

Piaget, Jean. 1995. "Explanation in Sociology." Pp. 32-96 in *Sociological Studies*, edited by L. Smith. New York: Routledge.

In this essay Piaget sets out to explain how sociological explanation is related to explanation in other sciences, in particular psychology and biology. He aims to clarify both the formal and substantive commonalities that explanation takes in sociology, psychology and biology, while also noting what is distinctive about sociological explanation. He begins by noting that a study of the structure of sociological explanation is vital not only because of the aforementioned links between sociology and other disciplines, but also because the *object* of sociological explanation—collective processes *sui generis*—have to be a part of any accurate study of the sources and forms of human knowledge, a question that he sees at the center of both the psychological and sociological projects. In a surprising passage, he adds that “human knowledge is essentially collective, and social life constitutes an essential factor in the creation and growth of knowledge.” This assertion stands in sharp contrast to the usual image of Piaget’s conception of the knowing subject as an isolated individual interacting with a material world of objects in isolation from any form of collective or social influence. Instead, for Piaget, all forms of knowledge, in particular the most scientifically rigorous and logical forms are, following Durkheim (1995[1912]), collective products through and through.

The article is divided in seven sections. In the first section Piaget establishes what he views as the commonalities and differences between the forms that explanation takes in sociology, psychology and biology in order to contrast them to the relationships between sociology and psychology. He first notes the substantive links between sociology and biology.

Sociological Explanation, Biological Explanation and Psychological Explanation

First, Piaget notes that biology and sociology have a common substantive domain because some animals exhibit complex social structures. Thus “there is an animal sociology, in parallel with animal psychology.” These two approaches are tightly linked, since the mental functions of social animals are constantly impacted by their embeddedness in social relations. This means that there is both an analytical and empirical distinction between biological facts proper and those associated with a purely social level of animal interaction: “facts of social organization are already differentiation from facts about organisms, and therefore call for a special type of interpretation” (p. 30). Furthermore, various animal species could not develop properly were it not for the external transmission of acquired characteristics—bee dances, bird songs, tool use among primates—in addition to the usual biological mechanism of genetic transmission of inborn behavior patterns and behavioral propensities. From this perspective the entire group of animals becomes “a system of constructive interdependencies” which calls

to be analyzed in a manner distinct from that which would be applied to “organic or instinctual structures” (p. 31).

Second, there are linkages between the study of human societies and physical anthropology—which Piaget conceives as a branch of biology—dealing with the interplay between human genotypes and the distribution of phenotypic characteristics as well as the influence of social organization in the expression of genetic propensities. In addition, there is a clear relationship between sociology and demography, in which the difference between sociological and biological types of explanation can be clearly appreciated: while sociological explanation “is concerned with external transmission” of learnable features, biological explanation is more concerned with “internal transmission (heredity) and the characters thereby transmitted.” This means that it is a priority of sociological explanation to argue for the importance of institutional and historical factors in explaining the observed variation in behavior and customs over different human societies in comparison with genetically transmitted traits and dispositions. In the very same way, sociological explanation shows its unique character when pointing to how “the biological aspects of demographic phenomena” are subordinate to “systems of (especially economic values and rules) systems which are themselves the “...outcome of the external interactions of individuals” (p. 31). *Third*, biological and sociological explanation meet in the study of the ontogenetic development of the individual, with biology pointing to the importance of relatively fixed patterns of physiological maturation, and sociology pointing to the prevalence of socially devised systems of acculturation and education.

