Reliabilism and Contemporary Epistemology

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ABSTRACT: This paper reviews some elements of contemporary reliabilism, a dominant epistemological theory, as is presented in the recent collection of essays *Reliabilism and Contemporary Epistemology* (2012) by a major epistemologist, Alvin I. Goldman. The focus is on Goldman's variant of *process reliabilism* as a theory of epistemic justification as well as some of the arguments he provided for this theory and its rivals. According to Goldman's process reliabilism, epistemic justification is a function of the reliability of the pertinent belief producing processes. This simple formula has been systematically developed by Goldman as a general theory of *individual* justified belief and knowledge. Goldman also extended his analysis in terms of reliable (truth-oriented, truth-conducive) belief production beyond the boundaries of individual epistemology into a *veritistic* social epistemology, formulating a general theory of *social* conditions of justification and knowledge as well as a theory of *social knowledge*. Two main themes from *Reliabilism and Contemporary Epistemology* are emphasized here: the structure of justification and the evidential role of intuitions. Concerning the latter topic, certain deviations from Goldman's original reliabilist position have been noticed and critically assessed.

KEY WORDS: Epistemic justification, Goldman, intuitions, reliabilism.

I. Introduction: An overview of
Reliabilism and Contemporary Epistemology

As part of the externalist and naturalist movement in the second half of the 20th and at the beginning of the 21st century, the reliabilist epistemology developed by Alvin I. Goldman as well as by other prominent philosophers, like David Armstrong, Fred Dretske, Robert Nozick or Ernest Sosa, provided many powerful arguments and answers to the perennial questions about the nature of knowledge and justification, skepticism and the methodological status of epistemology. Reliabilism, together with natural-

ism, radically changed the epistemological terrain, traditionally mapped by the network of internalist or evidentialist concepts, like *evidence*, *certainty*, *confidence*, *justification* or *reasonableness*. (By "traditional" I mean primarily a *type* of epistemological analysis, attributable to such historical figures like Descartes as well as to some 20th century analytic epistemologists, like A. J. Ayer or R. M. Chisholm, including contemporary internalists and evidentialists.) Epistemologists nowadays are more prone to use concepts like *reliability, belief producing*, *truth indication* or *cognitive environment* as their analytical tools. Needless to say, the works of A. I. Goldman, a leading figure in the reliabilist movement and a major contemporary epistemologist, contributed essentially to this reshaping of the contemporary epistemological scene.

The label "reliabilism" refers, however, to several theories, significantly differing from each other in some elements. The aim of this paper is to review and, wherever it seems reasonable, to assess critically some important elements of *process reliabilist* theory of justification in the work by Alvin. I. Goldman, taking *indicator reliabilist* elements in his reliabilist theory of evidence in consideration as well. A convenient background for executing this task is his recently published book *Reliabilism and Contemporary Epistemology* (2012) (hereafter: RCE). This collection of essays not only recapitulates Goldman's reliabilist program and its development, but also, through his arguments and interpretations of rivaling theories, casts new light on many controversial issues in contemporary epistemology. It contains eleven previously published papers, most of which appeared in the last two or three years, refining and improving older theoretical material: 1. What Is Justified Belief? (1979), 2. Immediate Justification and Process Reliabilism (2008), 3. Reliabilism (2011), 4. Internalism, Externalism, and the Architecture of Justification (2009), 5. Toward a Synthesis of Reliabilism and Evidentialism? (2011), 6. Reliabilism and Value of Knowledge (with Erik Olsson) (2011), 7. Williamson on Knowledge and Evidence (2009), 8. Epistemic Relativism and Reasonable Disagreement (2010), 9. A Guide to Social Epistemology (2010), 10. Why Social Epistemology is Real Epistemology (2010), and 11. Philosophical Naturalism and Intuitional Methodology (2010).

As Goldman remarked in "Introduction", the essays are grouped in five clusters. The first three essays form the cluster concentrating on the structure of justification and on the general features of process reliabilism. The second cluster with essays 4 and 5 is about the divide between internalism and externalism; the third cluster, containing essays 6 and 7, is about reliabilism as a theory of evidence and knowledge; the fourth cluster is devoted to social epistemology; and the fifth cluster with the final essay is about intuitions and philosophical methodology. With re-

spect to the density and richness of the content of the book, only two, topics, however representative of Goldman's remarkable epistemological achievement, from the essays collected in RCE, received special attention here: *the structure of justification* and *the evidential role of intuitions*.

In his meta-epistemological systematics, exposed succinctly in his capital epistemological work *Epistemology and Cognition* (1986), and subsequently developed and refined in the collections of his essays *Liaisons* (1992b) and *Pathways to Knowledge* (2002), Goldman divided epistemology into *individual epistemology* and *social epistemology*. Since his dealings with the first subfield are in focus here, at least some brief remarks concerning his work in the second subfield are in order. Goldman's contribution to the development of social epistemology is comparable and in correlation to his "reliabilist turn" in the realm of individual epistemology: in his main work on the topic, in the book *Knowledge in a Social World* (1999a) and in numerous papers published before and after it, in particular, in essays included in RCE, he developed and advocated several distinct social-epistemological theories, which can be considered as extensions of his reliabilism in the realm of social epistemology:

(i)   *veritism*, formulated e.g. in Goldman (1999a), in "A Guide to Social Epistemology" (RCE: 221–247), in "Why Social Epistemology is Real Epistemology?" (RCE: 248–279) and elsewhere, the doctrine according to which the proper aim and the ultimate value of any research and belief-producing activity is the production of true beliefs as well as the avoidance of error and also of suspension of beliefs;

