

**Children and TV:
Piaget's Method
Applied**
Lois Baron

In Jean Piaget's search for a theory to describe children's acquisition and use of knowledge, he not only developed a hypothesis of cognitive-development, but also revealed a mode or methodology to investigate the problem. Although running counter to the psychometric controls of empirical research, La Méthode Clinique has nevertheless proven to be quite a reliable and valid method of assessment (as demonstrated by more recent efforts to psychometrize his method of investigation). While rejecting what he saw as limitations of the psychometric school with its emphasis on standardized tests, Piaget's main aim was to develop a logical-mathematical model of the growth and development of thought and knowledge.

This paper examines the evolution of Piaget's thinking respective to modes of investigating the thought processes of children. Piaget's Méthode Clinique, its aims, advantages, disadvantages, and present acceptance and use are described with an emphasis toward examining its utility as a means of investigating the nature of the interaction between children and television. This paper is a methodological discussion and in no way a description of Piaget's cognitive-developmental theory. The emphasis here is a description of La Méthode Clinique — its application and benefit to descriptive evaluation in the field of research on children and television. A description of my own and others' adaptation of Piaget's method is to follow this account of Piaget's own motives for adopting such a process-oriented approach to evaluation.

Process Evaluation

Jean Piaget had been considered by many to have been first and foremost a psychologist. This is a mistaken assumption. Piaget identified himself primarily as a genetic-epistemologist. With roots in both the areas of biology and philosophy, the thrust of Piaget's efforts was to establish a theory concerning the evolution of thought processes in children. Taking an embryological perspective to describe the growth of logical thinking in the child, it was not Piaget's intention to present a psychological age-stage theory.

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As an epistemologist, Piaget was concerned with answering the following questions:

1. *What are the origins of knowledge?*
2. *Do we acquire knowledge by reasoning or through direct experience with the external world?*

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3. *What is the nature of the relation between the person and the environment?*
4. *What is the difference between what things seem to be and what they really are? (Ginsburg & Opper, 1969, p. 207)*

Concerned with a philosophical basis of knowledge, Piaget's "méthode" emphasized the interaction and functions of the "knower" and the "known" in the pursuit and expression of knowledge. The individual and the external world were both essential elements involved in the process of thought, and it was Piaget's goal to examine the role these elements played in the evolution of cognition.

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Given the task of re-working Binet's scale of intelligence, Piaget reached back into his clinical experience (he had worked in a psychiatric clinic for one year), and discovered that he could best study the reasoning of children through a more open-ended, unstructured interview approach. The incorrect answers rather than the correct responses given by children on standardized tests interested Piaget. How, he thought, did mental structure and the influence of the environment continue to form a representation of the world that became the child's conception of reality? Note the emphasis on "how", for Piaget spent his life investigating the process of mental operations and the acquisition and use of knowledge. He was not interested simply in children's overt responses to questions or how many children could pass his tests, but he examined the how and why behind every response. Concern for process was the catalyst for Piaget's developing a more open-ended approach to investigating the modality and logic of children's thought. Piaget believed that by freeing children from the constraints imposed by the more standardized testing procedures, he could better investigate a child's own "inventions" (Piaget, 1969, p. 13), or as Furth (1980) has described it, the child's "imaginative elaborations" (p. 23) about the world. In Piaget's evaluation, there was no right or wrong, just a concern with revealing the structure and development of thought itself.

Although openly admitting to certain advantages of the more standardized test procedures (Flavell, 1963), in order to satisfy the criteria of his own examination into the nature of cognitive structure, and more in keeping with naturalistic investigation, Piaget rejected the "tests", describing them

as restrictive in nature. To Piaget, standardized testing did not allow children to liberate themselves from the rigid questioning procedure imposed upon them by the examiner, nor did it permit children to delve into their store of knowledge to elaborate on and verbalize about the causality of real world events. Piaget's goal was to describe mental structure, not to test it. His extensive lifework laid the groundwork for others to adopt and modify. Interestingly, standardized diagnosis seems to be the direction Piagetian followers are moving toward re-examining means of psychometrizing his technique.

Aims, Method, and Use

To investigate the evolution of knowledge, Piaget needed an approach which would allow children to verbalize freely and honestly about their conceptions of the world. While meeting his central goal through open dialogue with children, Piaget also left himself and his method open to criticism from those of the more empirical schools of thought.

Piaget's feeling was that to describe the evolutionary process involved in the acquisition of meaning about the world, one had to allow children to freely verbalize and lay bare their hypotheses and problem-solving strategies. La Méthode Clinique allows for open dialogue between the examiner and the child. As Piaget noted, questions evolve from the child's own reasoning and not from some standardized test of measurement. The open-ended, more process-oriented, clinical approach to questioning a child "reveals something of the spontaneous tendencies of the mind" (Piaget, p. 14).

