PIAGET'S IDEAS IN THE DEVELOPING CHILD

Amanda Crosby

University of Wisconsin-Milwaukee

Jean Piaget was a Swiss psychologist and epistemologist in the mid-1900s. Epistemology is a theory of knowledge that focuses on the nature, origin, development, and limits of human intelligence. Piaget was also known as a stage theorist because of the way he described human development. He split developmental periods into stages which have specific intelligence milestones (Huitt & Hummel, 2003). The first stage in Piaget's theory is the sensory motor stage which spans from about 0-2 years of age. In this stage, children are developing motor skills, basic memory, and language. All things learned in this stage are based on experience and/or trial-and-error. The second stage is the preoperational stage which spans from about 2-7 years of age. In this stage, children can use symbols in their thought process, language is maturing, and memory and imagination develop further. Thinking in this stage is irreversible and without logic. The third stage is the concrete operational stage which spans from about 7-11 years of age. In this stage, children understand conservation and can think concretely and reversibly. The fourth stage is the formal operational stage which spans from 11 years into adulthood. In this stage, children begin to grasp abstract concepts and can form hypotheses based on prior knowledge (Huitt & Hummel, 2003).

Piaget defined egocentrism as how a child thinks for himself with no regard for another perspective and with no need to make himself understood. In Piaget & Inhelder (1956), 100 children ranging from 4-12 years of age were shown a mountain display. They were then presented with a doll and asked what the doll could see from her perspective. It was found that the children in the preoperational stage could hardly (if at all) distinguish between his own view and others. Children in the concrete operational stage could discriminate between perspectives, but it was obviously still a developing idea. I incorporated the idea of egocentrism into my study. My hypothesis was that the child in the preoperational stage would answer and give reasoning in

a way that supports only their viewpoint and the child in the concrete operational stage would answer and give reasoning in a way that shows understanding of other's perspectives.

Conservation is the understanding that something stays the same in quantity (volume, area, mass, number, etc.) even though the appearance changes. In Piaget & Inhelder (1974), children were asked if a clay ball had more, less, or the same amount clay than when it was rolled into a snake-like shape. They found that children in the preoperational stage had no understanding of conservation while children in the concrete operational could grasp this ever developing idea. Additionally, children in the preoperational stage are convinced that the quantity increases or decreases upon any and all changes in shape. Children in the concrete operational stage understood conservation on a basic level. I incorporated the idea of conservation into my study. My hypothesis was that the child in the preoperational stage would answer incorrectly and give illogical reasoning, while the child in the concrete operational stage would answer correctly and give logical reasoning.

My study had two participants: a four-year-old girl and an eight-year-old boy. I did have permission from their mother for them to participate (attached at the end). The children also agreed to participate. I tested them separately, so as not to have one influence the other. The four-year-old represents the preoperational stage and the eight-year-old represents the concrete operational stage. For the egocentrism task, I presented a bag of Goldfish to each child. I asked them what they thought was in the bag. Both children responded with, "Goldfish". I opened the bag and revealed to them that it was cereal instead. I then asked them if their sibling (who has not seen what was inside the bag) was asked the same question, what would they think was inside. The four-year-old said he would think there is cereal in the bag. I asked for her reasoning, but she refused to talk more. The eight-year-old, after thinking about it for a minute, said he

would think there is Goldfish in the bag because “it is a Goldfish bag and it sounds like Goldfish inside”.

The first conservation task included a ball of clay. I rolled the clay into a ball and had the participants look at it. I then smushed the clay and asked whether there was more, less, or the same amount of clay now. The four-year-old responded immediately with “the same”. When I asked for her reasoning she replied, “because it was into a ball and then it got smushed but it’s the same”. The eight-year old responded instantly with “the same because if it’s in a ball, there is still the same clay if you squeeze it down”.

The second conservation task included two cups of water. One glass was taller and skinnier than the other. I had the water in the shorter glass and the participants watched as I poured it into the taller one. I then asked whether there was more, less, or the same amount of water. The four-year-old was hesitant, but responded with “the same because it just looks a little different because that is a big cup and that is a little cup and you put it in the little cup”. The eight-year old had to do some investigating before responding. He looked to make sure all of the water was poured out of the first glass. After inspecting, he responded quickly with “the same because this is more skinny so the water is more higher but I know it is the same amount of water”.