In this respect Piaget notes that the study of “[c]hild development offers and are of experimentation of the greatest interest concerning the zone of overlap between internal, or hereditary transmission, and external, i.e. social and educational transmission” (p. 31-32). As an example of such a mixed “bio-sociological” process Piaget points to the acquisition of language which is—as have been pointed out by such Linguists as Chomsky—not only produced by the activation of pre-existing biological potentialities in the child, but which is also highly dependent upon exposure to an already organized, “collective system of signs” which is recurrently transmitted “from generation to generation.” This is the difference between linguistic *competence*, and the Saussurean system of linguistic conventions as a social reality *sui generis*. Piaget says that the same dialectic of interplay between neurophysiological development controlled by “hereditary maturation” and certain prescribed forms of “collective interaction” is responsible for the acquisition of widely observed “intellectual operations” including the ability to understand and use systems of logical implication. The problem here is for Piaget that when dealing with these types of subject matter “the link, on the one hand, and the difference...between biological...and sociological explanation are so evident that many authors renounce psychological explanation altogether and assimilate psychology to neurology and the social.” For Piaget, this forced unification of the three

forms of explanation can be, when done prematurely, a source of theoretical regression rather than progress.

For Piaget, instead of this premature unification and ersatz development of “global” schemes, the interplay between the distinct processes, entities and mechanisms (Machamer, Darden, and Craver 2000) postulated in sociological, biological and psychological explanations must be resolved through *analysis* (p. 32). When “sufficiently analyzed” more abstract commonalities between the three forms of explanations can be found.

First, “the remarkable nature of all of these processes, depending at the same time on maturation and an external or educational transmission, is that they obey an invariant sequence of development.” It is important to note that in this respect Piaget does not mean the word “invariant” to mean *the same*, across social, biological and psychological processes, but it is using the mathematical structuralist sense of being “isomorphic” or formally equivalent. Thus, Piaget turns to the example of language acquisition because it occurs in an orderly and empirically verifiable sequence of stages. It is in this respect that these types of processes can be “...highly instructive regarding the relationship between [biological] maturation and social transmission” and consequently regarding the difference between social and biological explanation. Thus, as has been confirmed in more recent psycholinguistics studies, the acquisition of different lexical types in a given language proceeds in an orderly sequence, with first the acquisition of nouns and global phrases for entities or proper names (along with some rudimentary prepositions for spatial location), followed by words related to actions (verbs) and lastly followed by the learning of noun and verb modifiers (adjectives and adverbs) and more abstract prepositions related to relations between entities and actions. Piaget notes that “[i]f such a sequence were the outcome solely of [biological] maturation, we would have to admit a preformation” as do some generativist schools of contemporary linguistics.

However, this hypothesis leaves a lot to be desired, since as noted by recent research in cognitive linguistics, various aspects of linguistic conceptualization and category formation are purely *conventional* and therefore under the control of collectively devised systems of instruction and tradition, they are “...relative to the collective realities ‘external’ to the individual.” However, a pure collectivist reductionism cannot work here either, since even if a conventional system of education attempted to teach the child contents that she was not yet ready to assimilate (i.e. abstract adverbs at an early age) it would meet with limited pedagogical success. Instead, what happens is that “...at each stage the child selects certain elements and *assimilates* them in a particular sequence according to his mentality” the child does not passively submit “to the pressure of ‘social life’ ” anymore than she does to the dictates of physical reality when these are considered as unanalyzed “totalities.” Instead what appears to happen is she “actively selects among available possibilities, and *reconstructs* them and assimilates them in his own manner” (p. 33).

This leads Piaget to conclude that “[t]he mental therefore exists between the biological and the social” (p. 33); this also opens up the opportunity for Piaget to provide a preliminary distinction between psychological and sociological explanation. For Piaget, the relationship between sociology, psychology and biology cannot be readily conceived as comprising a series of hierarchical “levels” of inclusion such that the biological is included in the psychological and this latter in the sociological (as suggested by the initial statement that the psychological lies *between* the sociological and biological).¹ Instead, it is best to conceive of it as comprising “...as simultaneous link from biology to psychology and sociology together, these [last] two disciplines *having the same object* (italics added).” Piaget’s notion that psychology and sociology study the same set of phenomena but from alternative perspectives and giving different processes and mechanisms different weights is an old one, going at least all the way back to Durkheim (1982[1909]). Thus Piaget rejects the standard picture that there are three aspects of the individual, the biological, the psychological and the sociological, “superimposed and succeeding one another like the fetus, the child and the adult.” Instead, for Piaget, “there is on the one hand the organism, determined by hereditary characteristics as well as by ontogenetic mechanisms” and on other hand there is human behavior and *activity*, which has both mental and social aspects.

