by an unreliable process. In the case of the evil demon problem, I aver that the cognizer in the evil demon world does *not* have a justified

belief, not even a weakly justified belief. *As long as the process used in belief formation is unreliable in that world, then the cognizer's beliefs are unjustified*. If perception were reliable in the evil demon world then the victim's perceptual beliefs would be justified. But since beliefs formed by the perceptual process are all false, the perceptual process is completely unreliable in the evil demon world. All beliefs produced by the perceptual process are therefore unjustified in *W*.

For the additional reasons given in sections 6.6 and 6.7 I think it wise to reject the weak conception of justification. Weak justification is a problematic concept that does not capture what justification is from an externalist perspective. The reliabilist, in order to secure the necessary link between reliability and justification, should conclude that the evil demon victim does not have justified perceptual beliefs. I therefore strongly disagree with the stance Goldman has taken in the evil demon problem and the benighted cognizer case. Moreover, as I shall discuss in the next section, the world relative modality of reliabilism, which I shall espouse, lends itself to the further undermining of weak justification.

6.9.1 *Actual, Normal, and World Relative Chauvinism*

As discussed in chapter 4, Goldman introduced the normal world criterion of reliability to process reliabilism. Remember, Goldman had no definitive position on reliability across possible worlds in "What is Justified Belief?" Three modal possibilities presented themselves—actual world chauvinism, belief *p* is justified in any world *W* if it is produced by a process that is reliable in the actual world; normal world chauvinism, belief *p* is justified in any world *W* if it is produced by a process that is reliable in normal worlds; and a world relative criterion of reliability where a belief is justified in world *W* if it produced by a

process that is reliable in *W*. In this section I shall discuss the changes Goldman made over the years to his position on the modality of process reliabilism.

6.9.1.1 *The Early Goldman*

The early Goldman favored neither actual world chauvinism nor a world relative criterion of reliability. In *Epistemology and Cognition* Goldman favored normal world chauvinism. Goldman was then of the opinion that neither a relativized nor an actual world criterion of reliability captured our intuitions when it came to difficult cases. According to Goldman we have a large set of beliefs about the actual world. This collection of beliefs forms what Goldman calls a set of normal worlds (107). Normal worlds are generally consistent with the beliefs we have of the actual world. A normal world is not an evil demon world, but it need not be identical to the actual world either. A process is then reliable so long as it is reliable in normal worlds. So normal world chauvinism is the one criterion of reliability across all possible worlds. The concept of 'normal worlds' is quite a strange one. We are used to talk of possible worlds and the actual world. Normal worlds is a novelty that will take some testing in thought experiments to clarify.

The conceptual impetus for normal-world chauvinism comes from Goldman's aversion to certain theories of reference in philosophy of language that lend credence to actual world chauvinism. When it comes to the questions of reference vis-à-vis proper names and natural kinds, there are famous theoretical debates.[71] The causal theory of proper names and natural kinds (Kripke 1980) has gained popularity in recent times. On this view, the reference of a name or term is derived from some 'baptismal' act on an original sample such that there is a

[71] For example, see Donnellan (1997), Frege (1980), Kripke (1997), Russell (1997), and Strawson (1997).

causal connection of sorts between the name and the object so 'baptized'. That name or term then refers to any sample in another possible world that is comprised of the same essential stuff as the original item 'baptized' with that name or term. Even though the item may change over time, it is the object itself that determines reference, not our beliefs about the object that determine reference. Thus, regarding proper names, a baby is named Bill Clinton. Thereafter it is the causal connection to the person himself that determines the reference of that name, not our beliefs about him. For example, Bill Clinton refers to that same person across all worlds from the minute he is born until he dies even though in one world he is the president of America and in another he is a banker. At one stage Bill Clinton is very much like any other baby boy. As time progresses, the young Bill becomes his own man with a unique personality and history. Yet, the name 'Bill Clinton' continues to refer to him, whether he is a baby or a man, despite these changes over time. Regarding natural kinds, for example, the term 'gold' refers to any item in any possible world that has the same essential properties as the item in the actual world to which that name was originally applied.[72] This type of causal theory of reference is compatible with actual-world chauvinism as follows. We baptize a certain process as reliable if it is reliable in this world. Thereafter we consider a process like this to be reliable across possible worlds since it is reliable in this world.

For Goldman the rationale for normal-world chauvinism can be gleaned from one of Peter Unger's thought experiments (1984: 84). Unger wondered what we would call cats in the following interesting case.[73] The things we have considered cats have really been inanimate robots placed on earth by Martian scientists. Then, unbeknownst to us, Martian scientists replace, at this present moment, all feline robots with feline animals? According to the causal theory of reference, the term cat would no longer apply to these feline animals since they do

[72] Gold's atomic number is often thought to be just such an essential property.

[73] Unger borrowed the first part of the thought experiment from Putnam (1975).

not share the essence of the feline robots, the robotic feline mechanism for example, which were the objects upon which the name 'cat' was originally baptized. Unger thinks that this result is intuitively wrong since we would continue calling the feline animals cats.

Goldman claims that we would continue to call these new feline animals 'cats' since the word 'cat' is informed not by *actual* circumstances, but rather by *presumed* circumstances. That is, not by the objects themselves but rather by our beliefs about the objects. So it is inconsequential whether the object is a robot or an animal. What does matter is that we humans cannot tell the difference. So regardless of whether it's the robot or the animal, we will continue referring to either by using the word cat. Words get their reference not by what is the case, but rather by what is presumed to be the case by the agent. The term 'gold' therefore refers to what we humans think is gold. If the object unbeknownst to us turns out to be fool's gold, the term 'gold' would still refer to that object, according to Goldman, as long as we humans thought it was indeed gold. Applying this to the case of justified beliefs, Goldman argues that a process is reliable so long as we presume it to be reliable in this world regardless of whether we are correct about its reliability or not. Thus, a process is reliable if it is reliable in a world that corresponds to the way we believe the actual world to be, that is, in a normal world (108).

6.9.1.2 *The Later Goldman*

In "Strong and Weak Justification" Goldman moves away from normal world chauvinism. Goldman lists four problems with that approach (136). One, there exists the problem of *which* beliefs about the actual world fix the normal worlds. There seems to be a large choice in the matter since we have many beliefs about matters of this world. The significant amount of

beliefs we hold about this world results in too much indeterminacy as to just which ones we should choose to constitute normal worlds. Two, there might be a large set of possible worlds, which differ drastically from one another, that could fit such a set of beliefs. In other words, there might be no unique normal world pinpointed by our beliefs about the actual world. A belief might then only be justified if it was justified in all these worlds, which is a problematic state of affairs. Three, the referent of "*our* beliefs about the actual world" is problematic. To whom are we referring? The entire human race? Me? You? It is unclear whose beliefs about the actual world should be used. People are bound to have differing beliefs about this world. Finally, surely beliefs formed in world *W*, a world that differs radically from ours, by a process that is not reliable in normal worlds but is highly reliable in *W* should be justified? Goldman thinks that intuitively such beliefs should be justified despite them being unjustified in normal worlds. But the normal world approach would deem such beliefs unjustified.[74]

Taking the foregoing problems into consideration, Goldman in "Strong and Weak Justification" proposed that the reliability of a process and/or method should no longer be rigidly fixed across worlds, by whatever criterion. Rather, reliability should be world relative, which means that as long as the process and/or method is reliable in world *W* then beliefs formed in *W* by that process and/or method are justified. By way of exemplification, Goldman applies this new world-relative criterion of reliability to clairvoyance. If there is a world *W* such that cognizers there have a reliable perceptual process of clairvoyance (without an undermining cognitive state and/or contrary evidence), then Goldman is of the opinion that even though clairvoyance is deemed to be an unreliable process in the actual world, and hence in normal worlds as well, beliefs formed by clairvoyance in *W* are justified.

