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Cognitive and didactic intellectualism in the genetic epistemology of Jean Piaget

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ABSTRACT: Jean Piaget's work is based on genetic psychology. The Genevian psychologist considers intelligence as an adaptation, by assimilating patterns and accommodations, to new situations. It is a process of balancing and self-regulation at every stage of development. This process defines the principle of learning, since for him "to learn is to adapt". Thus, the level of cognitive development of the child must be taken into account in the exercise of didactic and educational procedures. However, although the thought of Piaget had a considerable impact on the practice of pedagogy, one can see in his cognitive intellectualism that he proposes, a marginalization of the conative requirement. This cognitive intellectualism constitutes, in our opinion, a relay of moral intellectualism.

KEYWORDS:*Genetic psychology, cognitive development, intelligence, didactics, pedagogy, intellectualism.*

RESUME :*L'œuvre de Jean Piaget a pour fondement la psychologie génétique. Le psychologue genevois considère l'intelligence comme une adaptation, par assimilation des schèmes et accommodations, à de nouvelles situations. C'est un processus d'équilibration et d'auto-régulation à chaque stade du développement. Ce processus définit le principe de l'apprentissage, puisque pour lui « apprendre c'est s'adapter ». Ainsi, le niveau de développement cognitif de l'enfant doit être pris en considération dans l'exercice des procédés didactiques et éducatifs. Cependant, bien que la pensée de Piaget ait eu un impact considérable sur la pratique de la pédagogie, on peut voir dans son intellectualisme cognitif qu'il propose, une mise en marge de l'exigence conative. Cet intellectualisme cognitif constitue, à notre sens, un relais de l'intellectualisme moral.*

Mots clés *: Psychologie génétique, développement cognitif, intelligence, didactique, pédagogie, intellectualisme.*

I. INTRODUCTION

In a context where there is a growing interest in cognitive sciences in relation to the dynamics of NBIC (nanotechnologies, biotechnologies, information technologies and cognitive sciences), it is to be feared that human intelligence is only considered in this reductive, even hegemonic perspective. In particular, in the educational field, cognitivism provides new tools to improve the performance of learners. It probes the functioning of the human brain in order to provide "new and valuable insights into many aspects of the cognitive processes involved in the learning process and in the educational process in particular"(Andler , D. 2008, p. 9). The concomitant interest of the didactic turn of the sciences of education, a turn which forces first and foremost to center the educational act on the learning process, is such that any other aspect of education is at least annihilated. The study of intelligence, as a "state of equilibrium towards which tend all the adaptations, successive of a sensorimotor and cognitive order, as well as all the assimilating and accommodating exchanges between the organism and the environment"(Piaget, 1967, pp. 242-243), becomes what must be thought of the educational practice, itself reduced to the acquisition of "competences". But questions remain: what about the *conative requirement* in this genetic epistemology which tends to reduce man to a knowing subject? Moreover, is there not in Piaget a uni-factoriality in his approach, both of knowledge and education to the detriment of the multi-factoriality noted among others by Edgar Morin, for whom no fact cannot be explained on the basis of a single causality? Moreover, does not the epistemological and scientific offer of Jean Piaget constitute a scientist relay of the moral intellectualism put forward in Greek antiquity by the Socratics? To provide an outline of an answer to these questions, we will first dwell on the didactic turn in which the opening of cognitivism stemming from Jean Piaget is inscribed; then, we will present the economy of his didactic constructivism by relying on his Kantian and evolutionary royalties . It will then be possible for us to articulate, in contributions and deficits, the cognitivist legacy of Jean Piaget.

II. THE ROLE OF PIAGETIAN COGNITIVISM IN THE DIDACTIC TURN

In this first part, we will show that cognitivism is a theory of learning that focuses on the formation and evolution of mental processes. This theory explains how the brain receives, processes and stores knowledge. Learning is therefore an active and progressive process which makes the child the main actor. Cognitivism thus meets the requirements of the didactic turn.

