
Dialectical inferences in the ontogenesis of social representations

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Alicia Barreiro

University of Buenos Aires and CONICET (National Scientific and Technical Research Council)

José Antonio Castorina

University of Buenos Aires and CONICET (National Scientific and Technical Research Council)

Abstract

This article deals with a possible collaboration between two disciplines: developmental psychology and the theory of Social Representations (SR). The latter takes the study of the ontogenesis of social representations as a central issue, even though the explanation of this process is still inadequate. The objective of this paper is to analyse the potential found in the category of dialectical inferences, as formulated by Piagetian psychology, to act as a tool in explaining the psychological dynamics implied in the ontogenesis of social representations. We first present dialectics in the sense of an inferential process in the individual's construction of new meanings or concepts. Secondly, we analyse the research that has studied the ontogenetic processes of SR, interpreting its results by appealing to dialectical inferences. Lastly, we examine the theoretical meaning of the research on the ontogenesis of SR.

Keywords

developmental psychology, dialectical inferences, ontogenesis, social representations

Within the framework of Social Representations theory (SR), the ontogenetic corresponds to a level of analysis in the formation of SR. According to Duveen and Lloyd (Duveen, 2001; Duveen & Lloyd, 1990) social representations can be described as genetic structures, since their construction implies developmental processes in which it is possible to distinguish three different analytical levels: sociogenesis, microgenesis, and ontogenesis. Specifically, the ontogenetic level is concerned with the study of “a

Corresponding author:

Alicia Barreiro, Pedro Morán 3212 4 20, Ciudad Autónoma de Buenos Aires, (C1419HKF), Argentina.

Email: abarreiro@flacso.org.ar

process through which individuals re-construct social representations and in doing so they elaborate particular social identities” (Duveen & Lloyd, 1990, p. 7). Children are born in a world that is already constituted by SR, shared by their parents and other adults. This way, in becoming social actors they acquire their community’s SR. Nonetheless, this process is not limited to childhood, but takes place whenever individuals become part of different groups and appropriate the SR constituted within them.

In postulating that developmental psychology and the theory of SR are two sides of the same discipline, Moscovici (1990, 2001) also contributed to the analysis of the ontogenetic process of SR. On the one hand, he established that SR derive from social interactions and provided reasons why it is impossible to explain them through individual psychology. On the other hand, he linked social beliefs with individual experience, going against the intellectual current that dissociates the individual from society. However, he did not specifically look into the process by which individuals make SR their own. This is probably due to his emphasis on differentiating SR from the individual representations studied by cognitive psychology. Therefore, Moscovici’s (1990) emphasis on the specific focus of both social psychology and developmental psychology may have influenced the present lack of empirical research dedicated to the study of the ontogenesis of SR. In agreement with his approach, the social nature of the composition of human consciousness should be studied by comprehending the individual internalisation of the social experience. It is possible to distinguish different moments in this process, as well as specific operations through which different consciences are articulated between each other and with the culture as a whole. Notwithstanding, for Moscovici (1990) this analysis lies beyond the focus of social psychology, given that it remains an object of study for developmental psychology.

Duveen (1994) points out that the challenge for social psychologists is precisely to adopt a genetic approach when tackling SR; while for developmental psychologists the challenge lies in explaining how children become social actors. In other words, both disciplines study the same phenomenon, but the former does this on a positional or collective level of analysis, while the latter adopts a viewpoint centred in intraindividual psychological processes (Doise, 1982).

Our inquiry will deal with the ontogenesis of SR assuming the compatibility between developmental psychology and social psychology, based on common ontological and epistemological principles (Castorina, 2010; Duveen, 2001, 2007; Leman, 2010; Psaltis, Duveen, & Perret-Clermont, 2009). These principles consist, fundamentally, in assuming that the studied psychosocial phenomena are constitutively linked to culture. That is, we assume the revised Piagetian perspective, which affirms that meaning is constructed and expressed in practice with others, that subjects actively understand the world they are a part of, and that individuals are constitutively related to society (Castorina, 2010; Kitchener, 2009; Martí, 2012; Overton, 2006a; Psaltis & Zapiti, 2014).

