

# ISSA Proceedings 1998 - Evaluating 'Pros' And 'Cons': More Or Less Polarised Opinions?



## *1. Introduction*

The experiment presented in this paper [i] was designed in order to examine whether providing subjects with arguments which supported each side of the case in a casual manner would lead the participants to revise their own point of view and to adopt a less polarised position.

The findings from the study by Lord, Ross and Lepper (1979) run against this hypothesis. In their study, there were two groups of subjects who held opposing views on capital punishment. Each subject was asked to evaluate two invented studies, one claiming to demonstrate that capital punishment had a deterrent effect on the incidence of serious crimes and the other concluding that it did not. The studies assessed by the subjects used different methodologies. One was a comparison of crime rates in various states before and after the adoption of capital of punishment; the other compared the crime rates of neighbouring states with and without capital punishment. Subjects tended to be more critical about the study that disagreed with their position, whichever methodology it used. The results of Lord, Ross and Lepper's (1979) study indicated that people's beliefs became even more polarised in their original directions, following the evaluation of both supporting and contradicting evidence. It is hypothesised that, in the present experiment, the effect of asking people to evaluate evidence on their opinion may be associated with the type of topic they are dealing with and with the level of attachment to the issue in question. It was expected that the evidence evaluation procedure would have a greater effect on people's opinions when the issue in question was not closely related to subjects' basic values. By 'basic values' I mean those related to moral notions about life and human behaviour. In these cases, it is hypothesised that, contrary to the results of the previous studies, subjects' opinion will be less polarised after the examination of the mixed evidence.

In order to investigate the hypotheses raised in this experiment, the participants were asked to give their opinion on two different issues: animal experimentation

and the pros and cons of shopping at a supermarket or local shops. The former topic was regarded as having an 'emotional' content and being more likely to be related to subjects' moral beliefs and the latter as being a less emotive topic. Subjects' opinion on each topic was assessed before and after they had evaluated a list of 'pros' and 'cons' and written down their comments on the two issues.

## *2. Method*

### *2.1. Subjects*

Twenty four subjects recruited from the student population of the University of Sussex (UK) were paid to take part in this study. Fourteen of the participants were female and the remain ten subjects were male. Their age ranged from 18 to 29 with an average of 22 years old. The selection of the subjects took into account their opinion on animal experimentation. Half of them were in favour of it and the other half did not agree with the use of animals in scientific experimentation.

### *2.2. Material*

The materials involved two lists of 'pros' and 'cons' associated with animal experimentation and the idea of shopping at a supermarket or local shops. The list regarding the issue of animal experimentation included general supports for each side of the case based on arguments often used by subjects in previous experiments (Santos, 1996). The list for the 'supermarket versus local shop' issue was presented within the context of the hypothetical case of the construction of a new supermarket in the countryside. Each list contained six statements in favour and six against the subject in question. In both cases, the lists were introduced by a short comment on the associated subject. The introductory comment on each topic and its corresponding list of 'pros' and 'cons' were written on the same page and can be seen below:

#### *Animal experimentation*

The debate about the use of animals in scientific experiments is well known. Different groups hold different and opposite views and they can give reasons to support their positions. Below you will find a list of reasons people give for being "for" or "against" animal experimentation. Please, read carefully and after that write what your opinion is about the matter. Please, try to explain it as fully as you can.

#### *'Pros'*

1. There is a distinction between humans beings and animals. History civilisation

shows that. So, we should not be sentimental about animals.

2. The value of human lives outweighs the suffering that might be inflicted on animals. Better to sacrifice animals than have humans died.
3. There is a lot of important medical breakthroughs that have been made by animal experimentation. Drugs have been developed that have improved the quality of life.
4. It is necessary to test drugs in a living system. It is better to test them on animals before starting a preliminary medical test, so that the animal is at risk, rather than the human being.
5. Some animals do not have a sense of pain and there are also ways and means of limiting suffering in experimental animals.
6. There are regulations to assure that animals are well treated in labs and are not subject to any suffering that is not absolutely essential.

