Cognitive Developmental Interviews

Developmental interviews are intended to facilitate the leap from theory to the reasoning process of the child. This should serve to add clarity to your understanding of reasoning about tasks that Piaget, Kohlberg, Nicholls, others have used, thereby enhancing your general understanding of cognitive development. Additionally, it should provide the impetus to consider children’s words from a different perspective—in terms of what words mean to the child as opposed to what they mean to you.

On the following pages you will find instructions for carrying out interviews associated with cognitive developmental theory. In order to see developmental changes, you must interview children of varied ages. At least three children should be selected so that their age variation will allow us to see thinking in the preoperational stage to concrete operational stage transition (e.g., 5, 6, 8) or the concrete operational stage to formal operations stage transition (e.g., 8, 10, 13). The minimum age is 4 and the max is 14. If you only interview three, you should focus on one transition. You are encouraged to interview more children of varied ages if the opportunity is available (especially if you are interested in getting an above average grade).

For each child, complete at least five interviews (more is better if time permits) using a quiet place. Each of the children should complete the same interviews to allow comparison across a developmental transition. It doesn’t make sense to interview a 5 year old to see if they are in formal operations, or a 14 year old to see if they are preoperational. If you intend to use interviews to consider both transitions, you would obviously need extra children, with children 6 and below not receiving tasks designed to differentiate formal operations, and those 11 and over not receiving tasks used to distinguish preoperational thinking.

Before interviewing, get written parental consent with phone numbers (see next page). Videotape the interview. You may take notes during the interview or collect them while watching the tape. In a large envelope, turn in the report, permission forms, notes, and the DVD or tape (in VHS or most preferred; DVD format). The library has resources to copy tapes to DVD.

Follow directions! Use headings! Write a report which characterizes developmental changes in reasoning reflected in each interview protocol. Write a report (6-8 pages) comparing the three or more children interviewed for each of the interview protocols. The objective is to see how children’s reasoning about these tasks changes as they get older, not to classify each child. Your writeup should include 3 parts for each interview protocol; 1) Describe based upon your studies what is expected from children on that specific task at varying ages and levels of development. Be specific to this interview task. 2) Describe and compare what the various children did on the task. Note specific things the child did or said to illustrate their stage or level of reasoning. When you use their name, put their age with it; e.g., Billy,(9). 3) Discuss why your findings were or were not consistent with theoretical expectations regarding how children of these ages are likely to respond to the task.

The format as described in the assignment should use headings like those below and look something like this.
A. Ordinal Relations.
   1. What is expected from kids at these ages?
   2. Compare children’s responses of all children interviewed.
   3. Evaluate: Were they consistent with expectations?
B. Conservation
   1. expected
   2. compare
   3. evaluate.
C. ......

Turn in your paper, notes, permission forms, and tapes in an envelope.
Permission to Interview

Dear Parent:

As one of the course options for the course, Educational Psychology, __________________ can interview children to demonstrate how the reasoning skills are different at younger and older ages.

If you sign this form, you are giving permission for the student above to interview the child, videotape the interview, and write about the responses. Note that this is not testing in that these interviews are not intended to assess the development of your child. Instead they are intended to illustrate how children’s thinking changes with age.

Feel free to call Dr. Arden Miller 836-4160 if you have questions about the interview.

I consent to the participation of __________________ who is my son/daughter in the project being conducted by ________________ for their Educational Psychology Class.

_________________________              ________________________
Parent Signature              Date

_________________________              ________________________
Child’s Name     Child’s age years/months

[_____] Occasionally an interview provides a particularly good illustration of a concept. Initial here if it is ok to use the videotape as a classroom illustration.
Interview 1: Piaget--Ordinal Relations

**Purpose:** To discover if the child is able to place objects in order from smallest to largest and be able to logically match the series.

**Equipment:** Remove the next three pages and paste them to a sheet of cardboard. Then cut to produce two sets of cards—one of dinosaurs and one of patches of grass. Sheets may be cut first and pasted to file cards.

**Single Seriation Procedure:** Place the dinosaur cards in front of the child, and thoroughly scramble them so they are in a random order. Then point to a card with a dinosaur and say: "Here is are some dinosaurs, all of them of different sizes. I'd like you to take the smallest dinosaur, and then one a little bigger, and then another a little bigger, until you put all of them in a row here. I want you to line them up from the very smallest dinosaur to the very biggest dinosaur."

Describe how the child proceeds (for example, confidently, tentatively, systematically) and what he does. Draw the arrangement of the cards.

**Double Seriation Procedure:** Scramble the cards again and say: "Let's suppose the dinosaurs are hungry, and need to eat a patch of grass. Bigger dinosaurs need to eat more grass and smaller dinosaurs need to eat less grass. Match the dinosaurs up with the patch of grass that fits them, with the largest dinosaur getting the most, and each of the other dinosaurs getting the amount of grass that fits them best based on their size."

Describe how the child proceeds and what he does. Draw the arrangement of the cards.

Finally point to one of the dinosaur/grass pairs and ask: "Why do you think that patch of grass is the right one for that dinosaur?"
Interview 2: Piaget--Conservation of Space

**Purpose:** In this experiment, the child must understand that equal sized blocks placed upon pieces of paper of equal size take up equivalent amounts of space even though they may be arranged differently.