We will therefore not be dealing with “two sides of a single discipline” (Moscovici, 1990), but rather with an explicit collaboration between two different disciplines, with their own methodologies and theories. Although SR are the object of study of social psychology, their ontogenesis implies psychological processes traditionally analysed by developmental psychology. Thus, it requires that the process of assimilation by individuals be studied in interdisciplinary collaboration. Even though the research would be

enriched by complementing both disciplines' perspectives, this kind of approach is scarcely found (e.g., Barreiro, 2009, 2012; Leman & Duveen, 1996; Lloyd & Duveen, 1990; Psaltis & Duveen, 2006; Psaltis et al., 2009). Therefore, there have not been great advances in explaining the development processes involved in the appropriation of SR.

The study of the ontogenesis of SR assumes placing the development of representational forms in the limelight, as subjects elaborating and modifying their cognitive structures throughout the process by which they appropriate SR. In this sense, specifically in Piaget's later work (1974, 1980), developmental psychology has devised an empirically based theory about the dialectical inferences involved in the construction of new meaning through the individual's activity with objects of knowledge. The present article proposes that considering dialectical inferences as cognitive instruments might explain the mechanisms responsible for the transformations of SR during their appropriation. Here it is important to clarify that our paper suggests using dialectical inferences differently than is originally done in genetic psychology. That is, they are employed to explain the process by which individuals reconstruct the fields of meaning of SR as they are appropriated during ontogenesis.

Therefore, this paper's objective is to analyse the potential of the category of dialectical inference as a tool, when considering the psychological processes implied in the ontogenesis of SR. We will first present a reading of dialectics as an inferential process within the construction of new meaning or concepts by individuals. We will then analyse the studies on the ontogenetic processes of SR, interpreting their findings by appealing to dialectical inferences. Finally, we will provide a critical analysis of the possibilities and difficulties that arise in the research on the ontogenesis of SR, as well as their implications for future research.

Dialectical inferences in the construction of new meanings

In the first place, when talking about dialectics one refers to an extensive history of philosophical thought: from China and Classical Greece, passing through modern philosophy with Hegel and Marx, up to contemporary debates on its features, scope, limits, and universality or contextual adaptation to the processes being studied (Jameson, 2010). In spite of the considerable differences between historical periods and thinkers, it is possible to give a general outline of dialectics in terms of a minimal meaning the various versions have in common. They all share the dynamism and movement of a system, induced by tensions—in many cases, oppositions—in its internal relationships. A dialectical change occurs where the interactions intervene decisively in changing the system. For example, in Piaget's (1980) theory, these interactions would take place between action schemas or between action schemas and objects, which would then lead to transformations in the individual's concepts. Likewise, in Marx's (1894/1971) theory the interaction between the use value and exchange value allows for transformations in capitalism. In a general sense, dialectics therefore refers to the process of self-movement in the system in question, which allows for the construction of novel events (Castorina & Baquero, 2005).

In Piaget's (1980) theory dialectics acquires a new specific meaning as it is used to refer strictly to the constructive inferential process of the emergence of novelties in

logical thought systems. The establishment of new meanings assumes that previously existing ones are included in the new one constructed by this movement. Thus, a spiraling process of meaning construction takes place. The construction of new meanings is triggered by the natural contradictions produced by problems the subject is not yet able to solve. These contradictions, as defined by Piaget (1974, 1980), are cognitive conflicts resulting from inconsistencies between the schemas or concepts available to the subject, employed to understand the object of knowledge. These conflicts express moments of significant imbalance in the development of the individual's system of knowledge. However, they constitute only an instant of the broader equilibration process of knowledge systems, because the mere existence of these conflicts does not necessarily lead to overcoming them. Cognitive development is actually produced when the conflicts are overcome (Piaget, 1975). Therefore, cognitive conflict in itself is not the true engine of the development of knowledge, but constitutes merely the possibility of this development occurring. In other words, the reorganisation of systems of knowledge presupposes the existence of imbalances provoked by conflicts. It is because of them that processes of re-equilibration are activated, compensating affirmations with negations by means of reflective abstractions and generalisations (Piaget, 1975, 1977, 1978). Contradictions are a part of a more general process that involves constructive mechanisms producing cognitive novelty. These constructive mechanisms are what Piaget (1980) considered to be truly dialectical. This is why, from this point of view, it is possible to deal with the inferential process leading to the construction of novelties, without having to refer to the contradictions that take place in a previous logical step.

