

Do adults behave like children when under pressure?

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Abstract

Do adults behave like children when under pressure? If children perform differently because they have more limited cognitive resources, like working memory, if you load adults working memory can you then get them to show childlike behavior/interpretations?

Introduction

Investigate on adult tendency to commit universal quantification when their cognitive resources are limited.

The present study aims at examining this hypothesis.

Symmetrical response (SR) and Logical reading (LG) in children and adults do to low level of *COGNITIVE CONTROL*. Multiple numbers (≥ 6) of extra objects almost perfect LG (Sugisaki and Isobe (2001)).

Desired number of extra object should be the one that is capable to elicit both LG and SR responses.

Ability to flexibly switch perspective, children are inflexible (Piaget (1954)).

Children between 4 and 5 yo as in (Minai et al. (2012)).

Because they're able to provide both SR and LG responses

One group of adults 20-30.

Question-answer Requirement -> sentences are interpreted as answers to particular questions. Maybe under pressure the participant tend to find easier question, leading to commit errors and universal quantification.

Method

Truth Value Judgment (TVJ) task (Crain and Thornton (2000)) Use both extra object and extra subject picture.

Place them in different places of the screen, not always in the bottom right corner.

Three word recall task (Cullum et al. (1993)) adult subject are asked to remember three words during the execution of the experiment to keep their memory occupied.

Participants

English native speakers children between 4 and 5 years old, because they can provide both SR and LG responses. A group of English native speakers adults of age between 20 and 30 yo (they should have completely developed their linguistic and cognitive skills). Both groups, children and adults, will be equally divided between male and female subjects.

Procedure

Children Children will be presented a picture in the top centre of a display followed after 2500ms by a spoken sentence, in the exact moment that they start hearing the sentence they have to move the mouse toward the answer they think it

is correct, in our case the possible answers are "YES/NO" and are presented in two boxes on the left and on the right of the picture. If the children are too slow in the beginning they will be asked to start moving the mouse earlier. In order to display the picture and start the single step of the task children will have to click on a start button, the picture will be presented and then in the same moment when the sentence starts the two boxes containing "YES" and "NO" will appear on the screen. Knowing that this can be demanding for the children we take in account the possibility for them to take a break during the execution of the experiment (approximately in the middle).

Adults For adults the TVJ task will be presented in the same way, with the only difference that they won't be able to take a break during the experiment. Furthermore they will be asked to go through two Three Words Recall (TWR) tasks, one in the first half and one in the second half of the TVJ task, to keep a portion of their working memory busy and to push them to give more childlike answers. If the commitment to universal quantification in children is just bound to their under fully developed cognitive skills it should be observed in adults a tendency to give more childlike responses when their working memory is limited.

Materials

Sentences As this study is inspired by the work of Minai et al. (2012) the stimuli used for the TVJ task are the english translations of the ones presented in their paper, with the only difference that is necessary to add a *filler item* in order to have an even number of stimuli, which are necessary to divide the task in two blocks. The stimuli sentences are therefore 18 and are divided in three groups respectively: 8 target sentences, 8 filler sentences and 2 warm-up sentences. Below we report an example of a target sentence (1), in (Appendix I) it's possible to find the complete set of stimuli sentences. All the sentences will be spoken by both a male and a female english native speaker and recorded in order to be presented to the participants in form of an audio track.

(1) Every turtle is holding an umbrella.

Differently from Minai et al. (2012) we associated to the target sentences both the under and over-exhaustive scenes. This means that we have 2 presentable stimuli for each sentence. Participants are presented in the same proportion under and over-exhaustive ones, respectively four for each type, but they are never presented the same sentence with the two different images, in order to avoid priming.

For this experiment we will use materials very similar to the one used in Minai et al. (2012), with the difference that in addition to under exhaustive scenes, in which objects are

more than subjects, we will provide also over exhaustive ones (i.e. images in which subjects are greater in number than objects). Another important change to the original images will be done and it will consist in moving the extra objects, or the extra subjects, respectively, in all the four lattices in which the image is divided. This hasn't been done in the work of Minai et al. (2012) and it could have led to a lack of processing of the image presented.

We will report some examples of the materials that will be used.

Results

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. If you read this text, you will get no information. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. This text should contain all letters of the alphabet and it should be written in of the original language. There is no need for special content, but the length of words should match the language.

Discussion

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Appendix I