Cognitive Development Exercise: Ages 2-8

Beth is taking care of her niece and nephew, and has promised them some ice cream. When she goes to serve the ice cream, Beth discovers that she has forgotten to wash her dishes and there are only three bowls in the cupboard: one big, one medium, and one small. Beth gives her nephew one scoop of ice cream in the big bowl, and her niece a scoop of the same size in the medium bowl. Her nephew complains, saying her niece received more ice cream.

1. What aspect of preoperational thinking explains Beth’s nephew’s complaint?
2. What could Beth do to make her nephew feel better about his ice cream (without giving him more)?

You are watching two brothers, Jason and Adam, sorting their Halloween candy. The older brother, Jason says, “You don’t like licorice, so I’ll take both pieces of licorice. I don’t like gum, so you can have all four pieces of gum. You got four gums, so I can have all three sweet tarts”. Concerned for the younger boy, you ask Adam “Who got more, you with your four pieces of gum or Jason with all his candy”. Adam says “I have more, because I have four gums, and he doesn’t have four anything”.

1. What aspect of preoperational thinking explains Adam’s reply?
2. How could you rephrase the question to make it easier for Adam to answer?

You are trying to replicate Piaget’s three mountain task with a four year old girl named Emily. You carefully set up the coffee table with large, medium and small hills which you have constructed from clay. You place Emily facing the small hill, and place her teddy bear on the couch opposite her (facing the large hill). You ask Emily “What can Teddy see?” Emily says “He sees the small hill”. You are so amazed that Piaget was right that you bump the large hill, sending it crashing onto your foot. You start hoping around the room saying “ouch, ouch, ouch”. Emily goes to the kitchen, gets a piece of ice from the dispenser on the freezer door, and brings the ice to you. Emily says “this will make you feel better”.

1. What aspect of preoperational thinking explains Emily’s answer to the 3 mountain task?
2. How could you change the task to make it easier for Emily to answer correctly?
3. What would you call Emily’s behavior with the ice cube?
4. What does her action with the ice cube imply about her performance on the 3 mountain task?

Five year old Carlos loves Hercules. Christmas he receives a Hercules outfit, complete with bow and arrow, leather vest and leggings, and a Hercules wig. Carlos dresses up in the Hercules costume, and yells “I am a warrior”. His 2 year old brother, Jorge, starts crying. Jorge screams “What happened to Carlos? Who are you?”. Their father tells Carlos to calm down, take off the wig, and show Jorge that it is still Carlos in the getup. Carlos says “of course it’s still me, he should know that”.

1. What aspect of preoperational thinking explains Carlos’ assumption that Jorge knows the costumed person is Carlos?
2. Is it likely that Carlos would make similar errors if he saw his brother dressed up as someone else? Why or why not?