Piaget (1980) thereby reconsidered dialectics in terms of a—non-deductive— inference leading either from one conceptual system to another more advanced system, irreducible to the former, or to a conclusion from premises that do not include it. Thus, Piaget defended the alternation between deductive inferences, characteristic of thought on its structural level, and dialectical inferences that allow for interpreting the dynamics of cognitive development when explaining how knowledge is derived by individuals from other knowledge as they interact with objects of knowledge. This way, Piaget (1980) considers dialectics as the inferential facet in the equilibration of cognitive systems.

Thanks to this process, which allows passing from one system of meanings to another that surpasses and includes it, it is possible to conceive the emergence of cognitive novelties. Although Piaget (1980) described five modes of dialectical inferences, here we will only describe those we consider to be pertinent for the analysis of the available research on the ontogenesis of SR: the process of undifferentiation, differentiation, and integration of systems of meanings; the articulation of systems of meanings that previously existed independently; and the relativisation of properties that at first were considered by the subjects to be absolute.¹ Additionally, it is worth mentioning that one constructive process of meaning can be examined from more than one dialectical mode, as we shall see, given that each of them refers to a different analytical perspective on a single process.

A crucial inference for the development of new meanings is the shift from the initial undifferentiation (with respect to a degree of knowledge) of the properties attributed to an object, to their differentiation and ultimate integration. To study the way this mode of dialectical inference works, Piaget (1980) recalls the well-known experiment on the

articulation of spatial projections, where a child is placed in front of a model of three mountains and is asked what they would look like from various angles or spatial projections. Younger children imagine that on the opposite side from where they are, the mountain chain looks just like how they see it from their present location, that is, the mental viewpoints they adopt remain undifferentiated. They get to differentiate the possible perspectives only gradually, until they construct an operational system that admits all possible perspectives. For instance, the inversion of right and left or front and back as they turn 180 degrees around the mountains. Thus, the children can simultaneously consider the reciprocity of the relationships at stake, that is, of the spatial projections. It is an inferential process that goes from the undifferentiation of the projections to the differentiation and integration of the viewpoints. The elaboration of these inferences depends on the mechanisms of reflective abstraction and generalisation, broadly developed in Piaget's later work (1977, 1978), but in line with this paper's argument will only be mentioned.

The dialectical movement of undifferentiation, differentiation, and integration that characterise this type of dialectical inference is not only found in the formation of general or operational systems of knowledge studied by Piaget. It is also found in the genesis of strictly conceptual systems specific to fields of knowledge that interest psychologists and educators today (Castorina & Faigenbaum, 2002; Martí, 2005). In the field of social knowledge, for example, the levels of conceptualisation in the shaping of early childhood ideas on political authority have been reconstructed (Castorina & Aisenberg, 1989). In this developmental process, first the early child's hypothesis that the president is a moral benefactor, dedicated to carrying out what is best for the country and to intervene in times of emergency, was identified. In the version of an intermediate stage, the president becomes an institutional benefactor: he or she does society good through rules while supervising the activity of others, with the power of final decision over the laws. Finally, for the few children who offer more complex arguments, the president does not *have* to do good as a result of a virtue that is his or her own, but as a result of the contract that binds society. Also, for them the president's activity is regulated by social norms and moral principles. In brief, this conceptual construction on political authority begins in a state of undifferentiation between morality and politics, which then gives way to an intermediary stage where political and moral activity are differentiated. This differentiation is expressed in that the children endow the president with the function of regulating the laws. Finally, there is a movement of integration as the subjects come to think that certain moral principles are required to elaborate laws, and that there are also norms regulating the president. A president who, at the same time, is obeyed by people given that he or she is caring for the greater good.