The results from the egocentrism task did support my hypothesis and previous work. Egocentrism was present in the child in the preoperational stage. Her answer was based on her own perspective and no one else’s. Although she did not give reasoning for her answer, I believe she would have said something like “because there is cereal in there”. Egocentrism was not present in the child in the concrete operational stage. He was able to switch perspectives to give a correct answer and reasoning. The results from both conservation tasks did not support my

hypothesis or previous work. The child in the preoperational stage was able to give me a correct answer backed up by logic that (although was not grammatically correct) made sense. The child in the concrete operational stage was also able to give me a correct answer backed up my logic that made sense.

I decided to add the second conservation task because the first one did not support my hypothesis. I wanted my results to match prior work, but my sample size was very small. I also struggled with willingness to participate. Obviously, there were some issues in the egocentrism task. However, I had another task planned out, but had a very stubborn participant, and I ended up with results from three tasks.

Piaget would correlate the differences in answers to the development of perspective taking and the understanding of conservation (Piaget & Inhelder, 1956). The child in the preoperational stage was unable to distinguish her view from others, while the child in the concrete operational stage could. Piaget would have hypothesized that the child in the preoperational stage would have little to no understanding of conservation. He believed that a child would focus on a descriptive factor (height, diameter, etc.) and base their answer on this (Piaget & Inhelder, 1974). However, the participant in the preoperational stage could conclude that although the balls of clay or cups of water look different, they were the same based on another force. Piaget did say that children in the concrete operational stage were still developing reasoning skills. This was evident when I asked the eight-year old why he gave his answer. He struggled to find the words to describe what he saw.

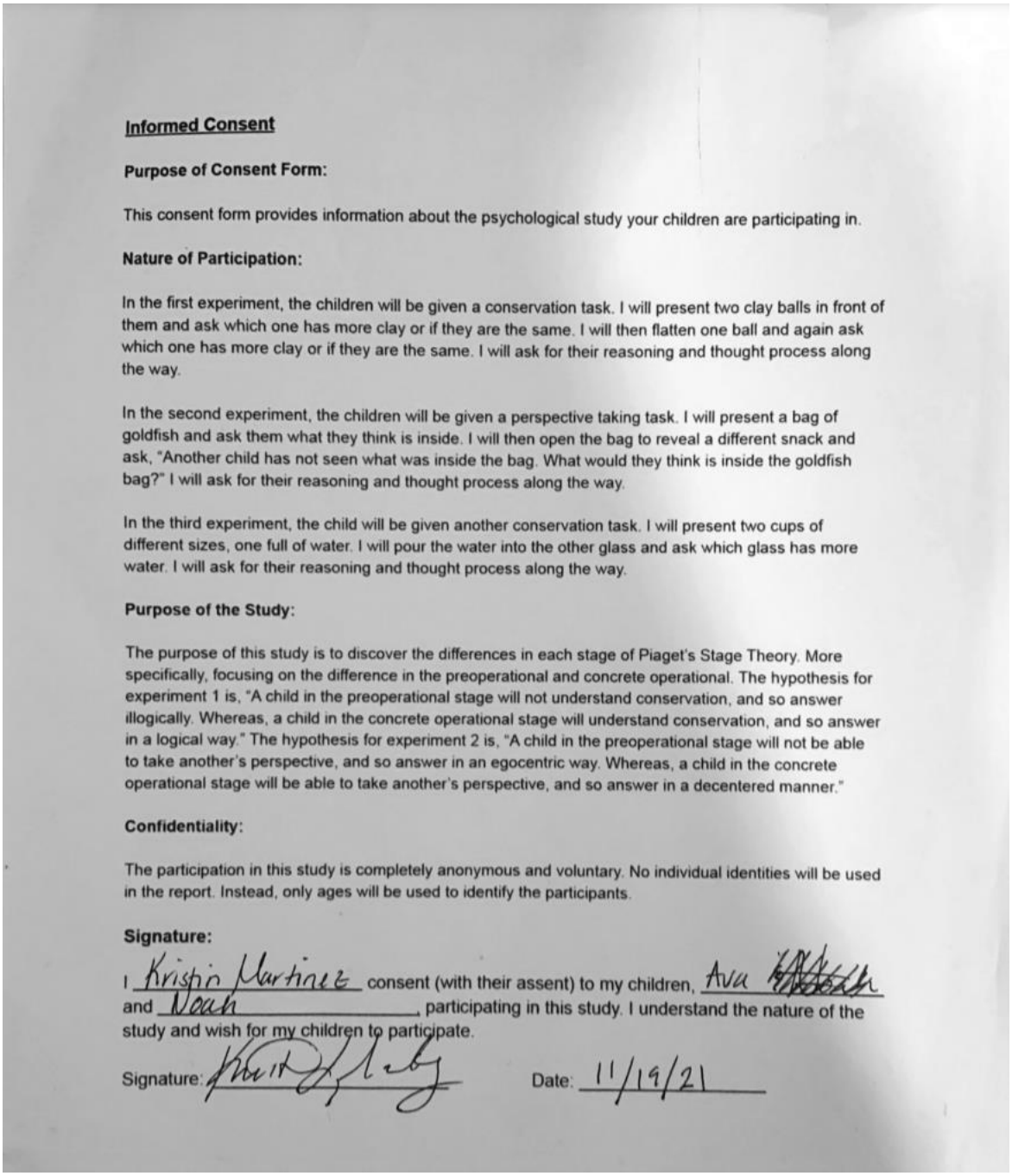
There are many benefits to studying and critiquing Piaget and his works. One critique is that Piaget puts a lot of stress on nature, while nurture definitely plays a role as well. Development does not happen without interactions between peers and the environment, and in

