CHAPTER 6

Dialectics of Genesis and Structure

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In Part I of this volume Charis Psaltis states that the direct predecessors of the theoretical framework of genetic psychology he is developing can be found in Piaget's genetic epistemology, Lucien Goldmann's genetic structuralism, and Serge Moscovici's genetic model of social influence. The ideas of these scholars were further elaborated in Gerard Duveen's contributions directed towards the advancement of genetic social psychology. Psaltis states that common threads binding these approaches together were the concepts of the dialectics of genesis and structure, part–whole relations and temporality. Psaltis emphasises that these common threads were linked with the fundamental epistemological questions that had already preoccupied philosophers such as Immanuel Kant, Georg W. F. Hegel and Karl Marx. In this commentary I shall suggest that while the questions about the nature of knowledge bind these philosophers together, their proposed answers surpass their common links because, depending on their epistemological presuppositions, their answers are based on diverse concepts concerning the nature of knowledge. Consequently, these answers were reflected in different ways in the contributions of Piaget, Goldmann, Moscovici and Duveen in their studies of the dialectics of genesis and structure.

Epistemological questions of Kant, Hegel and Marx about the nature and possibility of knowledge necessarily bring into focus the relations between the knower and the object to be known – that is, between the individuals' minds and their outside world. The objects to be known in the outside world encompass physical, biological, social and symbolic phenomena and, therefore, entail different modes of understanding. In posing questions about the nature of knowledge, Piaget and Goldmann approached them in terms of relations between the individual (or transindividual) and object, while Moscovici and Duveen approached them as the triadic self–other–object relation. Epistemological issues these different kinds of relations imply are fundamental for answering the questions about the dialectics of genesis and structure. However, as we shall see in this

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commentary, answers to these questions are determined in specific ways in concrete instances of the problem these researchers attempt to solve.

There are several concepts that, in my view, distinguish Piaget's genetic epistemology from interactional (or genetic) epistemology of Moscovici. Among these, I shall choose three of Piaget's concepts that exemplify theoretical distinctions between Piaget and Moscovici, namely the epistemic subject, equilibrium and a linear or continuous development. These concepts of Piaget are of course well known to all developmental psychologists, but I shall briefly remind the reader of them in the first part of my comment; they also apply to Goldmann's interpretation of Piaget's theories. In the second part of my comment, I shall discuss oppositions to these three concepts in Moscovici's and Duveen's genetic epistemologies.

Genetic Epistemology of Piaget and Its Interpretation by Goldmann

Epistemic Subject

In his *Critique of Pure Reason,* Immanuel Kant (1781/1929) stated that despite enormous efforts of rationalists and empiricists, their attempts to answer the question of how knowledge is possible have failed. Both rationalists and empiricists assumed the existence of two separate realities: the knower and the object to be known. Rationalists presupposed that the mind logically deduces the truth from self-evident universal principles and applies them to reality. Empiricists presupposed the existence of the physically structured reality which humans acquire in daily experience by inductive reasoning. Rationalists and empiricists, such as Descartes and Locke, thought that ideas, either innate or acquired in experience, respectively, merge together and resemble objects in the outside world. For example, Locke stated that an object that signifies a *swan* is composed of simple ideas such as white colour, long neck, red beak and so on. These simple ideas, when connected, resemble a *swan* (Locke, 1690/1961, II, xxiii) existing in the outside world.

In contrast, Kant postulated that the ideas of humans do not resemble objects as Descartes and Locke thought. Having been critical of the duality between the knower and the object to be known, Kant introduced the concept of a 'phenomenon' (appearance) that explained how objects *appeared* to individuals. He assumed that structural elements of knowledge which organise human experience are mental structures. The 'phenomenon' or an 'appearance' of an object results from interaction between the knower's (subject) mental structures and the object of knowledge. Kant

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argued that objects (appearances) must conform to human concepts (Kant, 1781/1929, B xvi–xviii). He proposed that the knower (subject) is equipped with a priori mental structures or categories such as time, space, number, quantity, and causality and others. Categories impose themselves on the knower's experience of objects, and so they construct their appearances. Therefore, Kant viewed the knower as an agent in the construction of knowledge. This Kant's idea was a vital innovation in philosophy. However, Kant conceived a priori categories of knowledge as atemporal and fixed universals, thus following the Platonic concept that true knowledge was atemporal and universal.