As Flavell points out, Piaget's clinical method "gets at the heart of the child's cognitive structure and describes it as it really is" (p. 28). Flavell further describes Piaget's approach to the study of the development of cognitive structure as being a quasi-anecdotal rather than quantitative-statistical approach. His main aim being to comprehend and describe the mechanisms of thought and not specifically to determine ages and stages in which certain thought occurs, Piaget felt he could best meet this objective using a free conversation format in which changeable questioning strategies did not allow for strict statistical analysis.

"... a cardinal rule of La Méthode Clinique — no pre-set questioning strategy, no standardized testing procedure."

Influenced by the clinical tools of psychiatry, Piaget stringently followed a client or child-centered approach to problem solving. The line of questioning used, in the strictest sense of La Méthode Clinique, involved following the flow of the child's

thoughts while utilizing the child's own answers to determine the course of questioning. The latter was a cardinal rule of La Méthode Clinique — no pre-set questioning strategy, no standardized testing procedure! Primarily relying on children's verbalizations, Piaget later revised his method of investigation by introducing concrete objects to children. The combination of a child's manipulation of these objects and simultaneous verbalizations revealed the organization of cognitive structure a child brings to the task.

Piaget indicated that it takes much training to become expert at La Méthode Clinique. The free flow mode of interview or conversation required an experimenter to be extremely alert and flexible as each new stimulus situation is set up for the child following each response. The paradigm of questioning followed a stimulus-response-stimulus-response sequence with the experimenter constantly adapting his/her behaviour to the child's mode of reasoning (Flavell, 1963). The method required such diversification of questions across subjects that as Flavell pointed out "no two children will receive exactly the same experimental treatment" (p. 27).

"... the examiner presents tasks to the child, and through observation and interrogation attempts to uncover the mental operations or mode of thought involved in solving a task."

The plan of La Méthode Clinique is to initially engage the child into a conversation about the particular subject of investigation. The examiner formulates questions and presents problems based on the child's previous responses. In the revised Méthode Clinique, the examiner presents tasks to the child, and through observation and interrogation attempts to uncover the mental operations or mode of thought involved in solving a task. This exploratory descriptive approach to examining children's conceptions of the world provides the link and describes the "constructive relationship" (Furth, 1980, p. 23) between the individual and his/her world.

Piaget's systematic approach to investigating children's thought processes is by no means objective. Through probes and prodding, the examiner forces the child to reach the highest levels of thought for which he/she is capable. The key to the process, as pointed out by Cowan (1978), is to understand the world through the child's own perspective.

Piaget's works are filled with anecdotal recordings of the statements made by children. Perhaps, as some have pointed out, this time-consuming approach leaves much to be desired methodologically and statistically. However, as Piaget predicted, and this seems

to be confirmed by the more recent work of others, the uniformity of the answers of each average age group in terms of similar conceptions about phenomena is proof of the validity and utility of this mode of investigation.

There are definite advantages to Piaget's approach toward clinical investigation of children's thought processes. However there has also been criticism directed at his Méthode Clinique. It becomes apparent that what may be an advantage according to one school of thought may prove to be the seed for growing criticism from another point of view.

Advantages

The main advantage of the method is that it allows the child freedom to express his point of view without the constraints of a standardized testing procedure. The child's own stream of consciousness is revealed in interaction with tasks and questions which force the child to stretch and expose the fabric of the imagination.

According to Piaget, the child is made to feel comfortable in the relaxed conversation-like atmosphere in which the questioning procedure takes place. The examiner also has more freedom in use and selection of questions (Ginsburg & Opper, 1969).

Finally, the clinical approach allows the child to respond at his/her own rate always encouraged to express an idea in the best way he/she knows how.

"The key to the process... is to understand the world through the child's own perspective."

Disadvantages

The advantages, as seen from the Piagetian point of view, have also led to criticism of La Méthode Clinique by the more empirical schools and even by some neo-Piagetians interested in a more standardized approach to intellectual assessment. The issue of reliability and validity of the technique has predominated the discussions of any weaknesses in the procedure.

Hyde (1970) accurately summarized the critiques of La Méthode Clinique by stating that the main disadvantage of the technique was "lack of precision, controls, and exact repeatability" (p. 66). Not only did Piaget come under attack for varying the procedure from subject to subject, but was criticized for not describing fully what he did in his experiments. The reliability and validity of Piaget's measures were questioned by those leaning more toward quantification of results. These individuals challenged his methodology and data analysis procedures (or lack thereof). Beilin (in Modgil, 1976) even accused Piaget of using the ambiguity of children's responses

es to fit his research purposes.

