

# **To participate or not to participate? Voice and explanation effects on performance in a multi-period budget setting**

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## **Abstract**

Under what circumstances does giving a voice and explanation to a manager in a budget allocation setting improve their performance? The research into whether or not managers should participate or have a voice in setting their budget allocation show conflicting results on performance. This seems largely as a result of the variables being measured in importantly different ways. Whether or not the voice influences the final budget allocation and whether the budget is perceived as unfair, unfavourable or unattainable needs to be clearly articulated in the research design.

This study demonstrates that the circumstances in which voice and explanation improve performance depend on whether or not the budget allocation is perceived as unfair. To date, it has been accepted practice that managers should participate in the budget setting process. However, it may be better to set a budget and explain its rationale. Over multiple budget periods care should be taken with the type of explanation given, because simply repeating last year's reason will discourage higher performance.

Keywords: Participative budgeting; Explanation; Voice; Organizational justice; Fairness

## **1. Introduction**

The invasive consequences of budget allocations into every area of organisational life mean the budget process is a highly focused one. Indeed the importance of the budget process has been demonstrated by the amount of practitioner and academic literature dedicated to the topic. Libby (1999) pointed out the importance of studying the budget process under realistic circumstances by examining a consultative budgeting process. This study seeks to extend this realism by examining Libby's (1999) consultative budgeting process over multiple budget periods.

The study of subordinate participation in the budgeting process has attracted a lot of attention however, as Shields and Young (1993) pointed out many of the empirical findings are inconsistent. Shields and Shields (1998) suggest that this is due to inter-study variation and the inadequate recognition of antecedents. Libby (1999) joined Shields and Shields (1998) in criticising the participation in budgeting literature by outlining that many experimental participation in budgeting studies assume that "organisations exist in a world of infinite resources and all individuals and organisational subunits can be allocated the amount of resources they request" (Libby, 1999, 125). Libby motivated her study by arguing that participative budgeting research assumes a subordinate can choose their budget target, however in reality a consultative budgeting process is practised whereby subordinates have an opportunity to provide input, however, the final budget allocation is decided by the superior (Vroom 1983). This is in line with other researchers who suggest there are two dimensions to participation in budgeting which are communication/involvement and influence (Otley et al. 1994; Hassell and Cunningham 1993).

Libby (1999), applying organisational justice theory, examined the effect of voice and explanation on performance within a budget setting. Libby argued when a manager's involvement in the budget process (voice) did not influence the final budget allocation, the

communication of a justification (explanation) will reduce the negative consequences compared to when no justification (explanation) is given. Libby's hypothesis was supported.

Libby's study was conducted using a static budget setting. However, in reality, the budget process occurs continuously, with budget periods at least yearly. It is argued in this paper that the continual rejection of the subordinate's input from one budget period to the next, despite the receipt of an explanation, could diminish the positive effect of the explanation, thus leading to the perception that the budgeting process is pseudo-participative which would negatively affect performance.

Argyris (1952) defines a pseudo-participative process as one in which the subordinates are led to believe that they have influence over the budget that is set, but in reality their input is ignored. This perception of a pseudo-participative budgeting process can lead to demotivating effects on subordinates' performance (Pasewark and Welker, 1990). Further, it is advanced that not all explanations would be equal. The type of explanation received would affect performance. To demonstrate, this study also examines the effect on performance of simply receiving the same or different explanations over multiple budget periods. More specifically, it is hypothesized that the same explanation used over and over again would severely impact on the positive effect of the explanation thus negating any of the beneficial effects on performance provided by the receipt of an explanation.

Using an experimental research design this study replicates Libby's (1996, 1999) experiment over multiple budget periods and examines the differences in performance of subjects receiving the same versus a different explanation. The results show a significant main explanation effect and no significant voice and explanation interaction effect on performance. This is contrary to Libby (1996, 1999) who found no significant main effects but a significant voice and explanation interaction effect on performance. Failure to replicate Libby (1999) provides an opportunity to explore the reasons for the difference. Insights gained from this exploration confirmed that perceived fairness and performance are related. In many studies this connection is assumed, however in this study empirical evidence is provided. The results also highlight that the effects of voice and explanation on performance are sensitive to the budget set. Clarity in the research design regarding the fairness and attainability of the budget goal is paramount. This finding is important given the call for careful study design by Shields and Shields (1998) if a theory on participation in the budget setting process is to develop.