(ii)   *epistemic paternalism*, advocated in Goldman (1991), the doctrine which stipulates a reasonable amount of control over providing relevant evidence as a necessary condition of testimonial knowledge in the cases in which testimonial evidence is already possessed by the person responsible for its providing;

(iii)   *objectivity-based epistemic relativism*, defended in particular in "Epistemic Relativism and Reasonable Disagreement" (RCE: 197–220), which assumes normative objectivism with respect to the first-order justification (i.e. the uniquely correct system of justification rules, Σ_1, is assumed), and epistemic relativism concerning the second-order justification, i.e. admitting alternative systems of epistemic norms, which regulate beliefs in the rules for the first-order justification (alternative systems, Σ_2);

(iv)   *expansionism* – opposed sharply to anti-epistemological *revisionism* (including social constructivism, "strong program" in sociology of science and postmodernism), and, to a smaller extent, to conservative *preservationism* – a doctrine according to which social epistemology,

while remaining normative and evaluative, and therefore a branch of epistemology, covers social institutions in their epistemic function as well, and so becomes descriptive and explanatory, including a great deal of empirical research ("Why Social Epistemology Is Real Epistemology?").

II. RCE in the reliabilist and externalist context

Reliabilism in general, or *generic reliabilism*, postulates *justifiers*, i.e. factors constitutive for justification or knowledge, which share a common property: they are all *reliable* in *producing* true beliefs or *indicating* the truth, i.e. they are *truth-conducive* or *truth-oriented*. So, when applied, they facilitate the generation of true beliefs and the avoidance of false beliefs. Among them we find foremost: reliable *belief producing* or *belief forming processes* and *truth indicators*, together with *appropriate cognitive environment*.

Being an *externalist* theory, reliabilism postulates justifiers which are not internally or cognitively accessible to epistemic subject, being *external* to the subject. It means that *S* may have a justified belief or knowledge that *p* even when S *is not* (actually or potentially) *conscious of* or when *S* does not *believe, justifiably believe* or *know* anything about the pertinent justifiers (obviously, this classification of internal justifiers follows W. P. Alston's (1989) classification). Moreover, the epistemic subject is not committed to having, and usually does not have, relevant *second-order* evidence or attitudes about the epistemic quality of these justifiers, i.e. about their reliability, truth-conduciveness, evidential strength, fittingness or appropriativeness. This is not contrary to the fact that many cases of knowledge or justified belief do include internally accessible evidence or reasons, or even, in cases of reflective knowledge, the second-order evidence, for the question and the reliabilist answer concerning the first-order evidence are primarily *normative*. They are in the first place about the conditions which *ought* to be fulfilled and which, jointly fulfilled, *necessarily* yield justification. They are not about the conditions that may be or are *accidentally* fulfilled, and *accidentally* yield justification. However, the *factual* questions and their descriptive and empirical answers, as Goldman emphasized, come to the forefront especially concerning the methods of providing and assessing the epistemic quality of justifiers and evidence, i.e. at the level of the second-order evidence (e.g. in his elaboration of the reliability of the second-order processes or the epistemic role of intuitions and the a priori).

Accordingly, the internal and cognitive accessibility of justifiers is *not necessary* for justifiably believing and knowing: this qualification is confirmed by the cases of ordinary perceptual knowledge, animal know-

ledge and the knowledge possessed by infants. Also, internal or epistemic accessibility of justifiers is *not sufficient* for a belief being justified: *S*'s internal second-order evidence about e.g. the reliability of *S*'s relevant cognitive processes or modules, does not entail that *S*'s cognitive processes are in fact reliable, for or her belief, having the internal second-order justification, could be nevertheless lacking the first-order justification. Having (internal) evidence or having (internal) reasons for believing that *p* is a function of certain external factors like having reliably produced or indicating beliefs, so it need not and cannot constitute justified belief by itself.

Simplified, reliabilism as an externalist theory gives an analysis by means of *minimal* requirements for having justified belief and knowledge, which are to be fulfilled by as many epistemic subjects, including unsophisticated adults, infants and animals, as possible. These justification and knowledge concepts are clearly opposed to the extensionally restricted and intensionally more complex justification and knowledge concepts formulated typically by *internalists* like R. M. Chisholm (1989), E. Conee and R. Feldman (2004), L. BonJour (1985) or K. Lehrer (1990), as well as to the concepts including the epistemic *duty* or *responsibility* as necessary ingredients (again by Chisholm or BonJour, or by recent responsibilists like L. Zagzebski 1996, 2003 or J. Montmarquet 1993). Internalists as well as responsibilists challenge the externalist and reliabilist concepts of knowledge and justified belief given in such a reduced format and attributable to such a wide range of subjects. They share the view of knowledge as specifically human and therefore intellectually superior state, enriched with reflective elements and with an extraordinary epistemic or even moral value. Some other epistemologists, like E. Sosa or M. Steup, took a middle way, advocating a kind of epistemic *dualism* and drawing distinctions between *animal* and *reflective* knowledge (Sosa 1991, 2007a), or *external* and *internal* knowledge (Steup 2001).

In his essay "Toward a Synthesis of Reliabilism and Evidentialism?" (RCE: 123–150) Goldman really considered the possibility of a synthesis of these two theories. However, he did not try to conjoin their justification and knowledge concepts in the framework of a balanced, compromise solution, but to show how evidentialism "could benefit by incorporating reliabilist themes" (RCE: 123). He argued that the concept of evidence, the central one for evidentialism and other internalist theories of justification, should be construed in terms of *reliable truth indication*. Accordingly, in contrast to the approaches which are directed toward improving reliabilism by means of evidentialist elements, like "evidentialist reliabilism" by J. Comesana (2010) or W. P. Alston's (1988, 1989) "internalist externalism", Goldman sees some prospects only for a hybrid theory resting on

purely reliabilist foundations. This hybrid theory should be constructed by means of the concepts of evidence and justification as reliable truth-indicators. So, Goldman's position concerning justification and knowledge, advocated e.g. in Goldman (1999b) by means of a whole battery of arguments against internalism and evidentialism, remained here uncompromisingly externalist and reliabilist.

