# To be or to look, that's the question. A comparative study on cognitive and social-cognitive development.

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## SUMMARY

In the last two decades, Piagetian theory has been increasingly criticised from many different angles. A research tradition which is widely referred to under the general label of social-cognitive development, has paid particular attention to Piaget's ideas about the role of the social environment in cognitive development. The studies which are presented in this dissertation, were all carried out in order to make a contribution to the discussion between Piagetian theorists on the one hand and social-cognitive theorists on the other.

Chapter 1 starts with the definition of three different social-cognitive research themes which are all concerned with Piaget's ideas about the role of the social environment in cognitive development. The first theme - *conceptual social-cognition* - is defined as "children's thinking about things social" (Damon, 1981) as opposed to children's thinking about things non-social. The focus is on the establishment of age-trends in children's understanding of the social world and on the description of qualitative age-changes. The second theme - *communicational social-cognition* - is concerned with cognitive growth as an inter-individual rather than an intra-individual process. In other words, this type of research examines whether cognitive growth may come about through social interaction. The third theme - *social context* - is concerned with the influence of the social context of the test-situation on children's cognitive functioning: does the social context lead to an under-estimation of children's cognitive level. The three research themes link up with three central questions which arise within a wide range of research: what is the *product* of development (conceptual), what are the *mechanisms* which bring about a particular product (communicational) and what kind of *measurement* techniques are used to collect the information (social context).

In the main part of chapter 1, an overview is given of the theoretical viewpoints and experimental results within each research theme. This discussion leads eventually to the definition of three central questions. (1) Does knowledge of social objects develop along the same lines as knowledge of non-social objects? Following Flavell (1982, 1985), this problem is reformulated as follows: how unitary can development of knowledge of non-social and social objects still be given the clear differences between both categories? (2) Is socio-cognitive conflict theory (e.g. Doise, 1984) a good alternative for the Piagetian view concerning the processes which are fundamental for bringing about cognitive growth? (3) To what extent do Piagetian tasks contribute to under-estimation of children's knowledge (e.g. Donaldson, 1978; Light, 1986)?

The general theoretical and experimental background discussed in chapter 1, forms the basis for the definition of a research model with four interrelated lines of research, two in the social and two in the non-social domain. The theoretical position which directly underlies this model, is discussed in chapter 2. Using the theory of the appearance-reality (AR)

distinction (e.g. Flavell et al, 1986) as a starting-point, two types of problems are selected: conservation, which is a typical non-social task (see Russell, 1982a, 1982b), and situations involving conflicting real and apparent emotions which is a problem from the social domain (e.g. Harris et al, 1986). With regard to these two problems, it is argued that there is a particular group of children whose knowledge may be under-estimated. These children - second-level thinkers - are prone to answer in terms of 'how it is', though this answer may be based on a subjective judgment, i.e. 'how it looks'. Thus, while the correct objective judgment may be at their disposal, children may say that 'this one is longer' but really mean that 'it looks longer'. It is further suggested that second-level thinkers can be distinguished from first-level thinkers by the fact that the latter group really thinks that it is as it looks. Third-level thinkers are children who spontaneously give correct answers to AR problems. These ideas are used to connect the conceptual research theme with the social context research theme. In both the non-social domain - i.e. conservation - and the social domain - i.e. situations with conflicting real and apparent emotions - children's knowledge may be under-estimated.

The above viewpoint may have certain implications for socio-cognitive conflict theory. An overview of conflict studies involving children who function on the same cognitive level and using conservation tasks, reveals that, in some experiments, children showed cognitive progress while in others, interaction did not lead to progress. This finding leads to the suggestion that even though subjects were classified as standard non-conservers in bot types of studies, they actually differed in that the 'progress'-studies used second-level thinkers whereas the 'no-progress'-studies made use of first-level thinkers. In other words, only second-level children benefit from social interaction while first-level thinkers do not show progress. Thus, equal-level socio-cognitive conflicts may lead to the underlying, correct answer, but they should not be seen as having the potential to establish cognitive restructuring. Taking these ideas somewhat further, it is also suggested that in unequal-level conflict studies, progress will only occur when the lower level children are actually second-level thinkers. By means of these ideas, the communicational theme is connected with both the social context and the conceptual theme. When the conservation task (non-social domain) and the conflicting emotions problem (social domain) are considered from an under-estimation point of view, specific ideas about the role of socio-cognitive conflict can be formulated.

Chapters 3 and 4 deal with the non-social domain and chapters 5 and 6 with the social domain. The first line of research is discussed in chapter 3. Experiments I, II and III were carried out in order to examine whether conservation could indeed be considered from an AR point of view. Children aged 5-7, were confronted with standard conservation questions and statements and with questions and statements which explicitly drew their attention to the appearance and reality aspect of these tasks. The





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results show that there were children, the second-level thinkers or AR-intermediates (AR-I), who performed significantly better when they were confronted with the 'looks'- and 'really'-questions and statements than when they were given questions and statements without any reference to the AR distinction. These children would probably be classified as non-conservers in a standard task, even though they seem to have the right answer at their disposal. These AR-I could be distinguished from a group of children, first-level thinkers or AR non-conservers (AR-NC), who did not benefit from the AR induction. Whether the questions and statements were introduced in terms of appearance and reality or whether they were standard, they all yielded incorrect responses, viz. appearance answers.

