

## Piaget’s Infancy Journal: Epistemological Issues

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**Upshot:** Ratcliff’s target article is an insightful introduction to a major corpus, the journal comprising the notes of Jean and Valentine Piaget in their studies of their three children. These studies were part of a research program in what Jean Piaget called “genetic epistemology.” My commentary focuses on a series of epistemological issues central to this theory of knowledge.

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1. Marc Ratcliff’s target article is important enough to become seminal. He reminds his readers that Jean Piaget’s published studies of infancy were based on a journal written jointly with his wife Valentine over seven years, comprising “1,200 pages of notebooks along with 10,000 observations and experiments” (§4). These primary sources have remained unused since their origination almost a century ago. To my knowledge, Ratcliff is the first to make explicit use of this powerful corpus. Thus, my first conclusion is that it is good news to see this article published. My second is to add the qualification: its current form raises some questions. With a view to promoting the former, what now follows is directed on the latter.

### Piaget’s epistemology

2. An epistemology is a theory of knowledge, and during the 1920s Piaget made clear his commitment to an “*épistémologie génétique*” standardly translated as “genetic epistemology.” I follow Piaget in naming this “developmental epistemology” (Smith 2009a, 2017). My reason is this.

3. Piaget clarified his interpretation as the denial of metaphysical realism, asserting instead that “[the version of constructivism due to Baldwin, Brunschvicg and Piaget requires] the rejection of any reality constituted once and for all, such as any fixed system of categories, appeal to genesis, interpreted not as origin but as the development of operations for the definition of what nature is” (Piaget 1924: 598, my translation).<sup>1</sup> His elegant summary of this interpretation in his *Encyclopedia*, referred to “[our recent work] has provided us with new findings on the formation and development of the different types of knowledge” (Piaget 1967: x, my translation).<sup>2</sup> Thus, formation and development are dual aspects of organisation and ongoing re-organisation of knowing.

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<sup>1</sup> French original: “rejet de toute réalité constituée une fois pour toutes, de tout système fixe de catégories, appel à la genèse (conçue non comme l’origine mais comme le développement) des opérations pour en définir la nature, etc.”

<sup>2</sup> French original: “[...] nous ont fourni des séries de données nouvelles sur la formation et le développement des connaissances.”

4. The opening line of his first infancy book raised the question central to intelligence, “the question of the relationships between reason and biological organisation” (Piaget 1953: 1, my translation correcting the published translation).<sup>3</sup> Following James Baldwin and Léon Brunschvicg, Piaget’s main argument was that, from infant to savant, all knowledge is organised and re-organised through its rational formation that enables its development to become more powerful knowledge. His epistemology is “historico-critical,” historical in tracking any category or structure through time, and critical in that subtle distinctions must be respected in identifying different kinds of organisation as knowledge-so-and-so, not as knowledge-such-and-such. Thus, a critique is comparable to a philosophical analysis combined with experimental control whereby normative principles and empirical evidence are systematically and comprehensively analysed and evaluated in their current use.

5. Two conclusions follow on. One is that no epistemology is reducible to psychology. Indeed, psychologism is the fallacy of reducing norms to facts (Frege 1964; Smith 2006; cf. Piaget 1953). The other is that no epistemology should be ignored in a psychology providing evidence for/against its normative positions. Piaget accepted both conclusions. Yet the marginalisation of Piaget’s epistemology is standard in most psychological commentary ostensibly on it, thereby converging on psychologism. Ratcliff notes this common practice, and could make more use of the journal to augment its epistemic insights.

## **Methodology and methods**

6. Karl Popper (2012) regarded the terms *methodology* and *epistemology* to be synonymous, notably in evaluating the competing merits of verificationism and falsificationism in the pursuit of knowledge. He argued that knowledge is impossible to verify in contrast to the falsification of mistaken hypotheses, the latter being the proper business of science. Piaget used the term *methodology* in this sense, since the epistemic standing of children’s thinking is central to his focus. He followed Pierre Duhem in regarding truth and necessity as the two poles of knowledge. Knowing has a truth-value necessitating its compatibility with any other truth. Thinking devoid of truth-value falls between these poles. As a boy, I thought that New York is the capital of the United States. But I did not know this because it is false. Claiming to know and knowing are not the same thing. Piaget’s methodology requires this distinction to be respected. By contrast, the common practice in psychology is to refer to methodology as a synonym of a method used even in an experiment with scant relevance to the knowledge of its participants.

7. From 1922 onwards, Piaget declared that his empirical studies are “experiments,” and used three different kinds. (a) Fully controlled experiments in his studies of perception (Piaget 1961). (b) Epistemically constrained experiments in his clinical method directed on different kinds of belief (Piaget 1926: 11, 1929: 10f). He used this

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<sup>3</sup> French original: “La question des rapports entre la raison et l’organisation biologique” (Piaget 1936: 8).

clinical method *pace* the mistranslation on page 9 three lines up from bottom which should read “clinical” not “critical”) in his studies published in French during the 1920s. (c) He added further epistemic constraints in his revision of what he called “[c]ette ‘méthode critique’ [this ‘critical method’]” (Piaget 1947: 7, my translation; cf. Smith 1993: 57). One constraint is experimental control of participants’ practical knowledge: knowing how is a pre-condition of knowing that. Another is the focus on operational thought central to knowing why.<sup>4</sup> Piaget introduced this method in his infancy studies during 1925–1932, and from 1941 onwards in children’s conservation and similar studies. Notice four things:

