Piaget J. (1959) The language and thought of the child. Third edition. Routledge & Kegan Paul, London.

Piaget J. (1924) Etude critique: L'expérience humaine et la causalité physique de L. Brunschwicg. Journal de psychologie normale et pathologique 21: 586–607.

Piaget J. (1926) La représentation du monde chez l'enfant. Alcan, Paris.

Piaget J. (1929) The child's conception of the world. Routledge & Kegan Paul, London.

Piaget J. (1936) La naissance de l'intelligence chez l'enfant. Delachaux & Niestlé, Neuchâtel.

Piaget J. (1953) The origins of intelligence in the child. Routledge & Kegan Paul, London.

Piaget J. (1937) La construction du réel chez l'enfant. Delachaux & Niestlé, Neuchâtel.

Piaget J. (1954) The construction of reality in the child. Routledge & Kegan Paul, London.

Piaget J. (1947) Avant-propos de la troisième édition. In: Piaget J., Le jugement et le raisonnement chez l'enfant. Delachaux et Nestlé, Paris: 5–10.

Piaget J. (1953) Logic and psychology. University of Manchester Press, Manchester.

Piaget J. (1961) Les mécanismes perceptifs: modèles probabilistes, analyse génétique, relations avec l'intelligence. Presses Universitaires de France, Paris. English translation: Piaget J. (1969) The mechanisms of perception. Routledge & Kegan Paul, London.

Piaget J. (1966) Part two. In: Beth E. W. & Piaget J., Mathematical epistemology and psychology. Reidel, Dordrecht: 131–304.

Piaget J. (1967) Logique et connaissance scientifique. Gallimard, Paris.

Piaget J. (1978) What is psychology? American Psychologist 33: 648–652.
► http://cepa.info/5558

Piaget J. (2006) Reason. New Ideas in Psychology 24: 1–29.

Popper K. R. (2012) The two fundamental problems of the theory of knowledge. Routledge, London. German original "Die beiden Grundprobleme der Erkenntnistheorie" published in 1979.

Smith L. (1993) Necessary knowledge: Piagetian perspectives on constructivism. Lawrence Erlbaum Associates, Hove UK.

Smith L. (2006) Norms and normative facts in human development. In: Smith L. & Vonèche J. (eds.) Norms in human development. Cambridge University Press, Cambridge: 103–137.

Smith L. (2009a) Piaget's developmental epistemology. In: Müller U., Carpendale J. & Smith L. (eds.) Cambridge companion to Piaget. Cambridge University Press, Cambridge: 64–93.

Smith L. (2009b) Reading Piaget in English. In: Müller U., Carpendale J. & Smith L. (eds.) Cambridge companion to Piaget. Cambridge University Press, Cambridge: 28–39.

Smith L. (2017) Knowledge in mind: Piaget's epistemology. In: Carré D. M., Valsiner J. & Hampl S. (eds.) Representing development: The social construction of models of change. Routledge, London: 166–178.
► http://cepa.info/5559

Leslie Smith is an Emeritus Professor at Lancaster University currently working on his book *Piaget's Developmental Epistemology* for publication by Cambridge University Press. His main interests are the English translation and the rampant mistranslation of Piaget's work, and Piaget's major problem, the historical origin of atemporal necessary knowledge.

Theorization and Relationships with Time: Some Reflections

Marcelo Dos Santos Mamed
ORCID: 0000-0002-6906-821X
University of Lausanne, Switzerland
marcelo.dossantosmamed/at/unil.ch

> Abstract • In this commentary, I would like to know more details of the role of temporality and the social dimension of the body in Piaget's early works, notably on the content of the notebooks written by Piaget and his wife, Valentine. Through diachronic-synchronic concepts drawn from linguistics, I propose a discussion of the methodological problems of Piaget's observation method, as presented by Ratcliff. In principle, taking a look at the methodological steps through these concepts could greatly contribute to the reflection on Piaget's units of analysis and thus to his interpretation of the emergence and coordination of the multimodality of skills.

« 1 » Marc Ratcliff presents important elements allowing us to understand the beginning of the theoretical construction of Piaget's work. I was extremely interested in and even impressed by the details of how Piaget constructed his units of analysis. However, some doubts emerged along my reading about how Piaget's longitudinal approach was organized in his notes. I will try to organize them in order to discuss the role of temporality and the social dimension of the body presented by the author.

