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Placing semiotic formulations to the epistemological ground of psychology

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Abstract
The increasing irrelevancy of reported results in psychology to their conjectures has been growingly well-documented. There is also a shift of emphasis from methodological to theoretical shortcomings. Inasmuch as the attention devoted to the replication crisis is justified, the call that methodological drawbacks are hardly addressable unless the theoretical base is fortified is equally warranted. In this paper, we intend to expound on our estimation that epistemological foundations of psychology are in need of dire reinforcement if our discipline should remain a bastion of knowledge production. We assert a twofold argument that (a) psychology has to free itself from verbal ambiguities and linguistic imperfections in order to relate its subject matter to its methodology and (b) for that reason, reinstate its subject matter in such a precision that conjectures and implications produced across subfields could be relatable and translatable to each other. In support of our argument, we attempt to identify epistemic conditions through which both parts of our argument could be sustained. For the first part, we consult semiotics to illustrate a way of discerning robust phenomena and thus establishing the validity of constructs. For the second part, we revisit the beginnings of the science of psychology to highlight the dead end we have currently been stuck in. We search for prerequisites of turning data points over subjective experience into objective information. In addition, the authors are well informed that none of the problems summarized in the literature nor the efforts towards resolving them cannot be considered independently from overarching sociopolitical influences and effective circumstances shaping research environments. Therefore, we take note of the present-day state of affairs corroding the ever-weakening tie between theory and methodology.

Keywords
theoretical ground, psychological constructs, method-methodology connection, semiotic bridge

1. Introduction

History of psychology is nearly equivalent to history of crises in psychology (Wieser, 2020). However, its relatively long history of crises rarely produced consensual improvement strategies elevating the status of the discipline to the

level of basic sciences, nor helped to formulate its main subject matter (Pryiomka & Clegg, 2020). It does not follow, however, that there are good examples or efforts to counter the corrosive flow of "publish or perish" dictum (for discussions on good research practices, open science, and replicability in psychology, see Banks et al., 2016; Nosek et al., 2022; Sassenberg & Ditrich, 2019; Vazire et al., 2022; Youyou et al., 2023). The recent literature on replication crisis is one significant endeavor to address the current link in the chain displaying the ever weakening power of psychology in mastering its raison d'être (Morawski, 2019). Despite ameliorative exercises, increasing irrelevancy of reported results to their conjectures continue to mark the major shortcomings of psychology (Scheel, 2022), echoed in a shift of emphasis from methodological to theoretical deficits (Eronen & Bringmann, 2021; Flis & van Eck, 2018). With a close examination of the succession of crises, one could suggest that most of the deep-seated issues in psychology, are indeed symptoms of a fragile intellectual and epistemological base of the discipline rather than methodological problems or technical inadequacies (Muthukrishna & Henrich, 2019; Wiggins & Christopherson, 2019).

Inasmuch as attention devoted to the replication crisis is justified, the argument that methodological drawbacks are hardly addressable without a fortified theoretical base is equally, if not more, warranted (Berkman & Wilson, 2021; Düzen & Uysal, 2022; Flis, 2019). It is evident that dissecting the methodological capability of psychology from its theory-building capacity would lead to a short-circuited understanding of epistemological problems. Doing so would eventually result in amplified procedural routines of singular studies, inevitably reducing methodical applications to mere technical operations. Recent criticisms on how mainstream research activities are conducted despite serious criticisms support the view that psychologists tackle the problem frivolously (see Berkman & Wilson, 2021; Borsboom et al., 2021; Gervais, 2021; Irvine, 2021). It is disconcerting that most psychologists do not engage with methodological problems beyond instrumental approaches specific to the scope of their current studies, worrying only about standardized methods and associated theoretical sketches (Oberauer & Lewandowsky, 2019).

In this paper, we intend to expound on our estimation that epistemological foundations of psychology need dire reinforcement if our discipline should remain a bastion of knowledge production (Düzen & Uysal, 2022). We present a twofold argument that (a) psychology needs to free itself from conceptual ambiguities and linguistic imperfections in order to relate its area of study to its methodology and (b) for that reason, reinstate its subject matter in such a precision that conjectures and associated evidence produced across subfields could be relatable and translatable to each other.

We will attempt to identify epistemic conditions through which both parts of our argument could be sustained. More specifically, we will consult semiotics (Glaz, 2017; Glaz et al., 2013) to illustrate usable ways to describe psychological phenomena, define pertaining concepts, and thus prepare the ground for establishing the validity of constructs. To illustrate our arguments, we will propose to refresh consciousness studies with an elaborated terminology by the

help of linguistics and, more generally, semiotics. We do not mean to put forward a formulation out of our own fancy, rather we will draw attention to the fact that determining the primary subject matter of a scientific discipline, such as consciousness in psychology, calls for collectively coordinated cooperative collaboration in order to achieve a consensual understanding of what it should deal with. We maintain that big questions should be taken care of concertedly as opposed to single-handedly as it is usually the case with private enterprises of individual researchers or insulated research teams.