2.1. THE DIDACTIC TURN

Didactics as the study of all techniques, methods and processes of learning, wants to be more specific, that is to say in relation to each knowledge or a specific discipline. Didactics is responsible for finding methods likely to motivate learners to participate actively in their training. The learner becomes, here, the main actor in the acquisition of knowledge. In doing so, we see a clear difference between pedagogy and didactics. Pedagogy is intended to be general, that is to say that it deals with the general organization of the educational act, while didactics is specific, "regional", oriented in a precise branch of knowledge (the teaching of modern languages, mathematics, chemistry, etc.). In other words, pedagogy is the same in all disciplines, while didactics differs from one field to another, especially since didactics is to pedagogy what theory is to practice. In addition, didactics tends to obey only a concern for professionalization, knowledge being transmitted only with a view to responding to some lack in the socio-economic sphere. The didactic turn enjoins that the school be defined in terms of practical objectives, of immediately efficient skills.

At the very least, didactics always postulates the requirement of the active role of the learner, and the emphasis is placed on the learning of the learners, and not on their ranks to be occupied. This active role of the learner extends to the heuristic level, as underlined by Imre Lakatos ( ), for whom didactics requires the effective participation of the student in the very formation of knowledge, insofar as it is always in progress and, consequently, never fixed.

Hence, moreover, the postulate of constructivism, by which didactics joins cognitivism.

2.2. COGNITIVISM AS A SOURCE OF LEARNING

Cognitivism is concerned with the functioning of mental processes in the learning process. This theory is opposed to behaviorism, which, ignoring the mental aspects of human conduct, stuck to behaviors as observables. From this behaviorist point of view, learning means reinforcing a behavior. On the contrary, cognitivism focuses on the analysis of mental processes.

A person develops his intelligence and builds his knowledge by action and by reflection on action and its results. The person apprehends and understands new situations through what they already know and modifies their previous knowledge in order to adapt to them. Each adaptation to a situation makes it possible to broaden and enrich the network of previous knowledge available to a person and this progression constitutes a network that allows him to deal with increasingly complex situations. (Beatrice Pudelko, 2013, p.63).

Cognitive theory in learning contributes to the development of teaching practices and programs and methods adapted to the level of development of the learner. This is what already emerges from the work of Alfred Binet, who is one of the precursors of the cognitive theory of learning, in connection with that of John Dewey. Binet's project is to propose a new psychology that would focus on the individual no longer in his behavioral aspects, but from the point of view of his intelligence. It is a question of making a study of the mental activity and the regulation of this one and, thus, of showing that the intelligence is certainly analysable, but also measurable. Binet conceives intelligence as being a set of functions which allow adaptation to new situations: “intelligence is action; it is contained in these four words: comprehension, invention, direction and censorship”(Binet, 1916, p.118).

In the light of these considerations, the study of cognitive processes aims to provide an answer to the particular educability of the mentally retarded. For him, “abnormal” children are “a completely heterogeneous group of children; their common feature, which is a negative character, is that, by their physical and intellectual organization, these beings are rendered incapable of profiting by the ordinary methods of instruction and education which are customary in ordinary schools”(Binet, A., Simon, T., 1907, pp. 6-7).It is not a question of motor deficients such as the blind and the deaf-mutes, but rather of those who do not have profound mental deficits.

Binet starts from the observation that for pedagogues,

> the child is nothing other than a man in miniature ,*homunculus* , with degree attenuations of all the faculties of adults; it is also admitted that there is a typical child, and to whom all more or less resemble; and thus we ignore all the differences that exist, not only between their character, their way of feeling, but also their way of thinking and their intellectual aptitudes (Binet, 1916, p. 7).

Yet children have a way of thinking that is unique to them and that varies from one child to another depending on their mental age, which should condition the type of teaching offered to them. It is therefore for Binet, from a test to complete the mentally retarded and provide them with educational techniques that would correspond to their level of cognitive development. In this study, it is about

> imagine a large number of tests, both fast and precise and presenting increasing difficulty; try these tests on a large number of children of different ages; note the results; find out what are the tests that pass for a given age and which children younger than one year, are unable on average to pass; also constitute a metric scale of intelligence which makes it possible to determine whether a subject given the intelligence of his age, either is late or ahead, and how many months or years this delay or advance amounts to .(Ibid, p. 125)

This form of measurement is done using a series of tests called: metric scale of intelligence. This study carried out in his laboratory in collaboration with Théodore Simon aims to develop small practical problems to be submitted to children in order to mobilize their intelligence as a whole and, at the same time, to determine intellectual power in terms of advance or delay (Binet, 1907, p. 43) by compared to average development. He therefore set up methods adapted to deficient children, among others the “mental orthopedic” method. It “straightens, cultivates, strengthens attention, memory, perception, judgment, will” (ibid, p. 105). It consists of physical exercises aimed at boosting mobility, attention and even self-control.