Just like Kant, Piaget was critical of rationalism and empiricism, and he suggested that the major determinants of the individual's knowledge were mental structures. However, in contrast to Kant, he believed that mental structures produce knowledge in the process of the structuration of biological tendencies of the human mind in their living environment. These processes, to which Piaget referred as 'genetic epistemology', take place during the child's development, and are the proper solution to the problem of knowledge. New structures are progressively elaborated by the child as an epistemic subject (Piaget, 1970, p. 728) in the dialectical process of development and transformation. This process is rational, and it logically evolves in the epistemic subject due to autoregulation and equilibration. The epistemic subject, which became the centre of genetic epistemology, was an analytical abstraction conceived as an ideal knower cognising physical objects or persons. The epistemic subject was concerned with the forms of knowledge rather than with concrete contents of the individual's knowledge. These forms were common to all children who are at the same level of development of cognitive structures. Piaget distinguished the so conceived epistemic subject from the psychological subject, which included non-cognitive activities of the individual.

Duveen (1984/2013, p. 73) drew attention to the difference between the epistemic and psychological subject already in his early writings and continued to refer to it throughout his career. He did not use the concept of Piaget's epistemic subject in his own work but was concerned with a holistically conceived psychological person including cognitive and non-cognitive activities in his/her interactions with others. Although he was critical of Piaget's view of the epistemic subject as being 'transindividual' (see later discussion), Duveen emphasised that it was essential for Piaget's theory to conceptualise the epistemic subject as an abstract concept in order to bring into focus the point of view that *the epistemic subject was not an individuated subject.* Nevertheless, Duveen kept emphasising that one of

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the limitations of Piaget's genetic epistemology was that it did not pay attention to the holistic psychological subject.

Piaget's concept of epistemic subject was related to his approach to language. Elkind (1967) pointed out that the Piaget essay on 'Language and thought from the genetic point of view' is one of few attempts of Piaget to deal systematically with the relation between thought and language. Piaget's position was that language and thought have different origins: thought is derived from the abstraction of the child's acting upon things, while language arises from imitations provided by adults and, therefore, is not the product of the child's proper activity. While thought precedes language, once language emerges, language and thought become linked in a genetic circle, in which they 'both depend on intelligence itself, which antedates language and is independent of it' (Piaget, 1967, p. 98). When language emerges, it starts to interact with and becomes a tool for further transformation of thinking, and for the attainment of more advanced forms of equilibrium. Having explored language in concrete operations and propositional logic, Piaget concluded that language is necessary but not sufficient to construct logical operations, because these are rooted in actions of thinking and in sensorimotor mechanisms, and these, Piaget emphasised, are deeper than linguistics.

Equilibrium

In his essay on 'Genesis and Structure in the Psychology of Intelligence', Piaget (1967) explained what he meant by 'structure' and 'genesis'. He defined 'structure' very broadly, as a system which has laws and properties as a totality. It holds true for human species; as forms of knowledge are progressively constructed, their emergence is explained by assimilation and accommodation as the two poles of an interaction between the organism and the environment (Piaget, 1954, p. 353). Development is an active process of progressive equilibration (e.g. Piaget, 1967, p. 104) through the transformation of disequilibrium and re-equilibration of cognitive structures. Equilibration is achieved when new contents and newly formed kinds of knowledge are integrated into the existing cognitive mathematical and logical structures through a succession of stages. While equilibrium is characterised by stability, it does not mean immobility. Equilibrium is both mobile and stable. Its stability is achieved by movements in opposite directions. Its specific role is to compensate for the intrusion coming from the external world by the actions of the subject: 'Equilibrium, thus defined, is not something passive but, on the contrary, something essentially active; the greater the equilibrium, the more activity is required . . . Equilibrium is

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synonymous with activity. . . . A structure is in equilibrium to the extent that an individual is sufficiently active to be able to counter all intrusions with external compensations' (Piaget, 1967, p. 151).