In this respect “[p]sychology and sociology are comparable, in their interdependence to two closely related biological sciences” or to the relationship between “number and space, the intervention of neighborhood sufficing to make spatial any ‘set’, or any algebraic or analytic relation” (p. 33). Thus, for Piaget psychological and sociological explanation cannot be easily separated, and it has been the failure of most psychological and sociological theorists (including Durkheim) to have proposed shaky criteria with which to justify a hasty division between these two alternative forms of understanding social action. This also means according to Piaget that *all* of the metatheoretical problems of psychological explanation “are therefore also found in sociological explanation, with virtually the sole difference that the ‘I’ is ‘replaced by the ‘we’, and that actions and [cognitive] ‘operations’ become, when a collective dimension is added, *interactions*.” This is a bold thesis, and Piaget devotes the rest of the essay to substantiating this “parallelism” argument of the common problems of psychological and sociological explanation.

Second, as can already be noted, Piaget’s primary meta-theoretical move in this respect is to establish correspondences between what he deems to be the fundamental *entities* and *activities* (Machamer, Darden, and Craver 2000) that form the key part of the mechanistic assemblages relevant to psychological and sociological explanation. Thus, he equates the primary *activity* of

¹ For a rejection of the notion of levels as a useful framework to classify the sciences see (Darden and Maull 1977).

postulated in psychological explanation that of “operation” with the primary activity postulated in sociological explanation: interaction. Piaget defines interaction in a very particular manner as consisting of “behaviour patterns which are capable of reciprocal modification.”² Piaget goes on to note that beyond these formal commonalities, *all* of the types of *questions* that figure prominently in sociological explanation have an “analogue” in psychology (p. 34) “...[t]his is particularly true of the central notion by means of which Durkheimian sociologists have wished to sever all relations between sociology and psychology, and this is the notion of totality.”

Piaget revisits Durkheim’s seminal argument, most clearly laid out in the essay “Individual and Collective Representations” (1953[1898]), that the *sui generis* status of society has to be conceded if *sui generis* emergence is granted in other domains of inquiry (the biological, chemical and mental). Piaget notes that “[t]here is a very curious passage...in which Durkheim compares, by a sort of analogical proportion, the collective consciousness in relation to its individual elements with an individual state of consciousness...in relation to the organic elements in which it depends.” Piaget goes on to repeat Durkheim’s conclusion that just as any individual mental representation whether cognitive or perceptual is not the result of a simple combination between its organic elements each considered in isolation—i.e. individual neuronal synapses—but is “rather an unity from the outset” (its identity lies in the *pattern* of neural firing and interconnectivity across regions of the brain), “...so collective representations are not reducible to the individual representations whose synthesis they constitute” (p. 34). Piaget notes that “[t]his comparison of Durkheim’s is more far-reaching than he could have imagined in 1898.”

What are the implications of Durkheim’s “emergence” argument (Sawyer 2001, 2002) that Durkheim himself did not envision? For Piaget, the notion of emergent totality constitutes in fact one of the primary linkages between sociological and psychological explanation because the *phenomenon* of *sui generis* emergence appears in both psychology and sociology. For Piaget, the prototypical example of emergent totality in psychology “corresponds closely to the notion of total form or ‘Gestalt.’” Piaget notes that while the objections that have been leveled at the Durkheimian notion of emergent totality are “also applicable” to the notion of Gestalt, “more relativistic conceptions of totality can be developed in both domains.” It is one of the goals of Piaget to develop a more “relativistic” notion of sociological totality (as he believed he did in psychology with the notion of “schema” [Arbib and Conklin 1987]) that bypasses the problems that he will outline vis a vis Durkheim’s notion. Piaget’s conception of

² This is close to the notion of interaction found in George Herbert Mead’s “social behaviorism” and most forms of pragmatist and symbolic interactionist sociology. This is why Piaget’s theoretical stance is best characterized as a form of *analytical interactionism*.

totality relies on the specification of *relational mechanisms* that account for emergence, and thus is closer to his own metatheoretical position of analytical interactionism.