**Equipment:** 20 small blocks or the equivalent (coins, poker chips, cutouts), two pieces of cardboard or paper of equal size and dimensions (8 x 11 or larger), two small cows (models or pictures)

**Procedure:** Place the two pieces of paper in front of the child and arrange the blocks in a pile to one side. Say to the child: "Let's pretend that these are fields owned by two farmers. Are they each the same size?" (The child must agree that they are the same size. Help the child to see this by superimposing one piece of paper upon another if necessary). When the child has agreed that they are equal size, say: "If each farmer puts a cow in his field will each have the same amount of grass to eat?" (Again, the child should agree to this). Then say: "One farmer decides to build a barn on his field and we will make believe that this is his barn." (Take one of the blocks and place it near one corner of one piece of paper). Then say: "The other farmer decides to build a barn too." (Put a barn on the other piece of paper in the same position as that on the first). Then ask: "Does the cow in this field have the same amount of grass to eat as the cow in the other field? Or does this one have more or does this one? Why or why not?"

Child's response:

Then say: "Now suppose that both farmers make a lot of money and build more barns. One farmer builds his barns this way. (Place two blocks on one sheet of paper right in a row with the blocks touching and lined up neatly along one edge of the paper). The other farmer decides to build his this way (place two blocks on the other piece of paper but spread the blocks out randomly several inches apart). Do the cows still have the same amount of grass to eat or does one cow have more grass to eat than the other." Why or why not?

Child's response:

If the child answers correctly, add blocks (barns) using the same comments. Add as many blocks as you need to be sure the child does or does not genuinely understand the concept.

Further Responses:
Interview 3: Piaget--Mental Imagery
transformational or static imagery

Purpose: To determine whether the child's mental imagery can decenter from the immediate stimuli based upon known properties of the physical environment. Note that key skill is the ability to use transformational imagery and correctly draw the water line parallel to the ground rather than parallel to the bottom of the glass.

Equipment: A tumbler half-full of water. Paper and pencil for the child.

Procedure: Show the child the glass of water and say: I want you to draw three pictures for me. One of how the glass of water looks now, one of how it would look if it were tipped over, and one of how it would look while it was tipping. Re-explain prior to each drawing. Describe how the child proceeds and save his drawings.
Interview 4: Piaget–Number combinations

Purpose: To determine whether the child systematically reason about hypothetical possibilities.

Equipment: Four card with four different single digit numbers on them.

Procedure: Show the child the four cards in a line and say, “See how these four numbers make a number. Can you tell me what this number is?” Make sure they understand, reading x thousand, y hundred and z. Say, ” Now I want you to rearrange the numbers to make as many different amounts as you can. Each amount must use all four numbers. Try to see how many you can make, but try not to repeat amounts.”

After recording their combinations (24 possible) ask them how they went about doing that. If they didn’t use a system, and don’t report using a system, ask them if they have any idea how one could do this, getting all of the number combinations without repeating any amounts.
Interview 5: Piaget–Hierarchical Classification

Purpose: To determine whether the child systematically reason about hierarchical classification (or class inclusion), comparing combined groups to single groups.

Equipment: Cards with the animals shown on the next two pages.

Procedure: Spread the cards in front of the child. Say, “We have a bunch of animals here. Which one’s do you think would make good pets? Put them in groups for different types of pets.” Determine whether they can group by dogs, etc. and give some assistance if necessary.

Would you have more animals if you had all of the dogs, or if you had all of the pets? How can you tell?

If they say same; Would you have more animals if you had all of the animals, or if you had all of the dogs?? How can you tell?
Interview 6: Moral Development Kohlberg

In Europe, a woman was near death from a special kind of cancer. There was one drug that doctors thought might save her. It was a form of radium that a druggist in a nearby town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost him to make it. He paid $500 for the radium and charged $5000 for a small dose of the drug. The sick woman's husband, Heinz, went to everybody he knew to borrow the money but he could only get together about $2500, which was half of what it cost. He told the druggist that his wife was dying, and asked him to sell it cheaper or let him pay later. But the druggist said, "No, I discovered the drug and I'm going to make money from it." Heinz got desperate and broke into the man's store to steal the drug for his wife. Should Heinz have done that?

Do you think what he did was right? Record the answer?

Use probes and additional questions, exploring the child's opinion until you feel confident that you have a solid basis for assignment to one of Kohlberg's stages.

Interview 7: Moral Development Kohlberg--Moral Development

Conduct a moral development interview using your own dilemma. Be sure to be able to recognize and demonstrate thinking that corresponds to Kohlberg's stages of moral development.
Interview 8: Normative difficulty  
(reasoning about difficulty and ability)

**Materials:** Make three folders (or large envelops) and draw pictures of smiling and frowning faces (see below). Each folder should have 12 faces, with 3, 6, and 9 of them smiling and the remainder frowning. Put something in each folder so that it feels like there is a puzzle in it.