Linear or Continuous Development

Piaget's theory of the child cognitive development postulated the stages in which knowledge becomes progressively more complex. This development is hierarchical, in which lower stages form a necessary grounding for the higher stages. Each stage is characterised by equilibrium, and its disturbance forms the basis for a restructuring that leads to a higher stage. The stage development presupposes a hierarchical development conceived as a progressive continuity and as a path towards the development of logical thinking. The stage development is a fundamental Piagetian perspective in which the child, by means of assimilation and accommodation, acquires progressively higher forms of knowledge. Such linear and continuous process was also incorporated in Durkheim's perspective, by means of which, in a historical process, religious representations are gradually transformed into scientific representations.

Lucien Goldmann[1]

Piaget's 'genetic epistemology' attracted the Romanian humanist, philosopher and sociologist Lucien Goldmann (1913–1970). A deeply convinced Marxist, Goldmann migrated through several European countries, and during the Second World War he came to Switzerland to work with Piaget whom he viewed as 'the most authentic dialectician, at least in the West' (Cohen, 1994, p. 57). Goldmann was a prominent critic of static forms of structuralism in literature and arts, to which he applied his method of genetic structuralism. As a part of his critique, he attempted to synthesise György Lukács's Marxist philosophy and genetic epistemology of Piaget.

[1] I am discussing the relation between Goldmann and Piaget in some detail because, as Psaltis (Part I of this volume) states,

1. Goldmann's genetic structuralism was one of the direct predecessors building a theoretical framework of genetic social psychology; and
2. It was crucial for understanding basic theoretical, methodological and epistemological questions that preoccupied Duveen throughout his career as the problems of Western Marxist thought.

Although Duveen and Psaltis often refer to the importance of the relation between Piaget and Goldmann in the context of the dialectic of structure and genesis, I shall attempt to complement their references by raising some issues about Goldmann's contributions to genetic epistemology.

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Goldmann (1959) was convinced that there was a strong correspondence between Piaget's genetic epistemology and Marx's dialectical method. He believed that Piaget's ideas concerning the epistemic subject's construction of knowledge as a universal process corresponded to Marx's position according to which the individual must be conceived as a transindividual subject – that is, as a subject who, in basic respects, is the same as other subjects. Goldmanm adopted the credo of young Marx: 'Man's individual and species-life are not *different* . . . In his *consciousness of species* man confirms his real *social life* and simply repeats his real existence in thought, just as conversely the being of the species confirms itself in the species-consciousness and exists for itself in its generality as a thinking being' (Marx, 1959, p. 46, emphasis in the original). In this context Goldmann quoted Piaget saying that 'it is necessary for sociology to envisage society as a whole, even though this whole, which is quite distinct from the sum of individuals composing it, is only the totality of relations or interactions between these individuals' (Piaget, 1947/2001, p. 171). These references show why Goldmann viewed Piaget's genetic epistemology as a parallel to the Marxist dialectic method. As a psychologist, Piaget was concerned with the development of equilibrium between the individual's cognition and natural environment, and this process was the same for all subjects at the same developmental stage. As a sociologist, Goldmann argued that every social group – that is, the transindividual subject – looks for equilibrium in developing a coherent response to problems that are common to all members, in their social and natural environment. Goldmann's transindividual subject creates history, generates world views and makes possible societal changes (Boelhower, 1980). World views have concrete historical and cultural contents. They cannot be developed by individuals; they are forms of collective consciousness. Collective consciousness of social classes is linked with their actions. As social classes make up fundamental sections of society, they can achieve societal changes that individuals could never make,[2] by understanding the relations of

[2] Goldmann (1959) dedicated his book on *Recherches dialectiques* to Piaget as his master and friend. He devoted two chapters fully to Piaget. One chapter is concerned with the method of Piaget's psychology, and the other chapter is concerned with Piaget's dialectics. Goldmann analysed in detail the philosophical similarities between Marx and Piaget. He claimed that the concerns about the role of nature, matter and object were identical in the historical materialism of Marx and in psychology of Piaget. He also saw analogies between the adaptive nature of intelligence and historical materialism and between Marx's idea of superstructures developing in productive forces and Piaget's assimilation and accommodation. Goldmann also found similarities between Piaget's logic and the dialectical logic of Marxism. He analysed in detail Piaget's ideas on intelligence, thinking and perception.