Piaget himself even stated that "it is so hard not to be suggestive." (in Flavell, 1963, p. 29). Besides the possibility of biasing the child's answers by guiding them along, an examiner may also be at fault by missing the importance of particular verbalizations or behaviors of the subject.

In rebuttal to the above criticism, Tuddenham (in Green, Ford, & Flamer, 1971) cautioned about criticizing Piaget's lack of control by emphasizing that one must also look at what he originally intended to prove. As Tuddenham stated "the nature of our problems places constraints on our method. . . psychometric considerations must necessarily alter considerably the format of cognitive problems originally approached by the *Méthode Clinique*" (p. 66).

As a matter of fact, the problems presently being investigated by the neo-Piagetians are different than those which Piaget sought answers to. A shift of direction has necessitated a change in method. With the new emphasis on psychometrizing and standardizing Piaget's technique in search of a diagnostic tool, theorists such as Inhelder, Vinh-Bang, Goldschmid, and Pinard are actually leaning toward the empirical school. Interestingly enough, as reported in the literature, the results of standardization efforts have also exposed a degree of reliability and validity for Piaget's methodology. In essence, as pointed out by Flavell, a positive approach results in using a sound cognitive-developmental theory to establish "good empirical predictions of the sorts of cognitive achievement society is interested in" (p. 417).

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Flavell and others see Piaget's work as laying the necessary foundation for further research in the cognitive-developmental area. It is generally felt that the advantages of *La Méthode Clinique* could be retained in some ways through more quantitative and semi-standardized procedures. Much ongoing cognitive-developmental work in the area of children and television, including my own, has borrowed from Piaget's model to develop more modified version of his "méthode". Unfortunately in some ways this has led to modifications of his technique in favor of a more "test-oriented" approach. However with a sound theoretical Piagetian base to fall back on, the benefits appear to outweigh the disadvantages.

Cognitive-Developmental Area

Developmental theory supports the point of view that it is particularly during the formative years that children develop perceptions and understandings about the

world. Television plays such a pervasive role in all children's lives that research must develop and continue in the cognitive domain in relation to both what the child brings to television and how children make sense of its effect of them.

Aimée Dorr (1976) and her research group did a series of studies investigating children's critical evaluation of television content, modes of evaluating the credibility of television content, and knowledge of the television industry. Using semi-clinical interviews she questioned children on such topics as general opinions about television content, knowledge of the television industry, and awareness of stereotyped portrayals on television. Her questions did not directly focus on the specific elements of television (e.g. zooms and edits), but were open in order to assess what elements children of particular ages chose to attend to. Dorr analyzed children's responses by developing a scale related to levels of understanding. Differences in levels of understanding allowed her to make conclusions about developmental shifts in television comprehension.

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In another study, Hawkins (1977) used a closed Likert-scaled questionnaire to assess children's perceived reality of television. The results of his data on a sample of 153 four, eight and eleven year olds indicated some developmental trends. Reviewing the literature on children's responses to advertising and aggression, Wachman and Wartella (1977) and Wartella (1979) found the results of the more cognitive-developmental studies in this area also demonstrated developmentally-related shifts in children's understanding about television.

There are a number of other studies which have looked at developmental differences in children's conception of television. For example, Salomon (1979) found age level shifts in the analytical skills of children exposed to segments from the program *Sesame Street*. This, and the other research examples of cognitive-developmental investigations into the interaction between children and television illustrate the point that Piagetian philosophy (admittedly perhaps more so than his methodology) can serve as a starting point in evaluating children's apprehension of what they see not only on the tube, but also within the production industry itself — its technology, its relationship to the business of advertising, and most importantly its relationship to themselves. One must keep in mind that it has only been through the efforts of Piaget's extensive research into

children's conceptions of the world that we can now take some methodological shortcuts, so to speak, to examine the understandings children may exhibit toward specific stimuli in their environment at particular stages of development. Piaget's having already laid the groundwork, a balance in research design can now be reached which hopefully pleases the empiricists and yet does not lose the essential quality of openness so characteristic of *La Méthode Clinique*. By developing a media literacy questionnaire which involves closed-ended questions combined with probes intended to force children to reach into and stretch their imaginations, I hope I have achieved this balance.