#### *'Cons'*

1. Human beings share a lot of molecular and biological similarities with very simple organisms. Life should not be sacrificed, whether it is a mouse or a human being.
2. Animals are beings just as much as humans and so scientists have no rights to make the animals have a horrible existence.
3. There is already a whole bank of data about certain chemicals and substances. So, all the manufacturers have to do is refer to computer data to see what sort of effect certain substances have.
4. The animal model does not really correspond to the human model. So, there will always be an element of risk. We can never be sure that a drug that is non-toxic to, say a dog or a rat, will not have terrible side effects in a human.
5. Scientists can use alternative means, such as cell cultures.
6. Animals go through a lot of pain and torture in the name of "science".

#### *b. Place to shop*

A well-known supermarket group is negotiating the purchase of land to build a new store. The site they intend to buy is in the country, in a farm area. There is no supermarket within a radius of 15 miles. The supermarket will serve most people from many villages in the surrounding area. Public opinion is divided. Below you will find a list of reasons people give to be in favour of or against the construction of the supermarket. Please read it carefully and after that write what your opinion is about the matter. Please, try to explain it as fully as you can.

### *'Pros'*

1. People from the villages will save time because they won't have to go to town to do their shopping.
2. There will be a greater variety of items available than in the local shops.
3. people will be able to buy everything they need under only one roof.
4. There will be no parking problem and less traffic congestion in the small villages.
5. It will generate jobs and reduce unemployment in the area.
6. People will be able to buy things more cheaply than in the local shops.

### *'Cons'*

1. it will destroy the landscape. It will be a real eyesore.
2. It will take trade away from local shops and farms.
3. It will increase traffic in small country roads.
4. Roads will have to be enlarged for delivery vehicles, destroying there hedgerows.
5. It will destroy the sense of "community" in the local shopping centres. A major source of social activity will be lost.
6. If local shops close people may be forced to use the supermarket, but some elderly people may have problems getting there.

Together with the lists, subjects were given two blank sheets of paper where they could write their opinions on each topic. The material also included two assessment questions, one about the participants' opinion on animal experimentation and the other about their preference regarding shopping at local shops or at supermarkets. These two questions were presented on a single page. Two copies of these questions were used in two different stages of the experiment, one at the beginning and the other at the end of the session. Finally, the subjects were given a new sheet of paper on which they were asked to write down the reasons why they had either changed or kept their initial opinions after having read the information given to them in the study.

### *2.3. Design & Procedure*

Subjects were tested individually. They were told that they would be asked to write down their opinion on two different issues.

First, the experimenter gave each subject a sheet of paper which contained two questions: one about their preference regarding shopping at local shops or at a supermarket and the other about their opinion on animal experimentation. The

subjects were required to rank their responses on a scale which followed each question. After they had finished these questions, they were asked to give the paper with their responses back to the experimenter. In the following part of this study, the subjects were given lists of 'pros' and 'cons' related to the topics on which they had just expressed their opinion. These lists were given out one at time and the participants were asked to take their time and read them very carefully.

After reading the list, subjects were asked to write down their opinion on the issue in question and try to explain their position on the topic as comprehensively as possible. Subjects were asked to write down their opinion as a way of making them think about their positions, the reasons they had to support their opinions and the arguments that they had just read on both sides of the topics used in the experiment. Half of the subjects examined the list of arguments in favour and against animal experimentation first and afterwards the 'pros' and 'cons' that could be involved in the construction of new supermarket in the country. The lists were presented in the reverse order to the other half of the participants.

After the subjects had written their opinion on both topics, the experimenter gave them a new sheet of paper which contained the same questions that they had been asked to answer at the beginning of the experiment regarding the position they held on the topics considered in the study.