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production and the development of productive forces.[3] Goldmann emphasised that his concept of collective consciousness had nothing to do with Durkheim's 'collective consciousness' because Durkheim's concept was external to subjects existing as affixed reality (Goldmann, 1980).[4]

Subject–Object in Piaget's and Goldmann's Genetic Epistemologies

To the extent that Piaget and Goldmann conceived the question of knowledge in terms of the relation between the subject and object, they both followed Kant's solution, according to which the knower (subject) is equipped with the structural elements of knowledge. In contrast to Kant, the active epistemic subject of Piaget and of Goldmann constructs knowledge from these mental structures during his/her experience in interacting with biological and social environment, explained as 'genetic epistemology' and 'genetic structuralism', respectively. According to both scholars, the subject's mental structures were the same for everybody in human species. I suggest that this presupposition implied that to explain the nature of knowledge, it was not necessary to postulate the concept of the other because in cognitive terms, the other was the multiplied single subject. 'Others' existed, of course, in non-cognitive terms as psychological and social individuals, but with respect to generating knowledge, 'others' were no more than mental structures that were the same for everybody.

Goldmann, however, as a sociologist, went beyond this point of view. He emphasised cultural and historical changes in societies in which groups were dependent on other groups and linked to class consciousness. The Marxist notion of class consciousness was inseparable from social practices by means of which proletariat would achieve its historical goal of uniting working people, developing a new world view and substituting the capitalist system[5] by socialism.

Commenting on Piaget's (1942) study on perception in his book on *Classes, relations et nombres*, Goldmann (1980, p. 140) argued that 'le rapprochement between Marx and Piaget is inevitable'.

[3] In addition to Piaget, Goldmann was strongly influenced by the Hungarian Marxist philosopher György Lukács. He argued that Piaget's work enabled him to reinterpret Lukács's categories in a more coherent manner by giving them a more anthropological basis (Boelhower, 1980). In *Recherches dialectiques* Goldmann (1959) emphasised again and again that Piaget, who did not refer either to Hegel or to Marx, nevertheless completely confirmed their claims.

[4] Durkheim, as a non-Marxist, postulated his concept of 'collective consciousness' as a historical transformation of less adequate forms of 'collective consciousness' into more adequate forms. Later in his career Durkheim substituted the notion of 'collective consciousness' with 'collective representations'.

[5] During 1950s and 1960s, and during after the Soviet invasion of Czechoslovakia in 1968, Goldmann became critical of Marxism as practised in the USSR. He also became critical of some Marxist theoreticians, including Lukács. He thought that Marxism became outdated and should be

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I suggest that the most important issues that attracted Duveen to Goldmann were (1) Goldmann's social, historical and cultural approach and (2) the concept of identity. Concerning the former, Goldmann's dialectics went far beyond Piaget's epistemic subject with its emphasis on the links between collective action and collective consciousness. Duveen suggests that in child development, the external coordination of the child's action with others is important for the child's construction of internal coordinations of actions – that is, for the construction of operations. These operations are products of collective actions, and Duveen (1984/2013, p. 71) refers again to Goldmann's transindividual subject. According to Goldmann's perspective, both the epistemic subject and the transindividual subject are active and collective agents. Their functions in social events are defined as activities of the social subjects who are adapting or transcending their natural and social environment (Mayrl, 1978).