The idea of collective collaboration is more about creating a synergetic consensus, however provisional that may be at a given moment, out of the combined efforts of heretofore unconnected scholars than about going with a series of slightly modified fragmentary studies even when interdisciplinarity or multidisciplinarity is sustained. We argue that if psychology is to claim ownership of a research area investigating mental faculty, it has to define the basic phenomena that supposedly make the mind up such as cognition, emotion, motivation, and consciousness. Furthermore, psychologists must discern a similar understanding when talking with these terms. The dark irony is that it is utterly difficult to find two psychologists who could agree on such basic phenomena, neither separately nor, worse, in combination. Solomon Asch pointed out the problem of subject matter in psychology 70 years ago: "If social psychology is to make a contribution to human knowledge, it must freely look at its phenomena and examine its foundations. [...] Before we inquire into origins and functional relations, it is necessary to know the thing we are trying to explain." (Asch, 1952/1987; p. xv; p. 65). Psychologists long abandoned the due philosophical, linguistic, and semantic work of describing their subject matter and thus building the conceptual framework defining it, despite historically good examples. Consequently, the discipline has become a scattered crowd of dazzled conductors pretending to decipher a deep mystery despite having only superficial, if not defective, decoders.

In such a haze, going back to basics and looking for the point of departure where roads are diverged could be helpful. Semiotics, in this sense, has the potential to provide much needed groundwork to start any inquiry on mental phenomena. As being the science of meaning making (see Chandler, 2022 for a concise account)semiotics provide us with the tools of constructing a metalanguage to link phenomena with concepts through which researchers can build their workable conjectures (Ayer & Elders, 1974; Popper, 1962). To put it plainly, we will search for semantic prerequisites for describing phenomena by reference to linguistic constructs in such a way to arrive at a unified conceptual framework. The goal of this venture is to be able to talk about the same thing: obtain empirical data and translate it into objective (in the sense of replicably testable) information that could be useful in epistemological inquiries and thus knowledge production.

2. The Precarious Science-worker's Conundrum

The authors are well informed that none of the problems summarized in the literature nor the efforts towards resolving them, for that matter, cannot be considered independently from the overarching sociopolitical influences and circumstances shaping the research environment such as funding schemes, publication pressure, and precarity. In this light, one has to consider present-day state of affairs corroding the ever-weakening tie between theory and methodology (Karau, 2019; Nosek et al., 2012; Uysal & Düzen, 2022; Witkowski, 2020).

It seems that the theoretical preparation in most studies in psychology is usually done with compilations from ready-to-use packages that are in demand by the current literature. Existing elements of intellectual background are presented in their widely accepted forms without being questioned or discussed in detail, allowing researchers not to take the risk of (re)addressing the epistemic validity of the variables they work with. Well-known or potential loopholes in the theoretical model are eclipsed in a way that does not pose a threat to the research at hand. Methodological problems are usually associated with the concerns of deciding on the appropriate combination in the matrix of data types (quantitative, qualitative, narrative, etc.) and data evaluation systems (statistics, thematic classification, content analysis, etc.) (Szollosi & Donkin, 2021).

Intellectual preparation is devoted to the selection of variables and estimating the correlations between them, rather than establishing the link between the phenomena and the corresponding by prioritizing simplicity in formulating the research question, validity in measurement, and clarity in reporting. In other words, on average, most of the reported results do not add precision to the description of phenomena or definition of the concept of it. Comparably, studies that emphasize model-building are written with the belief that epistemological and methodological problems are largely eliminated. However, advanced model applications often result in selecting variables based on model assumptions, rather than purifying the definition of variables (Danziger, 1985). As Cronbach lamented on the same disappointment twenty years apart Cronbach, 1975), model-appropriate hypothesis-forming instead of theory-building became the rule of thumb rather than exception, obviously hindering theoretical progress. Leaning excessively towards correlative techniques strips the method off its position as an integral component feeding the theory and, for that matter, pertinent epistemology. Hence, the opportunity of improving the idea or transforming the hypothesis-testing cycle into a knowledge-generation process decreases substantially (van Rooij & Baggio, 2021).

As research activity takes the shape of an automated procedure, establishing a productive method-theory interaction fails. The dynamic interaction between the methodology, which is the systematic discussion of how to transfer hypothetical reasoning and inferences to the process of generating empirical knowledge, and the method, which is the procedure of applying this discussion to the current study, is often lost amongst sentences of introductory textbooks.

Researchers usually focus on the method of the particular research they carry out at a given time rather than the methodological rationale of the discipline of psychology in its integrality. They are rarely able to get involved in the imminent relationship between method and methodology. This indifference results either in not linking the method to methodology or not being reflected in the study. The methodology is mentioned as if it is a pile of popular methods that do not speak to each other. When this is the case, deriving an increasing number of variables around the same theme and reporting the results of the correlations between these derivatives turn out to be an activity serving only the person doing the study (Flis & van Eck 2018). Thus, the literature loses its quality as a source of cumulative information suitable for the use of others and grows into a gigantic statistical table with no consequential outcomes. Such a literature creates a) disorientation in psychology as to what the discipline is good for b) distrust in scientific community as to what could be expected from psychology, and c) erosion in intra- and inter-disciplinary communication and collaboration.