[74] For other problems with normal world chauvinism, see Plantinga (1993: 204).

Goldman is absolutely correct in his claim that if a process is reliable in a possible world *W* and not reliable in the actual world, beliefs formed by such a process in *W* are reliable and therefore justified. *World relativity of reliability shows that justification is necessarily connected to reliability but contingently connected to certain cognitive processes*. For example, the perceptual process might be very reliable in the actual world but in another world *W* it might be highly unreliable. Conversely, clairvoyance might be unreliable in the actual world but reliable in world *W*. The reliability of a process depends upon the world in which it occurs. This is why I have inserted a modal specification in clause (a) of formulation (9) of process reliabilism found in section 6.10. As long as a cognizer is using a process that is reliable in the world in which she finds herself, then such a cognizer is well on her way to having a justified belief—there are still the other necessary conditions specified in (9) that need to be satisfied.

I think that there is merit in this change to a world relative designator of reliability. Actual world chauvinism and normal world chauvinism both have their respective problems. Each delivers counterintuitive results in different cases. I think Goldman is correct in deciding upon a world relative modality of reliabilism. As long as a process is reliable in the world in which it is used, then the beliefs produced by that process are justified. What happens in one possible world need not be affected positively or negatively by what happens in another possible world. World relativity of reliability exemplifies what I have argued for in this chapter—the necessary link between justification and reliability, on the one hand, and the contingent link between reliability and specific processes, on the other hand. A world relative criterion of reliability seems to capture best our intuitions in difficult cases that involve modality.

6.10 *Recapitulation*

To get clear on what I have said thus far, I maintain that the inclusion of weak justification in reliabilism was not a wise decision on Goldman's part. It is possible to acknowledge that a cognizer can be blameless in respect to the formation of certain of his beliefs without considering such beliefs to be justified, even if only weakly so. I have endeavored to show that weak justification brings too many problems on board. Then I proceeded to show that process reliabilism should maintain that the beliefs of a cognizer in an evil demon world are unjustified, hence avoiding the possible debilitating consequences of the evil demon problem. Justification must be necessarily connected with reliability in all circumstances in all modal possibilities. Finally, I wanted to show that Goldman was wise to jettison normal world chauvinism in favor of a world relative criterion of reliability. As long as a process is reliable in a world *W*, beliefs formed by that process in *W* are justified. It is quite inconsequential what process are reliable in the actual world. Reliability is only contingently connected with those processes in the actual world. For all we know, the visual process, thought to be quite reliable in the actual world, might be very unreliable in a possible world *W*. Then beliefs formed by the visual process would be unjustified in *W*.

A world relative criterion of reliability needs to be built into the expanded formula of process reliabilism. This could be done as follows:

(9) S's belief *p* at *t* is justified in world *W* [75] if and only if:

[75] The actual world could be such a possible world *W*.

a) S's belief in *p* at *t* results from a conditionally reliable belief-dependent cognitive process or an unconditionally reliable belief-independent cognitive process;
b) This process functions properly in the production of *p*;
c) There is no other reliable process available to S such that if it had been operating in addition to the process operating in the formation of belief *p*, S would not believe *p* at *t*;
d) The clash between this additional reliable process and the first process, or the reasoning process, is adjudicated by the reasoning process; the operation of the reasoning process suitably restricted by the proper function clause (b);
e) The cognitive process operating and/or method used in the formation of *p* at *t* results from a correct choice and application of such a process and/or method by a metareliable second-order cognitive process;
f) The inputs to a belief-independent sensory process need to be of a sufficient quality required by the relevant belief-independent sensory process to function properly.

Some might point out that the world relative criterion of reliability clashes with clause (d) because the reasoning process, though reliable in the actual world, might be unreliable in possible world *W*. This is a valid point. An amendment to clause (d) is therefore necessary. Though it is impossible to imagine all the different ways in all possible worlds in which clashing processes might be sorted out by the individual cognizer, I think it is reasonable to assume that each cognizer in the different possible worlds would have some type of process available to him or her that would be responsible for adjudicating clashes between beliefs produced by different processes. In this world the reasoning process is the process

responsible for adjudicating clashes. In another world *W* it might be process *x*, which performs a similar function to the reasoning process in the actual world, that is responsible for sorting out such clashes. So all that needs to be done to avoid the clash is to replace the words "reasoning process" in clause (d) with the relevant process in world *W* that does the similar job to the reasoning process in this world. (9) would then be an applicable formula for the necessary and jointly sufficient conditions for justified belief across all possible worlds.

Chapter 7

Virtue Reliabilism (1992)

In 1992 Goldman wrote his final paper on the question of reliabilism and justified belief, at least from the perspective of individual epistemology. "Epistemic Folkways and Scientific Epistemology" (Goldman 1992a), like "Strong and Weak Justification," involves some modification to process reliabilism to handle difficult cases, in particular the evil demon problem and the clairvoyance problem. In this paper Goldman introduces the concepts of virtue epistemology to process reliabilism. Virtue epistemology finds its full expression in the works of Ernest Sosa (1985, 1988, & 1991). Whilst the contents of "Epistemic Folkways and Scientific Epistemology" cover a wide range of issues, e.g. the relationship between folk and scientific epistemology, this chapter will focus exclusively on the merits, or lack thereof, of the inclusion of certain elements of virtue epistemology into process reliabilism. This chapter will also discuss Goldman's reconsideration of the modality most apt for process reliabilism.

7.1 *Virtue and Vice*

An intellectual virtue is roughly a personal quality that promotes the acquisition of truth and the avoidance of error. An intellectual vice is the opposite. Goldman envisions a combination

of intellectual virtue and the reliabilist tradition along the following lines. Those beliefs that are produced by virtuous processes are justified. Those beliefs produced by processes that are considered as vices are unjustified. A cognizer is thought to have in his mind a list of psychological processes he deems virtuous and a list of psychological processes he deems as vices. When asked to assess the epistemic status of a fellow cognizer's belief *p*, the cognizer will then attempt to match the psychological process that produced *p* to a process on his list of virtuous psychological processes or one on his list of processes considered as vices. If the process by which his fellow cognizer formed *p* matches a process or processes on the virtue list only, then belief *p* is judged as justified. However, if belief *p* partly matches a process or processes on the vice list, then belief *p* is judged as unjustified. Finally, if belief *p* was formed by a process or processes that do not feature on either the virtue or vice lists of the evaluator, then belief *p* is considered to be nonjustified.

How does a psychological process get on to the virtue or vice list? Goldman thinks that if a process is reliable then it qualifies for the virtue list. And if a process is unreliable, it makes its way onto the vice list (158). The account of justified belief in "Epistemic Folkways and Scientific Epistemology" is thus reliabilist at bottom. A person may inherit a list of virtues and vices and there may be varying opinions on which processes should be included on which list (160). It is not necessary according to Goldman that there be a consensus amongst epistemic evaluators as to which processes count as virtues and which count as vices.[76]

7.2 *Virtue Reliabilism and Problem Cases*

[76] I shall say more about Goldman's position vis-à-vis the acquisition of virtue and vice lists when I discuss the evil demon problem in the next section.

It is Goldman's claim that virtue reliabilism is able to respond to the two central problem cases that have dogged process reliabilism, namely the evil demon and clairvoyance problems, in a novel way so as to align reliabilism's answers with our intuitions in these cases.