Similarly, the current of new education, driven by Dewey, Claparède, Montessori, places the child at the center of the formation of knowledge, and recognizes in him the intellectual capacities required. Piaget will therefore find in these active methods of new education the attributes necessary to think about the education of young children. According to John Dewey, learning must be based on practical experience in order to be meaningful and useful for students. In this perspective, he writes that: “experience that does not lead to new experiences and new actions is not really educational”. Dewey argues that students should be involved in their own learning and that it should be based on concrete experience. It offers an approach to education centered on experiential learning. This means that a pedagogy that does not take into account the direct intervention of the student cannot promote knowledge. The learner must be the center and the major player in any knowledge process. Dewey therefore takes issue with the traditional approach to education of imparting knowledge to passive learners, pointing out that this does not encourage them to think critically and solve problems creatively. Instead, he proposed a method that allows students to learn by doing, exploring, and experimenting in their environment.

For Dewey, students must have direct and practical experiences in the real world to understand and solve problems. It also emphasizes that learning must be relevant to students, that is, it must relate to their daily lives and interests. By involving students in their own learning, Dewey believes they would be more motivated and engaged. Teachers should therefore act as facilitators of learning, rather than as experts passing on ready-made knowledge. Teachers should encourage students to ask questions, explore their interests, and actively participate in finding solutions to problems. Their lessons must be adapted according to the individual needs of the students. This means that they should take into account each student's unique skills, interests, and learning styles.

From the foregoing, cognitivism, approached in the light of the didactic and pedagogical turn, emphasizes taking into consideration the level of cognitive development of the child and puts it at the center of its learning process. learning. It is in this aim that the epistemological and pedagogical thought of Piaget will fit.

III. THE PIAGETIAN ARGUMENT FOR DIDACTIC COGNITIVISM

Piaget's cognitivism, inspired by Kantian constructivism and evolutionary theories of adaptation, conceives intelligence in its growth process as a game of balance, assimilation and accommodation, at different levels of the development of intelligence. 'child. Intelligence being, in this case, the adaptation of the child to the environment. This psychological study should be taken into account in educational processes not only intellectually but also morally.

3.1. THE KANTIAN LEGACY AND EVOLUTIONARY ROOTEDNESS

Piaget's genetic epistemology is an extension of Kantian constructivism, given its reconciling posture of empiricism and rationalism in the process of training and acquiring knowledge. The originality of Kantian constructivism

> is to have located in the subject the source of deductive necessity and of the structures constituting objectivity, in the form of an a priori construction. Transcending the dichotomy of the analytical (a priori) and the synthetic (a posteriori), he retained the idea of construction, in the form of synthetic judgment, and that of innateness, in the form of a priori or anterior to experience, thus discovering the possibility of "synthetic a priori judgments" thanks to which intelligence structures reality by apprehending it (Jean Piaget Foundation, Piaget and epistemology by M.-F. Legendre).

For Kant the formation of knowledge takes place in the interaction between the subject and the object; there cannot therefore exist a dichotomy between the two poles of rationalism and empiricism. However, Piaget finds that the Kantian *a priori*, not relying on genetic psychology, ultimately leaves little room for construction. Because according to Piaget, "if the structure of the mind is preformed once and for all, in its fixity and prior to experience, it is obvious that the psychological genesis of notions is equivalent to a simple awareness and not to a construction. proper » (Piaget, 1927, p. 198)

In Kant, the scheme is an intermediary representation between sensible phenomena and the categories of the understanding. The transcendental schema is the element that allows mediating between sensory intuitions and concepts. Kantian schematism wants to answer the question of how a concept can be applied to a phenomenon. Its purpose is to give a sensitive aspect to something that does not come under the regime of empiricity. For Kant, time is the principle that allows this mediation. Time as an *a priori form* is a condition not only of the internal sense but also of the external sense. The schema is therefore the method by which a pure concept is applied to an intuition. Now, in Piagetian constructivism, the scheme is "what, in an action, is transposable, generalizable, differentiable from one situation to the next, in other words, what is common to the various repetitions or applications of the same act" (Piaget, 1973, p.23). The scheme therefore does not designate the action itself, but rather its general structure. As we have recalled, the notion of schema already exists in Kant, from which Piaget draws inspiration. The schema constitutes, for Piagetian cognitivism, a centerpiece in the psychogenetic explanation of cognitive development in children, since it allows the passage from a lower level to a higher one.