For Duveen, Goldmann's approach offered a historically and culturally based social perspective on child development and the acquisition of identity. Without going into complex arguments about the separation of the subject and the object of knowledge (see earlier discussion) and about the identity of subject and object in Marx, Hegel and Lukács, Goldmann postulated the concept of partial (or possible) identity, linking it to culture or world views.[6] Identities are constructed in cultures, which for Duveen meant that they were constructed in social representations. Duveen acknowledged Goldmann's ideas that stabilities and changes in identities are linked to stabilities and changes of representations and social influences as cultural phenomena. Identities are not fixed forms of consciousness, but they are possible forms of consciousness because they develop in the changing world views. Identities constrain representations in the sense that they determine what forms of consciousness individuals or groups might find acceptable and what they might resist. Goldmann thought that potential (possible) consciousness was the most important contribution to the dialectical method (Mayrl, 1978). Duveen also appreciated that Goldmann linked identity to communication by drawing attention to what is possible to communicate and what is incommunicable. In problematic communication, cultural identities become particularly visible (Duveen, 2001/2013).

radically rethought, including the view of the role and identity of the proletariat. He expressed these altered views in his last book on *Lukács and Heidegger* (Goldmann, 2009).

[6] Details of these philosophical discussions can be found in Goldmann (1976, 1980, 2009) and in Cohen (1994), among others.

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In conclusion, let us remind ourselves that the question of 'genesis' or 'development' was a feature of not only 'genetic epistemology' but all social and humanistic approaches that rejected non-developmental positions of rationalism and empiricism since the late 17th century (e.g. Vico) through to the 20th century (e.g. Mead, Levinas, Bakhtin and many others). Some of these scholars also emphasised structures of thought, or were sympathetic to structural approaches (e.g. Marx, Husserl, Luckmann, Berger, Schutz, Cassirer). The uniqueness of Piaget and Goldmann was to place 'genesis' and 'structure' at the centre of their approaches. Concerning Goldmann's interest in Piaget's genetic epistemology, I suggest that although it was motivated intellectually, it was primarily inspired politically. As a convinced Marxist, Goldmann viewed and interpreted all genetic ideas of Piaget in terms of Marxist dialectic, disregarding any other possibilities.

In discussing the psychology of intelligence, and the structure and genesis in psychology, Piaget (1967) commented that psychology, in contrast to sociology, did not stem from systems such as those of Hegel and Marx. In the history of psychology and biology, Piaget argued, although the concepts of structure and genesis have been used, they were not conceived as dialectically related: genesis was conceived without structure or structure without genesis. According to Piaget, genesis originates from a structure and culminates in another structure. All structures presuppose a construction, and therefore, structure and genesis are indissociable. In psychology and biology, dialectics of structure and genesis was developed by Piaget, Vygotsky, Moscovici and Duveen (see Psaltis, Part I of this volume).

Piaget was sympathetic to Goldmann's efforts to develop genetic structuralism in human and social sciences. He appreciated Goldmann as 'a creator of ideas as one rarely meets in a lifetime' and 'the inventor of a new form of symbolic thoughts' (Cohen, 1994, p. 4), and he arranged in Switzerland a studentship for Goldmann's PhD project on Kant. Goldmann made Piaget read Marx, but it is not clear to what extent Piaget adopted Goldmann's ideas in his genetic epistemology.

Genesis and Structure in Moscovici's and Duveen's Approaches

In his article on 'Genesis and structure' Duveen (2001/2013) posed the question: In what ways did Piaget inspire Moscovici? He responded to his query by referring to Moscovici's concern with the study of structures and social change: 'most characteristic of Moscovici's socio-psychological imagination is the attempt to thematise change', or even better, 'it is the way in which change is thematized in Moscovici's social psychology which

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is distinctive' (Duveen, 2001/2013, p. 61). Yet despite this, while adopting Piaget's constructivist epistemology in general terms as an opposition to static approaches to the acquisition of knowledge, Moscovici conceived 'structure' and 'genesis' as being embedded in the triangular relation of the self–other–object. This signified several vital epistemological differences between him and Piaget. First, in contrast to Piaget, who studied logical and mathematical constructions in child development, Moscovici studied transformations in social knowledge not only in terms of relations between thought and action but, vitally, as a process of communication. Second, and following from the first, in contrast to Piaget, for Moscovici language was not just a tool expanding thought but the defining feature of social knowledge and of social influence. Therefore, the relation between self and other was characterised not only by cooperation and constraint in terms of action and interaction; rather, these were language- and communication-based activities.

