Theory & Psychology

From Speculation to Epistemological Violence in Psychology

A Critical-Hermeneutic Reconstruction

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Abstract. Based on historical and theoretical reflections it is argued that speculation cannot be eradicated from psychology and that it is a necessary part of empirical research, specifically when it concerns the interpretation of data. The quality of those interpretative speculations of data is particularly relevant when they concern human groups and differences between them. The term *epistemological violence* (EV) is introduced in order to identify interpretations that construct the 'Other' as problematic or inferior, with implicit or explicit negative consequences for the 'Other,' even when empirical results allow for meaningful, equally compelling, alternative interpretations. These interpretations of data are presented as 'knowledge' when, in fact, harm is inflicted through them. Examples of EV in the context of 'race' are briefly discussed. The concept of EV also demonstrates that the traditional separation of 'is' and 'ought' is problematic. Reflections on epistemological-ethical issues are provided.

Key Words: epistemological violence, epistemology, ethics, hermeneutics, interpretation, speculation, underdetermination

A hermeneutics of empirical psychology, as articulated in this essay, attempts to understand manifest and latent practices of psychology in general and *the role of interpretation* in empirical psychology in particular. The reconstructions and arguments in the following analyses provide an interpretation of problems of speculation and interpretation in empirical psychology. A hermeneutics turns critical if it is accompanied by a stance that does not take the self-understanding of mainstream psychology for granted and tries to disclose epistemological and ethical shortcomings of the status quo. In this article, I will argue that (a) speculation is a specter that has escorted psychology throughout its history; (b) psychologists have been aware of the problem of

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speculation not in their own research program but in those of others; (c) although various forms of speculation have been acknowledged in the discipline, speculation has found its refuge in the underdetermination of interpretation; (d) the quality of speculation regarding the interpretation of data is highly significant when it comes to human groups; (e) speculative interpretations that construct the 'Other' as a problem, while the data allow for equally valid alternative interpretations, should be labeled as *epistemological violence*; and (f) psychology should reflect upon the epistemological-ethical meanings of interpretation.

On Speculation

Speculation has a complex history and a long tradition in Western philosophy and psychology. Within the neo-Platonic Christian context, speculation became a way of approaching God, which was distinguished from other approaches such as cognition (*cognitio*), contemplation (*contemplatio*), and vision (*visio*) (Ebbersmeyer, 1995). In the Aristotelian tradition *speculative sciences* such as philosophy, mathematics, physics, and theology were opposed to *practical sciences* such as ethics, politics, and economics. With the rise of modernity and its critique of traditional theology and philosophy, an increasing challenge regarding the method of speculation took place.

This critique reached its first peak with Kant, whose *Critique of Pure Reason* (1781/1998) could be understood as a philosophical program to overcome speculation. For Kant, reason was deficient when it dealt with the soul (reason was trapped in paralogisms), when it attempted to grasp the universe (reason was caught in antinomies), and when it addressed God objectively. Kant dedicated an extensive chapter in this book to the critique of speculative theology, where he also provided a definition for speculation: 'A theoretical cognition is speculative if it pertains to an object or concepts of an object to which one cannot attain in any experience' (A634/B662, p. 585).

In the early 19th century, speculation was reinvigorated, especially in German idealism and through its representatives Johann Gottlieb Fichte (1762–1814), Friedrich Wilhelm Schelling (1775–1854), and Georg Wilhelm Friedrich Hegel (1770–1831). For Hegel (1812/1969), speculation led to the highest form of knowledge because speculative thinking comprehended contradictory moments of a dialectical relationship as a unit. Speculative thinking overcame 'either—or' reasoning because in capturing totality it embraced both (Hegel, 1830/1991, see § 32). For Hegel, speculation had a positive meaning because it could lead to knowledge of the *Absolute*. This positive assessment was expressed in Hegelian-influenced textbooks of psychology that embraced this method in the middle of the 19th century. For example, George (1854) argued that an empirical natural-scientific perspective in psychology would not exclude 'true speculation' (p. vi).

But the 19th century was also the battlefield on which it would be decided whether psychology should follow the lead of the natural sciences or philosophy. Beneke (1833/1845), who believed that a natural-scientific psychology should be the foundation for philosophy, complained that philosophy dealt with speculative concepts such as *Absolute Nothingness* rather than with empirical reality. He suggested that psychology should be based on empiricism and not on the philosophical speculations of German idealism. The increasing status of the natural sciences was already reflected in the titles of Waitz's (1849) and Drobisch's (1842) books, which shared the notion of psychology as a non-speculative natural science. The dismissal of speculation led to a revival of Kant, who did not fit into the school of absolute idealism, in various programs of neo-Kantianism beginning in the middle of the 19th century (Köhnke, 1991). Significant natural scientists such as Helmholtz (1903) suggested in the 1850s that Schelling and Hegel had ruined philosophy whereas Kant's epistemology was understood in line with the natural sciences (see also Schnädelbach, 1983/1984).