In the essay "Reliabilism and the Value of Knowledge" (co-authored by E. Olson) (RCE: 151–174) it is argued against the usual responsibilist charge against reliabilism (e.g. by R. Swinburne 1999 or L. Zagzebski 2003), that the concept of reliability does not explain the extra value knowledge has over the only true belief, with a special reference to the "swamping problem": the critics of reliabilism maintain that the extra value should already be present in the reliable process, for otherwise the value of the process is "swamped" by the value of the true belief it produces. But since that charge holds for any other theory of justification (e.g. for coherence or foundation theories) and since it ignores the difference between *types* and *token* reliable processes, Goldman treats the "swamping" as no genuine problem for reliabilism. Since the type reliability is conferred to the token process, the value of knowledge may derive from the very token of that type of reliable process.

Some of his epistemological considerations in essays collected in RCE and elsewhere, especially about the epistemic role of intuitions and about a priori warrant, show, however, a certain bias to accept *local* internalist solutions, or, at least, a bias to push the divide between externalism and internalism aside as sometimes irrelevant. Elsewhere, for example, in his essay "Internalism, Externalism, and the Architecture of Justification" (RCE: 95–122), Goldman apparently tried to relax the antagonism between externalism and internalism by admitting the occasional relevance of some internal justifiers, however, with a remark that at the end "externalism wins the battle".

Now, placing the whole topic of reliabilism in a wider perspective, it is a well-known fact that generic reliabilism has been bifurcated into two main types: as *process reliabilism* and as *indicator reliabilism*. This division partly overlaps with the distinction between the reliabilism about *justification* and reliabilism about *knowledge*, since indicator reliabilism appears generally as a theory of knowledge. This correlation does not hold, however, without notable exceptions: the reliabilism about knowledge may take the form of process reliabilism, as in Goldman (1975, 1986) or in H. Kornblith (2008); also, epistemic justification, as in M. Swain (1981), W. P. Alston (1989) or in papers collected in RCE, as it will be indicated, may be explained by means of an indicator reliabilist concept of evidence. The reliabilism, defended and developed by Goldman in his main works

(1979, 1986), defines, however, primarily *justification* and *knowledge* in *process* reliabilist terms: it is a function of the reliability of a belief producing process type. A simplified process reliabilist definition of justification may be stated as follows:

> *S*'s belief that *p* is justified iff it has been produced by a reliable belief producing process,

reliability being a relatively high ratio of true and false beliefs generated by the pertinent belief producing process type (perception, memory, inference etc.).

Consequently, process reliabilism about knowledge is in a simplified form a thesis that

> *S*'s true belief that *p* is knowledge iff it has been produced by a reliable belief producing process.

The reliabilism about knowledge, developed as *indicator reliabilism*, took various forms: as *belief indicator reliabilism* by D. M. Armstrong (1973), '*tracking*' or *conditional theory* by Nozick (1981), *relevantism* by Goldman (1976) and Dretske (1970), *reasons indicator reliabilism* (Dretske 1971) and *evidence indicator reliabilism* (e.g. Williamson 2000), to list the most notable examples. My usage of these labels here covers the branching of indicator reliabilism into three main types, in which three distinct factors play the role of the reliable indicator of truth: *belief*, *reasons* and *evidence*. The third plays an important role in Goldman's theory of evidence, especially in his dealings with evidentialism ("Toward a Synthesis of Reliabilism and Evidentialism?", RCE: 123–150), and with Williamson's theory of knowledge, according to which knowledge concept is coextensive with a reliabilistically construed evidence concept ("Williamson on Knowledge and Evidence", RCE: 175–196). It also proved significant in Goldman's theory of intuitions as evidence, discussed in the fourth section of this paper.

For example, Armstrong's (1973) belief indicator reliabilism is a thesis that

> *S*'s true belief that *p* is knowledge iff it reliably indicates that *p*.

Dretske's (1970) reasons indicator reliabilism defines knowledge as true belief based on conclusive reasons, whereby the reason *R* is conclusive iff *R* would not be the case unless *p* were the case. Accordingly,

> *S*'s true belief that *p* based on the reason *R* is knowledge iff *R* reliably indicates that *p*.

A version of the theory in terms of information theory developed by F. Dretske (1981) may be labeled as a process as well as indicator reliabilism, since it defines knowledge that *p* as true, information produced belief that *p*, where information is conceived as a semantic value reliably indicating that *p*. In Goldman's version of evidence indicator theory, according to which evidence serves as reliable truth indicator, reliable indication may be viewed as a function of underlying reliable processes or procedures: fine examples are the processes of tree growth generating rings, which indicate the age of the tree; the work of clock mechanism, which tells the right time; and (although controversial according to recent findings) the method of fingerprints matching producing forensic fingerprint evidence, which indicates an incriminating fact. In Dretske's information theory, however, reliable indication generates 'the flow of information', and so causes the production of belief which constitutes knowledge. It should be noted, however, that Goldman's own interpretation of this correlation between reliable indication and reliable underlying processes makes it clear that the processes in question are *evidence generating* processes. ("Philosophical Naturalism and Intuitional Methodology", RCE: 284–5).