7.2.1 *The Evil Demon Problem*

In a possible evil demon world, the demon interferes with or manipulates a cognizer's visual process such that the visual process leads to false beliefs and is hence unreliable. However, intuitively many would say that the visual beliefs of this victim are justified since the identical processes are used in the actual world to form justified beliefs and the victim's visual experience is phenomenologically identical to our visual experience. Hence Goldman thinks it wise to align reliabilism with the intuitive judgment that the victim's visual beliefs are justified. Applying virtue reliabilism to the evil demon case has the following results. Goldman claims that the visual process is most likely to be on the virtue list of the evaluator. If this is the case, then the beliefs produced by the victim's visual process in the evil demon world are justified since the visual process matches a process on the virtue list of the epistemic evaluator. With these modifications in place, the judgment that virtue reliabilism delivers on the epistemic status of such beliefs matches our intuitive stance on the status of these beliefs as justified.

Before assessing Goldman's treatment of the evil demon problem, it is important to note at this stage that it is apparent from the way Goldman arrives at the conclusion that the victim's beliefs are justified that he has shifted his position on the modality of reliability from one of world relativity to actual world chauvinism. An epistemic evaluator acquires a list of virtuous

processes in the actual world. She then applies this list to all possible scenarios across worlds. According to Goldman, the epistemic evaluator is hesitant to reconsider his or her thinking owing to fictional cross world analysis and its implications. There is a "categorical conservatism" that makes people reticent to revise their assessments of reliability in counterfactual situations (160). Thus, since the typical epistemic evaluator considers the visual process to be reliable in the actual world, the victim in the evil demon world has justified visual beliefs.

Recall from chapter 6 that Goldman first adopted normal world chauvinism because he thought that the Kripkean causal theory of reference was problematic. At that stage Goldman deduced, after considering Unger's cat case, that reference was fixed by what we presumed was the case and not by what was actually the case. In "Strong and Weak Justification" Goldman came to reject normal world chauvinism as the modal operator for process reliabilism in favor of a world relative modality. For instance, if clairvoyance is reliable in world *W*, then beliefs formed by clairvoyance in *W* are justified.

In "Epistemic Folkways and Scientific Epistemology" Goldman changes his position again and espouses a form of actual world chauvinism. The impetus for this change is Goldman's change of mind when it comes to Kripke's causal theory of reference. Though Goldman does not say anything expressly about his opinion of Kripke's theory when it comes to proper names and natural kinds, Goldman does think Kripke's theory adequately explains how epistemic evaluators come to acquire their opinions on which psychological processes are virtues and which vices as well as how such evaluators assess justification across possible situations. Epistemic evaluators in the actual world judge that reliable processes are virtuous and unreliable processes vices. Thereafter those processes retain their respective 'virtue' or

'vice' status across possible worlds in the thinking of epistemic evaluators because of the categorical conservatism that seems part of the psychology of epistemic evaluators (163). Whilst philosophers are prone to change their thinking in response to hypothetical thought experiments, Goldman thinks that the folk are not as flexible in their thinking. Hence, when it comes to the assessment of the justifiedness of a belief in a hypothetical case, the folk are likely to assess the belief according to the standards of those processes producing such beliefs in the actual world. Owing to this conservative tendency Goldman espouses actual world chauvinism for his reliabilist theory of justified belief.

The way Goldman arrives at the conclusion that the victim has justified visual beliefs amounts to a complex understanding of the justifiedness of those visual beliefs. On the one hand, the visual process is unreliable in the demon world because its outputs are all false. On the other hand, the justifiedness of the output beliefs depends upon the fact that the visual process is reliable in the actual world. The "categorical conservatism" of the lay epistemic evaluator engenders a situation in which justification is both connected and severed from reliability. By this I mean that a belief produced by an unreliable process in world *W* can be justified as long as that process is reliable in the actual world. There is thus both continuity with reliability and a lack of continuity.

Nevertheless, I think that Goldman has made a critical mistake here. Despite his connection of justification with reliability *in the actual world*, if Goldman admits that the victim *in the evil demon world* has justified visual beliefs he has basically conceded that reliability is not necessary for justification. If we can imagine a case where a belief has been produced by an unreliable process but which is nevertheless justified, then it has effectively been shown that reliability is not necessary for the justification of a belief. This would amount to the

discrediting of process reliabilism. In order to save process reliabilism by securing the necessary link between reliability and justification, process reliabilism must judge any belief formed by a process that is unreliable in the world in which it is formed as unjustified. This is what I attempted to show in chapter 6. The visual process in the evil demon world is unreliable. Therefore any beliefs produced by the visual process in the evil demon world are not justified.

Actual world chauvinism, whilst potentially explaining the psychology of the epistemic evaluator, has the unfortunate result of severing the necessity of reliability for justification. It is likely that the folk and the philosopher will think differently when it comes to questions in metaphysics. Philosophers are more aware of the theoretical implications of holding certain positions in counterfactual situations. That the folk are categorically conservative in their thinking is enough to become wary of following their intuitions in all cases.[77] I therefore find it strange that Goldman would follow the conservatism inherent in actual world chauvinism. It appears to me that whilst Goldman thought that the introduction of virtue epistemology into process reliabilism might adequately account for intuition in the evil demon case, and the clairvoyance problem (as we shall see in 7.2.2), in the end this combination has forced him

[77] I venture to propose that an alternate reading of Goldman is possible. The impetus for this alternate reading is Goldman's emphasis on the difference between the folk and the philosopher throughout the paper. Goldman might be saying that that whilst the folk may think that the victim in the evil demon world has justified visual beliefs, the philosopher reliabilist does not think that such visual beliefs are justified. Virtue reliabilism accounts for the intuition that many feel regarding the status of the victim's visual beliefs as justified. However, Goldman's reliabilism really considers such visual beliefs to be unjustified because the visual process is unreliable in the evil demon world. "Epistemic Folkways and Scientific Epistemology" then contains a dual modal operator—actual world chauvinism for the folk and a world relative criterion for the philosophically inclined. In this way Goldman can manage to account for common intuition in the evil demon case as well as securing the necessary link between reliability and justification by indicating that the correct philosophical answer to the evil demon problem does not rest with the folk's intuition. By accounting for the psychology of the epistemic evaluator Goldman can be read to say that whilst the folk may tend towards thinking the victim's visual beliefs as justified the more informed answer is that the victim's visual beliefs are unjustified.

into following an unacceptable tack. I think virtue reliabilism forces Goldman's hand because of its emphasis on the epistemic evaluator instead of the metaphysical issues at hand. If the metaphysical issues were more important to Goldman than folk intuition, which is normally an adequate guide in most circumstances, then Goldman would realize that the visual beliefs of the victim in the evil demon world would be unjustified.

There is no need for Goldman to align process reliabilism with folk intuition in the evil demon case. Every instance of him trying to do this amounts to jeopardizing the necessary link between reliability and justification. In each case that Goldman has responded to the evil demon problem he has modified process reliabilism to match intuition. Instead, Goldman should have questioned our intuition in the evil demon case. In "Epistemic Folkways and Scientific Epistemology" we begin to see Goldman differentiating between folk intuition and philosophical reasoning, which shows us that Goldman is aware that the two don't necessarily coincide. Therefore, when responding to the evil demon problem, Goldman should have thrown the legitimacy of the intuition driving the counterexample into question instead of finding some way to force process reliablism into judging the victim's beliefs as justified. In my opinion the evil demon problem is essentially a red herring because there is an unconditional acceptance of the intuition behind the problem. The process reliabilist should respond by saying that the intuition is either misinformed or internalist, both of which do not necessitate a response from process reliabilism, least of all should it be considered a counterexample to process reliabilism.