On the other hand, individual researchers *per se* cannot be blamed for these current and potential problems given the levels and types of precarity, academic culture, financial policies, societal endorsement, and political repression. If a researcher, despite the negative socio-political and academic circumstances, spare some of their effort to address the method-theory problem and cares about the relationship between methodology and method, they have to face two crucial problems, one intellectual and one practical. Intellectually, putting forward something significant about the methodology requires a giant repertoire in its own right. Practically, they would have to struggle with limiting the scope of their research, losing their thematic focus, and falling behind the requisite number of publications. The former asks for shouldering a workload that cannot be taken on alone, and the latter jeopardizes their chances of an 'academic career'. Faced with these intertwined problems, researchers usually declare in their "limitation and future directions" sections that they wait for an imaginary group of researchers, which is impossible to encounter, to come along and solve the methodological and epistemological problems that concern them as well. The development of the conceptual framework is postponed to further work, preferably by others; hence, the dispossession of the theory-method problem deepens. In this twilight where personal concerns and scientific responsibilities are intermingled the method-theory problem is apprehended by an avoidance reflex that the individual researcher refuses to undertake, and the collective effort never arrives.

3. Fault Lines on the Intellectual Plane

It is remarkable that the number of studies dealing with a double contraction in the field of psychology, theoretical deficiency and methodological bottleneck (i.e., method-methodology jamming), is not proportional to the urgency of the problem. Despite the scarcity, it is nevertheless promising to have studies trying to identify the sub-factors, components, or possible reasons (e.g., Eronen &

Bringmann, 2021; Flis & van Flick, 2018; van Rooij & Baggio, 2021). Here we will refer to Eronen and Bringmann's (2021) study to give a short account of reasons of weaknesses in theory building in psychology. Basically, we will summarize their review, as they do, in three headings: 1) Absence of robust phenomena, 2) lack of validity/validation, and 3) difficulty of finding a causal relationship. Indeed, they do not claim that the theoretical problems consist only of these three topics. Instead, they highlight the need for in-depth studies in these directions and draw attention to the ongoing uncertainty about psychology's subject matter.

In this section, we address the main theoretical challenges drawing on the work of these researchers and then discuss possible solutions or enhancement suggestions in the next section.

3.1. Absence of robust phenomena

Robustness is a measure of whether the theories have the power to determine the boundaries of the phenomenon. Accordingly, there is a two-way relationship between the phenomenon and the theory developed to explain the phenomenon: a) the phenomenon should be able to be explained on the basis of theory, and b) there should not be many theories explaining the same phenomenon. In psychology, however, both theories' power to explain the phenomenon is weak and there are many theories related to the same phenomenon. For example, Darwin's theory of evolution can perfectly explain the phenomenon of evolution and natural selection, and there is no other scientific theory that is a candidate to explain evolution and natural selection other than the existing theory. In the field of psychology, we cannot easily think about a theory like that. Instead, the phenomena proposed by theories are often not supported by empirical evidence or, when the phenomena are supported by specific evidence, this evidence provides no clue as to which theory would be more explanatory—and therefore more valid.

Eronen and Bringmann (2021) argue that the theory of ego depletion, which was thought to be well-established in the literature and has remained popular for a long time and has led to many publications, is slowly faded away due to its weak or unreliable empirical supports and existence of many alternative theories. Similarly, psychological theories on stereotype threat, newborn imitation, and priming effects, which are thought to be well-established, either cannot explain their phenomena or these phenomena are explained by different approaches. Thus, the absence of a theory that can explain its phenomenon and that cannot be explained by alternative theories contributes to existing crises and does not help to determine the main research subject of psychology.

3.2. Lack of validity/validation

The reason for the lack of validity/validation, which is not reflected in the studies to the extent that it is emphasized in psychology education, is an ongoing negligence towards developing psychological constructs. Eronen and Bringmann (2021) argue that robustness is ignored despite the abundance of constructs in the literature. Having plenty of repetitive constructs related to the same theme (for example, perceived control) and the continuous production of new ones without attempting to improve the existing ones take the form of common scientific activity. The field of psychology grows into a discipline of unvalidated constructs and provider of measurement tools for those slippery fabrications. Researchers' emphasis on reliability over validity, citing other seemingly related studies as a tool of validity, and the ability to publish derivative constructs make this mediocrity a standard.

It is worth mentioning two more preparatory factors that psychology does not deal with sufficiently, hence, make construct validation difficult: *generative entrenchment* and *epistemic iteration*. Generative entrenchment means that after a construct is introduced, it can be widely used in many fields other than the output field. Psychiatric diagnosis categories, which not only psychology but also other disciplines frequently use, can be given as an example for generative entrenchment. In time, such defective constructs are seen indispensable due to the practical fact that other structures (other constructs, measurement tools, training and intervention programs, etc.) built based on this construct will also be affected. Thus, commonly used constructs are persistently circulated even though they are known to be weak or erroneous.

Epistemic iteration refers to constantly increased epistemic purity of a construct with new definitions that are getting more and more precise over time. Epistemic purity can be understood as the degree of power explaining the phenomenon with the same construct at an increasing rate and without the need for other constructs. For example, atom or electron constructs in physics are constructs with high epistemic purity in terms of explaining the phenomenon, although their initial definitions have undergone significant transformations over time. However, most constructs in psychology remain outside of similar epistemic evolutions.