### *3. Results*

#### *3.1. Subjects' opinion: changes & no change*

At the beginning of the experiment subjects were asked to rank their opinion about the use of animal experimentation and their preference for shopping at a supermarket or local shops on a two-sided five-point scale ('for' and 'against' for animal experimentation and 'supermarket' or local shop' for shopping preference). Subjects had been previously selected taking into account their opinion on the use of animals in scientific experiments, therefore, half of them were in favour of it and the other half were against it. Regarding subjects' shopping choice, seventeen of them said they preferred shopping at a supermarket, five preferred local shops and the remaining two participants said they were undecided about it. The use of a scale allowed the observation of subjects' position and how convinced they were about their opinion. Table 1 below shows the number of participants who ranked their opinion either on the three lowest points or on the top two points on either side of the scale as a function of the subject matter. That is, the table shows subjects who held more

versus less extreme views, regardless of the polarity of these views.

Table 1. Number of subjects' who showed a more or less extreme position on a five-point scale as a function of topic

Animal experiment	Supermarket/Local shops		Total (n=34)
	Less extreme 0-3	More extreme 4-5	
Less extreme 1-3	12	06	18
More extreme 4-5	02	04	06
Total	14	10	24

Table 1 - Number of subjects' who showed a more or less extreme position on a five-point scale as a function of topic

Table 1 shows that in this experiment subjects tended to rank their opinion on the less extreme points of the scale. Half of them gave the lowest ranks to their position in both topics and only four subjects ranked their opinion in both animal experimentation and the locale for shopping in the top two points of the scale. Six subjects demonstrated they were more decisive about the place for shopping than on animal experimentation and the contrary happened with the two remaining subjects.

At the end of the experiment, the subjects were asked once more to rank their opinion on both topics using the same scale they utilised at the beginning of the experiment. That happened after they had evaluated mixed evidence about both issues and written their opinion about the two topics. Table 2 presents the number of subjects who made or did not make some changes to their opinion at the end of the experiment.

Table 2 suggests that changes observed in subjects' positions were related to the topics they were dealing with. At the end of the experiment, eight subjects modified the rank they had initially given to their position on animal experimentation, while 14 of them made some change to their positions about the best place to shop. Only four subjects indicated some changes in their positions in both topics and six of the participants kept their initial ranks on the issues used in the experiment. The fact that most subjects' performance differed from topic to topic seemed to indicate that the fact that they did or did not tend to change their opinion was not associated only with individual differences. The results shown in Table 2 tend to be in line with the hypothesis that subjects would more easily modify their opinion on the shopping issue than on animal experimentation.

However, the relation shown in Table 2 between the type of topic and subjects' tendency to alter their position about them was not found to be significant by the *McNemar's test* ( $X^2= 1.78, df= 1$ ) and, therefore, cannot be taken as confirming the prediction made in this experiment regarding a difference in subjects' performance related to the type of topic they were dealing with. At this point, It is also important to mention that except for two cases where one subject changed her opinion about her preference for shopping in supermarket to local shops and another participant who was initially undecided about that same topic and made up his mind by the end of the experiment, the changes that subjects made to their position were never bigger than two points on the scale they used to rank their opinion.

Table 2 Distribution of subjects that changed or did not change their position ranking as a function of topics

Actual experiment	Supermarket/Local shops		Total (n=24)
	Change	No change	
Change	06	04	10
No change	00	06	06
Total	06	10	16

Table 3 Number of subjects who had initially ranked their position on the top two points of the scale and changed or did not change their position ranking at the end of the experiment as a function of topics

Topics	Opinion		Total opinions ranked 4 – 5
	Change	No change	
Actual experiment	00	06	06
Place for shopping	06	04	10
Total	06	10	16

Table 2 - Distribution of subjects that changed or did not change their position ranking as a function of topics. Table 3 - Number of subjects who had initially ranked their position on the top two points of the scale and changed or did not change their position ranking at the end of the experiment as a function of topics

It is not difficult to suppose that the more convinced the subjects were about their position the less likely they were to modify it. This supposition led me to choose still another way of looking at a possible differences between subjects' performance when dealing with the two topics used in the present study. This alternative analysis looks at the number of subjects who made some change in their position at the end of the experiment and had initially ranked their opinion on the top two levels of the scale, i.e., those who held more extreme positions. The results of this analysis are shown in Table 3.