The Accusation of Speculation

Dewey (1901/1960), in his entry to Baldwin's *Dictionary of Philosophy and Psychology*, listed three meanings of speculation: speculation could refer to a reflection of the mind on itself, to a theorizing that goes beyond verifiable observation, or to a Hegelian apprehension of the unity of opposing categories.[1] All three meanings of speculation were increasingly rejected by psychologists. Lange (1866/1950), who wrote the first extensive critique of philosophical psychology, argued that psychology could learn more from experiments than from all books based on 'speculative' inquiries (see p. 181). Instead of philosophical reflection, he recommended experimental child and animal psychology.

Willy (1899), who published the first book on 'the crisis in psychology', proclaimed a *chronic crisis* (p. 1) of psychology already at the end of the 19th century. He began his essay with the statement: 'It is known that psychology in general is even today still caught in the bonds of speculation' (p. 1). Importantly, Willy did not target philosophical psychology but his critique was aimed at the dominant psychology of his time, such as the research programs of Wilhelm Wundt (1832–1920), Franz Brentano (1838–1917), William James (1842–1910), Hermann Ebbinghaus (1850–1909), and Oswald Külpe (1862–1915). According to Willy, psychologists like Wundt fell back into the lap of speculation despite their claims of conducting exact empirical science. If psychology truly wanted to succeed as a science, according to Willy, then it should not give any credence to the philosophical worldview because metaphysics and an empirical approach in psychology were not only mutually exclusive but negated each other. He labeled the fact that psychology at the

end of the 19th century was still caught in the bonds of speculation as the *metaphysical crisis* of psychology.

In the 20th century, the accusation of speculation became a virtual death sentence for psychologists. Any positive connotations of speculation had vanished. Whereas in the 19th century speculation and theory were not necessarily seen as distinct, 20th-century psychology dismissed pre-experimental and non-experimental theories as speculation (see Danziger, 1993). Standard targets for the accusation of speculation in psychology are Freud's (1856–1939) theories, which are rejected, for example, by most contemporary textbook authors. There is a consensus that Freud's evidence is 'very flimsy' (Eysenck, 2004, p. 450); his theories on psychosexual development and the Oedipus complex are identified, for example, as the fantasies of male researchers (Weisstein, 1992).

But also within natural-scientific psychology mutual allegations of speculation have been expressed in order to discredit opposing systems. Wundt (1874/1910) characterized Herbart's psychology, which had dominated the first half of the 19th century, as speculative. J.B. Watson (1913) challenged Wundt's psychology and argued that a program that defined the subject matter of psychology in terms of the facts of consciousness and applied the method of introspection for identifying these facts would be caught in speculative questions that could not be studied scientifically. Skinner (1953) criticized human-scientific psychology for a lack of precision in what understanding, interpretation, intuition, and value judgment precisely meant. The irony is that the work of Skinner himself, particularly his theory of language development, was criticized by Chomsky (1959/1967) for its speculative character (see Teo, 2005).[2]

Chomsky (1959/1967) described Skinner's ideas on language acquisition as mythology and labeled them as 'Skinner's speculation regarding language' (p. 142). According to Chomsky, when it came to cognitive processes, researchers were dealing with a behaviorist 'speculation as to the nature of higher mental processes' (p. 142). Chomsky argued that the results obtained in the laboratories of the behaviorists could not be applied meaningfully to complex human behavior such as language because the 'speculative attempts to discuss linguistic behavior in these terms alone' (p. 145) would exclude fundamental dimensions of mental life. Of course, it is a *meta-irony* that Chomsky's concept of an innate *language acquisition device* would also be accused of speculation (see also Moerk, 1989).

Although some recent publications acknowledge speculation in their titles (e.g., Held, 2002), there exists a consensus in mainstream psychology that speculation is highly problematic. Empirical psychologists, who represent the vast majority of contemporary psychologists in academia, understand themselves as non-speculative because hypotheses and, to a certain degree, theories are assumed to be tested through observations and experiments.

Speculation in the Interpretation of Data and Underdetermination

Despite a non-speculative self-understanding of psychology, a hermeneutic analysis of past and present empirical research in psychology must conclude that empirical psychology operates with speculation when presenting research in journal articles, chapters, or books. Indeed, speculation is an essential part of the *interpretation* of empirical data (results) because results do not *determine* interpretations (interpretations are underdetermined). If results determined interpretations, then psychologists would not need to present discussions because results would be sufficient by themselves.[3] Interpretations of data necessarily and always contain a speculative moment because interpretations are *underdetermined* by empirical results. Interpretations of data can thus be labeled as *interpretative speculations*.