3.3. Difficulty of establishing causal relationships

It seems that the theoretical and methodological development of psychology contingent upon to the revealing the causal relationships between psychological variables. Aside from the debate about which methodological processes are sufficient to establish causal relationships, there is another big problem that psychology needs to develop a solution. Although it is important to show the causal relationships between external variables and psychological variables, revealing the causal relationships between psychological variables is the main difficulty.

We can understand external variables simply as environmental stimuli, and psychological variables as units of processing these stimuli. Environmental stimuli also involve the internal environment of the organism (biological body, anatomy, brain, nervous system, etc.). Psychological variables, from sensation to perception, memory to attitude, emotion to belief, are all psychological responses and behaviors to the stimulus (responses, reactions, actions, echoes, reflections, representations, etc.). In that sense, external variables and psychological variables are poorly, if not at all, symmetrical. In other words, it is none other than our conjectures that make them related to each other. Such an asymmetry suggests that examining the correlation between a well-validated external variable (e.g., daylight duration) and a poorly validated psychological variable (e.g., ego depletion) would yield more reliable results than examining the correlation between two psychological variables (e.g., risk taking and ego depletion). Hence, we can predict that it will be relatively easy to establish a causal relationship between external variables and psychological variables, and it will be quite difficult to establish a causal relationship between psychological variables. Eronen and Bringmann (2021) suggest that establishing causal relationships between external independent variables and psychological variables can be considered a necessary condition, but not a sufficient condition for our discipline. They emphasize that since Wilhelm Wundt, psychology has not made any progress in overcoming this limit and remind that complex psychological processes such as thinking or feeling cannot be deduced from the correlations between external variables and psychological variables.

The cyclical feeding of the problems identified by researchers is one of the biggest obstacles to overcoming the epistemological and theoretical problems of psychology. In other words, the absence of durable phenomena, lack of validity/validation, and difficulty in finding a causal relationship, each grow from the negativity of the other, making it difficult to determine where to start solving the problem. The absence of durable phenomena paves the way for unvalidated constructs; unvalidated constructs make it difficult to find causal relationship; and the difficulty of finding causal relationship exhausts robust phenomena-explain possibilities.

Following Eronen and Bringmann, we maintain that linking a psychological phenomenon (such as risk taking) to a psychological variable (such as ego depletion) rather than linking an external phenomenon (such as daylight duration) to a psychological variable (such as, again, ego depletion) is of paramount importance. In the following sections, we will expand on this idea when we try to explicate why psychology should be the field of explaining psychological phenomena with reference to psychological variables and why studies explaining psychological variables with reference to external variables are destined to be unproductive – and do not make a science of psychology but something else.

4. Ontological Coordinates of Consciousness

In an attempt to establish a new paradigm for studying emotions, Lisa Feldman Barret (2017) attests that "… progress in science is often not answering old questions but asking better ones" (p. 14). She reviews existing theories of emotion and proposes a new approach endorsing that emotions are constructed in a similar way perception is eventuated against the question "what is this new sensory input most similar to?" (p. 7). When translated to Irvin Rock's language 1983) emotions are propagated answers to environmental questions in the sense of problems to be solved including questions arising from one's own inner milieu. In both perception and emotion, the organism uses past experience to guide itself to deal with the present situation and move forward to update its allostasis (Sterling, 2012) rather than restore homeostasis (Schulkin, 2003). Barret is not naïve to the huge literature on neural correlates of psychological processes, she nevertheless tries to establish a link between two psychological variables: receptivity of environmental events and associated emotions as allostatic responses to them. This way, she locates emotions not in the flesh (neural network) but in the interaction between the organism and its environment; that is, making sense of the sensory input and generating a corresponding response.

Inasmuch as Barret's approach helps to clarify the huge confusion around what emotions are, the discipline is still very far away from studying emotions like perception and cognition, let alone consciousness. Much less acceptable, we see no similar attempt in studies on motivation or, worse, connecting motivation to these basic mental faculties.Whether Barret's approach would be paid by due justice in studies of emotion is yet to be seen. What is certain is that studies in consciousness do not revolve around the interaction of the organism with its environment, but rather inside the individual's physical body and grant it a privileged position among all other mental states. The source of its distinguished status is said to be its inaccessibility to external observation, being both the means and ends of subjective experience in the same moment. Therefore, the attributed prominence of consciousness creates a hard problem. Notable researchers, too agree that introspection should not have a place in studies of consciousness, yet they admit that there is hardly a clear way of making research on consciousness sensible without referring to introspection (e.g., Seth & Bayne, 2022). The alternative term proposed to avoid it, interoception, helps no better as long as consciousness is looked for in the human brain (Nikolova et al., 2022).