Third, Piaget goes on to outline one of the key analytical distinctions that will occupy the bulk of his attention throughout the rest of the essay. This is the differentiation between “*genetic* explanations, concerned with the *mechanisms* of development, and the analysis of states of equilibrium as such” (italics added). Piaget thinks that he can organize the systematics of what is known in sociology as classical social theory—in particular the work of Marx, Durkheim and Pareto—along an axis that divides each theorist primary preoccupation as either focusing on “dynamic explanations (about the historical evolution of societies)” or synchronic or static explanations (about social equilibrium).” Piaget thinks of Durkheim and Pareto as two ends of a continuum according to this scheme, with the former focusing on genetic explanations of social institutions (see in particular Durkheim 1978 on the family and law, and Mauss 2003 on prayer) and the latter on the synchronic explanation of equilibrium (which evolves into “equilibrium analysis” in mid-twentieth century mathematic economics with the work of Arrow and Debreu). Marx, according to Piaget, represents the most highly developed effort at synthesis between genetic and synchronic modes of explanation in classical social theory. For Piaget the analytical division between developmental (or genetic) explanation and equilibrium based analyses is the second of the epistemological commonalities that unite sociology and psychology. The third explanatory commonality uniting sociology and psychology for Piaget concerns that fact that in both disciplines *three* major types of “structure” are invoked by analysts for explanatory purposes. These Piaget refers to as *rhythmic* (or cyclic) structures, *regulative* structures and *grouping* structures. This constitutes one of the most challenging parts of Piaget’s overall argument, as his classification of structures is bound to appear arcane or arbitrary to the reader. However, in what follows Piaget goes on to connect his classification of the three types of structure to very familiar fundamental problems in social theory.

The fourth axis of epistemological convergence between sociological and psychological explanation concerns the fact that in both disciplines recourse is made by analysts to two primary “casuistic” or analytic frameworks with which to account for the coherence or patterning of phenomena. On the one hand, there are analysts who primarily resort to the postulation of *casual relations* between distinct aspects of overall phenomena (as this is understood in traditional Aristotelian philosophy see Cartwright 1983; Spillman 2004). On the other hand, there are those analysts who dispense with purely causal explanation and resort instead to the postulation of relations of logical (or socio-logical) *implications*, or “axiomatized analyses” in which different aspects of sociological phenomena are connected to one another by systems of relations that are less constraining than the asymmetric, non-reflexive strictures characteristic of the casual relation (see for instance Martin and Wiley 2000; Mohr and Duquenne 1997; Sorokin 1937; White and Jorion 1992 for examples of “implicational”

analyses in sociology and anthropology which dispense with “causal” forms of analysis). Relations of implication as first noted by Sorokin (1937) are in fact unique to those macro-level forms of cultural order that Durkheim referred to by the term “collective representation.” Cultural explanations based on the *causes* of cultural forms (which may include the postulation of material or interactional causes), are thus analytically distinct from those based the autonomous implicational patterns exhibited by the elements of a given cultural Gestalt. Thus for Piaget, in both the sociological and psychological domains we can find analysts drawing on both implicational forms of explanation “alongside real or concrete explanations” based on concrete causes. In Piaget’s view, this *duality* of implicational and causal analysis cannot be easily transcended by appealing to either one-dimensional causal *or* implicational explanatory schemes (as is done by Alexander and Smith 2003 in the case of the latter).

Nevertheless for Piaget, the “duality of implication inherent in collective representations and of causality raises a fundamental problem of explanation” in the social sciences. This problem has been a key axis of contention in classical social theory, especially in the work of Marx and Pareto (p. 34-35). In classical Marxist theory, the duality of implication and causation took the form of the traditional problematic of “infrastructure” and “superstructure” a problem that has been addressed in different ways by analysts in the Marxist tradition, and which received a classical treatment—in the form of his theory of residues—at the hands of Pareto (Levine 1995). Piaget, however, believes that the seeds of explanatory progress—and transcendence of the base/superstructure problematic—are already implicit in this classical problematic. In particular sociologists must make the same theoretical turn that he considers to have led to progress in psychological explanation: the *enactive* or action-focused turn (Varela, Thompson, and Rosch 1991).