The philosophy of science has discussed a similar problem, specifically the underdetermination of theory by data (Quine, 1969, 1970). This *underdetermination thesis* suggests that radically different theories can be supported equally on empirical grounds (Bergstrom, 1993). This thesis was not developed in the context of the social but the natural sciences; Pierre-Maurice-Marie Duhem (1861–1916), to whom this idea is originally attributed, was a physicist. Duhem (1905/1954) also suggested that experiments in physics contain observations of phenomena *and* theoretical interpretations. For the purpose of the argument it is not necessary to discuss the complexity of the underdetermination thesis in relation to theories and to the intricate reflections developed in the philosophy of science (e.g., Kukla, 2001). Rather, it should be epistemologically evident in the context of the interpretation of results within the logic of empirical research in the discipline of psychology that the *realm of data* is not identical with the *realm of the interpretation of the data*.

Interpretative speculations are not just descriptions of data but impart meaning to data and make results understandable. Data require an interpretative superstructure that makes them comprehensible for the authors themselves, peers, an audience or a readership. I would like to call this phenomenon the *hermeneutic surplus* of interpretation: through interpretative speculations data are understood better than they present themselves. From an epistemological point of view, what are labeled 'facts' are in their denotations 'data.' However, an analysis of the *rhetoric of facts* in academic discourses reveals that often what are presented as 'facts' are indeed data *and* interpretative speculations. The same argument applies to the concept of empirical knowledge. The *knowledge* that is produced in psychological studies and that is published in research articles and books contains data *and* interpretative speculations. This hermeneutic surplus is often the most important part of a study because it is conveyed to peers in presentations, to students in the form of textbooks and to the general public via the mass media. Yet it is methodologically incorrect to present data *and* interpretations as *facts* or *knowledge*.

Methodological and epistemological problems surrounding the issue of interpretative speculations are neglected in empirical psychology and, thus, constitute important lacunae of the discipline. This *hermeneutic deficit* poses a threat to any concept of objectivity because it opens the door to ideological interpretations, to speculations that are meaningful within a *Zeitgeist* or to a subgroup, or to a consensus that is prone to temporal and spatial contingencies. Most importantly, this hermeneutic deficit discourages psychologists from reflecting upon the limitations of their own research (see also Gadamer, 1960/1997).

From the perspective of publication manuals on how to develop a research article, only the following parts of a research article would be needed in psychology if interpretative speculations were determined by data: *title*, *abstract*, *introduction*, *method*, and *results*—again, no *discussion* would be required. Yet, the *Publication Manual* of the American Psychological Association (2001) specifically assigns interpretation to the *discussion* part of an article. Indeed, it even promotes speculation. Instead of criteria to determine what constitutes valid discussions, interpretations, or speculations, the *Manual* recommends: 'You are *free* to examine, interpret, and qualify the results, as well as to draw inferences from them' (p. 26, italics added). However, examinations, interpretations, qualifications, and certainly all inferences are not determined by results and contain degrees of speculation. Although separating the *results* from the *discussion* is a step that underlines the qualitative difference between data and interpretations, this distinction does not solve the problem of the speculative character of interpretation itself. Instead, the problem might only be resolved by providing rules, guidelines, and criteria for valid discussions. For example, a basic guideline would be that an interpretation must simultaneously do justice to the data obtained and to the data that exist in the literature.[4]

The lack of awareness of adequate interpretative speculations is an enormous problem from an educational point of view. Despite the huge amount of didactic tools pertaining to method and methodology, empirical psychology has not developed textbooks, courses, or training manuals for distinguishing *good* from *bad* interpretations of data, nor has it provided students and academics with clear criteria to evaluate their own interpretative speculations. From a phenomenological point of view, faculty members who have sat on thesis committees of empirical psychological research know that the interpretation of results can sometimes take questionable forms. It is assumed that in the course of a career the *discussion* part will improve but also that an expert's discussion is more valuable than a novice's interpretation of data. It might be the case that experts use reason intuitively (see Dreyfus, 2004) and they might even have difficulties in providing explicit criteria for their interpretations. However, it remains a task for hermeneutic-critical psychologists to identify those implicit rules and to articulate guidelines for more adequate interpretations.

The Context of Interpretative Speculations

Connected with the problem of speculation in the context of the interpretation of empirical results is the practice of speculation in theoretical frameworks. Non-formalized theories, which represent the large majority of psychological theories, contain by nature a degree of speculation. Theories summarize empirical research in a process of abstraction from particular data based on multiple studies. But the process of abstraction always includes, to a greater or lesser extent, a degree of speculation. It should be emphasized that the term 'speculation' is used not in a pejorative but in a descriptive way. In addition, theories operate with certain axioms (in psychology they should be labeled premises) that cannot be tested. Because premises contain speculations, theories contain speculations.

Interpretations in the *discussion* section are accomplished ostensibly within theories, and results produce meaning within the contexts of a theoretical framework. More accurately, one could describe the logic of empirical research in the following way: theories lead to hypotheses within theories and the results obtained make sense primarily within the theoretical framework because results are interpreted within this framework and the original hypotheses were derived from that framework. Holzkamp (1977) described this process as a circle between theory and empirical research, and Danziger (1993) labeled the relationship between theory and data as 'reciprocal' (p. 18).