A reliabilist component is also a vital element in the version of virtue epistemology developed by Ernest Sosa, labeled subsequently as "virtue reliabilism" as well as in some hybrid virtue "reliabilist-responsibilist" theories like those by John Greco (2000, 2010) or Linda Zagzebski (2003). The proper functionalism by Alvin Plantinga (1993) contains a significant process reliabilist element in his requirement for the reliability of relevant cognitive modules, which, functioning properly according to a design plan in an appropriate environment, yield warrant.

Significant attention has been paid to the so-called *sensitivity* condition for knowledge deriving from Nozick's (1981) counterfactual analysis, which is also reliabilist in essence:

'If *p* would not be true, *S* would not believe that *p*'.

A similar qualification holds true for its derivation, the so-called *safety* condition, defended by E. Sosa (2000) and T. Williamson (2000):

If *S* believes that *p*, than *p* would not easily have been false [or: *p* is not false in the close possible worlds].

Historically, it is clear that fully developed and explicit reliabilist theories are a more recent phenomenon, whose appearance coincides with the emergence of naturalism and post-Gettier epistemological analysis. The epistemological community recognized, however, F. P. Ramsey (1930) as an early 20th century predecessor. It has been sometimes emphasized that reliabilist ideas can be traced back to the historical philosophical theories,

like those by the ancient philosophers Plato, Aristotle or the Stoics. In some more recent theories of knowledge and justification, like in A. J. Ayer (1956) and P. Unger (1968), not intended to advocate reliabilism, one can detect certain reliabilist elements wherever the analysis stipulates the *non-accidentality* condition for knowledge (as Goldman notices (RCE: 26, 69)).

It seems, therefore, as if the reliability has always been an implicit or background idea, becoming increasingly elaborated and explicit, perhaps even dominant, in contemporary epistemology. It would be, from an externalist and reliabilist point of view, a welcome indicator of the growing influence and perhaps dominance of reliabilist theories as well.

Goldman's paper "A Causal Theory of Knowing" (1967), containing a theory of knowledge modeled on Grice's causal theory of perception, marks the beginning of the development towards complete and systematically explicated reliabilist theory. In that paper Goldman stipulated, besides three traditionally imposed necessary conditions for knowledge – (1) belief, (2) truth, (3) justification – that (4a) there is an appropriate causal connection between the fact that p and the belief that p, and that (4b) the causal chain is adequately reconstructed. In his paper "Innate Knowledge" (1975) he provided the first process reliabilist phrasing of his causal theory: an appropriate causal connection between the fact that p and S's belief that p yields knowledge that p iff this causal connection is "a kind of process which *generally* leads to true beliefs of the sort in question" or, like the cases of rheumatic rain-predictor and the successful chicken-sexer, show, iff S applied *reliable* techniques for forming pertinent beliefs (1975: 116).

Goldman's paper "What Is Justified Belief" (1979) (RCE: 29–49) contains the first explicit formulation of the process reliabilist theory of justification, where he labeled it as "historical reliabilism". It has been rightly included in the RCE, and not only for its historical merits, but primarily due to its theoretical value and clarity of exposition.

III. The structure of justification

In one of the final passages in this paper Goldman defines justification in the following way:

> 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. (RCE: 46)

Here and elsewhere in this essay, particularly in his elaboration of the distinction between the justification *ex post* and the justification *ex ante* (RCE: 47–8) Goldman exhibits some important programmatic and methodological features of his process reliabilist analysis of justification.

First, this definition defines justification as a *categorical* property of a belief: it defines that what is sometimes called *doxastic* justification, i.e. the justifiedness of an actual belief that *p*, or, in Goldman's terms, the justification *ex post*. By means of this definition, however, one can define *propositional* justification, i.e. the possession of good (internal) reasons for a belief that *p*, or in Goldman's terminology the justification *ex ante*, as well. It can be accomplished however, only indirectly and conditionally: *S* is *ex ante* justified in believing that *p* at *t* "just in case a reliable belief-forming operation is available to him such that the application of that operation to his total cognitive state at t would result, more or less immediately, in his believing *p* and this belief would be *ex post* justified" (RCE: 47). Therefore, in the primary sense, as doxastic justification, epistemic justification is an *objective* feature of a belief, not a subject's disposition to provide evidence or reasons for a belief. This disposition may be explained away as a function of what has already happened in the belief forming process and yielded the justification *ex post*.

Second, it is given in non-epistemic terms, as a *recursive* definition: its definiens or, in Goldman's terms, the "base clause(s)" or its antecedent(s), contains no epistemic terms, like "evidence", "reasons" or "justified". It contains only epistemically neutral predicates like "reliable", which refer to a statistical property, or "cognitive" and "belief forming (process)", which are psychological terms. So, the circularity, which contaminated some internalist theories of justification, has been avoided.

Third, it obviously adds a certain *naturalist* element to his theory: epistemic justification is explained and described by means, and reduced to, the *natural* properties of psychological processes. This idea was already present in Goldman's (1975) analysis of innate knowledge. Goldman (1986, 1992a), however, qualified this naturalist ingredient in reliabilism by significant *normativist* constraints, introducing justification *rules* (J-rules) and developing his version of methodological naturalism in a form of an *ameliorative naturalist* epistemology. (A congenial, but in some respects divergent position is advocated by e.g. H. Kornblith 2002.) Goldman (1986: 51–3) integrated this meta-epistemological point into the very concept of justification, by distinguishing between reliable *processes* and *procedures* and by introducing the idea of *reliable second-order processes*, i.e. the processes which reliably, i.e. appropriately cause acquiring or sustaining reliable first-order belief-forming processes. This idea also saved process reliabilism from the charge that it promotes automatized (in

Comesana's 2010 wording, "blind") first-order processes and procedures, unsuitable for gaining knowledge. Appropriate second-order processes are of special interest mainly with respect to reliable procedures, which are primarily *learned*, like algorithms or inferential strategies.