« 2 » Time was not the object of Piaget's interests. Centrally, at least. But it is important to highlight that this dimension crosses his work and Ratcliff provides us with a substantial attempt to open the discussion and take a look at his early and classical works through the temporal category. The distinction between diachronic-synchronic dimensions – which was developed in 1916 by Ferdinand de Saussure (1974), who promoted the development of linguistics as a science – is a useful approach taken in social research to understand the construction of units of analysis. Basically, the aim of studies with a synchronic approach is to set up "the fundamental principles of any idiosyncratic system" (de Saussure 1974: 101), while the goal of the diachronic approach is the development of a unit across time. The first one pays attention to the structural features, characteristics, differences, and similarities between units at a given point of time, offering a rich description across different units, whereas the second one produces descriptions paying attention to the emergence of a unit and its historical transformations. The questions of research on a permanent change and its stability over time can gain in depth with these temporal divisions of the same phenomenon.

« 3 » The method elaborated by Piaget to observe the development of the infant was focused on the body, but the way it was

87

carried out points to the relation to time adopted in his research It seems clear that Jean and Valentine Piaget wrote thoroughly about their observations of a chosen unit (hand, thumb, smile, gaze, etc.) in terms of its recurrence (§9, 12) in a space of time often mentioned when the behaviour was visible ("sucked it from the first days"; "for several months, to fall asleep" §7; "14 June. Same experiment" §9) This way of proceeding suggests that the emergence of a behaviour was conceived of as occurring across time. Little by little, the units came into contact by extending network around a behavior.

« 4 » This network around a behaviour, for instance sleep (§7), is described in such a way that we do not see the role of parents' actions in its emergence (the pillow that they put in the cradle). This is an important element, in my opinion, and it becomes invisible because of the diachronic focus. Just as the role of other fine motor coordination is invisible that preceded, accompanied or did not accompany the behaviour of "sleep" with the cushion. In §17, when Ratcliff mentions the horizontal and vertical criteria according to which Piaget considered an element as stable – for instance the imitation – it is not clear to me, apart from the criterion of stable repetition, how Piaget delimited the beginning and ending of the network indicating the behavior in a vertical way. What kinds of gestures precede imitation? Does imitation begin when the gaze starts causing the gestures and movements imitated? Does it end when the baby disinvests his gaze, which would be followed by a change in gestures? What kinds of gestures mark the end of imitation? Do sounds play a role? What about the discourse of the imitated adult who encourages imitation? Do the prosodic properties of her voice attract and keep the baby's attention? All those questions about delimited actions and the framework in which they emerge could help substantiate these units in their verticality. In contrast to contributing to negative stereotypes of Piaget's research, it should encourage the reproduction of these devices by giving serious consideration to the role of these temporal divisions that surround the studied social phenomenon.

« 5 » The importance of knowing the methodological steps that lead to the theorization of a phenomenon is crucial. Following Bruno Latour (1996: 135), a theory is a final product preceded by practices and, in this way, linked to the means of production that allows it be built up. In his theoretical construction, Piaget tried to articulate new emergence and its stabilization in time as a novel higher-level skill co-existing and coordinating with skills already existing at some lower level (§22): the conquest of multimodality by the child. In doing this, he constructs his theory by taking a temporal choice close to the linear conception of time.

« 6 » Indeed, contemporary psychology often – perhaps even completely – forgets that age, like longitudinal studies, by the way, remains "a social and cognitive construct" (§36). Since George Herbert Mead (1959) and Émile Durkheim's work (Durkheim 1960), sociology has addressed the manner in which we think about time, escaping a linear representation, as a collective datum (common understanding about time) and a social category articulating multiple events (past, present and future in the same gesture). The imitation of a gesture – or a sequence of gestures – on the part of a baby is therefore also a matter of the past and the future. Imitation is possible only because the child has seen the gesture on other occasions, often in a ritualized setting. She knows that the gesture has playful implications in the interaction and therefore scope for future applications.

« 7 » Theorization is also a translation of practices into a discourse (Perrenoud 1998). This translation, or this passage, is not a common speech addressed to all audiences. The transition to scientific discourse is concretized by the presentation of elements perceived as an objective construction. The way we express time plays a decisive role.

References

de Saussure F. (1974) Course in general linguistics. Fontana/Collins, Glasgow. French original published in 1916.

Durkheim E. (1960) Les formes élémentaires de la vie religieuse. Presses Universitaires de France, Paris.

Latour B. (1996) Sur la pratique des théoriciens. In: Barbier J.-M. (ed.) Savoirs théoriques, savoirs d'action. Presses Universitaires de France, Paris: 131–146.

Mead G. H. (1959) The philosophy of the present. University of Chicago Press, Chicago. Originally published in 1932.

Perrenoud P. (1998) La transposition didactique à partir de pratiques: Des savoirs aux compétences. Revue des sciences de l'éducation 24(3): 487–514.

Marcelo Dos Santos Mamed is a linguist and a psychologist. He is currently a graduate assistant and PhD candidate at the University of Lausanne. His research is dedicated to the therapeutic education of chronically ill patients in the specific context of diabetes. His interest lies in the organization of these educational sessions and the discursive organization of practitioners who coordinate the popularization and translation of scientific knowledge and new ways of relating to the body.