Another mode of dialectical inferences studied by Piaget (1980) is the articulation of elements or systems formerly separated or independent of each other. For example, Piaget (1980) observed this was the case with mathematical operations such as adding and subtracting in an experiment where he asked the participants to balance groups of tokens with unequal quantities (e.g., 3, 5, and 7 elements). The participants began by taking two elements away from the group of five and adding them to the group of three, and then vice-versa, which brought them back to the imbalance between the groups. When children act this way they only bear in mind addition and overlook subtraction. They later begin to articulate addition with subtraction, but only when they are able to

use reserve elements, available outside the groups in question. The children are finally able to solve the problem, that is, able to equal the collections of elements compensating for the differences, when coming to terms with the idea that adding is relative to subtracting. One implies the other; $+n$ and $-n$ are simultaneous. This constitutes something akin to a unit of opposites, in so far as two opposed operations refer to each other and are executed in coordination in order to obtain the result.

This articulation of previously independent systems is a type of dialectical inference and can also be identified in the construction of specific fields of knowledge. For example, in the results obtained by Carey (1999) on the biological field of knowledge, it is evident that a conceptual reorganisation of the children's ideas on a "living being" takes place, consisting of coordinating originally independent ideas. For 4-year-old children plants and animals are ontologically separate entities: the former are a natural kind without behaviour, while the latter are a natural kind with behaviour. Around 10 years of age, these entities coalesce by a process of inference that coordinates the independent entities into a common ontological unit: living beings.

Finally, by means of the dialectical inference mode of relativisation, a property previously considered by a subject to be absolute or isolated from others becomes a part of a system of interdependencies. In the experiments on seriation, differences in size between objects are first considered by children as absolute, "the large ones and the small ones." Yet, years later they are conceived in relative terms, as parts of a system, a seriation where any object is at the same time larger and smaller than others (Piaget, 1974). In general terms it could be stated that the construction of new concepts is to a great extent a matter of broadening the notion's referent, along with a relativisation of its properties. In the case of the aforementioned study on political authority, the president possessed the inherent moral attribute of doing what was right by everyone. Whereas on the third level of conceptual construction, it becomes clear there is a shift from a substantialist version to a relational version of these attributes. The president tends to act for the greater good, but according to the norms that regulate his or her functions, given by the relations within the political system.

It is worth noting that the features of the dialectics offered here are not the results of an a priori philosophy, but rather of a cautious experimental inquiry into the development of certain knowledge. Its credibility depends on its ability to generate new hypotheses that may account for cognitive novelties and their verification (Castorina, 2010). In summary, the study of dialectical inferences has contributed to pinpointing how one conceptual system is transformed into another, inferring novelties by means of relativisations and reorganisations.

The ontogenesis of the social representations of gender

As outlined in the introduction, the ontogenesis of SR refers to the process by which individuals—not just children—appropriate the cultural knowledge available in the group they belong to when becoming social actors (Duveen & De Rosa, 1992). In this vein, the empirical work by Lloyd and Duveen (1990) describes the ontogenesis of the SR of gender. The authors understand gender as a semiotic system, where the terms *masculine* and *feminine* are associated with values, ideas, and specific practices. In other

words, those categories frame sets of objects and personal trends specific to each gender. This way, when someone says that a doll is a feminine toy and a car is a masculine toy, attributions are made based on the social significance of these objects and not on their physical characteristics.

Lloyd and Duveen (1990) point out that babies are born in a social world structured by adults, where gender representations pre-exist them. During the first six months of life they do not yet assimilate gender meanings, therefore they are signifiers for adults, because of their biological characteristics. It follows that although certain toys may have a different meaning for adults; babies show the same interest towards any of them. With the appearance of the semiotic function children expand their activity in controlling and regulating gender expressions, in such a way that the externalised identity (bestowed by adults) proper to the sensorimotor stage starts to be internalised at the age of two.