Piaget, interested very early in the theory of the evolution of species, drew inspiration from Darwinian evolutionism and that of Herbert Spencer, to refine his theory of cognitive adaptation. Indeed, for him, the evolution of intelligence is the extension of the biological evolution of the organism and the environment. Henri Bergson in *Creative Evolution*, will say that "the history of the evolution of life, however incomplete it may still be, already lets us glimpse how intelligence was constituted by an uninterrupted progress, along a line that rises, through the series of Vertebrates, to man" (Bergson, 2013, p.6). Let us take the example of the problem of biological classification in zoology and botany, which remains that of qualitative logical classifications. In physiology, and in chemistry, mathematical operability is more and more widespread. However, the embryological study is of particular interest not only for organic development, but also for sensory-motor development. Organic embryology extends into mental embryology. The hereditary structures consist of forms, virtual or actualized, which include the nervous coordinations and those of the intelligence as well as the structures of the organs, and their development continues, after birth as during the embryonic stages, under the species of internal maturation. On the other hand, environmental influences on this development include, as a special case, the action of exercise and experience on the development of mental structures. It therefore appears that embryological development from the point of view of the interaction between hereditary factors and the environment prepares the intellectual development of the individual. The conflict between preformism and epigenesis will speak volumes on this question. For preformism, the mental structures of the child are innate. The preformism held by Theodore and Schwann admits the transformation of species into each other, and appeals only to factors internal to the subject. While epigenesis integrates the contribution of experience into the cognitive process of the individual.

For Piaget, contrary to the theory of preformism, the epigenetic process leads to the formation of intellectual operations; in other words, psychogenesis is comparable to embryological epigenesis and the formation of phenotypes with the only difference that the role of the environment is more important there, and that the social environment is added to the physical environment. One realizes, from the above, that "a certain parallelism between the biological explanations of variation, the psychological explanations of intelligence and even the epistemological explanations already strikes the attention when, under different words, we try to find the common mechanisms" (Piaget, 1950, p.79).

Indeed, the central problem of biological thought is that of adaptation and evolution. The question of evolution necessarily encompasses that of adaptation, since "all the theories of evolution whatever they are have given an explanation of adaptation" (ibid, p. 80). For Piaget, in *Biology and Knowledge*, adaptation is " a balance between assimilation and accommodation. (…) The reason is that without assimilation, there is no accommodation in the biological sense of the term"(Piaget, 1967, Pp. 243-243). That said, adaptation therefore boils down to the process of assimilation and accommodation, which constitute the two main functional invariants of evolution. Adaptation is as much biological as cognitive. The theory of biological adaptation is therefore similar to that of intelligence. To say that intelligence is a special case of biological adaptation amounts to "assuming that it is essentially an organization and that its function is to structure the universe as the organism structures the immediate environment."(Piaget, 1977, p. 10)

From what precedes, it emerges that cognitivism originates in Kantian constructivism, where we see the project of constituting a science which would draw its sources not only from sensitivity, but also from

understanding; which requires the interaction of the subject with the object of knowledge. Piaget starts from this constructivism to propose a completely new one which is in line with the extension of evolutionism. Adaptation and biological evolution are, from this point of view, similar to the adaptation of intelligence.

3.2. THE ECONOMICS OF DIDACTIC COGNITIVISM

Piagetian cognitivism emphasizes intelligence in its formation process. For him, intelligence is "the state of equilibrium towards which tend all the successive adaptations of a sensorimotor and cognitive order, as well as all the assimilating and accommodating exchanges between the organism and the environment" (Piaget, 1967, p. 17). Intelligence would be a state of equilibrium, the result of a maturation of the structures of the operating schemes by the dialectical process of assimilation and accommodation. It is the capacity for the child, in the face of difficulty, to modify his way of approaching the problem. This process would constitute, for Piaget, the keystone of the regulation and coordination of actions(L. Allaire-Dagenais, 1982, pp. 66-67).