This hard problem led psychologists and researchers from other fields to place consciousness into the brain, sometimes along with a little bit of larger neural network. This placement made it handy to work on the connections across external and psychological variables. There it is seen immediately that such are studies linking external variables to psychological ones, neglecting once again linking psychological variables to each other. At the end, we have an abundance of correlations between supposedly conscious experiences with an endless list of brain or nervous system structures, processes, and functions. Most of the time, these correlations are not even translatable to the vocabulary of psychology. The

explanation is nothing psychological but physical so much so that one need not to be a psychologist to do the work or make sense of the outputs.

What, then, blocks psychologists developing an understanding of consciousness that can be sought in interactions of the organism with its environment, as they do when studying perception and cognition? To put it differently, could there be alternative ways of defining consciousness in such a way that it yields itself to investigation without referring to neural correlates, brain parts, or chemical reactions? Could psychology search for consciousness by connecting psychological variables among themselves rather than to external variables?

4.1. From construct to concept

The use of the word consciousness in psychology is so imprecise that it cannot fulfill the function of a concept. Researchers hardly take into account its linguistic characteristics, historical background, or literary, artistic, and metaphorical implications. It seems that consciousness is never thought to be reprocessed to ascribe qualities of a construct. Rather, everyone understood that it is understood by everyone the way they understood. At the end, we neither have a good theory of consciousness nor a testable construct. That is why, in this section, we try to develop a proposal asserting that the transition from construct to concept follows a semiotic process that makes the semiotic work an intrinsic component of identifying robust phenomena. Then, later, we will go back to reflect on what had been lost in studies of consciousness by neglecting the semiotic homework.

We argue that one fruitful approach to take semiotic work into the center would be to consult social representations (see Bauer & Gaskell, 1999 for an outline of the approach). Even though a thorough discussion of the way semiotics is linked to social representations is beyond the scope of this chapter, we nevertheless think that this approach provides useful methods for describing robust psychological phenomena (see Veltri, 2013, 2015 for connections between semiotics and social representations).

It may not be a coincidence that Moscovici (1988) repeatedly invoked the same example given by Eronen and Bringmann (2021) in his efforts to explain social representations: *Atom*. Initially, atom was not a concept corresponding to an observed and identified object/phenomenon, but a construct proposed to correspond to an object that was thought to exist. Natural sciences insisted on calling the smallest unit of matter by the term atom. Physics empirically demonstrated that matter is composed of atoms, more or less in accordance with Democritus' design. In fact, atom as an object was neither indivisible nor the smallest unit, but it was historically convenient to express findings about the qualities of the constituent elements of matter. Physics continued to describe these constituent elements and explained its attributes through empirical evidence while preserving the construct of atom. Although its meaning expanded to other areas of life (art, music, literature, worldviews, etc.), the word atom differentiated

from every other meaning and became a basic term in physics. Thus, atom transcended its meanings in everyday language and settled in the discipline of physics as a concept corresponding to an ontological object.

Constructs are linguistic expressions built with the aim of converting them into concepts corresponding to the described or identified objects, regardless of surrounding nomenclature. In that sense, constructs are made up of words by stripping off their irrelevant connotations and denotations in order to appoint them the quality of a *term*. When supported empirically, *the term* enters into the terminology as a concept corresponding to an ontological object. Otherwise, terminology remains a set of words with high interference frequency – which is the usual case in non-specific use of language. Sporadic nomenclature exerts disproportionate power on the social sciences compared to natural sciences in terms of twisting the object under investigation and bending the information to be gained from this investigation.

Once constructs become concepts, we can give a pause for a while. If the concept can continue to describe and explain the object in a more precise way - as in the case of atom - we do not need to change terminology. But if the concept does not correspond well enough to the object, we need to go back and revise the construct and put forward the conditions under which the reconstructed construct can become a concept. As a matter of course, scientific activity starts from fiction and arrives at a concept; it is an effort to extract the phenomenon from the imagination of the researcher and expose it to empirical access.

4.2. The price of staying away from semiotics

Moscovici (1984) emphasizes that every social representation is embedded in a semiotic triangle and that it should be understood as a dynamic embeddedness. Briefly, the semiotic triangle shows the three components of making sense of the world and thus representing it. These components (see Figure 1.) are a) the signifier (linguistic expression), b) the signified (concept), c) the signifier/signifier (object) (see Ogden & Richards, 1989; Kıran, 1990 for basic semiological terms; see Michon et al., 2008 for semiotic views of psychology).

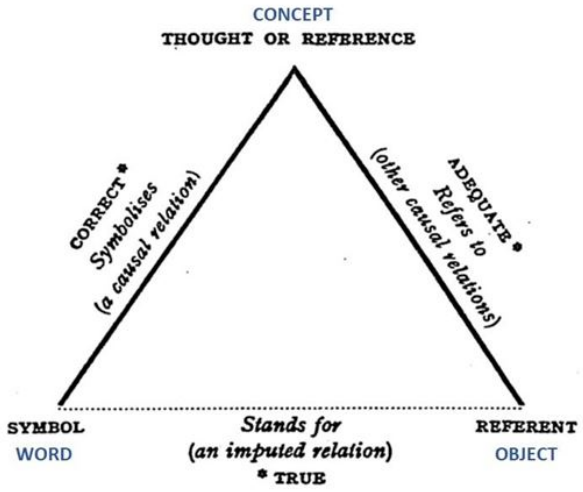

Figure taken from page 11, The Meaning of Meaning: A Study of the Influence of Language upon Thought and of the Science of Symbolism, 1923, was co-authored by C. K. Ogden and I. A. Richards, Magdalene College, University of Cambridge, Public Domain, https://commons.wikimedia.org/w/index.php?curid=672318