This reciprocal relationship also leads to the problem that a research group in psychology that shares the same theoretical background interprets the data within this framework and agrees on a common interpretation whereas another group that shares a dissimilar theoretical program interprets the same results differently. Because data do not determine theoretical interpretations, contradictory interpretations are possible within current practices. Indeed, criteria regarding what constitute rigorous speculations, interpretations, and discussions would be able to overcome this problem. However, even if there existed two psychological theories of which one has greater support (and psychologists had clear criteria regarding what 'greater support' means), the data would not determine the theory. There is always a speculative gap between theories and data—even for the best empirically supported psychological theories. Thus, psychologists cannot argue that a more supported theory is right and a less supported theory is wrong. Psychologists could only say that one theory is better supported than another one, and that therefore one should give preference to the former. However, the inference that a better-supported theory is true is itself a form of speculation.

As is widely known, the philosophy of science has dealt with an equivalent issue, namely the problem of *induction*, or developing the general from the particular. While Hume (1739/2000) pointed to the speculative dimension of inductive processes, logical positivists tried to save induction in a theory of inductive probability (Carnap, 1945). However, the young Popper (1935/1992)

pointed out that induction can never become the source of progress in the sciences because of the logical shortcomings of verification. Thus, he rejected the notion that better-verified theories could be more true. Instead, he famously recommended falsifying theories rather than verifying theories. From a methodological point of view, in psychology a better-supported theory could indicate that more positive instances have been identified for a particular perspective or simply that more individuals and hence more studies operate within an accepted research program than in another one. Unfortunately, despite the hypothetical support of Popper in psychology (e.g., Herrmann, 1979), falsification attempts from proponents of a specific theory are seldom practiced, and the request to examine disconfirming evidence does not often find its way into interpretative speculations.

Hypotheses, derived from theories, provide another context for speculation. However, the problem of generating hypotheses is significantly reflected upon in the philosophy of science and in psychological methodology. In the context of generating hypotheses, it is acknowledged that speculation is a central part of the research process (see Bunge, 1983). The development of hypotheses is seen as a speculative process but not as problematic because hypotheses are tested in the *context of justification* (Reichenbach, 1938). Bunge (1983) suggested that all scientists speculate when generating hypotheses but he identified this aspect of psychological research as a positive process because the philosophies of science have established criteria for what constitutes a sound hypothesis. According to Bunge, a sound hypothesis is 'compatible with the bulk of scientific knowledge' (p. 4) and 'it can be refuted or confirmed (to some degree) by observational or experimental means' (p. 4). However, Bunge did not discuss the problem of speculation after a hypothesis is tested and results are obtained; he did not analyze speculation in the context of the interpretation of results.

It should be pointed out that social epistemologies consider hypothesis-generation itself a problem—even if hypotheses are tested, 'verified,' or falsified. Kuhn (1962) famously drew the attention of historians, sociologists, and philosophers of science to the problem of the external social dynamics within a research community rather than to internal problem solutions. For example, feminist epistemologies have emphasized Reichenbach's (1938) context of discovery and have suggested that sociologists and historians of science should study why a particular researcher was interested in a specific problem and how he or she arrived at his or her hypotheses (see Code, 1991; Harding, 1986). Within social epistemologies it has been argued that the specific content of hypotheses might make sense only in particular socio-historical contexts and that hypotheses themselves could be profoundly biased, for example, in androcentric terms. In psychology, Gergen (1985) within his social-constructionist perspective most prominently suggested that observations were socio-linguistic constructions that did not reflect reality. Socio-political and personal preferences might be involved in whether psychologists look for

differences or similarities (in the area of gender, see Febbraro, 2003). In that sense hypotheses themselves can be understood as ideological.

Finally, another form of speculation should be mentioned: speculation with regard to concepts used in empirical studies. In empirical psychology, concepts are usually operationalized and thus seem to contain no speculation. However, operationalizations do not provide a final criterion for the ontological status of a concept (see also Green, 1992). For example, if psychology operates with a dozen different operationalizations of one concept, and all of them have empirical support, then one cannot decide which operationalization should be preferred (see Holzkamp, 1964). The preference for one concept involves a speculative momentum that draws on theoretical commitments. In addition, meta-theoretical concepts are taken for granted and not tested. For example, psychologists do not know the ontological status of the concept of an *independent* or *dependent variable* (see also Winston, 2001). Do independent variables exist in nature? If so, how so, and if not, what is their meaning in research? It has also been pointed out that many basic concepts in psychology (e.g., intelligence) reflect the sociohistorical context from which they emerged (Danziger, 1997).