In *Child Psychology*, Piaget identifies four levels of cognitive development in children from birth until adolescence. The first is the sensorimotor stage (from birth to 2 years old), during which the child discovers the world through his senses and his physical movements (sucking, touching, turning around). The infant in his first months acts by reflex, then around 1 to 1 and a half years, creates new means by the coordination of his motor schemes. The second stage is the preoperative stage (2 to 6 years). This period is marked by symbolic thought, egocentrism, the acquisition of language. The third level is the concrete operations stage (7 to 10 years). The child shows decentration. He acquires the notions of classification, volume grouping, mass. The fourth and final stage is formal operations (ages 11 to 16). The child is capable of hypothetico-deductive reasoning. Note that for Piaget the notion of "stage" has an important place in his vision of knowledge because for him they are not only necessary but also universal.

In close line with the development of the structures of knowledge, Piaget proposes an educational theory respecting the level of maturation of these. Inspired by the principles of the new education promoted by Dewey, Claparède, and Montessori, he thinks that education based on genetic psychology must focus on "the meaning of childhood, the structure of child's thought, the laws of development and the mechanism of childish social life" (Piaget, 1969, p. 205). The child, in the learning process, is the main actor in the acquisition of knowledge; all the more so since " one does not learn, he says, to experiment by simply watching the master experiment or by giving oneself over to the exercises already all organized: one learns to experiment only by groping oneself, by actively working , that is to say freely with all his time" (Piaget, 1959, p. 39). Education should no longer be, as has long been the case in traditional pedagogies, a generational transmission of knowledge already constituted. In the pedagogy of Geneva, the teacher's only role is to give the student the necessary and adequate material learning devices that can stimulate his sense of innovation.

His proposals are clearly in the field of didactics. Thus, at the elementary level, the problem of the teaching of mathematics and the natural sciences is that of the constitution of school programs which do not follow the principle of active methods. As far as mathematics is concerned, the lack of interest, even better, the mediocrity of children in the understanding of this discipline remains because the mathematical problems are posed in an abstract way, that is to say cut off from their experience and the needs that are theirs. Even pupils reputed to be inferior in mathematics present a different attitude when the problem emanates from a concrete situation and is linked to their interests;

> Any normal pupil, notes Piaget, is capable of good mathematical reasoning if we appeal to his activity and if we thus succeed in removing the affective inhibitions which too often give him a feeling of inferiority in lessons. related to this branch. The whole difference is that, in most mathematical lessons, the pupil is invited to receive from outside an already entirely organized intellectual discipline, which he understands or does not understand, whereas, in a context of autonomous activity, he is called upon to discover relations and notions for himself, and to recreate them in this way until he is happy to be guided and informed.(Piaget, 1972, pp. 83-84)

It would therefore be advisable to give solid training to school teachers. This through knowledge of learning and child psychology, through valid training in experimental pedagogy, and through in-depth knowledge of general culture.

Beyond intellectual education as we have seen previously, Piaget also attaches importance to moral education. Opposing Durkheim, he thinks that the latter, although its goal is to train the citizen, is not the product of a transmission from previous generations to current generations. In *moral judgment in children*, Piaget sets out to present the notion of morality as being the fruit of a successive construction at each level of the child's development. He sees morality as a set of standards that the young child is able to obey. According to him, moral development revolves around the transition from a heteronomous morality to an autonomous morality. He thinks that, "all morality consists of a system of rules and the essence of all morality is to be sought in the respect that the individual acquires for these rules"(Piaget, 1932, p. 1)