For Piaget it was precisely after the realization among psychologists that “the contents of consciousness alone explain nothing causally and that the only possible causal explanation” (a reference to early twentieth century introspectionism) must return from a preoccupation with the contents of consciousness with a concern with *action patterns* that progress was made in psychological explanation. Piaget recommends the same remedy to sociologists, who if they wish to propose causal forms of explanation must reject explanations “based on ideology, in favor of explanations through action” in particular actions related to what Marx called *praxis* (i.e. collective action “...carried out in common to preserve the life of the social group in a material environment”) and what Mauss referred to as *techniques* (“concrete and technical actions which become perpetuated in collective representations”). Thus for Piaget, after the enactive perspective is taken, it is easy to see that “[t]he problem of relations between infrastructure and superstructure is, therefore, closely linked to that of relations between the *casuality* of behavior patterns and the *implications* within representation” (p. 35). These implications could be of a logical or socio-logical (symbolic) nature (as in what Piaget refers to

as “socio-centric” ideologies) or can be “logically coordinated as in rational collective representations, of which scientific thought is the most authentic product.”

The *second* reason for why anyone interested in explaining the origins of valid knowledge should be concerned with “sociological knowledge” for Piaget has to do with the close connection between what he refers as the *sociogenesis* of collective knowledge—the historical sequence (or progression) of different knowledge systems—and the psychogenesis of knowledge structures (the sequence of stages of cognitive development that the child goes through while growing up), “the sociogenesis of the different forms of knowledge being neither more nor less important than its psychogenesis, since these are two inseparable aspects of any existing formation.” For Piaget “the very object of sociological research subsumes the whole development of collective knowledge, in particular the whole history of scientific thought” (p. 35). The two primary questions that are opened up in this respect concern: (1) clarifying the relationship between sociogenesis and psychogenesis during the “formation of the child’s notions” during the process of mental development and (2) “the question of the nature of these same notions in the elaboration of scientific and philosophical notions as these succeed each other historically.”

In respect to the first question, Piaget proposes what appears to be a fairly surprising proposition: the study of psychogenesis cannot be undertaken in isolation from its embeddedness in a concrete historical context (p. 35-36). This is surprising from the point of view of those who continue to think of Piaget as proposing an asociological theory of the origins of knowledge, in which a socially isolated individual knower confronts a world of socially decontextualized objects. Instead Piaget rejects the notion that there is such thing as “the child in itself” isolated from social influences. For Piaget, the child’s thought *cannot* “be studied as a self contained entity, insulated from adult influences” (p. 36). Even more radically, Piaget proposes that given the explanatory commonalities between psychology and sociology that have already been mentioned, “child psychology is a branch of sociology, concerned with the study of the socialization of the individual, at the same time as a branch of psychology itself.” The isolation of the child from social influences in the context of experimental and laboratory work, is purely done for methodological purposes, and do not imply that knowledge proceeds in this way “in the wild.”

Piaget’s idea of the relationship between sociogenesis and psychogenesis is a strictly interactive one, in which psychological and sociological processes retain their partial autonomy and identity and cannot be reduced to one another (either from a top-down “sociological reductionist” perspective or a bottom up “psychological reductionism”). To illustrate this point Piaget proposes the example of children learning to “construct logical and numerical operations, the representation of Euclidean space, of time, of speed, etc.” For Piaget what is interesting about this process is that “in spite of social pressures of all kinds which attempt to

impose [the contemporary versions of] these notions ready-made,” the child must still “pass through all of the phases of a reconstruction,” in which intuitive and sensorimotor ideas of space and time are first developed and only later are (partially) replaced by “modern” and formal versions of these notions consistent with modern science. The same goes for the construction of the various operations related to “logical addition and seriation...which are necessary for the establishment of a concrete logic” as well as the construction of operations of one-to-one correspondence...necessary for the genesis of number.” Instead of accepting the “fully developed” versions of these notions and categories of thought, “the child only selects...from the available representations those elements which are assimilable according to the precise laws of operatory development!” In this manner, social transmission processes must be channeled through the psychogenetic processes of construction of schemata with which to assimilate and construct objects of experience. Psychology cannot be reduced to sociology.