Figure 1

In another study Moscovici (1988) argues that once a representation is endowed with explanatory power, the only thing to do is to study the phenomenon that the representation points out to, and that there is no other way of producing knowledge. Jovchelovitch (2002) proposes to build the social psychology of knowing on the basis of dynamics of social interactions and cultural contexts following Moscovici's footsteps. Hence, she also shows why representations cannot be understood when left in the subject-object binary and not placed in the semiotic triangle. According to this reasoning, giving meaning to the object depends on a) being in relation with others and b) being able to develop a common code of signs that serve communication and social interaction. In other words, the object does not have meaning unless it is part of the common code of social communication and interaction. Reinterpreting these views, Voelklein and Howarth (2005) state that the binary opposition of subject-object is insufficient to fully grasp the social nature of representations and identify three dimensions of representation as 1) the object represented, 2) the subject who assumes the representation, and 3) the social group in which the subject positions itself while assuming the representation.

In line with these evaluations, we are looking for the *semiotic bridge* that connects the construct to the phenomenon in the transition from construct to concept. In this search, we argue that *the term as the specified name of the word* (or *phrase*) is the semiotic element that should be taken into account when claiming that a proposed concept really corresponds to the ontological phenomenon in question. To the best of our knowledge, the conditions of semiotic transition from construct to concept is not sufficiently emphasized in psychology and this lack of emphasis leaves the matter inconclusive as what to call a concept and what to call a construct. Following the example of *ego depletion*, we can argue that the researcher's construct is not subjected to a

semiotic work to establish its status as a communicative concept beyond the researcher's conjecture. Although the social representations approach does not explicitly mention *the term as the specified name of the word* or such is a semiotic component, we find it arguable that there is an abundance of implications within the approach that the function of the term summarizes the representation of a social or psychological object.

4.3. Semiotic geometry of the concept

A research activity based on words expressing schemes that are not objects and ignoring the transitivity from constructs to terms and then to concepts may result in the pursuit of things that are not objects. This risk is the same for words that refer to supernatural beings such as djinn, fairy, and demon as well as for words that express states rather than phenomena such as individualism-collectivism. In other words, a research activity that is initiated without establishing the transitions of construct-term-concept may end up producing meaningful statistical results about either a phenomenon that does not exist or a situation that does not qualify as a phenomenon.

Glaz (2017) argues that the semiotic triangle is insufficient for determining the metonymic and virtual meanings of linguistic expressions used as words or phrases. First, he finds that linguistic units are largely composed of expressions that are used interchangeable (metonymic) or denote the unrealized part of the reality (virtual). As examples of transpositional expressions, he gives the example of marking the object identified with the subject instead of the subject performing the action, as in the expression "Brussels said that" instead of "The European Union said that", or marking the subject who created the music even though the object of love is Mozart's music as in the example "I like Mozart very much". As for virtual expressions, he gives the examples of hurricane and composition. A hurricane is the form of a storm that reaches a certain but different peak each time, while a composition is a piece of music that is performed with a different interpretation each time. Both are critical expressions of more than just one part of reality that appears there and then. Glaz says that this feature of virtual expressions makes all virtual expressions also transitive. A hurricane extends to all storms that reach a peak; a composition extends to all interpretations of a piece of music that is performed differently each time.

The fact that linguistic expressions are transitive and virtual and that all virtual expressions are also transitive, prompts Glaz to reconsider the semiotic triangle. Glaz sees that unless the semiotic triangle is transformed into a tetragon, the semantic content of linguistic expressions cannot be completely determined. He says that we cannot know what we are talking about if we cannot determine which virtual and transitive forms of a linguistic expression we are talking about. He emphasizes that whether or not we define the boundaries of what we are talking about in a way that is clear to ourselves and others will definitely affect the limits of describing the phenomenon that will be the subject of scientific research. Glaz combines Jakendorff's (1983) distinction between "the real world,

the conceived world, the experienced world" and Bartmiński's understanding of "the interpretation of reality embedded in language" to build a fourth corner in the semiotic geometry (Bartminski & Zinken, 2012; Bartmiński, 2013). This way, he proposes to update the semiotic triangle consisting of linguistic expression-concept-object into a tetragon of linguistic expression-conceptual structure-experienced world-real world.

We maintain that by adapting Glaz's quadrilateral semiotic model to the construct-term-concept transition, we can concretize the view we try to develop in this chapter. According to our version, terms that are names of constructions acquire the quality of concepts insofar as they are shown to correspond to the object in question. During the assembly of the construct, one or more of the transitive and virtual variants of linguistic expressions are selected and distinguished from the others. One of the dissected expressions are coined with a specific name that will indicate the holistic theme appropriate to the purpose of the construct. Hence, the term as the specified name of the linguistic unit is formed after eliminating raw linguistic expressions and before determining the concept corresponding to the object. Empirical studies conducted under this name acquire the function of the term (the linguistic unit in which the concept is to be expressed) when they describe and explain the phenomenon. When it becomes clear that the term can be used as a concept, connections of the term beyond linguistic connotations (e.g., imaginary or kinetic) are also included into the concept. In this respect, the concept is always broader than the term. The term is the cognitive-linguistic alias of the concept, and it is important to take extra care that the concept is not overshadowed by this alias.