Based on the example of the concept of rules in the game of marbles, it shows that the child is immersed in a sphere of rules from the first days of his birth. They are still only regularities which are ritualized. This is the first stage of moral development. At this first stage, the notion of rule does not yet exist strictly speaking. Taking the example of the ball game, the child's action aims first of all to explore and manipulate the object; he seeks to know him, his sex, his mass. At this stage, the game is "subjected to the fantasy of the moment"(ibid, p. 15), then, gradually, we move on to motor regularities. The second stage, which begins around 3 years old until 5 years old, is characterized by childish egocentrism. The child, in the practice of the game, is aware of the existence of the rules, applies them, even if at this stage each one follows his own rule without really realizing it. The respect of the rule is carried out under the constraint of the adult. This is what Piaget calls "moral realism": good here is obedience to the rule and evil is disobedience to the rule. Respect is for the coercing adult is one-sided respect. Then, it is from 7 to 11 years old that the child develops the feeling of competition. He feels the need to play to win. However, awareness of the rules remains as it is at the stage of egocentric thinking. It is therefore from the age of 11 that the young child is capable of moral judgment. Moral education must allow a social life between pupils, through cooperation and a sense of autonomy.

In the wake of education, Piaget advocates active methods of *self-government* that emphasize the freedom and autonomy of students in the learning process. In this educational process, it is up to the children to organize their school discipline. It is developed there the feeling of equality, justice and solidarity, this under the control of common standards. This method, it is clear, puts an end to the constraint leading to a unilateral respect where the child blindly obeys the adult, to reach the cooperation, the bilateral respect.

IV. THE DIDACTIC COGNITIVISM OF JEAN PIAGET, IN CONTRIBUTION AND DEFICITS

If the constructivist offer of Jean Piaget contributes notoriously to the progress of didactics, on the other hand, it participates in the concealment of the conative dimensions of learning. Hence this evaluation in contributions and deficits.

4.1.CONTRIBUTIONS

Piaget's epistemological work, through its interdisciplinarity, is of great relevance for the approach to science in general, and to pedagogy, in particular. Piaget's cognitivist approach is applied in the field of cybernetics where certain cognitivist analyzes compare the human mind to a computer and "will be at the origin of the notion of artificial intelligence"(C.Meljacand E.Shoov, 2011/1-2 , p 31-53). We can therefore say that even after his death the "master of Geneva" contributed to a revolution in the computer world. The suggestions made by Piaget with regard to the training of teachers have found a favorable echo in the current educational systems. Teachers at the elementary level are trained to take into account the cognitive development of children. They must have an encyclopaedic knowledge to be able to provide the learner with the necessary tools and guide their research. Piaget's educational principles thus promote innovation, excellence, collaboration between researchers, which are important aspects for research and innovation in close line with NBICs.

In didactics, Piaget brings to the teaching of sciences, in particular mathematics, a completely new approach, in that it invites to take into account, in the elaboration of curricula, the level of intellectual development of the learner. In a context marked by the mystification of the understanding of mathematics, it thus leads to the understanding that all students are capable of logico-mathematical reasoning if the questions are asked in relation to daily experiences.

4.2. DEFICITS

The scientific approach adopted by Paget, which is essentially based on cognitive data to consider not only the formation and evolution of knowledge but also the educational processes that result from it, thus minimizes the conative *requirement*. Conation makes a point of honor "on the fact that behaviors cannot be explained solely by the cognitive. It is necessary to take into account what makes the subject initiate a behavior, pursue it and end it" (Florin, A. and Pierre Vrignaud,2007, pp 11-14), that is to say the will, the intentionality.The will is the faculty or the power to decide and to act consciously. It represents determination, strength of character and the ability to make choices based on our motivations and values. Willpower can be seen as an internal force that drives us to achieve our goals and to persevere in the face of obstacles. Willpower plays a crucial role in achieving our aspirations and in personal development. It allows us to overcome difficulties.However, intellectualism tends to ignore the role of the will in the field of knowledge.

Piaget has a uni-factorial vision of knowledge and education. For Edgar Morin, the individual is a "complex whole", that is to say multidimensional: "the human being is defined first of all as the trinity individual-society-species: the individual is a term of this trinity" (Morin, E., 2001, p. 54). It is therefore necessary to think of a new paradigm that would embrace this multi-factoriality. All the parts that make up the individual are interconnected; which testifies to its complexity. From the Morinian point of view, there is therefore no longer any question of considering an anthropological or scientific thought confined to a single aspect of knowledge; man is multi-dimensional and must be studied in all of his dimensions.