**Procedure:** See these three folders? Each of these folders has a puzzle in it. On the folder are faces of the children who could or could not do them. The smiling faces are the faces of the children who were able to do the puzzle. The frowning faces are the faces of the children who could not do the puzzle. Can you see which puzzle lots of children could do? Which one could not to many children do? (repeat as necessary to make sure they understand this.)

Which one of these puzzles would you have to be very smart in order to be able to do? Which one could only smart children do?

Hard       Medium       Easy (circle one)

How can you tell?

How come so many children got this one wrong (pointing to 3/12 right)?

How come so many children got this one right (pointing to 9/12 right)?

Which one would you like to do?

Hard       Medium       Easy (circle one)

Why would that be a good one to try?
Interview 9: Conceptions of ability
(reasoning about effort and ability)

Materials: Photograph of two children working on the same set of puzzles, one working hard while the other is not.

Procedure: Explain the pictures to the children as follows. “See these two children. They’re both working on the same set of puzzles. They both took the same amount of time and got the same score on the puzzles.

Are one of them working harder or are they working the same? (This is asked to insure that they notice the differential effort.) If they fail to note the difference, talk to them about the pictures. It would be impossible to proceed meaningfully if they do not recognize this difference.

Are one of these children smarter or are they the same?

High effort     Low effort     They’re the same(circle one)

How can you tell?

How come they both got the same score when this one worked hard and this one didn't?

What would happen if they both worked hard at the puzzle. Would one do better or would they both get the same?

High effort     Low effort     They're the same(circle one)

How can you tell?

Repeat the earlier question: So which of these did you think was the smartest? If they change their answer, ask how they can tell again.

High effort     Low effort     They’re the same(circle one)

Tell?
Interview 10: Conceptions of ability & luck

Materials: Two cardboard sheets, each having six cardboard flaps on it (see figure below); three copies of figures (attached, you can use either the lions or the witches). On one cardboard sheet, one of the six figures should be placed on each flap, with an identical figure below it. On the other cardboard sheet, place figures below the flaps only. The single figure above the six figures represents the standard and should be glued to a small card. For each figure that does not match the standard, circle in red the part of the figure under the flap which does not match the standard (thus allowing you to show feedback of right and wrong).

Procedure: We have these two different types of puzzles for kids to do. For this one (point to skill), you try to match the card with the pictures on the front of the flaps. So if you picked this one you’d be wrong; and this one wrong/right.... (show how they can be wrong or right) On the other one (luck) you have to look at this card, then look at the flaps (point to the blank flaps) and try to pick which one is just like the card. See if you pick this flap you are wrong; this wrong; and this right, etc. (showing markings for wrong and right under the flaps).

Mark did this one (point at luck) and got it wrong and Billy did this one (point at skill) and got it wrong. Would they both have done better if they had tried harder?

Would Mark have done better if he tried harder? Yes  No Would Billy have done better if he tried harder? Yes  No How can you tell?

If they both tried at their puzzles again, which one would be more likely to get theirs right?

Skill  Luck How can you tell?

Which of these puzzles would you have to think really hard on in order to get it right? Which one would you want to try hardest on?

Skill  Luck How can you tell?

If the said both would do better, say, "So both of these would do better if they tried harder, right"?

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Interview 11: Proportional Reasoning

Materials: 8½ x 11 heavy paper or card stock; 8 jumbo paper clips and 12 small paper clips, or similar items where the jumbos are 50% larger than the smalls. If you can’t get clips that are close to the right proportion, create something.

Draw a stick man on one side of the card that is 6 jumbo clips high and on the other side of the card, draw a stick figure that is 4 jumbo clips high. Have the student measure the large stickman with the jumbo paper clips, and then the small stickman with the jumbo paper clips (connected as a string). Then have the student measure the large stick figure with the small paper clips (should get 9).

Then ask, “How tall does the small stickman on the other side measure in terms of small paper clips?” You may remind them that it was 4 jumbo clips long. The student may use paper to compute proportions, if needed.

How can you tell?

Interview 12: Hypothetical reasoning, if A then B

This task will be used as an example in class. Use file cards and envelopes to create the conditions I describe in class. Use the cards first, and if they get it wrong, explain the answer. Then try the envelopes.
Interview 13: Syllogism

Describe the following.

All mailmen wear purple suits.
John is a mailman.
What does John wear?

How can you tell?

This requires deductive reasoning. Now try deductive reasoning with symbols.

All B’s are A’s
All C’s are B’s
Then all A’s are ________

How can you tell?

And if all…(repeat), then what do we know about C’s

How can you tell.

Interview 14: Pendulum problem, separation and control of variables

Materials: a structure with which to support the pendulum, 30 or so inches of string, a set of varying weights, timing device.

Create a sample pendulum, and have the student count how many times the pendulum cycles in 30 seconds. Ask the student to speculate about things that might influence the speed of the cycling. If they respond about learning specifically that it is the length, this task cannot be used to discern formal operations reasoning. They might respond with weight, string length, height when dropped, or a push. Help them to speculate. Then ask them to test it out and see if they can determine which of these are important. Describe how they proceed, carefully noting how they manipulate variables with each test. Remember, formal operational reasoning is signaled by the separation and control, not simply whether they attain the right answer.