The fourth important point in the proposed definition is the implementation of a *conditional* or *counterfactual* analysis of justification, paraphrasing an earlier analysis of knowledge in terms of conclusive reasons by Dretske (1971) and antedating a similar approach to knowledge introduced by Nozick (1981). Goldman stipulated here that no other belief forming process be available to the subject, which in a counterfactual situation ("had it been used by *S* in addition to the process actually used, …") undermines the process actually applied, and plays the role of an *external defeater* for the belief that *p* at a given moment *t*. Thus, Goldman has also shown how a typical internalist analysis in terms of *epistemic defeat* could be functionally integrated into a conditional and reliabilist analysis.

Another possible linkage between reliabilism and internalism can be found on the level of the *second-order* questions about the justification concept. Since the base clause in the reliabilist definition identifies some *basic* features of the justification concept, Goldman's version of reliabilism may be, following E. Sosa's (1980) analysis and Goldman's own suggestion in his essay "Immediate Justification and Process Reliabilism" (RCE: 50–67, here: 60), considered as a variant of "formal foundationalism". In this essay Goldman, following his methodological idea of improving internalism and evidentialism by means of reliabilism, has further shown that this kind of reliabilism provides a plausible solution to the perennial epistemological problem of the "immediateness".

Despite its apparent applicability to a wide range of cases, Goldman's process reliabilism, especially in its first formulation, faced several notorious problems and a number of counter-examples. In his entry on "Reliabilism" in the *Stanford Encyclopedia of Philosophy* (RCE: 68–94) Goldman reviewed the problems and their proposed solutions. They are as follows:

(i)　the *evil-demon* counter-example, according to which reliability is not *necessary* for justification (formulated by S. Cohen 1984 et al.): the victims of the evil demon have perfect experiential evidence (equivalent to ours) for their unreliably produced and false perceptual beliefs;

(ii)　the *reliable clairvoyant* counter-example (by L. BonJour 1980), the *Truetemp* counter-example by K. Lehrer (1990) and A. Plantinga's (1993) counter-example with a *brain lesion* show that reliability is *not sufficient* for justification: the clairvoyant Norman has true and reliably produced clairvoyant beliefs, having yet no "rational" rea-

sons for holding them true; Truetemp has no reason for true tempera-
ture beliefs produced by a reliable thermometer computer implanted
in his head; *S*'s brain lesion reliably causes i.a. *S*'s true belief that *S*
has a brain lesion;

(iii) the *generality* problem (noted in Goldman 1979, stated by R. Feld-
man 1985), the problem of identifying, among many pertinent types
of the belief-producing process, the appropriately general *type* for
assessing the reliability of the *token* process;

(iv) the problem of "*easy knowledge*", or "*bootstrapping*", namely the
problem of epistemic circularity (stated by J. Vogel 2000 and S. Co-
hen 2002): *S*'s reliably believes that *S*'s belief that *p* is reliably pro-
duced, so is S's justified in believing that S is justified in believing
that *p*, therefore, the whole justification generation process is unreli-
able and unjustified for being circular (like bootstrapping);

(v) the (already discussed) *value problem* or the "*swamping*" problem,
relating to the alleged lack of extra value of knowledge over only
true belief.

The first two problems were handled by Goldman (1979, 1986, 1988,
1992a) by confining the domain of reliable belief-producing processes to
our "actual" or "normal worlds", governed by natural laws, which also
provide the normative basis for attributing reliability to processes and,
therefore, the justificational status to the beliefs produced by them. As J.
Comesana (2006) plausibly argued, the generality problem is only a spe-
cial case of the problem of the appropriate *basing relation*, but in that case
it holds true for any theory, not only for reliabilism. The more promising
answers, however, appear to be Goldman's (1992a) own appeal to rel-
evant research findings in cognitive science and contextually established
epistemic "virtues" as well as M. Heller's (1995) contextualist solution,
proposing that the relevant type (or types) could be identified relatively
to a relevant context. A similar point holds true for the problem of "easy
knowledge": it is not a special reliabilist difficulty, but a general epistemo-
logical problem, which could be solved perhaps only relatively to relevant
contexts. The stated problems and the proposed solutions clearly indicate
how far reliabilism has come in resolving the main epistemological dif-
ficulties, being at least less vulnerable to them than its rivals.

IV. Intuitions and the a priori

Goldman's dealing with the a priori began early in the seventies and its re-
sults were published in his paper on innate knowledge (1975), containing
the earliest statement of his reliabilist approach as well. This fact demon-

strates an intimate connection between these two topics by Goldman, between reliabilism and the problem of the a priori and innateness. It is noteworthy, however, that he provided an analysis of *innate* knowledge, a kind of a priori knowledge, which can be based on evolutionary selected *natural* propensities, detectable by means of behavioral regularities, and not of a priori knowledge in general, which traditionally presupposes rational intuition and is directed toward abstract objects. From Goldman's process reliabilist perspective, the innate knowledge that *p* is a true belief that *p* formed by an *innate propensity* due to a process of natural selection, manifested by a behavioral regularity. Confirming examples could be provided by biologists, like in the case of the common tick: the common tick can be credited with "knowledge" that – in proper environmental circumstances – at the spots from which a specific odor emanates (i.e. the odor caused by butyric acid) and it senses the appropriate temperature (about 37°C) – it can suck blood (and it behaves consequently, even when other circumstantial elements are not favorable, when it falls victim to a kind of illusion, sucking where there is nothing to suck) (1975: 118–19). Since the odor and the temperature, says Goldman, are "signs" of a good spot (for a tick) to suck blood, he obviously introduces an *indicator* reliabilist element into his analysis. Here we find a clear anticipation of the analysis of animal or "proto-knowledge" presented by Fred Dretske and Berent Enc (1984), but also of Goldman's own indicator reliabilist conception of *intuitions as evidence* in the essays in RCE, in particular, in "Philosophical Naturalism and Intuitional Methodology".