The force of my suspicion of (folk) intuition is captured by an example from the history of physics. In 1900 Max Planck proposed an account of radiation using the novel concept of quanta. This discovery leaned towards an understanding of light as a particle and not as a

wave as was traditionally thought since Thomas Young confirmed the wave theory of light in 1801 thereby settling for a time the dispute between Newton and Maxwell (in favor of Maxwell). In 1905 Einstein proposed in his paper on the photoelectric effect that light is both wave and particle. To think that light had this dual nature or 'split personality' was a *counterintuitive* finding. Intuitively, it is impossible, or at the very least seems highly unlikely, that one thing can be two different things at the same time. How is it possible, many asked, that light could act as both wave and particle at the same time? Yet, Einstein's counterintuitive finding would lead to many of the most important scientific discoveries in the history of physics and the eventual revision of Newtonian physics. Einstein would become the most important physicist after Newton precisely because he worked counterintuitively to explain problematic phenomena. If Einstein had been guided by folk intuition, he could have drifted into obscurity. That the measurement of time and space would be relative to the speed of the observer is a remarkable and counterintuitive discovery. Some of the most important discoveries in modern physics have been because scientists went against the grain of common intuition. If we should be wary of intuition in science, should we not be wary of intuition in philosophy? Whilst intuition may guide us well in many circumstances, it is not necessarily an infallible guide when it comes to questions in philosophy that hinge upon concepts not usually encountered in everyday life, which one assumes is source of our intuitions. So I would put the ball back in the court of those who think that the evil demon problem counts as a counterexample to process reliabilism by insisting that they make an accounting of the intuition to think that the victim has justified visual beliefs. A little self-reflexivity on this intuition might very well expose the theoretical failure of the evil demon challenge.

7.2.2 *The Clairvoyance Problem*

Goldman next turns to the clairvoyance problem. Recall from chapter 3 that BonJour's four clairvoyance cases can be divided into two classes. The first three cases (Samantha, Casper, and Maud) involve an agent who ignores contrary evidence. Samantha, contrary to her clairvoyant belief that the president is in New York City, has evidence that the president is in Washington whilst Casper and Maud have evidence that each does not possess a reliable power of clairvoyance yet maintain such a belief in their clairvoyance nonetheless. Here virtue reliabilism says that in all three cases the agent does not have a justified belief because in each case the responsible processes will be matched to the vice of ignoring contrary evidence (159).

The fourth case involves the reliable clairvoyant Norman who has no evidence for or against his power of clairvoyance. Norman then forms the belief that the president is in New York City. In this case virtue reliabilism might say one of two things. Either Norman's belief is nonjustified or it is unjustified. For those evaluators who do not have clairvoyance on either their virtue or their vice list, Norman's belief will be nonjustified. For those who assimilate clairvoyance with other dubious processes such as telepathy and telekinesis, which are likely to appear on the list of psychological processes deemed as vices, Norman's belief will be unjustified. Norman's belief that the president is in New York City is therefore unjustified by association.

Does virtue reliabilism get things right in these four cases? I think it does when it comes to Samantha, Casper, and Maud. Goldman thinks that the reason these clairvoyants have an unjustified belief is not because their clairvoyance is unreliable. Rather their beliefs are

unjustified because the processes involved also include the vice of ignoring contrary evidence. This type of approach was clearly outlined vis-à-vis process reliabilism with the inclusion of non-defeating clause (c).[78]

However, virtue reliablism gets it wrong in Norman's case. Remember that the clairvoyance cases, especially the fourth one, are intended to defeat the sufficiency condition of reliability for justification—if it is possible to have a belief produced by a reliable process absent of contrary evidence but which is unjustified, then reliability is not sufficient for justification. So reliabilism should respond to the clairvoyance problem in such a way that makes reliability sufficient for justification given the satisfaction of the other necessary conditions. If virtue reliabilism does not at the very least begin with a positive assessment of justified for a reliable clairvoyant's belief, then it has succumbed to the clairvoyance challenge. The answers that virtue reliabilism delivers amount to such a submission. The reasons I make this claim are stated immediately below.

The first option open to a virtue reliabilist in response to Norman's case is that Norman's belief is nonjustified. Nonjustification amounts to a lack of positive justificational status (159). But it does not imply the negative status of an unjustified belief. I think this answer is unsatisfactory. Just because some people don't have clairvoyance on either of their lists should not mean that Norman's output belief has neither positive nor negative epistemic status. If Norman's belief is produced by a reliable clairvoyant process it should be justified, subject to the satisfaction of the other necessary conditions. If produced by an unreliable clairvoyant process it should be unjustified. Whether epistemic evaluators have certain

78 See section 2.6 in chapter 2.

cognitive processes on their lists seems inconsequential to the epistemic status of a belief, at least from the externalist point of view.

The second option of unjustified to Norman's case is problematic as well since the reason given for the belief being unjustified is that clairvoyance is associated with other processes that are typically found on the vice list. But surely guilt by association is no reason to judge Norman's belief as unjustified? Once again virtue reliabilism forces the unjustified result by emphasizing the thinking of the lay epistemic evaluator. When it comes to metaphysical questions regarding the epistemic status of a belief, the more informed decision is the philosophical one. The reliability of the clairvoyance process is what counts, not the thinking of lay epistemic evaluators. Virtue reliabilism might yield an unjustified status to Norman's belief, but it gets there in the wrong way. A more defensible argument for why Norman's belief is unjustified is because it does not satisfy non-defeating clauses (b) and (d) of (9).[79] In chapter 3 I showed that Norman does not have a justified belief because he has failed to reason properly (he has not corroborated the reliability of his clairvoyance process) and because there is a clash between his clairvoyance and reasoning processes (each process forms a belief that is contrary to the other). It is for these reasons that his belief is unjustified. That clairvoyance might be similar to other dubious processes is not of any significance. If clairvoyance is reliable for Norman in his world *W*, then Norman should have a justified belief in *W* that the President is in New York City. Thereafter, we assess whether this belief satisfies the other necessary clauses of (9). In Norman's case it does not. Therefore his belief is unjustified.

[79] See section 6.10 in chapter 6.

Furthermore, if clairvoyance is reliable in Norman's world, which seems to be the case as I have understood BonJour, then the epistemic evaluator incorrectly has clairvoyance associated with other dubious cognitive processes in this world. If clairvoyance is reliable in world *W* then beliefs formed by that process are justified in world *W*. The epistemic evaluator incorrectly has clairvoyance associated with unreliable processes. It is the reliability of a process that determines justification, not the association that process might have with other processes in the actual world. I shall take up this problem concerning the disparity between the reliability of a process and the supposed reliability epistemic evaluators attribute to processes in section 7.3.

The line of argument between Goldman and myself is drawn as follows. When it comes to the evil demon and clairvoyance problems, Goldman approaches them using actual world chauvinism. This leads him to conclude that the victim's visual beliefs are justified and that Norman's belief is unjustified. Regarding the first assessment I think Goldman is wrong and regarding the latter he gets to the right answer but in the wrong way. I approach the evil demon problem using a world relative assessment of reliability and approach the clairvoyance problem with the non-defeating clauses of the fleshed out version of process reliabilism. I shall devote chapter 8 to an examination of these differences. I now turn to further internal problems that I identify with virtue reliabilism.

7.3 *Other Internal Problems*

There are several internal weaknesses of virtue reliabilism that I wish to highlight. These problems are not serious enough to discredit virtue reliabilism. Yet, it is worth noting some of

the other obstacles that Goldman may need to sort out before virtue reliabilism can become a more satisfactory account of justified belief.