This does not mean that the process of social transmission has no influence on the timing and *rate* of acquisition of novel conceptions. For Piaget, one of the primary ways in which social learning influences psychogenetic development is by allowing the individual to more rapidly pass through and transcend more limited ways of conceptualizing the object world, in a manner that partially “recapitulates” the historical sequence of systems of ideas in scientific thinking. Here Piaget draws on the Bachelardian notion of scientific development as being comprised of a series of discontinuous transitions from one system of understanding to another that is as comprising a “veritable” series of “mutations” of the human intellect. What is interesting for Piaget in this respect is that “...a child of 7, 9. Or 12 years...will have in the twentieth century quite different ideas about movement, speed, time, space, etc.” in comparison to “children of the same age in the sixteenth century (i.e. before Galileo and Descartes), or in the tenth century” while “[t]his is obvious” it still “shows very clearly the role of social and educational transmission.” But once again, this does not mean that the child’s mind is a passive clay on which social transmission leaves its stamp. Instead, the child actively struggles to reach a stage of cognitive development in which these “modern” notions are capable of being assimilated.

Thus the most recent level “is not reached in a single step; instead a series of preceding levels is passed through, in the course of which the child even resuscitates, without feeling any doubts about it” older conceptions that once held collective sway in the history of science. Thus, “without needing to invoke an exact parallelism between ontogenesis, phylogenesis and historical sociogenesis...’intellectual mutation’ is not manifested in the form purely and simply of the replacement of old ideas by new ones: rather it takes the form of an acceleration of the psychogenetic process.” This acceleration is made possible by the existence of institutionalized and socially produced systems of recording and transmission of collective knowledge. Thus, [t]he necessary appeal to specifically mental factors is...justified by the

existence of these accelerations and delays in development as a function of collective environments” (p. 37). It is in this sense that the phenomenon of “‘intellectual mutation’ as an acceleration factor cannot be explained by appeal to either “organic maturation alone” nor by “social transmission alone” but neither can it be explained by a bland “combination of these two processes” as is still done by contemporary advocates of the middle way in the nature versus nurture debate. Instead Piaget proposes the following solution:

If social transmission accelerates individual mental development, it must take place in the following manner...between organic maturation which furnishes the potentialities, but without ready-made psychological structuring, and social transmission which furnishes the elements and the model for a possible construction, thought without imposing this in a complete state, *there occurs and operatory construction which transforms the potentialities furnished in the nervous system into mental structures.* But this translation only takes place *as a function of the interaction between individuals, and therefore under the accelerating or delaying influences of differing actual modes of social interaction* (p. 37, italics added).

Thus for Piaget, psychological and sociological processes do not interact directly. Instead social structures of interaction and exchange provide pathways in which the construction and progression of different mental structures is allowed to proceed in a more expeditious manner, or be delayed and get stuck in “local maxima.” Thus it is the strict interdependence of mental and social factors “which alone can explain the accelerations or delays in development in varying collective environments” (p. 38).

For Piaget, the influence of sociogenetic processes increases as the individual matures. Thus, it is correct—that as noted by Bourdieu in *The Logic of Practice*—the “diffuse pedagogy” of the group begins to affect the individual’s mental operations even before the language acquisition process is complete. Piaget refers to this influence as that which occurs by way of “sensory motor training” and “imitation.” It is however, with the advent of language that the influence of social on mental processes increases dramatically. As Piaget puts it, with language, “the role of the social augments considerably, since it allows *exchange of thought* as soon as thought is developed.” Thus for Piaget language is important not because it has a strong effect on individual mental schemes (as erroneously assumed by some proponents of structuralist linguistics) but because it allows a sort of *social intercourse* and exchange of linguistic signs that goes beyond the sensori-motor based processes of embodied simulation characteristic of the pre-verbal child. Piaget notes that

Once the operations are established, and equilibrium is attained between the mental and the social, in the sense that the individual who has become an adult member of a society could no longer think apart from that completed socialization (p. 38).