According to Lloyd and Duveen's (1990) findings, in order to take on social gender markings children must be able to differentiate signifier from signified (signs and symbols). This requires progress in terms of the undifferentiation that characterises sensorimotor activity (signals). In order to take on gender identity, the subject's cognitive development—described by Piagetian psychology (Piaget, 1959)—involves a process of differentiation that comes in tandem with the development of the semiotic function. Thus, boys of approximately two years of age choose to play with toys socially marked as masculine more than do girls, because it allows them to express a clearly differentiated identity. In contrast, girls know the social tags of objects but do not use them to express differentiated gender identity (Duveen, 2001). Therefore, boys' identities are not exclusively internal elaborations, but reconstructions of collectively constructed meaning. In this research it is not only evident that boys internalise social representations, but also that during this process they construct particular identity standpoints in relation to those representations. Even in a single individual assuming his/her identity there are externalised identity elements (the signals) as well as internalised elements (the signs).

These findings clarify that the ontogenic process in children, as opposed to what happens in adults, calls for considering the development of the cognitive instruments implied in handling different signifiers (signals, symbols, and signs). That is, the elements constitutive of representation. Considering the development of semiotic processes in children allows for understanding the genesis of the gender representation processes, through which the individual gains access to the gender significations agreed upon in the children's community.

Lloyd and Duveen (Duveen, 2001; Lloyd & Duveen, 1990) employed categories borrowed from genetic psychology, such as construction, semiotic function, and sensorimotor signals. However, they did not take the categories from the Geneva School's functional research (R. L. Campbell, 2009) into account, as is the case with dialectical inferences. Particularly when interpreting the results on the ontogenesis of gender SR found by Lloyd and Duveen (1990), we could call upon the dialectical mode of undifferentiation, differentiation, and integration. Before developing the semiotic function, children cannot differentiate between the self and the world, because they have not yet formed a sense of agency or a social identity. Here a possible interpretation is that there is a sensorimotor undifferentiation between signifier and signified. That is, there is no representation of an absent object, but rather there is a bond where one is part of the other. At first, when

babies spend more time playing with certain objects this would not be due to identifying them with a gender representation, but instead the behaviour would be encouraged by the adult's representations. Next, accessing the semiotic function would be similar to installing a differentiation between signifier and signified. That is, objects would begin to represent gender for the children—for instance guns become toys for boys and not for girls. Finally, the achieved differentiations come together in a gender identity, or this identity is constituted by a unit of multiple semiotic differentiations. At this point “being a boy” for boys would equal assuming the set of signifiers socially marked as characteristic of that gender. When we speak of a process constituted by dialectical inferences, we mean that the transition from exterior identity (attributed by adults) to assumed identity (or internalised) would be a transformation of gender meanings. Those are at first indistinguishable from the signifiers, then become distinct and for the eyes of children constitute social gender markings, and are finally integrated when the complete set of social markings becomes an assumed identity. This way the social representation of gender would be activated in children as their identity.

The ontogenesis of the social representation of justice

Aside from Lloyd and Duveen's (1990) research, we know of only one other research project dedicated specifically to the study of the ontogenesis of SR. This study was carried out by Barreiro (2013), who analysed the individual reconstructive activity within the ontogenetic process of the SR of justice. Contrary to Lloyd and Duveen's (1990) work, its approach hinges on psychological analysis. That is, however, acknowledging that this phenomenon is shaped by the individual's social position, and suggesting that different levels of analysis within social psychology (Doise, 1982) should be articulated.

Additionally, Barreiro (2013) points out that developmental psychology has a long-standing tradition in the study of the psychogenetic process of the notion of justice, ever since Piaget's (1932) research on children's moral judgements (Damon, 1990; Kohlberg, 1981). From this point of view, distributive justice is considered as the most rational of moral notions, given that it is based on a main property of operational thinking: reciprocity. Moral development is thereby conceived as an uninterrupted process of increasing balance towards operational rationality. Thus, the work on the notion of justice in the Piagetian research tradition was based on the hypothesis of an isomorphism between the development of operational thinking and the conceptions of justice, without taking into account the common sense used by people in their ordinary lives (Moscovici, 2001; Wagner & Hayes, 2005).