Firstly, the generality problem can be leveled against virtue reliabilism. We can ask *which* process is the relevant process responsible for the belief under consideration? How does an epistemic evaluator identify the relevant process to be assessed when presumably a belief can be the product of various processes of varying degrees of reliability? Whilst this puts virtue reliabilism in no deeper waters than process reliabilism, since the latter must also contend with the generality problem, I merely wish to raise the point to enumerate potential difficulties the theory faces.

Secondly, presumably the virtue and vice lists contain a description of individual processes. Yet the manner in which these processes are described can affect the assessment of the epistemic status of the belief under consideration. Let us call this the *new generality problem*. If a cognizer places processes on her respective virtue and vice lists using a narrow description methodology, then she might find herself in a bit of a quandary if a belief under assessment falls under a broad description. No ideal match is made. And a judgment of nonjustified of such a belief because of a mere mismatch is hardly the desired outcome. For example, we might place, consciously or subconsciously, psychological processes on our virtue and vice lists with narrow descriptions, viz. the visual process concerning colored objects, the visual process during the day, the visual process using both eyes, the visual process used in conjunction with the other senses, etc. If we were then asked to evaluate Jennifer's belief *p* that is the product of the visual process, no specifications given, then we might be in a quandary as to how we should evaluate Jennifer's belief *p* since we have no 'visual process' so broadly described on our virtue list. We might decide that in such a

predicament it is best to judge Jennifer's belief *p* as nonjustified since it does not match a process we have on our virtue list. But surely because there is no perfect match does not mean that Jennifer's belief *p* is not justified? If Jennifer's visual process is reliable then her belief *p* should be justified. The issue of matching processes should not be a part of this evaluation process.

The foregoing brings us to a third internal problem of virtue reliabilism that can also fall under the new generality problem. In order for a belief to be deemed justified or unjustified according to virtue reliabilism, there needs to be a matching of the process used to produce the belief to a process on either the virtue or vice list. Yet Goldman has given no accounting of the sufficient degree of matching required for there to be a correspondence between the belief-producing process and the process of the virtue or vice list. Does the match require identity, i.e. a match of 100%, or is a match of a lower percentile sufficient? Once again, the description of the processes utilized in this assessment will play into the equation in such a way as to make such an assessment either very difficult or incorrect. As I tried to show with the example of Jennifer, our description of psychological processes may not match the description of the psychological process operating in the formation of Jennifer's belief *p*. So if we are not aware of the degree of matching that is needed, we might not be able to evaluate the epistemic status of a peer cognizers' beliefs. Unless a degree of matching is specified, there might be many cases in which an epistemic evaluator might be unable to evaluate a peer's belief.

A fourth problem worth considering is how Goldman expects a lay epistemic evaluator to be able to match cognitive processes with lists of such processes when presumably such a task would involve a superficial knowledge of cognitive science? Surely such knowledge is

beyond the ken of the lay epistemic evaluator? The genesis of belief is a complicated science. Virtue reliabilism expects too much of the average person. And even if the lay epistemic evaluator does have some knowledge of cognitive science, they could still be mistaken in the processes that he considers responsible for the belief at hand. The whole matching process will then be in error and the result will be a wrong assessment of the epistemic status of the belief at hand. So not only does the process by which a belief comes to be assessed as justified, unjustified, or nonjustified ask too much of the average person, it is also a process that can so easily go awry.[80]

A fifth problem arises when we compare Goldman's approach to reliability and truth in *Epistemology and Cognition* to his position on these issues here in "Epistemic Folkways and Scientific Epistemology." In *Epistemology and Cognition* Goldman says that it might well be beyond our ability to assess whether a belief is true or not. This stance is a result of Goldman's realist understanding of truth. The consequence of this stance vis-à-vis truth is that it might very well be beyond an epistemic evaluator's ability to determine whether a certain psychological process is reliable or not since reliability depends upon truth. Thus I find it rather strange that here in "Epistemic Folkways and Scientific Epistemology" Goldman thinks it par for the course that epistemic evaluators have representations as to which psychological processes are reliable and which are not. If a process is labeled a virtue or a vice it is because of its truth ratio—something most likely to be inaccessible to the epistemic evaluator from a realist point of view. So there seems to be a misfit between the theoretical foundations of process reliabilism and the psychology of the folk associated with virtue reliabilism. Hence, I think virtue reliabilism is a inherently conflicted theory.

[80] Whilst the topic of a reliabilist response to skepticism is not one which I have included in this paper, I have merely mentioned the skeptical challenge that arises to virtue reliabilism here so as to make the listing of virtue reliabilism's internal problems complete.

Finally, I want to question Goldman's motivation for the introduction of virtue reliabilism to process reliabilism. As far as I can see there is very little benefit that virtue epistemology can add to process reliabilism. Process reliabilism is a formidable theory on its own. Whilst it is true that virtue epistemology does attempt to account for the psychology of an epistemic evaluator, this perspective is riddled with problems, as I have shown in this section. I therefore think it best for Goldman to ignore virtue epistemology.

7.4 *Recapitulation*

In this chapter I have outlined Goldman's proposal for the incorporation of virtue epistemology into process reliabilism. Analysis of virtue reliabilism, however, reveals a rather disturbing picture. I think that virtue reliabilism gets things wrong in the evil demon case and in Norman's case. In particular, I have disagreed with Goldman's adoption of actual world chauvinism that eventuates in his positions on the evil demon and clairvoyance problems. Moreover, I expressed concern over the apparent lack of theoretical concordance between process reliabilism and virtue epistemology, as Goldman has envisioned the union.

The problems with virtue reliabilism can be summarized as follows:

1. Virtue reliabilism's answer to the evil demon problem does not secure the necessary condition of reliability for justification.
2. Virtue reliabilism's answer to the fourth clairvoyance case does not secure the sufficiency condition of reliability for justification.
3. Virtue reliabilism is a potential target for the generality problem.

4. Virtue reliabilism is a potential target for the new generality problem.
5. No account is given of the sufficient degree for a match between a target process and a process on the virtue and vice lists.
6. Virtue reliabilism is too demanding of the lay epistemic evaluator.
7. There is a potential clash between the realist conception of truth at the heart of process reliabilism and Goldman's approach in "Epistemic Folkways and Scientific Epistemology" to an epistemic evaluator's access to the truth of beliefs produced by a psychological process.
8. The motivation for Goldman's inclusion of virtue epistemology in a reliabilist framework is not warranted enough for his virtue reliablism thesis to be maintained.
9. The impetus for the actual world chauvinism of virtue reliabilism is the theoretical conservatism of the folk, which is hardly a respectable motivation for a philosophical theory.

I think that process reliabilism can stand alone. It has no need for the help of virtue epistemology. Whilst an account of the psychology of the epistemic evaluator would be a valuable asset to process reliabilism, which it currently lacks, I think a better account of it should be sought that does not bring with it the accompanying problems I have identified with virtue reliabilism. I therefore think that Goldman would be in a more formidable theoretical position if he rejected virtue reliabilism and maintained his position as found in "What is Justified Belief?" and *Epistemology and Cognition* (my additional clauses included) with the further amendment of the world relative criterion of reliability, as found in "Strong and Weak Justification." My negative appraisal of virtue reliabilism brings me back to my comments at the end of chapter 6 regarding the growing differences between Goldman and

myself. My rejection of virtue reliabilism now makes my backing of the earlier Goldman against the later Goldman more marked. I shall, however, leave my discussion of these differences for chapter 8.

