Conservation – Asking only one question in the conservation experiment.

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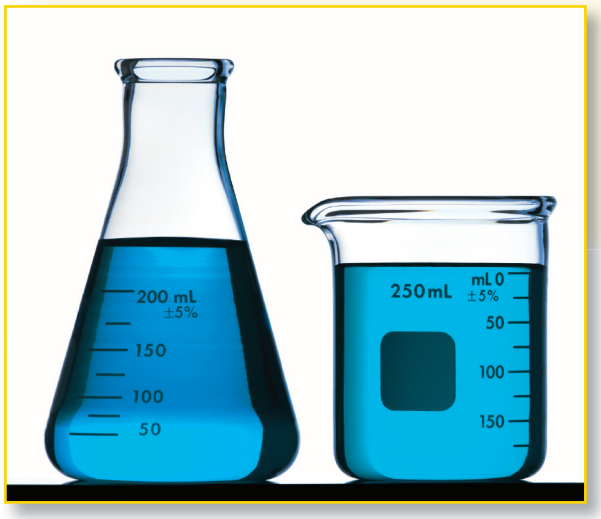
Samuel, J. & Bryant, P. (1984)

Introduction / Background

The study by Samuel and Bryant is an example of research that has led to a re-evaluation of Piagetian concepts and this developmental study is concerned with Piaget's theory of cognitive development. Piaget claimed that the way a child thinks is *qualitatively* different from the way an adult thinks because children's thinking uses different rules.

Conservation is an example of the qualitative difference. To conserve something is to preserve it or keep it the same, to *maintain the same quantity*. In terms of thought processes, a child can conserve when they understand that quantity does not change even if it *looks* different. For example, if you pour water from a wide glass into a narrow glass, the quantity looks as if it has increased. Young children are influenced by what they see (concrete information) and think that the quantity has changed, and they will say that there is more water in the narrow glass. Psychologists say that this child cannot conserve.



	Pre-transformation		Post-transformation
	Equal quantities	Unequal quantities	
1 Mass	Two equal plasticine cylinders.	Two unequal plasticine cylinders, one longer than the other.	One cylinder is squashed so it looks like a sausage.
2 Number	Two rows of 6 counters each, arranged identically.	One row of 6 counters and one of 5 arranged to look equal in length.	One row was either spread out or bunched up so the two rows were not of equal length.
3 Volume	Two identical glasses, with the *same* amounts of liquid.	Two identical glasses, with *different* amounts of liquid.	The liquid from one glass is poured into a narrower or wider one.

Piaget suggested that age 7 is a watershed. Children above this age have developed their ability to conserve. Evidence to support this was gathered using conservation tasks in which Piaget used quantities such as a row of counters (number conservation) and a ball of clay (conservation of mass). His procedure was to show the child two equal quantities, for example two rows of counters equally spaced out. He asked the child 'Do the rows have the same number of counters?', to which the child answers 'Yes'. Piaget then transformed one display, for example spreading one row of counters out so that it looks longer. Piaget asked the child again 'Do the rows both have the same number of counters?' Some children say 'yes' (they are the ones who can't conserve), some children say 'no' (they can't conserve).

Samuel and Bryant, criticised Piaget's research, and argue that the reason young children get these tasks wrong is not because they can't conserve, but because being asked the same question twice confuses them. The child may think that the reason the experimenter asks the same question again is because he wants a different answer.

The aim of the study is to test the theory that 'asking the same question twice' is the reason why children fail to conserve in Piaget's standard conservation task.

Results

There were no differences found in the equal and unequal conditions and therefore the results for these were combined.

The table below shows the mean number of errors for each child (rounded to the nearest whole number). An error is a failure to conserve.

Age	Standard	One question	Control
5	8	7	9
6	6	4	6
7	3	3	5
8	2	1	3

Conclusions

Asking the same question twice (the method used in the standard conservation task) may cause some children to fail to conserve, BUT, the results also provide support for Piaget's theory, because as the age of the children increased the children made fewer errors of conservation, regardless of which condition they were tested in.