Table 3 shows that none of the subjects who had indicated they were strongly convinced about their opinion on animal experimentation at the beginning of the experiment changed the ranks they had given to their position after having evaluated the arguments on both sides of the matter. A *binomial test* showed that this result was significant ( $N= 6, x= 0, p.05$ ). A different situation was observed when subjects were dealing with the ‘supermarket versus local shop’ question. In that case, six out of the ten subjects made some modifications to their position after they had dealt with the ‘pros’ and ‘cons’ related to each shopping alternative and the remaining four participants kept their initial position. The difference associated with this topic was not significant (*binomial test, N= 10, x= 4*). Five of the six subjects who altered their opinion on this issue, ranked their position on a lower level of the scale by the end of the experiment. If examined together with the results previously shown in Table 2, these findings seem to indicate that not only the type of topic, but also the level of attachment that one has to an opinion affect the possible modifications that are likely to be made to their opinion. These results favour the hypothesis put forward in this experiment that the effect of asking people to evaluate evidence on their opinion is associated with the level of attachment that the person has to the issue in question.

It has already been indicated that subjects’ inclination to revise their opinion was related to the topics they were dealing with. However, that analysis did not say whether the changes that the subjects made in their opinion led them to adopt a more or less extreme position by the end of the experiment. This aspect of subjects’ changes in their position is presented in Table 4.

Table 4 Number of changes in subjects’ opinions towards a more or less polarised position as a function of topic

Topics	Opinion		Total of changes*
	More polarised	Less polarised	
Animal experiment	04	04	08
Place for shopping	04	09	13*
Total	08	13	21

\* excluding the subject who was initially undecided and made up his mind at the end of the experiment

Table 4 - Number of changes in subjects’ opinions towards a more or less polarised position as a function of topic

The changes that subjects made to their position on animal experimentation were evenly distributed between changes towards a more polarised position and those

towards a less definite opinion. The small number of cases included in this analysis, as well as the even distribution between the types of changes that subjects made to their opinion, does not allow any predictions about the direction that the data might take in case of the use of a larger sample of subjects. The data associated with the 'supermarket *versus* local shops' choice, on the other hand, shows a tendency for changes towards a less definite position, even though the difference between the occurrence of more or less polarised opinions was not significant (*Binomial test, N= 13, x= 4*). Once more, these data points to a difference in subjects' performance related to the type of issue they are dealing with. However, this conclusion must be treated with caution since it lacks statistical significance.

### *3.2. Subjects' reasons for changing or keeping their original opinions*

The subjects who did not change their opinion on the issue regarding the idea of shopping at supermarket or local shops tended to remark that nothing new had been mentioned to alter their personal view. At times, they made comments comparing their personal shopping choice with their opinion about the specific case of the construction of the supermarket in a country area used in the present study. When explaining the reasons why they had changed their opinion, subjects invariably referred back to the list of arguments given in the experiment as having made them think or reminded them of a personal experience similar to the particular case used in this study. The reason given by a subject who was initially undecided and at the end made up his mind in favour of the local shops is shown below.

Stephen:

'I have changed my opinion with this second scale because through 'discussing with myself' I have seen that local shops are central to the community existence super-markets destroy.'

The subject's comment shown above is possibly related to a further difference between the two topics used in this experiment. Contrary to what happens with the issue of animal experimentation, the topic about the best place to do shopping is not much discussed. Therefore, it is very likely that when writing about animal experimentation the subjects were discussing predetermined ideas, whereas when dealing with the supermarket *versus* local shops issue in this experiment, it would have probably been the first time that they were led to think about that topic.