By means of this definition Goldman tried to show that in an adequate analysis of knowledge, according to which epistemic subjects are not committed to have internal justification for their beliefs in order to know (like in the case of the common tick), the possibility of innate knowledge is fully acceptable. Its actual existence, especially among humans, however, remains to be demonstrated by detailed *empirical* research. This methodological point influenced not only his later consideration on the topic of a priori justification and knowledge, but also further research in that epistemological subfield, notably by A. Casullo (2003). Goldman (1986) and Goldman and Pust (1998) made a similar point.

Further elaboration of the problem can be found in his paper "A Priori Warrant and Naturalistic Epistemology" (1999c), where he produced a naturalist formulation and solution to the problem in terms of "moderate naturalism", i.e. a kind of naturalism which embraces psychologism together with a causal theory of warrant and moderate scientism – a fusion which should have been proved compatible with moderate rationalism. Interestingly, Goldman's psychologistic explication of warrant – as being "a function of the psychological processes that produce or preserve be-

lief" – appeared intimately close to what internalists understood as being a function of internal (i.e. psychological) processes or states. So, BonJour's 'minimal psychologism' (BonJour 1994), at least according to his statement, could be a common denominator of naturalist and internalist conception of the a priori. Goldman himself recognized this striking, but from his reliabilist point of view, only a superficial similarity (1999c: 3).

Since it is not given in the form of a straightforward definition, it is hard to say what Goldman (1999c) offered as his then definite solution. It can though be paraphrased as follows: a priori warrant is a function of a priori warranters, and these are (conditionally) reliable inferential as well as non-inferential belief producing processes, the latter being processes providing a non-inferential apprehension of basic necessary truths; and both types belong to the individual's fundamental cognitive architecture (1999c: 12). According to the traditional conception, a priori warrant (justification) is a type of warrant which is *independent of experience* and is *intuition generated*. In the general reliabilist framework, however, the internal accessibility and thus 'experience' of warranters is not at all necessary for warrant. This was already established in Goldman's (1975) analysis of innate knowledge, in which he sharply separated *having justification* and *knowing innately* (and a priori). Therefore, according to Goldman, *being independent of experience*, in the sense of *being not necessarily accessible to the knowing mind*, does not make a discriminative criterion of *a priori* warrant.

Goldman also explicitly rejects another traditional qualification of a priori warrant, namely that it is intuition generated. Intuitions are "spontaneous, conscious judgments" about concepts as unconscious psychological structures and analogous to a kind of interoception, a type of conscious cognitive state. Therefore, intuitions, primarily those applied in philosophical conceptual analysis and in the classification of cases, may provide *experiential* evidence, like any other empirical source, and they are *not a priori* warranters (1999c: 20–21). In the last section of the paper Goldman openly brought into question the tenability of the a priori/a posteriori distinction (1999c: 23–24), calling for its scientific "transcending". It seems, however, that the very nature of Goldman's reliabilist analysis already makes the a priori/a posteriori divide "transcended", explaining the a priori as by no means belonging to a separate kind of warrant. Similar conclusions, primarily with respect to the a priori status of logical knowledge were already drawn in Goldman (1986: 299–303) in his dealings with psychology of reasoning.

Following this line of argumentation concerning intuitions and the a priori, Goldman (2007) took into consideration the so-called *classification* or *application intuitions* (analyzed in Goldman 1999c as well) being

used for the classification of particular cases viz. for the application of categories or concepts to particular cases. Those intuitions are of Goldman's special interest since they are also essential for the philosophical methodology of testing philosophical hypotheses by inventing fictitious cases, like in Gettier-type cases of justified true belief. Those cases were "intuitively" judged by the majority of epistemologists as not being cases of knowledge and therefore treated as genuine negative evidence, proving that the JTB-hypothesis is not true. Are such intuitions genuinely evidence generating and is the philosophical methodology, based on such intuitions, viable? Goldman tried to argue for a positive answer. He, however, remained steady in his conviction, opposed to the traditional conception, and among contemporaries, to e.g. E. Sosa (1998) and G. Bealer (1998, 1999), that classification intuitions are *not rational* ones: since they are mental episodes, they are not actually oriented toward abstract objects, as Sosa maintained, and do not have a strong modal content, i.e. necessary propositions, as Bealer argued in his "modal reliabilism". Intuitions' epistemic role is secured by "a reliable indicatorship relation" (Goldman 2007: 7), but this relation is doubtful in the case of Platonic forms and other abstract entities, for there is no "causal pathway or counterfactual dependence". Goldman's approach has been contested from a naturalist perspective by H. Kornblith (2007), however, not primarily concerning Goldman's psychologism about intuitions, but concerning his acceptance of the philosophical methodology based on intuitions as a legitimate or "standard justification procedure".