Chapter 8

Concluding Assessment

In this chapter I wish to summarize my treatment of Goldman as well as make a concluding assessment of his work on justified belief. I will begin with a brief sketch of the main developments of each chapter. Particular attention will be paid to the challenges raised against process reliabilism and the defenses made by Goldman and myself, where applicable, in response to such challenges. I will also recall the impetus for the additional non-defeating clauses that I added to process reliabilism. Thereafter the full formulation of process reliabilism will be stated.

Once the foregoing has been completed, I will assess the adequacy of Goldman's reliabilist theory of justified belief as it developed from 1979 to 1992. This assessment will largely consist of the criticisms I made of the theory in the relevant chapters. Thereafter I shall assess the differences between Goldman's account and my modification of the account.

8.1 *Summation of Critical Points*

8.1.1 *The Theory*

The main chapters that spell out the essential elements of Goldman's reliabilist approach to justified belief are chapters 2 and 4. The core element of Goldman's approach is that if *S*'s belief *p* is produced by a reliable cognitive process at *t*, then S's belief *p* is justified at *t*. A process is reliable if it has the tendency to produce more true beliefs than false beliefs in counterfactual circumstances such that a ratio of significantly more than .50 of true beliefs over false beliefs is satisfied. This is therefore a metaphysical theory of justified belief that turns on descriptive psychological epistemology.

However, it is not enough that a belief be produced by a reliable process in order to be justified. Goldman stipulates three further necessary conditions for a belief to be justified. One, if the process under consideration is a belief-dependent process, then the belief inputs of that process must themselves be justified. This condition was inserted because we cannot expect a belief-dependent process to be reliable if its input beliefs are false.

The second necessary condition a cognizer must satisfy before her belief *p* can be justified is that there must not be an additional reliable process available to her such that if she had used that process she would not have come to hold her present belief *p*. The case of Jones and his beliefs about his childhood was the theoretical impetus for this second necessary condition. This condition essentially requires that the cognizer must not think that her belief *p* is not justified. A cognizer cannot be said to have a justified belief *p* if she has a concurrent undermining cognitive state in which she has a belief *q* that her belief *p* is unjustified.

The third and final necessary condition is that the process or method producing the belief *p* be selected by a reliable second-order process. This condition amounts to an accounting of the

structure of cognitive processes and methods according to secondary epistemology. Once this condition has been fulfilled, the belief *p* is fully justified.

Finally, I used the perceptual process as an example to demonstrate the significance of Goldman's epistemics. It seems evident that the findings of cognitive science on the perceptual process can influence certain positions in traditional epistemology. For example, it was shown that depending on how the perceptual process is understood, an epistemologist might be influenced to hold a version of foundationalism or coherentism. I considered this sufficient evidence for Goldman's claim that the relationship between traditional epistemology and cognitive science has to be investigated further by traditional epistemologists.

8.1.2 *The Clairvoyance Problem*

In chapter 3 I analyzed the clairvoyance problem. BonJour and others thought that if we could imagine a case in which a reliable clairvoyant forms a belief using his or her reliable process of clairvoyance yet the resultant belief is not justified, then it has been shown that reliability is not sufficient for justification. Goldman adequately defended himself in the first three clairvoyance cases by saying that since the clairvoyants have an undermining cognitive state, namely negating evidence against their belief N that the President is in New York City, their beliefs are not justified. Regarding Norman, Goldman claimed that since he failed to garner evidence for his power of clairvoyance, he is *ex ante* justified in thinking that he is not a reliable clairvoyant. In effect, Norman, like the first three clairvoyants, failed to reason adequately. To be more precise, I inserted a proper function clause into the formulation of process reliabilism that states that if a cognizer does not use a process properly then his belief

is not justified. For example, the clairvoyants have failed to use their reasoning process properly since despite reason indicating otherwise, they continue to believe in their clairvoyant belief N. That is why all of the clairvoyants do not have a justified belief N. It is not because their power of clairvoyance is unreliable. They all have a concurrent undermining cognitive state. Each clairvoyant has a clash between their clairvoyance process and their reasoning process. My interpretation of the clairvoyance cases resulted in my insertion of a further necessary clause, the clashing clause, into the formulation of process reliabilism that states if there is clash between two processes, then the reasoning process is to adjudicate the clash properly, which would probably result in the reasoning process arriving at the correct belief to hold.

The foregoing two clauses that I added seem to adequately counter the clairvoyance problem. I wish to make one final comment on the clairvoyance problem, however. Throughout this paper I have allowed those who think that the clairvoyance problem counts as a counterexample to process reliabilism their full say. Such persons thought that these cases challenge the sufficiency condition of reliability for justification. Yet there is a much more forceful answer that a process reliabilist can make to the clairvoyance problem that effectively dismisses the problem. Process reliabilism claims that a belief *p* is justified if it is produced by a reliable process. But this is not all that the theory says. In "What is Justified Belief?" and *Epistemology and Cognition* Goldman explicitly stipulated three further necessary conditions required for a belief to be justified, namely the belief dependency, undermining cognitive state, and second-order reliability conditions. Therefore, a belief *p* is only justified if it satisfies all four necessary conditions since these four conditions are jointly sufficient for justification. In no place did Goldman say that the mere production by a reliable process is sufficient for a belief to be justified. All four conditions have to be jointly satisfied

depending on the specifics of each case. Take the case of a bachelor for example. In order for a person *x* to be a bachelor it is not enough that *x* is unmarried; *x* also has to be a man. Both conditions are necessary and jointly sufficient.

From the foregoing consideration it is evident then that the clairvoyance problem never actually poses a challenge to process reliabilism since it makes the false claim that it shows that reliably produced belief is not sufficient for justification. But Goldman would agree with that in certain circumstances. Whilst in some cases the mere production by a reliable process is sufficient for justification, in the clairvoyance cases it is evidently not since there are non-defeating clauses involved that undermine the justified status of the clairvoyant belief N. So BonJour and his followers have made more of the issue than they should have by thinking that the clairvoyance problem counts as a counterexample to process reliabilism. There are other necessary conditions for justification besides the production by a reliable process according to process reliabilism.

Furthermore, I interpreted Goldman in such a way as to adequately defend Goldman against those, such as Steup, who have challenged the non-defeating clauses on the grounds that these clauses open the door to evidentialist considerations. All the non-defeating clauses deal with aspects relating to the operation of psychological processes only. At no point do considerations above and beyond the operation of reliable psychological processes enter the equation. At this point I therefore do not consider the clairvoyance problem to count as a problem for process reliabilism.

8.1.3 *The Generality Problem*

Chapter 5 consisted of an analysis of the generality problem. The three components making up the generality problem consist of the identification problem, the single case problem, and the no distinction problem. I noted Alston's reply to Conee and Feldman on these issues but found it wanting for several reasons. I then offered my own solution to the three problems. Regarding the first I said that only once we know more from cognitive science will we be in a better position to assess the situation over the identification of processes involved in belief formation. Thereafter, I claimed that the single case problem can be avoided if we describe processes using necessary as opposed to contingent properties of processes. This methodology for describing processes neatly avoids a description that is too narrow or specific. Finally I refuted the cogency of the no distinction problem by offering four possible solutions to that problem. The first solution allowed for the narrower description of processes according to the epistemic status of the output beliefs. The second solution denied that output beliefs of broadly described processes differ in epistemic status. The third solution involved the proper function clause whilst in the fourth solution I introduced the quality clause.

The more important point to consider regarding the generality problem is that process reliabilism is a metaphysical theory that does not concern itself with the identification and description of processes on a case by case basis. These problems come after the fact and therefore do not challenge the theoretical foundations of the theory. Therefore the generality problem, as it stands, does not constitute a problem for process reliabilism as a theory.