Research

The work of Hans Furth, who is presently investigating children's conceptions of social institutions, served as the catalyst for my utilizing a semi-clinical approach to examining children's understanding of television-related elements. In his most recent work Furth (1980) describes how he explored the questions of children's understanding of such societal institutions as banks, government, and stores. His general hypothesis is the assumption that children adapt to the environment in which they live in terms of how they conceptualize social stimuli within their environment. The aim of his descriptive, exploratory research is to look at developmental shifts in understanding utilizing a Piagetian framework not only for investigation, but also for interpretation. Furth's mode of gathering data genuinely follows that of the *Méthode Clinique*. He allows children to openly express their thoughts, stretching their imaginations without using a structured approach. His collection of anecdotal recordings are then interpreted for commonalities of "ways of thinking" across age levels and other child-related characteristics. He, like Elkind (1978), who explored children's understanding of religion and prayer (albeit using a far more structured methodology), assigns specific stages in children's transition from global undifferentiated thought to the more highly differentiated mode of thinking characteristic of Piaget's formal stage of mental operations.

"There was room for more research of a cognitive-developmental nature in the children and television area..."

Influenced particularly by Furth's and Elkind's adaptation and use of a Piagetian approach to investigating cognitive-developmental issues, I began to formulate my own thoughts and questions concerning the subject of children's understanding of television. There was room for more research of a cognitive-developmental nature in the children and television area, and the more

process-oriented research approach of the Piagetian philosophy served my own needs in terms of examining the relationship between the medium and receiver of its messages.

To examine the concerns of my research program, a thirty-two item questionnaire directed at investigating children's understanding of such television-related elements as fantasy/reality, actors' roles, television technology knowledge, understanding the manipulation of time and space, and television as a learning source was developed. In effect, the nature of the questionnaire which covers a number of areas of understanding only opens the door to more in-depth research in each of the areas investigated. However the main focus of the work was to explore the possibility of developmental shifts in understanding. As reported in Baron (1980), preliminary results demonstrated shifts in children's thinking about television while also pinpointing specific areas where certain television-related elements such as technological knowledge are not well developed even into the more formal stages of development.

In terms of the methodology, the questionnaire was designed using forced-choice questions as well as open-ended probes. Pilot work demonstrated that although young children gave responses similar to those made by older children on the forced-choice items, the probes actually revealed differences in levels of understanding or sophistication of thought. This latter finding supported the need for more open-ended probing — perhaps, not as unstructured as *La Méthode Clinique*, but certainly open enough to allow for individual children to respond as spontaneously as possible to items.

Examples of questions including probes include:

1. How are cartoons made?
Probe: How do you know? (Why do you say that?)
2. Could the Flintstones move next door to you? Yes ___ No ___
Probe: Why do you say that? (Why? Why not?)
3. When your mother or father buys a T.V. set, are the T.V. shows in the T.V. set when they buy it? Yes ___ No ___
Probe: (i) Why do you say that? How do you know?
(ii) How do the T.V. shows get to your T.V. set?
4. What happens to Diana Prince's clothes when she spins into Wonder Woman?
Probe: (i) How do you know?
(ii) Where do they disappear?

Measurement of reliability has been built into the instrument as at least two items are designed to question similar knowledge. Validity of the questions is certainly of concern here, for developing a questionnaire of

this nature requires that young children in particular understand the items. It appears that conformity of responses over large samples of children at particular age levels is indicative of a certain level of validity. However, as Piaget discovered, verbalizations are not enough. The introduction of more concrete stimuli would certainly add validity to the testing procedure. It is this researcher's intention to develop such stimulus materials for future research of this nature.

Anecdotal recordings of the children's responses were coded in terms of levels of understanding. Using a methodology developed by Dorr (1976), children's understanding was coded on a scale of one to six as follows:

1. No Understanding — Absolutely no information is given.
2. Misconceptions — Subject's response indicates misunderstanding of the concept.
3. Understanding Peripheral Facts — Partially correct knowledge.
4. Understanding Isolated Facts — Subjects had accurate knowledge of certain facts without connecting them together.
5. Partial Understanding — Subject knows either one or another of the possible responses to a question.
6. Full Understanding — Subject knows the answer and possible different reasons are mentioned if there are such reasons.

"Results on most variables seem to indicate that shifts from less to more sophisticated levels of understanding do indeed occur..."

The results of the forced-choice and levels of understanding data have been analyzed and are in the process of further analysis and interpretation as related to developmental trends. Results on most variables seem to indicate that shifts from less to more sophisticated levels of understanding do indeed occur with a definite turning point being the onset of concrete operational thought (approximately age seven or eight).

My experience has led me to believe that the contribution the Piagetian model has made to this research project is a positive one. Although not following *La Méthode Clinique* in the strictest sense, utilizing a semi-clinical approach brings children out of the lab and asks them what they think. The more process-oriented method which has been applied to this and other similar work in the field has proven to be a valid method for investigating the area. Most importantly however, it has shown that the work of Piaget has evolved into a reliable model for research. That one man's professional endeavors have laid a framework other re-

searchers can build on is certainly a major contribution to science.

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