Leading theoretical psychologists have discussed the problem of speculation. From a natural-scientific perspective, Bunge (1983) analyzed the role of speculation in research. In his view, an *anything goes* mentality in the process of speculation was confined to the arts. Sound speculation was, according to Bunge, the domain of science. Of course, human-scientific-oriented psychologists would not agree with such an assessment and point out that hermeneutic rules are used in the arts. From a human-scientific perspective, Bakan (1975) wanted to give speculation an 'honored place' (p. 17) in psychology. Based on the argument that Copernicus, Darwin, and Freud were driven in their discoveries by speculation, he encouraged speculation as a tool in psychology. According to Bakan, speculation was a positive method that he contrasted with a process in which one rigidly held to a hypothesis. He argued: 'Speculation provides not only the thought which is to be verified, and held to be true, but also the alternative thoughts, whose presence is essential to give credibility to the hypothesis which is taken to be the truthful one' (p. 21).

From a critical perspective, Holzkamp (1964) investigated the relationship between theory and experiment. He demonstrated convincingly that the interpretation of experimental results is not binding and that psychology offers theories for which one can produce experiments that either verify or falsify the theory, always according to one's needs. He specifically pointed out that the interpretation of experimental results is rather arbitrary and that psychology has no criteria to establish the meaningfulness of an interpretation (for the natural sciences, see also Feyerabend, 1975). It is worthwhile to mention that Holzkamp did not develop these concerns in the abstract but that he performed experiments himself (e.g., Holzkamp & Keiler, 1967). He abandoned his own provisionary criteria for solving the problem because he moved his own research program in a non-experimental direction.

Arguably, the discipline of psychology requires more objectivity, even if it is not clear what that might mean (in a natural-scientific context it could mean excluding subjectivity; in a human-scientific context it might mean consciously including subjectivity). From a critical-hermeneutic perspective that goal would be to progress beyond an objectivist mode of interpretation that leaves discussions to the unreflected speculations of authors, but also beyond an attitude that claims to know how to interpret the results even before data are obtained. There are two solutions when it comes to the interpretation of results. The first one is to abandon completely the interpretative part of research. This option would mean canceling the *discussion* part in psychological research articles. Unfortunately, this solution would not reduce interpretative speculations—they would just occur after an article had been published. This solution would leave speculations to a wider readership, and concerns regarding certain speculations that could be expressed in the *discussion* would be omitted, too. The second solution is to develop hermeneutic criteria for meaningful speculations in the interpretations of results. Obviously, this is a difficult task and would involve formal and procedural solutions if these criteria were epistemological and methodological. However, in specific circumstances these criteria should contain epistemological *and* ethical considerations.

From Speculation to Epistemological Violence

Speculation in empirical psychology as it is discussed in this article takes the form of interpretations of results. From an epistemological point of view this means that empirical research in psychology contains a hermeneutic dimension (we want to *understand* empirical results). Dilthey (1894/1957) famously suggested a division between natural and human sciences, but he himself was critical about construing this distinction as absolute. Indeed, hermeneutic approaches in psychology rely in their understandings on the results of the natural sciences (see Maslow, 1966/1969). Yet, the opposite is also true for natural-scientific psychologists: empirical psychologists cannot operate without interpretations that are based on the understanding of the meaning of results.

Although interpretations of results are presented as facts, they contain speculative elements. As suggested above, *knowledge* that is produced in empirical psychological studies contains data *and* interpretations. Interpretations are not determined by data and thus require a hermeneutic process. It is not suggested that there is no relationship between data and interpretation—even in the worst-developed interpretations there is a relationship in the sense that interpretations draw upon some kind of data—yet, this 'drawing upon' is not articulated and is not discussed as a reflexive process that requires hermeneutic competencies and performances.

Opponents of the idea that interpretations should be subject to an equivalent scrutiny as are other parts of a research article could make the argument that for the majority of empirical studies in psychology it does not matter what kind of interpretation or theoretical framework one prefers. But as soon as an interpretation has practical, behavioral, or existential consequences, the choice of interpretative speculations becomes relevant. Psychologists who espouse a Piagetian framework might come to very different educational recommendations from those of behaviorists who adopt an operant learning program.

This argument becomes even more significant for interpretative speculations that involve groups of human beings such as women, visible minorities, gays and lesbians, persons with disabilities, and so on, who have been marginalized in society. As soon as empirical differences are interpreted (and these interpretations contain speculations), and as soon as these speculations construct the 'Other' as problematic or as inferior, with possible negative consequences for the 'Other,' one should speak of a form of violence that is produced in 'knowledge.' In these cases, interpretative speculations (and not data!) turn into *epistemological violence*.

The term *epistemic violence* was developed by Spivak (1988) to identify the various projects in history, culture, literature, and philosophy through which the colonial subject has been constituted as 'Other.' In her postcolonial analysis, Spivak suggested that the *subaltern* person (specifically the *subaltern* woman) was not solely politically and economically oppressed and dispossessed but that she existed in a shadow; she was unable to speak and had no history, not in Western contexts but also not in her own native culture, which had been exposed to colonial practices. Spivak specifically applied the term *epistemic violence* to the practices of colonialism in 'Third-World' countries. However, in order to do justice to the methodological nature of the problem in the empirical sciences, more precisely in empirical psychology (which was not a concern for Spivak), the term *epistemological violence* is suggested for empirical psychology.