8.1.4 *The Later Goldman*

The above concludes my analysis of the early Goldman. The later Goldman involves the application of certain amendments to the main theory of process reliabilism to account for

difficult cases. The first amendment involved the introduction of two conceptions of justification—strong and weak justification. When a belief is formed by a reliable process it is strongly justified. When a belief is not formed by a reliable process but the cognizer is nevertheless blameless in forming that belief, then the belief is weakly justified. Strong justification encapsulates the position the early Goldman took on justified belief. Weak justification was added to account for our intuition that the victim in the evil demon world has justified visual beliefs. Goldman thought that the victim had weakly justified beliefs. I then launched into a critique of weak justification, a theoretical amendment that I have rejected for numerous reasons, most importantly because of the problematic result it delivers in the evil demon case and also because it does not capture the essence of what justification amounts to.

In chapter 7 I analyzed virtue reliabilism, which is Goldman's attempt to account for the psychology of the folk epistemic evaluator. Virtue reliabilism amounts to the incorporation of certain elements of virtue epistemology such that a belief is justified if it is produced by a virtuous process and unjustified if produced by a process that is a vice. In my consequent analysis of virtue reliabilism I found the theory, on the whole, an unsatisfactory account of justified belief because of its many internal inconsistencies and problems as well as for the more important reason that it gets things wrong in the evil demon and clairvoyance problems.

My treatment of the later Goldman therefore amounts to a repudiation of most of his later work. The one component of Goldman's later work that I do find very positive is his espousal of a world relative criterion of reliability in "Strong and Weak Justification." The justification of a belief in world *W* is dependent upon whether the process that produced it in *W* is reliable or not in *W*. The reliability of processes in the actual world or in normal worlds is

inconsequential. These comments lead to my assessment of the appropriate modality for process reliabilism in the next section.

8.1.5 *Modality*

Throughout this paper I detailed the trouble Goldman had with settling the question of the apposite modality for process reliabilism. Initially he had no definitive position on the issue. Subsequently Goldman considered normal world chauvinism before moving onto a world relative criterion of reliability thereafter settling for actual world chauvinism. In chapters 6 and 7 I endeavored to show that a world relative criterion would be best for process reliabilism. My main argument was that reliability is necessarily connected to justification but only contingently connected to certain psychological processes. A world relative criterion captures this relationship best. Moreover, a world relative criterion also helped explain why I thought that the victim in the evil demon world does not have justified visual beliefs, namely because his visual process is not reliable in his world. To account for a world relative criterion of reliability I made the adequate modal amendments to the formulation of process reliabilism.

In the table below I have summarized the positions Goldman has taken on the more significant issues during his work on justified belief. The elements in the table are significant because they represent Goldman's response to the challenges that have targeted the necessary and sufficient conditions for reliability.

Form of Reliabilism	Modality	Clairvoyance Problem	Evil Demon Problem
Process Reliabilism	N/A[81]	Not Justified	Justified
Rule Reliabilism	Normal World Chauvinism	Not Justified	Justified
Strong and Weak Justification	World Relative Criterion	N/A[82]	Weakly Justified
Virtue Reliabilism	Actual World Chauvinism	Not Justified	Justified

8.2 *Final Formulation*

Taking all the foregoing points into consideration, I present the final formulation of process reliabilism:

(10) S's belief *p* at *t* is justified in world *W* if and only if:

a) S's belief in *p* at *t* results from a conditionally reliable belief-dependent cognitive process or an unconditionally reliable belief-independent cognitive process;

b) This process functions properly in the production of *p*;

c) There is no other reliable process available to S such that if it had been operating in addition to the process operating in the formation of belief *p*, S would not believe *p* at *t*;

d) The clash between this additional reliable process and the first process, or the reasoning process, is adjudicated by the reasoning process; the operation of the reasoning process suitably restricted by the proper function clause (b).

[81] Goldman took no position on the modality of process reliabilism in "What is Justified Belief?"

[82] Goldman did not address the clairvoyance problem in "Strong and Weak Justification."

e) The cognitive process operating and/or method used in the formation of *p* at *t* results from a correct choice and application of such a process and/or method by a metareliable second-order cognitive process;

f) The inputs to a belief-independent sensory process need to be of a sufficient quality required by the relevant belief-independent sensory process to function properly.

The above formulation is the expanded formulation of process reliabilism. It differs from the formulation Goldman has worked with over the years. Clauses (a), (c), and (e) are clauses found in Goldman. I have added a modal qualifier in the analysis; the proper function clause (b); clause (d), which governs clashes between processes; and clause (f) which is the quality clause. Depending on the specifics of each case, conditions (a) through (f) are severally necessary and jointly sufficient for S to have a justified belief *p* at *t* in world *W*.

8.3 *The Adequacy of Goldman's Theory*

At this point I wish to discuss the differences between Goldman's account and my modified version of the account. Before I get to the differences between the original and the modified versions of process reliabilism, I first wish to cover territory that the two versions share. There is much that I think is novel, cogent, and prescient about process reliablism as a theory of justified belief. Goldman is correct in espousing descriptive epistemology. This novel approach to questions in epistemology has led to a more formidable theory of justified belief that seems to adequately account for how and why it is that a belief acquires the status of justified or unjustified. Moreover, an approach that hinges justification upon the truth-linkedness of belief forming processes, in other words the reliability of psychological

processes, is bound to avoid those easy counterexamples to previous theories of justified belief in traditional normative epistemology that involve incorrect or unacceptable belief formation as the source of unjustifiedness.

More importantly, process reliabilism stands to benefit from being an externalist theory of justification. Internalist theories of justification are notoriously plagued by internal theoretical difficulties.[83] Goldman's rejection of the JJ principle makes it possible for process reliabilism to avoid all those debilitating problems. Justification is aptly connected with the truth ratio of belief forming psychological processes. This ratio is bound to be beyond the ken of the cognizer. Justification is therefore not a matter of metajustification on the cognizer's part. In addition, the truth ratio mechanism accounts for degrees of justification. Process reliabilism can therefore account for why it is that one belief is more justified than a second belief.

Goldman has adequately responded to those who think that a truth-linked theory is a target for the common problems associated with truth. Goldman's adoption of realism, as Dummett specified it, satisfactorily accounts for how a process is truth-linked: the truth of the target belief *p* is determined by the correspondence of belief *p* to the fact *p* in reality regardless of whether this correspondence can be verified or not. The truth-linkedness of a belief is therefore not an epistemic matter. Instead it is a metaphysical matter. This dovetails well with the overall metaphysical nature of process reliabilism. Many theorists who have pitted themselves against Goldman seem to have forgotten that process reliabilism is a metaphysical theory of justified belief—it stipulates the necessary and sufficient conditions for a belief to be justified under counterfactual circumstances. Process reliabilism does not concern itself with the specific belief in the specific case. Therefore certain of the challenges put forward

[83] See, for example, Goldman's "Internalism Exposed" (1999).

against process reliabilism, certain aspects of the generality problem for instance, do not constitute appropriate challenges to process reliabilism. Such challenges amount to a confusion of levels of analysis.

Process reliabilism correctly entails a theory of justification that allows for fallibilism. Previous theories of justified belief implied that only a true belief could be justified. Process reliabilism correctly stipulates that a false belief can be justified. The truth or falsity of an individual belief is not what determines the justifiedness of that belief. Instead, it is the reliability of the process that would produce beliefs of that type in typical circumstances that determines justification. The truth value of individual beliefs is more important when it comes to questions of whether S knows that *p*. Knowledge is determined in part by the truth of an individual belief. Process reliabilism therefore correctly captures the difference between the concepts of knowledge and justification vis-à-vis the truth value of individual beliefs.