In this vein Barreiro (2013) emphasises that the notion of justice does not have an unambiguous meaning, even in debates on moral philosophy. Therefore, different ways of understanding justice coexist in line with different ideologies and social interests (e.g., socialism, feminism, and liberalism). And so it is that different social groups call upon the law to legitimise their interests and criticise power relations present in confrontations with other social groups (T. Campbell, 2001). In spite of the plurality of possible meanings, recent studies show that both Buenos Aires inhabitants and Argentina's most read newspaper represent hegemonic justice (Duveen, 2007; Moscovici, 1988) in a retributive manner (Barreiro, 2013; Barreiro et al., 2014). The country's most important newspaper

mentions justice mainly in institutional terms with a negative assessment. It demands more severe sanctions to combat the increase in delinquency, placing the population in a continuous state of so-called “insecurity” (Barreiro et al., 2014). The same representation can be found in youths and adolescents, who associate the term “justice” with laws, punishment, delinquency, judges, and impunity (Barreiro et al., 2014; Morais Shimizu & Stefano Menin, 2004).

To inquire into the ontogenesis of this SR of justice (Barreiro, 2013), a developmental approach was used by interviewing boys and girls as well as adolescents from different socioeconomic backgrounds in Buenos Aires. During the interview, the participants were asked to construct narratives about how justice formed part of their daily lives. Three basic representations of justice were identified: retributive, utilitarian, and distributive. The retributive representation refers to justice in terms of punishment or reward proportional to the actions carried out. In the utilitarian representation, justice is understood in terms of “bringing happiness to people,” where “good” is a synonym for happiness. In the distributive representation justice is a form of distribution based on norms equally applied to everyone implicated in a situation, without favouritism or preference. The results show that the utilitarian representation of justice is present in all age groups. Also, the appearance of retributive representations increases with the participants’ age and the distributive representation features poorly throughout all age groups compared to the other two representations.

In the course of cognitive development these basic representations, which at first emerge as independent argumentative systems, merge to form a dialectical movement from independency to articulation, and also relativisation. This gives way to four different representations: utilitarian representation in a distributive situation; distributive representation in a retributive situation; utilitarian representation in a retributive situation; utilitarian representation in a situation of retributive distribution (Barreiro, 2013). Upon integrating with utilitarian representation, retributive representation attains the highest frequency in the age group of 10 to 17 years. For most of the adolescents who participated in this study justice is what allows people to live happily and the way to achieve this is through punishment.

Thus the representations that were formerly independent of each other are integrated and their properties start to depend on one another. At the same time they constitute an example of conceptual relativisation, in that the properties that characterise them are defined by their relationships with the remaining elements in the system that integrates them. In the case of SR of justice, both retributive and distributive justice become a method for utilitarian justice. They are, in other words, turned into a strategy for achieving happiness for the greatest number of people. This is how the construction of new meanings in the field of justice as an object of representation, follows the path from initial independence of its characteristics and properties to integration into a more complex representation. This dynamic of meanings allows for explaining the development process that lets people achieve a broader and more abstract understanding of the SR of justice pertinent to their social group.

Therefore, the ontogenesis of SR of justice as described by Barreiro (2013) involves a meaning construction process, principally manifest in a process of integration and dialectical relativisation of the representations (Piaget, 1980). It could be argued that the

interdependent representations express the development of novelties, in the sense that the construction of a new form of representing justice includes and transcends the three basic representations (utilitarian, retributive, and distributive). As we have said, the more complex representations not only provide a definition of justice (e.g., justice is making people live happily), but also a method of achieving it (e.g., administering punishment or rewards according to personal merit).

In another vein, these interdependent representations refer to a broader field of phenomena. Subjects think about the way social or institutional systems involving different individual and social roles work, beyond their direct personal experience. The latter is precisely what smaller children base their representations on. The fact that none of the representations of justice are abandoned during development indicates a strong continuity of the collective meaning in the individual conceptualisation processes. Moreover, the process of construction of meaning, in this case of integrated representations, can be considered as the result of a genuine inference. That, for instance, goes from isolated representations of retributive and utilitarian justice to a new representational unit that includes and transcends them.