Epistemological violence is a practice that is executed in empirical articles and books in psychology when interpretative speculations regarding results implicitly or explicitly construct the 'Other' as problematic. The term *epistemological* suggests that these speculations are framed as knowledge when in reality they are interpretative speculations regarding data. The term *violence* denotes that this 'knowledge' has a negative impact on the 'Other' and that the interpretative speculations are produced to the detriment of the 'Other.' The negative impact can range from misrepresentations and distortions, to a neglect of the voices of the 'Other,' to statements of inferiority, and to the recommendations of adverse practices or infringements concerning the 'Other.' The term *epistemological violence* as it is used in the argument refers not to the misuse of research in general but to a hermeneutic process (interpretative speculations of data) that has negative consequences for the 'Other.'

Interpretative speculations that damage the 'Other' can be done with good or bad intentions. Bakan (1975) was concerned that 'unscrupulous persons' (p. 24) would misuse speculation in psychology. However, he did not discuss the possibility that researchers themselves might use speculations in an unscrupulous manner when they interpret their own results. Researchers who have bad intentions are aware of the consequences of certain speculations, whereas psychologists with good intentions are often unaware of the human costs of their interpretations. However, for the 'Other' it does not really matter whether the speculations were perpetrated with good or bad intentions because the consequences are the same (see also Teo & Febbraro, 2003). The issue is not about an ethics of intentions but about an ethics of consequences, and this is where epistemic responsibility becomes a factor (see Code, 1987).

Some researchers who perpetrate epistemological violence emphasize that the interpretations of data are facts and that critics who might point to epistemological violence are motivated by political concerns: when Broca (1864), the famous brain researcher, speculated that the 'mixture' of closely related 'races' (British and French) would be beneficial whereas the 'mixture' of distant 'races' (Blacks and Whites) would be perilous (inferior in fecundity and longevity)—but also argued based on anatomy that white men should have sex with black women but that black men should not have sex with white women (see Teo, 2004)—he claimed that he was a neutral and objective scientist who rejected political and social considerations in science, because in science 'facts must answer the question' (p. 15). But his interpretations were speculations on data, based on his own ideological-political commitments.

Indeed as Miller (1993) pointed out so eloquently: 'The scientist's social and political beliefs can be especially biasing in a field such as psychology, in which people are studying people' (p. 16). She even suggested that the selection of facts tells as much about the psychologist as about an observed behavior. Facts are not just facts, but data are interpreted, speculated upon, and 'knowledge' in a research article contains data *and* interpretative speculations. Consequently, the discipline of psychology needs to develop hermeneutic guidelines for valid interpretative speculations. The denial of the role of interpretation in empirical research has led to a neglect of courses, manuals, or continuing education for academics on the problem of interpretation of data.

It requires only basic hermeneutic skills in order to understand whether an interpretation of results in a particular article produces epistemological violence and whether the speculations on results are performed to the disadvantage of a historically oppressed group of human beings. However, in large research programs the interpretation of results and the commitment to speculative theories that produce certain speculative hypotheses, based on speculative concepts, interact systematically. Thus, one finds historical and contemporary examples in which a whole research program is subject to a hermeneutic deficit and to epistemological violence. For didactic purposes it might be useful to examine examples from the history of psychology because historical cases often intuitively

demonstrate that interpretations are not determined by data, given the shift of collective consciousness and because later research makes it obvious that what had been presented as knowledge in the past was speculative.

Some of the most significant cases of epistemological violence emerge from research on gender differences and 'race' differences. If one finds empirical gender differences, for instance, in terms of numbers of full professors in science programs, and concludes, based on these data, that women are by nature less able to perform science than men, then one has entered the realm of speculative interpretations, the realm of hermeneutic deficit, and the realm of epistemological violence. Interpretations that construct women as 'inferior,' and present these interpretative speculations as expertise, knowledge, or fact, while the data allow for equally valid alternative interpretations, are examples of epistemological violence. In terms of alternative interpretations, it should be pointed out that from an epistemological point of view these alternative interpretations might also be underdetermined by data. However, they might not be considered in terms of epistemological violence.