this way, development will look different in everyone. In recent years, it has been discovered that children are more advanced than Piaget had originally thought (Lawson, 2021). Furthermore, Piaget was a discontinuous stage-theorist. He believed that at every stage, there were specific milestones that were met. In studying his work, it was found that children are reaching such milestones earlier than what was originally proposed. This points to development being continuous, and happening at a child's own pace over time. Not only can studying Piaget help further research, but it can also help in school settings. Teachers (or even caregivers) can better understand children's thought processes which could enhance teaching and learning.

Teachers can align their strategies with their students' cognitive abilities. They can set their goal to help individuals construct knowledge and foster curiosity (Blake & Pope, 2008). Piaget focuses on making and testing hypothesis, especially in the formal operational stage. If teachers taught students how to work through a scientific question, they might be more inclined to ask and solve questions about the world around them. Teachers can also provide opportunities to recognize similarities and differences at the physical and abstract level. This can help students be able to comprehend what is abstract and how to go about their thinking.

The impact of aligning teacher's strategies to their students' cognitive abilities would include higher class achievement and more motivation. By learning something you are capable of, it makes learning exciting. If students are constantly engaged in school, the overall class achievement would rise. Not only is this good for the school, but for the future of the children. These children will grow with the motivation to learn and the ability to be curious about ideas. This is a great base to build off of in secondary education and throughout adulthood.

Informed Consent



Informed Consent

Purpose of Consent Form:

This consent form provides information about the psychological study your children are participating in.

Nature of Participation:

In the first experiment, the children will be given a conservation task. I will present two clay balls in front of them and ask which one has more clay or if they are the same. I will then flatten one ball and again ask which one has more clay or if they are the same. I will ask for their reasoning and thought process along the way.

In the second experiment, the children will be given a perspective taking task. I will present a bag of goldfish and ask them what they think is inside. I will then open the bag to reveal a different snack and ask, "Another child has not seen what was inside the bag. What would they think is inside the goldfish bag?" I will ask for their reasoning and thought process along the way.

In the third experiment, the child will be given another conservation task. I will present two cups of different sizes, one full of water. I will pour the water into the other glass and ask which glass has more water. I will ask for their reasoning and thought process along the way.

Purpose of the Study:

The purpose of this study is to discover the differences in each stage of Piaget's Stage Theory. More specifically, focusing on the difference in the preoperational and concrete operational. The hypothesis for experiment 1 is, "A child in the preoperational stage will not understand conservation, and so answer illogically. Whereas, a child in the concrete operational stage will understand conservation, and so answer in a logical way." The hypothesis for experiment 2 is, "A child in the preoperational stage will not be able to take another's perspective, and so answer in an egocentric way. Whereas, a child in the concrete operational stage will be able to take another's perspective, and so answer in a decentered manner."

Confidentiality:

The participation in this study is completely anonymous and voluntary. No individual identities will be used in the report. Instead, only ages will be used to identify the participants.

Signature:

I Kristin Martinez consent (with their assent) to my children, Ava [redacted] and Noah, participating in this study. I understand the nature of the study and wish for my children to participate.

Signature: [redacted] Date: 11/19/21

References

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