For this author, education must be reformed in the light of complex thinking. Morin envisions an education in complex thought allowing to place the human being at the heart of a Land-Fatherland. To achieve

his vision of future education, Morin proposes a reform aimed at cultivating a way of thinking capable of navigating and dealing with uncertainty by integrating an essential element: "dialogic". This approach would make it possible to develop concepts both complementary and antagonistic, to link knowledge together, and to promote a global understanding of the world, based both on an apprehension of its complexity and on empathic communication. He manages to understand the tears, the smile, the fear, the anger of a person by considering him as an alter ego, that is to say as an alternative version of himself. He says that his ability to feel the same emotions as this person allows him to capture and share his emotional experience. This idea highlights the importance of empathy and the ability to put oneself in another's shoes to understand and interact more deeply with others. Edgar Morin militates here for a reform of education.

> The reform of knowledge and thought depends on the reform of education which depends on the reform of knowledge and thought. The regeneration of education depends on the regeneration of understanding, which depends on the regeneration of Eros, which depends on the regeneration of human relations, which depends on the reform of education. (Morin, E., 2007, p. 122)

In this way, he highlights a loop of dependence and interrelation between the reform of knowledge, the reform of thought, the reform of education. It is therefore necessary to approach the individual not only under his intellectualist aspect, but also conative, affective and cultural. Pierre Dasen, close collaborator of Piaget, will show that Piaget in his universal theory of the stages of construction of knowledge, does not take into account the intercultural differences which could support either the anticipation or a delay of a stage according to the order of evolution. This is why he will do a study on the Senegalese population and will prove that literacy, the emotional relationship between mother and child, or even the types of games influence the cognitive development of the child(Dasen, P. R, 1988. pp. 3-23).The epistemological offer must take into account the multi-factoriality and the context of the child to bring about innovative educational reforms, capable of responding to the demands of society.

Moreover, we oppose to Piagetian cognitivism a grievance of moral intellectualism, projected on the field of learning and knowledge and learning. Indeed, since the pre-Socratics, the universe is thought from an element which would be at the origin of this one. An intelligible element which would be the cosmological principle. With the Socratics, starting from Socrates himself, man is a two-dimensional being: body and soul; the soul being the essential part of it, because it is from it that one reaches self-knowledge and therefore virtue. Knowledge in Socrates, as knowledge of the just, leads man to act as such. Which leads to the formula: "no one is wicked voluntarily". Access to knowledge therefore determines moral behavior. Education would make man better; hence his disposition to do good, evil being only the fruit of ignorance.

Morality in Kant as in Piaget, and based on rationality. For Kant, the will, as related to reason, is the path of morality. He says to this effect that “the will is conceived as a faculty of determining oneself to act in accordance with the representation of certain laws. And such a faculty can only be found in rational beings"Kant, E.,1985, p. 103). Morality is independent of all empirical experience, it is essentially a fact of reason. It is clear, in any case, that moral action is determined by the human mind. However, in Piaget, the reference to the soul is replaced by the summoning of the cognitive dispositions of man, and more exactly to the relations of adaptation of man to the world. The parallelism between cognitive development and moral development necessarily reflects the constructive and dynamic character of the latter. However, morality cannot be totally the fruit of a construction if it would not fall into a kind of metonymy.

V. CONCLUSION

Ultimately, in Piagetian thought the impact of cognitivism on educational anddidactic practice is undeniable. Indeed, the didactic turn, in its relation to cognitivism, makes learning an interactive act between peers and the teacher. The Piagetian model of learning thus invites us to take into account the cognitive development of the child in the educational and didactic processes. For him, the study of intelligence as an adaptation is the very image of the construction and therefore of the transmission of knowledge. This epistemological approach has contributed, first of all, to giving a new vision of childhood, which has a way of thinking different from that of the adult, and, by extension, a more innovative solution to educational problems in general and didactic especially. The interdisciplinarity demonstrated by Piaget's genetic epistemology, transposed into his pedagogical vision, calls for collaboration and rigor in scientific research and teacher training. However, by making intelligence the principle from which not only epistemology but also pedagogy must be considered, Piaget seems to go beyond the *conative* requirement, which would also be an inseparable element in the acquisition of knowledge and in the development of knowledge. school learning, even more when we know that the individual is multi-dimensional. It must therefore be studied in its "complexity" from all these factors which would condition its cognitive development, which would also promote a more efficient and contextualized educational practice.

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