Accumulations of epistemological violence can also be found in 'race psychology' of the past and present. Many race psychologists produced empirical data, speculated about the data, and presented data and interpretative speculations as facts. These facts (i.e., interpretative speculations) have had a negative impact on the constructed individuals (e.g., immigration restrictions; see Jackson & Weidman, 2004). A prototypical example of epistemological violence is the interpretation of differences on psychological measures such as IQ between African-Americans and European-Americans. One level of speculative inquiry concerns the concept of 'race' itself, which supposedly denotes naturally distinct large groups of humans. There have been a variety of significant challenges to the concept of 'race' in the human sciences (e.g., American Anthropological Association, 1998) but also in psychology (Smedley & Smedley, 2005; Sternberg, Grigorenko, & Kidd, 2005; Tate & Audette, 2001). Many critics have argued from a natural-scientific perspective that what individuals perceive as distinct groups are in fact an amalgamation of various populations; that the variation within a classical 'race' group is much larger than that between 'race' groups; and that 'race' is not a natural-scientific but a sociopolitical concept. Yet, because the concept 'race' has a long cultural tradition in Western thought, it is very difficult to eradicate this axiom of race psychology.[5]

In terms of interpreting racial differences on IQ tests, Neisser et al. (1996) provided the only epistemologically justifiable answer for what was responsible for racial group differences: 'The fact is that we do not know' (p. 94). This statement is correct if one keeps to the existing data, and takes into account that no proof exists that links racial genes and IQ. Of course, psychologists have produced interpretations of data in favor of promoting a genetic speculation (e.g., Rushton & Jensen, 2005). Because these speculations have a negative impact on the 'Other,' a naturalistic interpretation should be labeled for what it is: epistemological violence.

Genetic speculations on the causes of Black–White differences in IQ and other mental characteristics have a long history (see Richards, 1997; Winston, 2004). Yet, there exists no genetic evidence for this hypothesis, which makes it more accurate to characterize it as a *chronic speculation*. The speculation that Blacks are genetically less intelligent than Whites is an interpretation that has negative consequences for Blacks (e.g., funding for preschool programs; expectations and attributions; school support; identity; etc.). Given the negative implications for African-Americans, and given that no genetic evidence has been established for racial differences in IQ, such speculations are not a question of bad 'taste' (see Sternberg, 2005) but a question of a *hermeneutic deficit*, which is an epistemological *and* an ethical problem.

Gottfredson (2005) suggested that 'lying about race differences in achievement is harmful' (p. 318). But any examination of textbooks shows that race differences are reported on a regular basis. The critical issue is the *interpretation* of these differences. The discipline should not prohibit psychologists from testing their hypotheses; in fact they should be asked to report direct biological evidence that genes are involved in racial differences in IQ. However, until then, the discipline should identify these speculations as speculations. Suggesting that the truth is known about the causes of these empirical differences is equally harmful.

Epistemological Ethics

The term *epistemological violence* indicates that epistemology and ethics might not be distinct categories but belong together, and that an epistemological problem can be an ethical one as well (see also Prilleltensky, 1997). Various ethical codes in conducting research also substantiate this point: because in psychological studies researchers deal mostly with other human beings, they have established criteria for appropriate research behavior. Despite the traditional idea that epistemology and ethics are two separate areas (Hume, 1739/2000), this theoretical assumption does not hold up empirically in contemporary psychological research, because both are intertwined in a variety of areas of research. Ethics plays a role in the construction of research; in the execution of research (e.g., informed consent); and after a study has been completed (e.g., providing feedback).

Epistemology and ethics are also related when it comes to the hermeneutic process of the interpretation of results: if data do not determine interpretations, and if interpretations contain necessarily speculative elements—but at the same time they are crucial for the communication of research—then what are the duties and responsibilities of the discipline, the researchers, and readers with regard to the dissemination of 'facts' (containing data and interpretations)? Epistemological ethics refers to question of what one's duties and responsibilities are with regard to speculations on data of human groups. To suggest that one can choose epistemology over ethics in these cases,

when both are intertwined, is to make an ethical choice itself that does not do justice to the complexity of the hermeneutic problem.

Epistemological ethics plays a role on three levels. First, on the *disciplinary-institutional* level, various organizations (e.g., American Psychological Association, Canadian Psychological Association) have the professional duty to reflect on the epistemological adequacy and the ethical consequences of interpreting empirical results. These reflections could find their expression in the *ethical principles* of these organizations. For instance, the following statements could be included: 'Psychologists must make all efforts not to produce epistemological violence.' 'Because data do not determine interpretations, psychologists must take responsible steps when they interpret data, particularly when data refer to human groups.' 'Because interpretations contain a degree of speculation, they must make a reasonable effort to ensure that their speculations do not harm people.' 'Epistemological responsibility means that psychologists consider the impact of interpretations on minority groups.'

Ethical experts should address issues surrounding the concept of *negative impact* regarding an interpretative speculation. There exist various ethical systems within which these issues could be addressed (for instance, discourse ethics; see Habermas, 1983/1990). From a critical perspective, *ethical principles* have an ambiguous status in academia as soon as they are perceived as imposing themselves on epistemology without providing insight into the necessity of those principles. It might not be far-reaching to invoke experiences of a 'tyranny of principles' (Toulmin, 1981). Although psychologists might agree that academics should not research the heritability of the tuberculosis of kidneys by looking at the extracted eyes of twins that were murdered for that purpose (see Weingart, Kroll, & Bayertz, 1988), they might not have the same attitude towards research that produces epistemological violence in its interpretative speculations. Rather, they might see it as another encroachment of ethics boards on research, if it is not combined with arguments regarding the hermeneutic deficit of interpretations.