- (a) Piaget attests his knowledge of the major method used in empirical sciences, and so (b) and (c) reflect a deliberate choice.
- Ethical constraints are widely agreed to require respect in science. Piaget was arguing that epistemic constraints should also be respected in what he called “Studies in Child Logic ... [directed on] the formation of logical norms” (Piaget 1959: xx–xxii, v, my translation).<sup>5</sup>
- Piaget followed Henri Bergson in regarding knowledge as “the creation of the absolutely new.” That is why his focus was on “construction ... [giving children] new ‘powers’ that enrich their knowledge of objects” (Piaget 1978: 650). But Ratcliff merges (b) and (c), or at least does too little to disambiguate that misleading and widely used expression “Piaget’s clinical-critical method.”
- In view of the negative dismissal of (c) in psychological commentary, the journal could be used to check the reliability and validity of the protocols already reported in Piaget’s infancy books. Are the published protocols trustworthy as evidence? Are they sound as the grounds of different kinds of knowledge?

## Body

8. Piaget of course accepted that embodiment makes a core contribution to stating the mind-body problem. He argued for the parallelism of mind and body, each identifiable through a dominant relation, implication and causality respectively (Piaget 1966). Bergson (1907) had identified instinct and intelligence as dominant organs of life. Piaget complained that Bergson had inadequately clarified how the causal organisation of bodily based instinctive actions evolve into the implicatory organisation of mental acts of rational intelligence – revisit the earlier quotation from his first infancy book.

9. Embodiment makes a core contribution to Piaget’s account of knowledge. Ratcliff attests this in his use of the hitherto “unknown” journal, adding that it offers

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<sup>4</sup> See Q12 in “Jean Piaget interviewed in February 1980 by Gilbert Voyat, with the assistance of and a paper by Bärbel Inhelder,” (translation, preface and notes by Leslie Smith),

[http://www.fondationjeanpiaget.ch/fjp/site/textes/VE/JP80\\_Voyat\\_interview.pdf](http://www.fondationjeanpiaget.ch/fjp/site/textes/VE/JP80_Voyat_interview.pdf)

<sup>5</sup> French original: “Études sur la logique de l’enfant [...] sur le développement des normes logiques” (Piaget 1923: 3–5)

perspectives on “self-cognition of the body, i.e., the child’s knowledge of her body, as either a curious object or *her* own body” (Abstract). Agreed, this is a valid issue. But epistemic problems are waiting in the wings. One: is self-cognition self-knowledge? Not all cognition has a truth-value, at least not in cognitive psychology addressing problems of perception and learning. Two: if self-cognition is knowledge, is it practical knowledge or conceptual knowledge? This question is important because Piaget explicitly noted that, despite being embodied, activity in infancy is confined to practical knowledge, that is, “sensori-motor intelligence is limited to wanting success or practical adaptation, whereas the function of verbal or conceptual thought is to know and state truths” (Piaget 1954: 360, my translation).<sup>6</sup> Three: in general, Piaget’s unit of analysis is intentional action, i.e., action directed on a goal recognisable in the conscious awareness of its agent. This admission is central to his main problem, the development of necessary knowledge. Since infants’ knowledge is practical, its modal character cannot be expressed other than as a behavioral success/failure in attaining its goal. Four: the step from embodied cognition to behavioral neuroscience is not taken by Ratcliff, but it is made by others (Changeux 2010; McCulloch & Pitts 1943). Piaget had strong arguments against taking this step. A suitable precaution is for Ratcliff to present a clarifying analysis. Does the journal include any pointers for/against this?

### **Necessity and rationality**

10. Piaget identified the formation and development of necessary knowledge as a major problem in his epistemology (references in Smith 1993: 1, 2009a: 69). His final paper outlined a novel way forward:

“There are implications between actions or operations as such; these implications both lie beneath and precede implications between statements (propositions); and they constitute the essential driving force of cognitive, and in particular dialectical, constructions” (Piaget 2006: 5).

11. Implications have logical attributes, notably their necessity based on reasons. Yet prelinguistic infants capable of making logical inferences can express neither necessity nor reasons. Does the journal contain any anticipations throwing light on a constructivist resolution of these issues?

### **Mistranslation in English texts**

12. Alas, this is rampant, and of course Ratcliff cannot redress it. What he can do in his article is to quote key French terms along with their English counterparts. For example, English *scheme* does not mean French *schème*, which does not mean *schema* in Immanuel Kant’s sense from which Piaget gained his inspiration (Smith 2009b). Ratcliff is well aware that Piaget wrote mainly in French, and he invites Piaget’s readers to revisit what he thoughtfully calls the “classic texts,” i.e., texts providing new insights

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<sup>6</sup> French original: “l’intelligence sensori-motrice se borne à vouloir la réussite ou l’adaptation pratique, tandis que la pensée verbale or conceptuelle a pour fonction de connaître et d’énoncer des vérités” (Piaget 1937: 316).

on their re-reading. Yes, indeed! This is a compelling reason for reading Piaget, preferably in French, and for re-reading Piaget.

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