When subjects kept their original opinion on animal experimentation, they either said that they had thought about the issue before and had already a formed opinion about it or they repeated the reasons that they had given to support their opinion when they previously wrote about the topic. Among the eight subjects who changed their opinion on this topic, three of them did not justify the change, but, instead, remarked that they had kept a similar position - even though slightly differently ranked in the scale - again because they had already thought about the issues before and there was no new argument in the list they evaluated. Two subjects who held opposing views on animal experimentation made a general evaluation of the list of arguments and remarked that their views had been strengthened in their original direction because the list of arguments that supported their prior opinion outweighed the ones that justified the opposite position. One subject, who was in favour of animal experimentation and showed a less polarised position by the end of the experiment remarked that by looking at the arguments she had realised that they were more complex than she had initially thought and she had started to see both sides of the argument. The remaining two subjects, who also showed less polarised views at the end of the experiment, had initially said they were against the use of animals in scientific experiments. One of them mentioned a counterargument to her original opinion, which, in fact, indicated that she was not as against as she had claimed she was. The same happened with the second of these subjects, who explicitly made a similar comment about his own position. His comment is transcribed below.

Nathan:

'Having thought about it, I am not as sure about being against experimentation in animals as I first thought, though I need to think it over more'.

The above comment appears to be an obvious example that sometimes people are not really aware of the opinions they have, as suggested by Kuhn (1991). The analysis of the comments that the subjects wrote on animal experimentation after having read the list of 'pros' and 'cons' on the issue reinforces this suggestion. The examination of subjects' comments shown next finalises the analysis of the data of this experiment.

### *3.3. Subjects' comments*

The most interesting finding observed in the analysis of the comments written by the subjects after they had evaluated the list of arguments was the fact that six of the subjects who had ranked their position as being against animal

experimentation, in fact showed a different opinion when they were writing about the topic. In their argumentation, three of these subjects seemed to be weighing both sides of the case and, at some point, explicitly expressed their agreement with the use of animals in, at least, some of the scientific experiments. One of them claimed that she strongly agreed with all the 'cons' in the list given in this experiment, but, there was one particular 'for' - animal experimentation for medical purposes - that made her say that sometimes it was necessary. In the case of the two remaining subjects included in this group, from the very beginning of their argumentation they stated the conditions in which they would be in favour of experimentation in animals. The inconsistency between what these subjects said they believed and what they really seemed to think about this topic became even more evident from the fact that, at the end of the experiment, they kept on ranking their opinion on the 'against' side of the scale. In three cases they did give a lower rank to their opinion, but the other three subjects maintained the same rank in the scale, one of them being as extreme as '-4'! A direct implication of these results is that we should question the confidence that we can have in the objective assessment of people's opinions and the belief that this has on the status of factual knowledge. The findings of this experiment seem to suggest that in order to have a more accurate picture of people's opinions on certain issues it is necessary to examine the reasons behind the position they claim to hold.

The analysis of subjects' argumentation on animal experimentation showed that, in general, they put forward their opinion by

- (a) weighing evidence that supported both sides of the case,
- (b) focusing on attacking the other-side arguments or
- (c) concentrating on giving support to their position.

The examples below illustrate these three types of argumentation. Except for the fact that the final part of the comment made by the third subject in the following examples was omitted, no other alteration was made to the transcriptions of subjects' responses.

Vida (Weighing evidence):

'I don't have strong views either way since I can see the reasoning behind both sets of arguments. I think that although animal testing does have some shortcomings, and there are limits to the generalisations we can make from animals to humans, animal testing is very important. I do not believe that the use of cell cultures alone would be enough to see the effects of certain drugs upon an

interacting biological system within an organism. I don't think that the argument that some animals do not have a sense of pain is valid: I don't believe that statement is true at all. However, I can't see any alternatives which would give as enough information, so that we could stop animal testing altogether. However, there are probably ways in which we could treat animals more humanely during tests and so these methods should be employed.'