A further insight that process reliabilism draws to our attention is that justification of an individual belief can depend upon concurrent cognitive states of the cognizer. For example, S's belief *p* may satisfy all the necessary and sufficient conditions for a belief to be justified. Yet S may have a concurrent mental state in which S believes that her belief *p* is not justified. In other words, Goldman has made a correct accommodation for concurrent undermining cognitive states that defeat the justification of a belief even though in ordinary circumstances that belief would be justified. The Jones case introduced the reader to the realization that justification of beliefs is a more complex concept than was previously thought. Goldman made us aware that there are other considerations beyond the particular belief that play just as important a role as the propositional content of the belief. Issues such as truth-linkedness, concurrent undermining cognitive states, the belief dependency of certain processes, etc., are

factors that affect the justifiedness of beliefs. Reliability of processes is the core element that determines justification. Yet it is not the sole determinant. There are other necessary conditions that join with reliability of processes to make a belief justified. Goldman's analytical scope is therefore wider than his predecessor's. This makes process reliabilism a more holistic theory that provides us with a more expansive account of justification.

Finally, process reliabilism adequately captures what justification is—that which converts a belief into a candidate for knowledge. Many externalist theories of knowledge do not contain a justification component. Yet Goldman was aware that just such a justification component is necessary for knowledge. In *Epistemology and Cognition* (53-55), Goldman claimed that whilst a belief may be true it does not count as knowledge if the cognizer does not think it does. Once again we have the appearance of the concurrent undermining cognitive state. There has to be a justification for that belief before it can be a candidate for knowledge. Hence the importance of process reliabilism as a theory of justified belief. With process reliabilism in hand we are well on our way to having an adequate theory of knowledge. Perhaps with the necessary analysis we might find that Goldman's theory of knowledge, which would include his theory of justified belief, would amount to a satisfactory theory of knowledge; one which in the future may come to achieve the status that foundationalism and coherentism have enjoyed in the history of epistemology.

On the whole, therefore, I am in agreement with Goldman. He has put forward a compelling theory of justified belief. The popularity that Goldman's process reliabilism has gained in philosophical circles in the late twentieth century and the early twenty-first century is testament to the strength and force of the theory. (10), the expanded version of process

reliablism, is a well thought-out theory that is more expansive in its analytical reach and more penetrative in its philosophical ingenuity when compared to previous theories of justification.

Yet there are parts of the theory that some have questioned and others that I have disagreed with. Regarding the first, I have generally been able to allay certain problems by clarifying aspect of process reliabilism or with the addition of one of my non-defeating clauses. However, there are four points over which the modified version differs from Goldman's: weak justification, virtue reliabilism, the evil demon case, and the modality of process reliabilism. In chapter 6 I explained why I think weak justification should not be part of process reliabilism. In chapter 7 I mentioned the numerous problems I think virtue reliabilism has, all of which led me to deem it an inadequate amalgamation of virtue epistemology and process reliabilism. Regarding the evil demon case, I have maintained that the victim's visual beliefs are not justified. Finally, in both those chapters I expressed my dissatisfaction with normal world chauvinism and actual world chauvinism, especially in the evil demon case. I think that Goldman was correct when he supported a world relative criterion of reliability in "Strong and Weak Justification."

The modified version of process reliabilism is essentially my attempt to propose modifications to Goldman's account where I find his account unsatisfactory. The question to which I now turn is: is there a significant difference between Goldman's account and the modified version of his account or are these differences negligible in respect of the common ground between them? This is an important question because it is necessary to gauge whether the modified version takes process reliabilism in a new direction or whether it is to be understood as a sister version of Goldman's process reliabilism that is on the same track as Goldman. I think that the modified version is essentially on the same track but with a slightly

different version of the theory. Firstly, it must be noted that it is possible to read Goldman as having changed his position regarding weak justification since in "Epistemic Folkways and Scientific Epistemology" he makes the unqualified statement that the victim does have justified visual beliefs. Goldman makes no distinction between strong and weak justification, which suggests he had come to reconsider weak justification.

Secondly, my dissatisfaction with virtue reliabilism does not amount to a serious difference between Goldman's account and the modified version of his account. The reason I say this is that virtue reliabilism is essentially process reliabilism approached from a different perspective. Virtuous processes are determined according to reliability. So the difference over virtue reliabilism does not amount to a rejection of its reliabilist foundation. Rather it only amounts to a rejection of the inclusion of theoretical concepts from virtue epistemology.

So the main points over which Goldman's account and the modified account differ are the evil demon case and the modality of process reliabilism. Essentially these two points are one since the position one takes regarding the modality of reliability will determine the position one takes in the evil demon world. If one holds actual or normal world chauvinism, then one will judge the victim's visual beliefs as justified since visual beliefs are justified in the actual world and in normal worlds. Yet, if one espouses a world relative criterion of reliability, as the modified version does, then the victim's visual beliefs are not justified since the visual process is not reliable in the demon world. I categorically reject that the victim in the evil demon world has justified visual beliefs. I say this for two reasons. One, claiming that the victim has justified visual beliefs amounts to admitting that reliability is not necessary for justification in that world. If the process by which the belief in question is produced is not

reliable then the belief is not justified, simpliciter. It is inconsequential which processes are reliable in the actual world or in normal worlds.

Two, the impetus for judging the victim's visual beliefs as justified is intuition. I brought into question the validity of this intuition as a motivation for a theoretical amendment to process reliabilism. Many of our intuitions in epistemology are not theory-free; internalism has had a marked effect on our thinking. The intuition in the evil demon case is not associated with the truth-linkedness of the respective visual beliefs. Rather the intuition in the evil demon case is driven by the subjective reasoning of the victim. I therefore see no immediate need to accommodate this intuition without a serious justification of this intuition by those putting the evil demon case forward as a counterexample to process reliabilism.

So it is at this juncture that the difference between Goldman's account and the modified account is most palpable. His final account espouses virtue reliabilism with actual world chauvinism and claims that the victim's visual beliefs are justified. The modified account espouses process reliabilism with a world relative criterion of reliability and judges the victim's visual beliefs as unjustified. Considering that I agree with Goldman on most points, these differences are not as significant as some might think. As mentioned above, process reliabilism and virtue reliabilism are more alike than they are different. The question of the correct modality for process reliabilism is only important in certain infrequent circumstances. Only when we consider questions of counterfactual circumstances in possible worlds does the factor of modality come into play. The point of reference of our analysis of process reliabilism is most likely to be the actual world with the assumption that the actual world is not an evil demon world. We consider the cogency and worth of the theory in this context.

8.4 *Conclusion*

On the whole Goldman's theory of justified belief is an adequate theory of justified belief. It is only with respects to modality and the evil demon problem that I think Goldman took a wrong turn. This does not amount to his theory being inadequate, however. The necessary and sufficient conditions enumerated as to what makes a belief justified, capture the concept of justification well. The theory adequately explains why a belief is justified if it satisfies those conditions. Finally, those beliefs we generally do consider to be justified seem to satisfy these conditions. So the theory captures what philosophers look for in an adequate theory of justified belief. It is therefore rather unfortunate that the later Goldman sought to modify process reliabilism to account for cases I think do not demand the type of modification Goldman thought they do. The early Goldman of "What is Justified Belief?" and *Epistemology and Cognition* had the theory almost satisfactorily complete. All that needed to be added to the early Goldman's account of process reliabilism was a world relative criterion of reliability.

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