Duveen (2001/2013), who adopted the triangular model in his studies, emphasised that to understand transformations of social knowledge, following Moscovici, we must focus not only on dynamics of cognitive processes but also on transformations of values, ideas and practices. These developmental processes are always embedded in communication, whether interpersonal or mass mediated, and this implies that 'the structure of any social representation is a construction and thus the outcome of some developmental process' (Duveen & Lloyd, 1990, p. 5). This sociogenetic perspective was the feature of the three above-mentioned concepts that distinguished Piaget's genetic epistemology from Moscovici's epistemology, as will now be shown.

Epistemic Subject versus Psychological Subject

Duveen and Psaltis (2008/2013) pointed out that even in his most sociological writings Piaget did not appreciate the constitutive importance of social interaction in the genesis of structures. In contrast, social interaction is the leading force in Duveen's sociogenesis, and particularly in microgenesis. Rather than adopting Piaget's model of the epistemic subject in the form subject–object in the child's development of knowledge, Duveen embraced the triangular ego–alter–object relation (Moscovici, 1972), making the constructivist position inherently social. The child does not acquire knowledge solely through his or her own reasoning, but he/she constructs knowledge in the dynamics of social life which involves values and ideas that are embedded in communication and social practices. The

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child–child–task/object is a fundamental unit of analysis in the studies of interaction and knowledge and an excellent example portraying the ego–alter–object triangular model of the epistemology of social representations. This epistemology assumes the totality of living experience embedded in, and accumulated through, history and culture.

The epistemology of living experience implies that in one sense, relations between the ego–alter are those of constraint and force, leading to compliance due to the authority of the other. In another sense, relations between the ego–alter capture trust and communication rather than in the constraint due to asymmetric relations and authority. Developmental, situational, cultural and societal constraints carry the symbolic value in social representations.

Equilibrium versus Development through Conflict

One of Moscovici's early influences was Wiener (1948) who, in his studies of cybernetics, explored logical relations between the individual and social groups. He showed that individuals do not create a group or community to achieve homeostasis, but that a society is created by numerous kinds of interactions among members and their modes of communication involving patterns, gestalts and configurations. The concepts of 'structuredness' and 'formness' in cybernetics thus fundamentally contrasted with concepts of 'elements' or 'stimuli' and with their aggregates that prevailed in positivistic and behaviouristic approaches at the time. Equally, these concepts contrasted with many kinds of interaction in social psychology that were characterised by the tendency for symmetry, homeostasis, reciprocity and equilibrium, all searching to establish or restore balanced states. For example, Kurt Lewin's group dynamics is underlain by the idea of homeostasis and equilibrium among interacting agents and driving forces encouraging social change and restraining forces that resist change (Lewin, 1947/1951). The driving and restraining forces both contribute to creating equilibrium. Piaget's concept of interaction, just like Lewin's interaction, places emphasis on equilibration of cognitive structures through accommodation and assimilation (Piaget, 1954).

In a series of articles published in the 1990s, rather than building on psychological and sociological concepts of interaction, Galam and Moscovici (1991, 1994, 1995) took as their point of departure *thermodynamics and statistical physics*, specifically the concept of *spontaneous symmetry breaking*. Drawing on electrodynamics, they discussed the breaking of symmetry as a more general phenomenon that is 'evidenced at