Furthermore, it is likely that the process of interdependence and relativisation during the ontogenesis of the representation of justice may occur simultaneously with cognitive decentration. This is the process that allows subjects to include different social and personal perspectives in their representations of justice. Hence, the growing complexity expressed within the moral sphere, as in other areas of social thought, allows passing from the concrete characterisation of personal experience to the more abstract thought about aspects of a social system (e.g., Barreiro, 2012; Castorina & Lenzi, 2000; Delval & Kohen, 2012; Duveen, 2013; Faigenbaum, 2005; Kohlberg, 1981; Nucci & Gingo, 2012; Piaget, 1924). This cognitive process takes place during the ontogenesis of SR, allowing children to reconstruct them by means of their own intellectual activity.

It is important to note that the retributive representation of justice does not correspond to any development stage of thought in particular, since it is present in all age groups (Barreiro, 2013). Actually, retributive representation becomes viable through persistent participation in specific interactions and discussions that highlight this particular meaning, limiting the construction of other possible meanings.

To summarise, the conceptualisation process in the ontogenesis of SR of justice implies the construction of novelties, framed by collective constraints (inherent to SR) and cognitive constraints (what subjects can achieve depending on their development). These constraints condition the construction of specific meanings of the social object, limiting the construction of alternative meanings. There would be novelty only for the individual actors of the ontogenesis, not for the group to which they belong as a whole, where SR are already installed.

The individual's reconstructive activity in the ontogenesis of social representations

We have presented two studies dealing with the ontogenesis of SR (Barreiro, 2013; Lloyd & Duveen, 1990) and have seen that in both cases developmental psychology has provided interpretations that allowed a more precise description of the process. In order

to describe the process of appropriation of SR it is necessary to make explicit how psychological mechanisms render this possible. Here it should be clarified that the psychology of SR has not dealt with individual psychological mechanisms, due to how it approaches its problems. However, upon inquiring about the individual's assimilation of SR, involving the process by which individuals constitute their identity and structure the social world from birth, social psychology starts to veer towards developmental psychology. In any case, a situation of great interest arises here, as it leads to reflecting on how these two disciplines could cooperate, each from their own perspective, when dealing with a common issue.

As has been shown above, developmental psychology will be an instrument in advancing our understanding of the ontogenesis of SR, while SR have become restrictive conditions for studying the process of individual construction of social notions (Castorina, 2010; Psaltis et al., 2009). This collaboration is possible because both research programmes share the same relational epistemological framework (Overton, 2006b). The dialogue between disciplines is made possible by their compatibility, based on shared ontological and epistemological philosophical assumptions. We can then assert that there is a relational epistemic framework, brought about by the dialectical interaction of the terms at hand. In the case of developmental psychology this dialectical relation is expressed in the relation between individual and society or subject and object (which is at the same time restricted by social representations). In the case of SR theory, this dialectical interaction is expressed in the relation between individual and society in the frame of the subject/alter/object triad (Castorina, 2013).

In Lloyd and Duveen's (1990) research on the ontogenesis of gender SR, the developmental psychological resource is Piaget's theory of the formation of sensorimotor and semiotic instruments, as a precondition for the process of knowledge building. Accordingly, the authors take into account the constitutive processes of the semiotic function. These are general in nature, as they are involved in the construction of any kind of knowledge (whether logical, mathematical, or social). These instruments give way to the genesis of truly representational knowledge, based on differentiating signifier from signified (whether these are images, linguistic signs, or symbols).