Second, psychologists might be more open to the idea of addressing epistemological violence on the *level of publications*. Given the knowledge and insight that interpretations are underdetermined by data and may have a negative impact on the 'Other,' and that one's own interpretations may be biased and limited, one might develop a *hermeneutic collaboration model* (see also Joseph, 2004, pp. 340–342). This means that one researcher (or group of researchers) executes the study and produces the data and another group of interpreters (who may range from adversarial, indifferent, or sympathetic to a given program) provide a set of interpretations of data that are included in the *original* article. For example, if a researcher studies 'race' differences in intelligence, the researcher does not provide the discussion; instead this is the product of four to six different interpreters. From the perspective of researchers, this should be an acceptable suggestion because it makes methodological sense and provides more objectivity and balance in discussions.

Finally, on the *personal level* the viability of a hermeneutic collaboration model depends on the open-mindedness and reflexivity of the individual researcher. An individual researcher should attempt to develop not only his or her methodological skills but also his or her epistemological-ethical skills. Among these skills would be the need to develop *interpretative credibility.* Interpretative credibility may be based on theoretical and hermeneutic competencies in psychology; more specifically, skeptical or critical thinking should be used for assessing interpretative speculations (e.g., Slife, Reber, & Richardson, 2005; Teo, 2005). Psychologists should learn to be critical about how, but also why, data are produced, and about how data are interpreted. This requires a change in the education and training of psychologists.

Textbooks and courses should focus on how to develop critical skills regarding interpretative speculations, and methodologists should develop standards of *interpretative credibility*. Beyond the classical distinction of association versus causes, such concepts could address whether an interpretative speculation does justice to the complexity of the issue, and, in the context of race psychology, it would be important to learn about and acknowledge the history of racism and psychology's problems with race (Howitt & Owusu-Bempah, 1994). *Interpretative responsibility* means recognizing the social impact of certain interpretations and that epistemological violence may be produced in research articles. It also means deciding whether a speculative interpretation that leads to negative consequences for a human group should be published.

Conclusion

Empirical psychology is not excluded from being the subject of research. It is a historical reality that empirical psychology has produced research that must be labeled as classist, sexist, and racist. In order to understand this historical reality, one can provide an analysis of empirical psychology on the background of three perspectives (see also Reichenbach, 1938). Studies in the *context of justification* require an assessment of the quality of methodologies and methods and focus on sampling problems, selective data reporting, the validity or reliability of concepts and instruments, and so on. Such analyses can be labeled as *internalist reconstructions* and have focused on the epistemological (sometimes ontological) problems of empirical psychology. Studies in this tradition have asked about the *logic of research* that, for example, has led to scientific racism.

Studies in the *context of discovery* address why researchers are interested in studying particular topics and might identify underlying social, political, and personal interests. Such *externalist reconstructions* fall under the purview of a psychology or sociology of science. For example, reconstructions on the racism of psychology have looked at the cultural-historical, political, and economic background of racism (e.g., ideologies of colonialism).

These externalist studies of science are interested in asking why someone has focused on studying race, gender, or class differences and they address the social origins of hypotheses and theories.

In the *context of interpretation*—a perspective articulated in this article—reconstructions assess the quality of the interpretation of data and address the relationship between data and *discussion* in psychological studies. Such analyses can be labeled as *hermeneutic reconstructions*. These reconstructions focus on the role of speculation in psychology, the interpretation of data, the rhetoric of facts, and epistemological violence. The hermeneutic perspective does not exclude the other perspectives. On the contrary, all types of reconstructions complement each other and provide a better understanding of empirical research in psychology. But hermeneutic reconstructions cannot be reduced to the other two contexts. Although future research on epistemological violence requires concrete reconstructions, the general idea must be repeated here: the implicit surplus of interpretation (interpretations contain more than data), which is indeed a hermeneutic deficit (interpretations are generally deficient because they contain elements of speculation), needs to be addressed in empirical psychology for the sake of hermeneutic credibility and responsibility.

Notes

1. There is a fourth, market-related meaning of the term (economic speculation), which is not discussed in this article.
2. This was most clearly expressed in Chomsky's introduction to the 1967 reprint of the original paper.
3. Survey data might suffice without discussion.
4. It is not the goal of this essay to develop those criteria. The point of the article is to identify epistemological-ethical problems of interpretation, problems that in my view are real, even without an articulated set of criteria in order to overcome the problem. The development of hermeneutic criteria for valid interpretations must remain the task of another article. It might even be the case that it will be impossible to develop clear, explicit, general, and generally accepted criteria for settling speculative disputes in psychology. Perhaps psychology must settle for case studies of interpretative disputes for learning to distinguish *good* from *bad* interpretations.
5. A similar argument could be applied to the concept of *intelligence*, which is also a problematic concept but will not be challenged in this article.

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