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several levels of reality from cosmology to biology' (Galam & Moscovici, 1994, p. 481). Both physical and biological systems emerge from spontaneous movements of matter, from its symmetrical to asymmetrical states – that is, from static to dynamic states. The concept of *symmetry* in modern physics retains its importance with reference to laws of invariance, and it still dominates certain fields in physics, for example, the theory of relativity (Einstein rejected the concept of asymmetry as being too complex). Nevertheless, *spontaneous symmetry breaking* has become one of the most important concepts in accounting for dynamic physical effects and has become widely discussed and researched. Interaction breaks invariances; when humans interact and become interdependent, homeostasis and symmetry change into asymmetric and diverse forms of interaction. Individuals have a capacity to switch from asymmetry to symmetry, from equilibrium to disequilibrium, from conformity to innovation, and vice versa. It is the breakdown of symmetry that initiates a dynamic order, an order that is evolving, encouraging innovative ways of thinking, differentiating and generating new patterns of knowledge, beliefs, images and activities (Galam & Moscovici, 1994).

Interactions in social representations are directed towards both symmetries and asymmetries. Symmetries lead to compromise and a relative stability of social representations and recall Durkheim's collective representations. Some forms of communication, such as rumours or information provided by the media, may seem to encourage the metaphor of the spread by contagion (Sperber, 1990) and relative inactivity. In contrast, asymmetries of knowledge and of perspectives in which humans are actively involved are likely to create conflict and tension, instigate communication and motivate innovation.

Pre-established Stages versus Dynamic and Open Systems

Finally, Moscovici rejected Piaget's perspective that mental structures are determined by pre-established stages. Instead, he was attracted by two kinds of new developments that were taking place during the 1950s and 1960s. One was the phenomenological perspective of Merleau-Ponty (1964) who understood child's development as a dynamic and open system in a holistic manner. Merleau-Ponty (1964) did not view the child's representations as being initially inadequate or irrational and only gradually, through the passage of cognitive stages, reaching mature and logical adult thinking. Instead, Merleau-Ponty emphasised that children's mental processes and activities are adequate to their 'lived experience' in which

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these processes and activities take place. The other development concerned newly emerging fields such as cybernetics, system theories and communications. Among these, Moscovici was attracted to the study of intricate interactions between humans and nature. Exploring the interdependence between nature and culture, humanity and animality, as well as nature as historical and humans as natural, Moscovici (1974/2012) postulated the concept of *biunique societies as a new episteme.* 'Biunique' implied the one-to-one relationship between each society or community and its specific natural environment. Both humans and nature transform one another in the dynamic and historical process that for Moscovici defined the ecological movement in the 1960s and 1970s. Just like Moscovici, the French philosopher Edgar Morin adopted this perspective in the ecological movement. Morin's epistemology of dialogical thinking and Moscovici's new episteme were motivated by the Hegelian/Marxian ideas of dynamic and historical interdependencies of antagonistic processes. The dialogical principle regards antagonistic processes as being united in a complementary way in a single reality, and so indissociable from one another. Whilst the classic scientific thinking strictly separated order from disorder, organised from disorganised states, and rationality from irrationality, Morin (2008, p. 19) does not view opposites as excluding one another. Instead, the logical core of dialogical complexity is to treat 'separability-inseparability, whole-parts, effect-cause, product-producer, life-death, homo sapiens-homo demens' as complementary in the Hegelian manner. Moscovici subscribed to an open logic based on living experience without any predetermined stages. The structure transforms itself in dependence on the newly selected, de-selected and re-selected features based on the oppositional nature of human thinking, such as hidden/apparent, involuntary/voluntary, inner/outer.

Moscovici and Morin reject 'hierarchy' as an organising principle of the system. For Moscovici, the alternative to 'hierarchy' is not anarchy, promiscuity or randomness, but 'heterarchy', which means that the tasks between individuals and groups are distributed to coordinate their actions in cooperation. Heterarchy presupposes a decentralised organisation which safeguards a degree of freedom and establishes a reflexive relationship between parts. As an example of heterarchy, let us recall an extreme event showing multiple self–other relations that followed the catastrophe of the Grenfell Tower fire in London on 14 June 2017 in which 72 people tragically died. Flora Cornish (2021), who has undertaken an ethnographic study of this catastrophe, showed multiple heterarchical relations between the self and members of the community and between the self, community and institutions. Cornish explained that while much literature focuses on