Evan (Supporting my side):

'I think that animals should be used for experiments only when all other methods have been exhausted. If the only way for a scientific discovery to be made is to experiment on animals then that should be done. If the experiment is just for a cosmetic product or other non-essential then I don't believe it is right to use animals in the experiment. I believe animals are a lower life form than humans and it is therefore better for an animal to suffer or die than a human. So, experimenting on an animal with the aim to invent a cure for a human illness is acceptable. Also the number of animals tested must be surely less than the number of humans saved or cured by the discovery. This is also a very good reason for testing on animals.'

Alison (Critising the other side):

I am completely opposed to the use of animals in scientific experiments simply because I do not distinguish between animal as being any less sensitive to pain than human beings. It is ridiculous to say that we shouldn't be sentimental about animals when it comes to scientific experimentation, yet show outrage at animal mistreatment away from the laboratories. The abuse of animals is a punishable crime, yet is acceptable to inflict such suffering in the name of science. As far as I'm concerned animals are on the same level as humans and should be treated accordingly. We are all part of the 'Animal kingdom', and all of God's creations. The sense of cruelty is lightened by the fact that the animal itself is unable to protest, to demand an end to its suffering [...].

When justifying their opinion, eleven subjects (three against and eight in favour of animal experimentation) besides mentioning arguments that were presented in the list they were given to evaluate, also used arguments associated with this topic that had not been included among the ones listed for them.

None of the subjects explicitly referred in their argumentation on experimentation in animals as being a matter of weighing 'pros' and 'cons'. Two of the participants

made this type of comment only when they were explaining their reasons for having changed their original position about this issue at the end of the experiment. A different behaviour was observed, however, when subjects were writing about the case of the construction of the supermarket in a country area. In this case, 10 subjects used in their comments some explicit expression, such as *'I think the 'pros' outnumber the 'cons'*. This finding seemed to indicate that with this kind of problem, more than with the animal experimentation issue, decisions about their opinion were mainly based on weighing the advantages and disadvantages of each alternative choosing between them. Using Nickerson's terms (1991), when dealing with the supermarket *versus* local shopping issue, most of the subjects were *'weighing evidence'*, whereas when discussing animal experimentation, they were *'building a case'*.

#### *4. Discussion*

The general aim of this experiment was to investigate whether subjects opinion on two different issues would become less polarised after they had evaluated arguments on both sides of the question. It was hypothesised that the possible changes in their position would be related to the type of topic they were dealing with. It was expected that they would tend to alter their opinion more often when dealing with the issue of shopping at a supermarket *versus* local shopping than when discussing animal experimentation. This hypothesis was based on the assumption that the topic about shopping at supermarket or local shops would be less strongly associated with the subjects' basic values and therefore more likely to be modified.

The results of the present experiment showed that subjects tended to make some changes in their views about their preferences regarding the locale to do their shopping more often than they did when dealing with the topic of animal experimentation. This tendency was in agreement with the hypotheses put forward in this study. However, the difference observed between subjects' responses to the two different topics did not reach significance. This lack of statistical endorsement does not permit more conclusive inferences about these results.

It might be possible that the lack of statistical significance in the difference found between subjects' performance when they were dealing with the topics was related to the fact that most of the subjects did not hold a strong view on animal experimentation. This fact might have made it more likely for them to revise their