The second line of research is discussed in chapter 4 and is concerned with the implications of the above findings for socio-cognitive conflict research. Experiment IV aimed to provide more insight into the contradictory results which emerged from the equal-level conflict studies. Equal-level dyads consisting of two AR-NC (first-level thinking) or two AR-I (second-level thinking), were asked to solve a conservation of length task. The results reveal that the interacting AR-I did indeed show clear cognitive progress when compared with the non-interacting AR-I. However, this cognitive progress could not be ascribed to a socio-cognitive conflict effect since most AR-I/AR-I dyads started the interaction with two conserving answers. This occurred because the AR pre-test yielded a clear short-term effect since it made children think about the problem. Nevertheless, social interaction had a clear function for most of these AR-I in that the short-term pre-test effect turned into a long-term effect when an interaction situation offered them the opportunity to agree with other AR-I who had also arrived at the correct solution by means of the AR pre-test. The children used the interactional situation as an opportunity to confirm each other's correct response. If AR-I did not have such an opportunity, most of them stayed on the same AR intermediating level. The results further show that social interaction was ineffective in establishing cognitive growth for the AR-NC. These children were only slightly susceptible to an AR pre-test effect.

The third line of research is discussed in chapter 5. Experiments V and VI were carried out in order to study whether the under-estimation phenomenon also played a role with social situations. Children aged 5-10, were confronted with short stories in which the story character displayed an apparent emotion which was different from his/her real emotion. The children were again asked standard questions and questions which drew their attention explicitly to the appearance and the reality aspect. The results show that induction of the AR distinction is also effective in identifying underlying knowledge concerning situations with conflicting real and apparent emotions. A particular group of young children - the so-called AAR children or second-level thinkers - already understood that the real emotion may not always be identical to the apparent emotion despite the

fact that they were prone to focus on appearance when standard questions were posed. These children could be distinguished from the so-called AAA children (first-level thinkers) who answered exclusively in terms of appearance and from the RRR children who were prone to answer exclusively in terms of the reality aspect. It appears that RRR answers also reflected a second-level way of thinking.

The fourth line of research is discussed in chapter 6. Experiment VII was carried out in order to study the implications of the findings emerging from experiments V and VI for socio-cognitive conflict research. Since investigators on conflict theory have been mainly concerned with tasks from the non-social domain, this area is largely unexplored. Unequal-level dyads were formed by pairing AAA (first-level), AAR and RRR (both second-level) children with children who gave correct answers to the short stories which were presented in chapter 5 (third-level). These dyads were asked to discuss one of the short stories and arrive at one common answer. The results show that the interacting AAA children performed significantly better than their non-interacting counterparts. This was an unexpected finding in view of the suggestion in chapter 2 that socio-cognitive conflict only leads to the emergence of the underlying correct answer. Furthermore, AAA children were only slightly susceptible to an AR pre-test effect. As expected, AAR and RRR children benefitted from both the interaction phase with the children who gave the correct answer and the AR pre-test.

In chapter 7, the results of these several experiments are integrated within the context of the social context, communicational and conceptual research themes. With regard to the social context research theme, it is argued that the conservation studies were very convincing in showing children's underlying conservation knowledge. Although the results of the studies on situations with conflicting real and apparent emotions also seem promising, further experimentation needs to be done since there are some uncertainties about the material used. The general hypothesis is advanced that development from first- to second- to third-level thinking is a gradual process from lack of knowledge, to increased underlying knowledge, to clearly established and readily accessible knowledge.

With regard to the communicational research theme, it is suggested that in the gradual developmental process from first- to second- to third- level thinking, two steps can be distinguished. Knowledge of something has to develop and once it has developed, children have to learn to express it. In this process, at least two variables play an important role: *social interaction* and *problem introduction*. Both variables can be viewed as having a *cognitive conflict inducing* and an *intersubjectivity developing* function. Which of the two predominates over the other, depends on the point in the process which children have reached. When children are closer to first-level thinking, they need information which makes them think about the problem in question - i.e. which induces cognitive conflict. When they are closer to third-level thinking, they need to learn that their underlying correct answer





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should be explicitly used - i.e. intersubjectivity should develop. In this context, whether children are dealing with equal or unequal-level interactions and whether they are confronted with strong or weak problem introducing hints, are also important factors.

These suggestions and conclusions provide an answer to the central question which was formulated within the conceptual research theme: how unitary can development of knowledge of non-social and social objects be, given the clear differences between both categories. It is first acknowledged that certain differences which are inherent in the task, may have yielded differences in results. Despite this, the experiments have also shown that there are certain important processes which are not restricted to either the social-cognitive or the non-social-cognitive aspects of development. In the first place, children seem to pass through an under-estimation phase with both non-social and social tasks before they reach complete knowledge. In the second place, the same variables seem to play a similar role in leading children from one developmental level to another. It is concluded that development of knowledge of an object whether from the social or the non-social domain can be similar in important respects. However, "we have to know how and where to look" (cf. Flavell, 1982, p. 9).