In his essay "Philosophical Naturalism and Intuitional Methodology" (RCE: 280–316) Goldman developed his earlier views on intuitions, the classification intuitions in particular, on the a priori and on the philosophical methodology more fully and more systematically. He also took into consideration the massive empirical evidence indicating the unreliability of intuitions as evidence. First, he refined his concept of intuitions, defining them in the following way:

> Intuitions are occurrent mental states, either intuitive judgments (a species of doxastic states) or non-doxastic states such as intellectual "seemings" or "attractions", which tend to generate intuitive judgments. In either case, they are supposed to be spontaneous or non-inferential states, not states produced by conscious inference. (RCE: 282)

So, if they are supposed to play an evidential role, intuitions may do it either as belief-like ("judgments") or perception-like mental states ("seemings"), which from their side can cause ("tend to generate") intuitions as belief-like states. This appears, however, as an unnecessary complication: What is the reason for this dualism? How can the causal influence of the

intuitions as perception-like states on the intuitions as belief-like states be explained? An analogy with ordinary perceptual evidence can perhaps be helpful: perception ordinarily yields perceptual evidence, and also generates perceptual beliefs, which themselves may yield further evidence for some other beliefs. Therefore, a similar gradation may be assumed by intuitions. However, labeling two very different things by the same name appears methodologically dubious and not compatible with an adequate analysis. Moreover, the qualification of intuitions as "non-inferential" states does not become clearer when it is rephrased as "… not states produced by conscious inference". What about the assumption of *unconscious*, but nevertheless reliable inferences *producing intuitions* (for which it is argued by e. g. P. Johnson-Laird 2006)? One may also ask why it is necessary that intuitions be non-inferential, since intuitions would be then, in Goldman's view, possible only as perception-like mental states, not derivable by any inference from other such states. Why should we then not assume intuitions as a kind of by-product of previous inferences? The predicate "spontaneous" is another questionable element in the explanation, utilized by Goldman as if it would be synonymous with "non-inferential" or "not consciously inferential": this predicate is, however, ordinarily read as equivalent with "not externally caused", but also with "non-voluntary" and "natural". So intuitions would be, perhaps wrongly, equated with effects of some blind natural propensities or dispositions (like in Goldman's 1975 explanation of innate knowledge). The dispositionalist explanation of process reliability in terms of cognitive virtues, i.e. competencies, however, has been strongly contested by Goldman himself in his criticisms of Sosa's virtue reliabilism (e.g. Goldman, RCE: 8–10).

It is important to take note of Goldman's distinction between two types of questions about the evidential status of intuitions, *the first-order* and *the second-order* evidential questions. It serves as a convenient tool for resolving the problems elicited by negative psychological findings and arguments by experimental philosophers, but also as an answer to the question of the a priori in general. The first-order questions are e.g. about whether intuitions play an evidential role, about their evidential quality and strength, and whether intuitions yield empirical or a priori evidence. The second-order questions are about whether there is and how to obtain good evidence for the first-order evidential status of intuitions and what the most appropriate kind of the second-order evidence is, i.e. empirical or a priori. Goldman's answer to the latter question is that the favorable second-order evidence is *empirical*. It is the central methodological point: the validity of the philosophical methodology based on intuitions should be checked empirically. Moreover, even the first-order dilemma, whether intuitions provide empirical or a priori evidence, is to be resolved depending

'partly on how one defines "a priori", and also on what cognitive science tells us about the cognitive processes underlying classification intuitions' (RCE: 283).

In light of Goldman's appeal to the cognitive science's research on cognitive *processes* and his focus on *process reliability* as the main justificatory element for more than thirty years, his explanation of the evidential role of intuitions in terms of *reliable indication*, although already introduced, appears a bit surprising. He provides the following explanation:

> E is evidence for the belief that *p* iff E reliably indicates the truth or fact that *p*, and since being in a mental state can be a reliable indicator as well, so intuiting that *p* may be evidence for the truth or the fact that *p*.

How can this shift be explained? One reason could be perhaps his disinclination to the *dispositionalist* approach expressed in virtue reliabilism. It may be hypothesized that Goldman, by explaining the epistemic role of intuitions in terms of process reliability, would be led to explain intuiting by means of the concept of reliable intuition in the sense of a cognitive virtue or competence viz. *disposition*, as Sosa apparently (2007b) did. Had he proceeded that way, he would have been vulnerable to his own criticism of virtue reliabilism (RCE: 8–10). Consider the fictitious case of Arthur, a boy endowed with algebraic competence, invented by Goldman. In this case Sosa's virtue reliabilist conditions for knowledge (accuracy, adroitness, aptness) are satisfied. Despite his competence, Arthur, due to his momentary laziness, does not proceed through a relevant calculating *process*, but takes a shortcut, and, consequently, does not know. So, it seems, according to Goldman, a *reliable process* is a necessary as well as a sufficient justificatory element: 'not only is a reliable process constraint required, but incorporation of process reliabilist conditions would render the original appeal to *dispositions* unnecessary, or otiose.' (RCE: 10). Therefore, a possible explanation for the fact that Goldman, in his explanation of this case of algebraic ignorance and knowledge, did not retreat to intuitions, although it could have been a seemingly natural move, is that he tried to remain consistent with his criticism of Sosa and with his general process reliabilist approach. And that could also be a reason why he, when he did utilize intuitions as explanatory device, could not utilize them in process reliabilist terms, but only as *evidential* category. However, as already noted, even in his evidential talk about intuitions, Goldman did not entirely abandon process talk, but he used it only concerning the *evidence generating* processes (RCE: 284–5), not in the usual sense of the belief producing processes.