In this sense Lloyd and Duveen (1990) present the differentiation and integration processes implicated in the psychogenesis of the semiotic function, as they help in acquiring gender meanings. This is supported by the formation of the differentiation between signifier and signified. Cognitive development thereby allows for ontogenesis, because the development of the semiotic function is an indispensable condition for children to assume their gender identity. However, the authors have not been dedicated to clarifying the dynamics or process by which SR are reconstructed when the social object marked by adults is assimilated. Even though the authors recognise those processes of differentiation and integration in their empirical data, they have not characterised them explicitly. In this vein it is worth recalling that resorting to dialectical inferences corresponds to a level of Piagetian theory that is not considered by Duveen. This would nonetheless provide a more precise explanation of the process of ontogenesis of SR, as it emphasises the individual's psychological dynamics through which the subjects actively reconstruct SR when they assimilate them.

Meanwhile, Barreiro (2013) explicitly uses the processes of dialectical inference to explain the reconstruction of meanings in the ontogenesis of SR of justice. Through working with interviews, in the discourse of adolescents it could be identified as interdependence of representations into the subjects' narratives. That is, articulating fields of meaning to acquire an understanding that subsumes retribution to utilitarianism as a means to an end. In so doing the previously differentiated significations become relative to each other. The analysis in this investigation is concerned with the personal process of elaborating arguments contained in the narratives, thus providing access to the transformation of the SR during their ontogenesis. Nevertheless, having limited the analysis to the subjects' discourse excludes the social ways of enacting SR in everyday interactions with others (Jodelet, 1989; Zittoun, Duveen, Gillespie, Ivinson, & Psaltis, 2003). That is, in patterns of interaction or habits that express meaning. Furthermore, the discursive approach does not contemplate the existence of unreflective elements of SR that lie beyond the scope of discourse (Flament, Guimelli, & Abric, 2006).

One can say regarding Lloyd and Duveen's (1990) research that not having considered the personal perspective on gender it has not taken into account a structural aspect of the appropriation of any symbolic resource, including SR. In recent years, Jodelet (2008) has enriched SR theory by offering a particular approach to the issue of subjectivity. She understands the relation between SR and subjectivation, among others, on the level of the production of knowledge and meaning. By doing so the subjective dimension is included in the study of SR, in addition to social interaction and transsubjectivity. In the present article, we refer to subjectivity in terms of an inquiry on the dynamics subjects undergo in assimilating SR and reconstructing them. Jodelet (2008) proposes, in other words, to consider SR in their subjective dimension, referred to as the intervention of cognisant and emotional processes susceptible to discursive expression. This dimension covers the singular aspects with the experiences proper to each individual's history, but it also includes certain general processes constituting the individual construction of a collective belief. It is in this sense that this work is proposing a dialectics of meanings.

To sum up, focusing on the dynamics of meanings and the cognitive processes by which subjects actively construct and reconstruct entails delving into the mechanisms involved. This article has tried to show the potential explanations provided by appealing to the processes of dialectical inferences in order to account for the individual's reconstructive activity during the process of assimilation of SR. This resource allows us to precisely capture the transformations of collective meanings throughout the process in which subjects actively assimilate them. Specifically, it allows for approaching a kind of cognitive activity involved in the processes of the psychological activation of SR (Duveen & Lloyd, 1990). Future research will have to corroborate our interpretative hypotheses empirically, as well as it needs to continue studying other cognitive mechanisms that might be involved in the ontogenesis of SR, such as abstraction, generalisation, thematisation, or analogical thought.

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Note

1. Neither the modes of subject–object interaction, nor the circle from preactive to retroactive relations between concepts will be considered here.

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Author biographies

Alicia Barreiro is a researcher at CONICET (The National Scientific and Technical Research Council – Argentina) and teaches in the Faculty of Psychology at the University of Buenos Aires. She has published several papers about the construction of social knowledge from the perspective of developmental and social psychology. Email: abarreiro@flasco.org.ar

José Antonio Castorina is Consultant Professor in the Faculty of Philosophy and Letters at the University of Buenos Aires. He is a researcher at CONICET (The National Scientific and Technical Research Council) and Chief Director for the Research Institute of Education Sciences at the University of Buenos Aires. He has published several books and articles on the psychological development of social knowledge and on epistemological problems of educational and development psychology. Email: ctono@fibertel.com.ar