According to Piaget, this leads to “the second essential question which genetic epistemology raises for sociology: that of the role of society in the elaboration of notions, through history, in philosophy and in the various types of scientific knowledge.” This is of course the classic problematic of the sociology of knowledge, running through Marx, Durkheim and onto Mannheim. Piaget, accepts the sociology of knowledge problematic as a central problem in social theory, without subscribing to an all out skepticism regarding the validity of scientific categories of thinking as is done for instance by contemporary proponents of the “strong program” in science studies—which require a methodological “symmetry” between valid and invalid beliefs—or the various anti-sociologies that go by the name of “actor-network” theory, which reject the coordinates of the problematic altogether by denying that knowledge has a basis in “society” in the first place. Instead Piaget argues that “sociological analysis has a critical part” in this respect “an its importance cannot be underestimated.” The reason for this follows from taking the enactive (or practice-theoretical) turn: it is only in sociology in which the linkage between “thought and action” is conceived in “the closest possible manner.”

Here Piaget introduces a key analytical distinction that will form the core of the argument throughout the rest of the essay, and which allows him to accept the problematic of the sociology of knowledge without falling into a rampant skepticism regarding the empirical validity of the categories of scientific thought: this is the difference between egocentric and decentered thinking. Egocentric thinking refers to the well-known cognitive bias in the thought process of the child whereby he or she deploys cognitive schemes in her understanding of the world, that presume that *absolute* and *universal* validity of her own limited subjective point of view, without having the ability of conceiving of cognitive points of view that transcend the perceptual perspective of the ego. Piaget then draws an analogic correspondence between egocentric styles of thinking found during development and “certain forms of thought” that have been recognized and theorized in the classical tradition in social theory which are characterized by “the reflections of the preoccupations of the narrow group to which the individual belongs.” This type of thinking, which is the collective analogue of egocentric thought, Piaget refers to as *sociocentric*. Because sociocentric collective representations tend to be theorized—following Durkheim and Mauss’ seminal work in *Primitive Classification*, and Durkheim’s sociology of knowledge argument (not to be confused with the epistemological argument [Rawls 2004]) in the last chapter of *The Elementary Forms* in addition to the original Marxian statement in *The German Ideology*—as having a relation of correspondence or homology with certain forms of social organization, Piaget also refers to sociocentric styles of thought as *sociomorphic* (p. 38). However, Piaget adds that in addition to

...the sociomorphism described in the primitive societies, or the national or class sociocentrism, more refined and disguised, that are seen in ideologies and systems of metaphysics...[s]ociology also recognizes in...other forms of thought, the possibility of true universalization of the operations of thought, as in the case of scientific thought (p. 38).

Thus, just as there is the possibility of transcending egocentrism at the level of psychogenesis, Piaget holds that a true enactive and constructivist account of cognition must also leave open the possibility of a *type of collective thinking that transcends the limitations of sociocentrism*, and which therefore is not open to the sociomorphic “critique of ideology.” That is, a style of thought that is both collective and has universal validity. As examples of the sociological analysis of sociomorphic and sociocentric thought systems, Piaget isolates a couple of classic statements in Marxist literary and cultural criticism: Lukacs’ early work on the novel, and Lucien Goldmann’s analysis of the philosophical systems of Kant and Pascal. Thus, for Piaget, “[i]t is already possible to conceive of an interpretation of the history of philosophy as a function of the different types of social differentiation of nations and in social classes.” As to the sociological analysis “of intellectual operations themselves” that is of scientific thinking in general, a project that Piaget deems “possible given the history of technology and science” a full consideration will have to wait until the last section of the essay.

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