views. The analysis of the performance of subjects who had indicated that they were strongly convinced about their positions in the two topics used in this experiment showed that no changes were made by the subjects in their position on animal experimentation, but six out of ten of these subjects did alter their position on the 'local shops *versus* supermarket' issue. This analysis seemed to indicate that opinion - or beliefs - revision might be related not only with the type of topic, but also to how strongly people are attached to their positions. In most of the cases, where subjects made some changes in their opinion, their positions became less polarised when compared with their initial views. These results go against the findings from the study by Lord, Ross and Lepper (1979) which demonstrated that subjects' opinion on a particular topic became more polarised in their original direction after the evaluation of supporting and contradicting evidence. However, the findings from that previous study were related to a type of issue - capital punishment - which differs very much in nature from the shopping issue used in this experiment, which was the one that led subjects to assume a less polarised position after evaluating the 'pros' and 'cons' of the choices in discussion. It has already been demonstrated in previous experiments (Santos, 1996) that the issue of capital punishment is strongly associated with subjects' moral and religious values, which people avoid revising. It would seem more reasonable to compare the results obtained by Lord, Ross and Lepper (1979) with subjects' responses to the animal experimentation topic used in this experiment. In this case, the incidence of changes towards a more or a less polarised opinion was equally frequent among subjects. This result differed from the tendency demonstrated by Lord, et al (1979), but, certainly, not much can be concluded when there are only eight cases where subjects change their opinions, equally distributed towards opposite directions (Table 4).

The result of this experiment also seems to indicate that the 'weighing of evidence' in order to make a decision - about an action or an opinion - varies according to the type of subject matter one is dealing with. In this study, the use of this argumentative strategy was more associated with the supermarket *versus* local shops issue than to the topic of animal experimentation. This finding might have been related to the fact that it was much more likely that the subjects had had the opportunity to discuss animal experimentation before than they had thought about their preference about the place to do their shopping. That might have led the participants to concentrate more on defending their predetermined ideas on animal experimentation than on evaluating opposing evidence.

Another factor that might have led the subjects to focus on the 'pros' and 'cons' of the supermarket *versus* local shops issue might have been the fact that, in this case, they were asked to evaluate the 'pros' and 'cons' of a very specific situation, as opposed to the general nature of the topic of animal experimentation. Perhaps, if the subjects were dealing with the issue of animal experimentation in a more specific context, e.g., the use of certain animals in a scientific project to test a drug that could be used for the treatment of a specific disease, they would also focus on weighing 'pros' and 'cons' in order to adopt a position on that specific matter.

A very interesting finding mentioned in the analysis of the results was the fact that the comments made by some subjects indicated that they actually did not hold the position that they had indicated at the beginning of the experiment. I have already commented that an implication of a finding like this is that it raises doubts about taking people's explicit and categorical claims about their opinions and beliefs as a factual matter. There must be more to them than a first response might indicate. Another interesting aspect of this finding was that the cases where this inconsistency between what the subjects said they believed and what they really thought were invariably associated with subjects who initially said they were against animal experimentation. It might sound like mere speculation, but I am inclined to suppose that this fact was related to a comment made by a subject in a previous experiment in which she remarked that being against animal experimentation is 'the "right" thing to think' (Santos, 1996). Therefore, it might have been the case that, even though subjects considered cases where they did think that the use of animals in scientific experiments was justifiable, when they were asked to state in which 'side' they were in, they went for the 'right thing to think'.

#### NOTE

**[i]** This study is part of more comprehensive research submitted as a doctoral dissertation at the University of Sussex, UK., and supported by CNPq (Brazilian National Research Council).

#### References:

Kuhn, D. (1991). *The Skills of Argument*. Cambridge: Cambridge University Press.  
Lord, C.; Ross L. and Lepper, M. R. (1979). Biased assimilation and attitude polarization: the effect of prior theories on subsequently considered evidence. *Journal of Personality and Social Psychology*, 37(11), 2098-2109.

Nickerson, R. S. (1991). Modes and models of informal reasoning: a commentary. In: J. F. Voss, D. N. Perkins & J. W. Segal (Eds.), *Informal Reasoning and Education*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Santos, C. M. M. (1996). "Good reasoning: To whom? When? How?" An investigation of belief-bias effect in syllogistic and argumentative reasoning. Unpublished D.Phil. Thesis, University of Sussex, England.