In this regard, we have the possibility of reorganizing Glaz's geometry into the tetragon of linguistic expression-terms-concepts-objects. In this reorganization, the terms correspond to the selected and extracted contents of linguistic expressions, and the concepts referred by these terms correspond to the phenomena that the researcher investigates (see Figure 2). More concisely, concepts correspond to objects and terms to linguistic expressions.

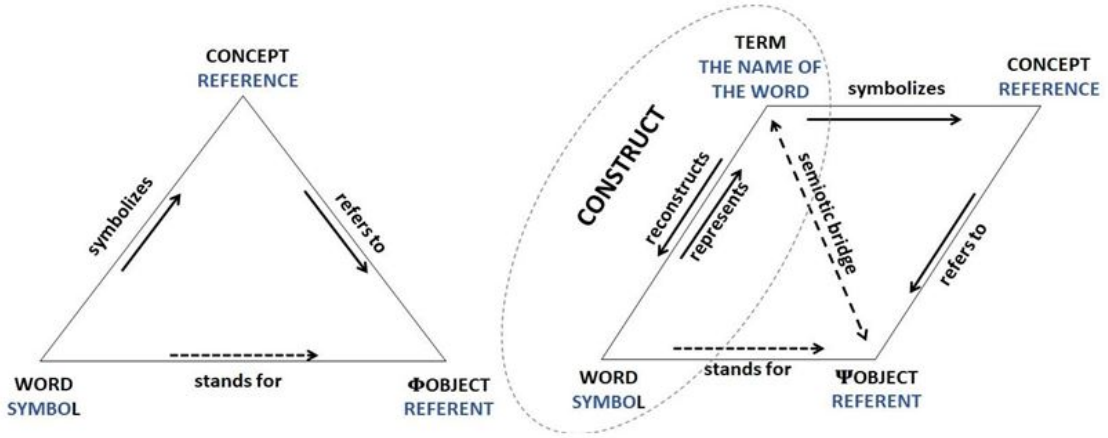

Figure 2

In our adaptation, the term is the semiotic bridge between the fact and fiction in the research activity that seeks to move from fiction to concept. When this semiotic bridge is not explicitly intended, the fact-seeking researcher may not know what they are talking about. The interlocutor, who is addressed by the researcher but who is not aware of this semiotic bridge, may not be able to find the meaning of what they hear.

We may imagine that the proposed semiotic bridge is a constant headache for social sciences, though it can also bother natural sciences time to time. Since the research subjects of natural sciences are external objects including laws of nature, historically it has been considered to be unaffected by human imagination. In this respect, living beings in general and the biological equipment of human beings in particular are seen as external objects. Natural sciences may have the comfort of using more direct quotations from existing linguistic expressions and neglecting most of transitive or virtual variations when defining concepts associated with external objects. Although the study of quantum mechanics nowadays is confronted with the possibility that the presence of an observer may affect the phenomenon under study, it may not be a top priority in the natural sciences to observe construction-terms-concept transitivity. From a theoretical point of view, it can be argued that observing this transitivity is a necessity, but from a practical point of view, we can think that the methodology of investigating external objects mitigates the effect of this neglect at least to some extent.

In terms of social sciences, on the other hand, neither the constitution of research subjects nor the methodology are strong enough to bear such a neglect. The phenomena sought by social sciences are not to be found *free* in nature. They are all found in human interaction with the living or non-living elements of the environment, including one’s own inner milieu. Social sciences have nothing to say about the non-interactive human being. The non-interacting human being, like all external object-phenomena whose ontology is not changed by human imaginative or linguistic activity, is the subject of research only and exclusively for the natural sciences.

5. Epistemological Coordinates of Consciousness

We can illustrate the necessity of the bridge of term in the semiotic geometry with an exercise that helps to define consciousness in the form of a robust phenomenon. In this exercise, we deliberately avoid saying anything new about consciousness. We traverse the breadth of the literature on consciousness by drawing on Van Gulick's (2014) entry on Consciousness in the Stanford Encyclopedia of Philosophy. In a reductionist way, we try not to go beyond emphasizing the importance of appealing to semiotic geometry.

In the study of consciousness, we may speak of three main approaches that develop independently of the researchers' trained disciplines of origins. The first approach (the materialist view) argues that consciousness must ultimately arise in the course of neural activity. The second approach (the panpsychic view) claims

that consciousness should be considered as one of the basic elements of nature such as matter, mass and energy, and that human consciousness is a share of this basic element of nature. The third approach (empiricism) says that consciousness is an illusion, just like visual illusions, and that in order to understand consciousness we need to study the processes of illusions. All three approaches ultimately look for consciousness under the skin of the individual human being, especially in the brain and its neural activities.