Another possible objection in the domain of the first-order evidential questions may be raised to Goldman's psychologism concerning intui-

tions, which lead him close to the internalist version of evidence concept. It comes to the fore when he dismisses T. Williamson's (2007) criticism of the psychologism concerning thought experiments, especially with respect to the distinction between *intuiting* and what is *intuited*. For Williamson, only the latter can play an evidential role, since otherwise the principle of "evidence neutrality" would be broken and it would open up the gap between thought-experimental evidence and what it is supposed to be evidence for. Interestingly, Goldman understood *intuiting* as a basic kind of evidence, and admitted *intuited* as a derivative kind, without appealing to the process dimension of *intuiting*, what one might expect and what is even signalized by the presence of the verbal nouns ("intuiting", "occurrence"):

> Such non-psychological evidential facts [i.e. *intuited*] derive their evidential status (…) from *psychological evidential facts*, i.e. the *occurrence* of intuitions or intuitive judgments about the hypothetical scenarios. [italics added] (RCE: 284)

One might regard his neglecting the temporal and process dimension as striking, in comparison to his adherence to "historical reliabilism" as well as to his then rejection of "current-slice time" theories of evidence in Goldman (1979, 1986), especially when logical intuitions are in question. A quote from Goldman (1979) will be sufficiently illustrative (and also indicative for his reliabilism of that period, vulnerable to the charge of "blind" reliability):

> The psychological process of "seeing" or "*intuiting*" a simple logical truth is very fast, and we cannot introspectively dissect it in constituent parts. Nonetheless, there are mental operations going on, just as there are *mental operations* that occur in *idiots savants*, who are unable to report the computational processes they in fact employ. [italics added] (RCE: 43)

The most important challenge to the idea of intuitions as reliable indicators of truth of their contents appears, however, in the domain of the second-order evidential questions, from the psychological experimental studies and the negative conclusions by the proponents of the so-called experimental philosophy ("X-phi") (e.g. J. Alexander and J. M. Weinberg 2007; S. Swain, J. Alexander and J. M. Weinberg 2008), which show their factual *unreliability*. This poses a real problem for Goldman, for he called for getting "down and dirty" and "into the psychologist laboratory" (RCE: 302) when the intuitional methodology, in particular, with respect to the concept possession and categorization, is to be tested. The main evidence for the conclusion that classification intuitions are conflicting and varying from non-philosophical (ethnic, cultural, emotional etc.) reasons derives

from the experiment in which the intuitions about K. Lehrer's Truetemp Case were tested, the case of the man who, unbeknownst to him, forms reliably produced true temperature beliefs by means of a thermometer computer implanted in his head, and yet, according to Lehrer, does not know what he truly believes about the temperature (S. Swain, J. Alexander and J. M. Weinberg 2008).

Goldman proposed several strategic moves for minimizing the damage for the intuitional methodology, which include e.g. (i) stressing the defeasible character of these findings as being only prima facie evidence against intuitions' evidential role, (ii) calling for redefinition and clarification of the objects of intuitions (in particular, in the case of epistemic ascriptions), (iii) grading skepticism concerning intuitions, i.e. localizing doubts for some areas of objects and groups of subjects, against globalized skepticism concerning intuitions, or (iv) enhancing the evidential force of intuitions in the framework of an *ameliorative* approach to intuitional methodology, and therefore (v) relying on evidence based on the intuitive agreement of a high grade, or on "collective intuitional facts" (RCE: 303). The latter move demonstrates the force of Goldman's *social-epistemological turn*, in combination with indicator reliabilism: like in Condorcet Jury Theorem, the weight of collective intuitional evidence could exceed the evidential weight of a single individual's intuition.

Finally, this strategy affects Goldman's naturalist and psychologist approach to a priori warrant itself, which he, again by means of the process reliabilist terminology, defines as the warrant "produced by processes of intellection or ratiocination" (RCE: 306). However, there is no necessary correlation between intuitions and a priori warrant, and therefore, the philosophical methodology is not at all just an "armchair" activity. Moreover, since a priori warrant is now considered as compatible with fallibility and as the warrant without extraordinary evidential strength, it can be integrated into the naturalist outlook. Consequently, the clear-cut divide between the empirical and the a priori is not only impossible: it is perhaps, after all, philosophically uninteresting, insofar as the status of a priori warrant derives "from certain class of cognitive processes", thus being the function of their reliability, like empirical warrant with respect to some other class of processes (RCE: 309).

V. Concluding remarks

Alvin I. Goldman and other prominent epistemologists, advocating any of several variants of epistemological *reliabilism* or *externalism* in general, produced first-rate conceptual and methodological innovations and, together with naturalism, actually reformed epistemology. This reform

perhaps did not position epistemology just as "a chapter of psychology", as Quine urged, but nevertheless made it a serious scientific enterprise, linked with hard core sciences of cognition and at the same time preserving a great deal of its traditional normativist problem orientation. Many of these innovations are to be found in Goldman's work, and some of them have been clearly represented in his recent book *Reliabilism and Contemporary Epistemology*. The core of Goldman's epistemological program is his *process reliabilist theory of epistemic justification*, which defines epistemic justification as the function of the reliability of the relevant belief producing processes. A series of distinct theories in individual as well as in social epistemology followed naturally from this theory: the *process reliabilist theory of knowledge*, *moderate naturalism*, *veritism*, *epistemic paternalism*, *objectivity based relativism*, and *expansionism*. Even Goldman's *relevantism* and *indicator reliabilist theory of evidence*, in particular intuitional evidence, have their conceptual ground in explanations expressed in process reliabilist terms. It is, therefore, a somewhat surprising to discover that Goldman, in explaining the epistemic role of intuitions, favored the indicator reliabilist type of explanation.

The enormous significance of this epistemological reform is certainly a matter of historical analysis and subsequent assessment, which are going to be provided from the vantage point of the next generations of epistemologists. It is, however, already clear that Goldman's statement expressed in *Reliabilism and Contemporary Epistemology*, that "externalism wins the battle" (and reliabilism, too), resonates well with other propulsive phenomena in contemporary philosophy, like naturalism and scientism.

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