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'collective actions' as being successful, the experience of activism after Grenfell has been characterised by frustrating partial wins, inertia, delays and setbacks, or what she calls 'activism beyond hope and despair'. She described how the affected individuals transformed into activists demanding changes in public policies to ensure that such a tragedy would never happen again. Collective actions of survivors of the catastrophe and their struggle with institutions implicated by this event showed that activism is not modelled on a linear and hierarchical journey to succeed or fail, but is a frustrating heterarchical journey in which setbacks, glimpses of hope, delays and short steps forward all take pace simultaneously.

Conclusion

Although the constructivist epistemologies of Piaget, Goldmann, Moscovici and Duveen are linked by questions about the nature knowledge, I have tried to show in this commentary that these epistemologies are not 'the same'. Their responses concerning the construction of knowledge are based on different concepts of rationality which, in one case, are answered in 'cognitive' terms and in the other case include both 'cognitive' and 'non-cognitive' characteristics. Such a broad distinction between constructivist epistemologies, however, requires further stipulations, because specific research and professional problems demand different epistemological arguments. Let us consider two examples which show that what is meant by the 'same' or 'different' epistemology depends on the problem with which the researcher is concerned in the concrete here-and-now.

In one context, Duveen (1997/2013) stated that Moscovici and Piaget shared the same epistemological stance. He made this claim in the context of Piaget's and Moscovici's defences and elaborations of their constructivist positions, arguing against empiricism or a priori rationalistic approaches: both Piaget and Moscovici insisted that human world is constructed from interactions between the individual and environment, and the term 'genetic' expressed the constructivist epistemological positions that they both held. To that extent it was meaningful to state that Piaget and Moscovici shared the same epistemological stance.

In another context, when Duveen was exploring (e.g. Duveen, 1984/2013; Duveen and Psaltis, 2008/2013) the epistemology of social representations *within* in the context of constructivism, he expressed doubts about genetic epistemology as formulated by Piaget. Piaget's constructivist epistemology was concerned only with the epistemic subject and not with the psychological subject, and this seriously reduced the relevance of

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genetic epistemology for social representations. Duveen kept raising the perspective of Piaget's differentiation between the epistemic subject and the psychological subject throughout his career, both defending and critiquing Piaget's perspective (see also Psaltis, Part I in this volume).

In this commentary I chose this latter case in order to contrast constructivist epistemologies of Piaget/Goldmann (based on the subject–object interaction) and Moscovici/ Duveen (based on the subject–other–object interdependence). I focused on their diverse perspectives in relation to three concepts, namely epistemic *versus* psychological subject, equilibration *versus* the development through conflict, and linear or continuous development *versus* discontinuity. Both kinds of epistemology refer to themselves as dialectic. Piaget and Goldmann conceive their epistemologies as dialectic because they emphasise evolution and the transformation of knowledge. Just like the dialectic of Marx or Hegel, they assume the hierarchical development of less advanced into more progressive stages. These kinds of dialectic are based on the idea that evolutions and histories strive towards predetermined goals (for details of 'histories' with a goal, see Marková, 2003, pp. 21–23). For Piaget, the dialectic hierarchical progression is completed when the child achieves formal operations.

Moscovici rejected dialectics based on the development in stages and hierarchies. He and Morin (see earlier discussion) argued that hierarchies are not organising principles of living systems. Instead, processes between individuals and groups are organised as 'heterarchies' – that is, decentralised organisations which safeguard a degree of freedom and establish reflexive relationships among components of the system. Moreover, the triadic self–other–object relation presupposes a communicative interdependence. Communication and dialogue are open processes that cannot be organised into hierarchies, and one cannot predict where the development will lead. This is one of the most important features that distinguish dialectics with a predetermined goal from dialogicality as an open system leading to undetermined events. As Michael Bakhtin insisted, the last word has not yet been spoken. Social representations, as Moscovici and Duveen showed, develop in and through dialogue.

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