All three approaches, which have produced most of the literature on consciousness, insist that the difficulty of the problem lies in the fact that a) the experience of consciousness is subjective and b) subjective experience cannot be detected in the workings of objective matter. None of these approaches, however, goes back to one of the basic tenets of the organism and its environment: The interaction between the distal and proximal stimuli (Flach & Holden, 1998; Gibson, 1967). In fact, Bartley (1982) gives an exact example of why it is important to agree on terms which are meant to be used in building constructs which would be used in describing the associated phenomenon. More recently, Brosch et al. (2010) reemphasizes the significance of working with the concepts of distal and proximal stimuli in emotion research. They assert that, without a clarified terminology there is no way of studying emotions in the sense that emotions are responses not to external stimuli which are outside of the organism but to distal stimuli which are representation of the external stimuli by the organism.

To put it differently, consciousness is not understood in psychology the way perception, cognition, or emotion is understood. The reason why emotion is entered the picture more recently may hold true for consciousness as well. Finally some researchers (e.g., Barrett, 2017) came to the understanding that emotions, too, are about organism's preparedness to receive external stimuli (work on distal stimuli) and, again, preparedness to react to distal stimuli on the basis of its representation (proximal stimuli) which is made up of a complex repertoire of learned responses. Such an understanding made possible to fine tune the terminology in describing emotional phenomena and thus what we should understand from the term emotion in emotion research (Shaffer et al., 2022). Consciousness, on the other hand, is still a crude word without irrelevant transitive and virtual extensions are eliminated and without the transitivity between constructs-terms-concepts are taken into account. Therefore, we have the word but not the term of consciousness which is taken to be the concept of the phenomenon of consciousness.

Does psychology have to search for consciousness under the human skin? Or could the discipline begin this search by placing the elements that are thought to mark the phenomenon of consciousness in their proper place, such as in a semiotic geometry? This exercise gives us the opportunity to argue the following: If the psychodynamic school had placed self and consciousness in person-environment interactions including interpersonal relations, instead of in the subjective psyche, we would be talking about a completely different psychology today. We could have placed consciousness in semiotic geometry, thus paving the way for describing other related phenomena as well, finally elevating the

concept of the psychological phenomena to a solid position in the history of science.

We should also emphasize the importance of semiotic geometry by reminding us that semiotically unprocessed linguistic expressions often do not correspond to psychological phenomena and may even contain elements that have nothing to with describing phenomena. It would not be an exaggeration to say that studies in voluminous fields such as emotion or personality mostly rely on factor analyses of word lists and correlations between variables derived from these analyses. The information on emotions or personalities produced by researchers working in what are thought to be the most ambitious fields of psychology are more situational than factual. Moreover, this way of working, in which the robust phenomenon is neglected, is open to the arbitrary shaping of the researcher and closed to independent audits. It is in this light that one should evaluate what went wrong in the personality studies of Hans Eysenck, who died in 1997 as the most cited researcher after Freud and Piaget (O'Grady, 2020).

Concluding Remarks

Perhaps psychology's inability to give up the idea of dispositions (eventually giving rise to essentialist constructs and thus essentialist variables in many sub-fields like clinical, developmental, and social) should be linked to the fact that – in addition to sociopolitical factors – psychology considers itself as obliged or condemned to discover free-roaming objects in nature. That could be the reason why increasing numbers of psychologists are now working in fields derived from biology such as neurology, physiology and endocrinology. In these fields, psychologists have the opportunity to examine the relationships between external variables and psychological variables. Doing so, they believe that they are accepted scientifically to the extent that they can link psychological variables to external variables. Especially if they can assign essentialist qualities to psychological variables, they think that they have raised the scientific status of psychology.

The advantages of submitting essentialist constructs as concepts are many. As soon as one says *disposition* or *trait*, an imaginary ontological field emerges. Once this ontological field is taken as an unquestioned axiom, an unlimited horizon opens before psychology from which countless variables can be derived, from consciousness to the self, identity to personality, individualism to collectivism, emotion to pathology.

However, there is no methodological basis for saying that a study without reference to an external object cannot be scientific. Psychology is the discipline of being able to work with the variables that remain after external variables are removed from the equation – as long as the constructs are built in a way that is suitable for capturing the phenomenon. Attempts to construct psychological variables by resorting to non-essentialist constructs are rare in our discipline. The work of Jack Martin and his colleagues, who draw attention to the productive relationality of the construct of personhood rather than the futile essentialism of

the construct of personality, exemplifies that such constructions are possible (Martin, 2015; Martin & Bickhard, 2012; Martin et al., 2010). Neither should we neglect studies that examine how personhood is constructed in collective relations (see Hammond, 2021 for examples in this direction).

It is necessary to re-position psychology as a discipline able to describes and explains psychological variables in such a way to explain psychological acts and actions not by including but by eliminating external variables from the equation. Consciousness is not a phenomenon that psychology can study by asking what consciousness is mimicking the question of what atom is. Defining and explaining consciousness can only be achieved by building a construct that is capable of encompassing the boundaries of the conjectured phenomenon. Any activity to the contrary would be a fake epistemology on an imaginary ontology.

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