The results also confirm previous research in two ways. They reinforce the importance of an explanation and also show support for the pseudo-participation phenomenon – that an uninfluential voice, despite receiving an explanation, negatively affects performance.

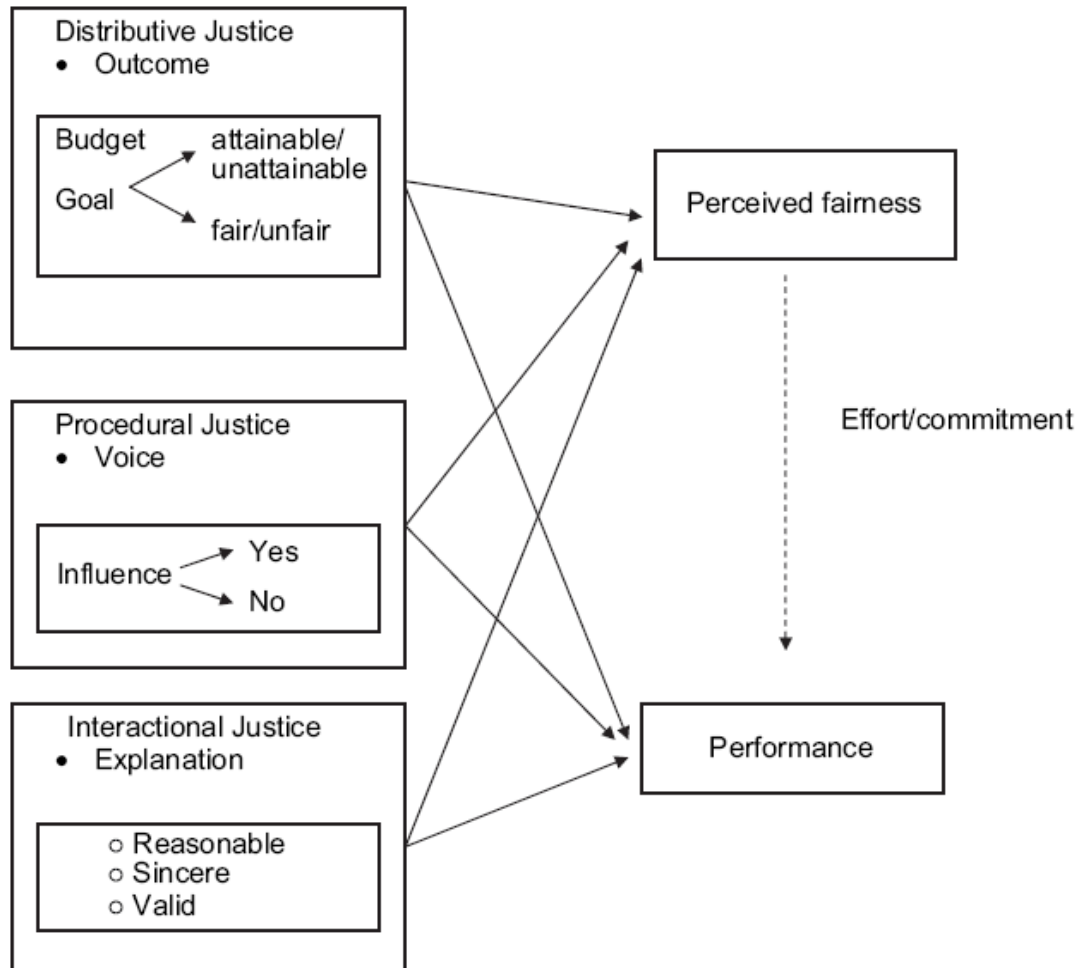
Further, this research shows that over multiple budget periods those subjects receiving a different explanation performed significantly better than those subjects receiving the same explanation. However, the hypothesised effect on performance over time was not significant. The advantage of explaining a decision stems from its ability to counter any negative thoughts of unfairness. Greenberg (1991) argues that convincing others of one's fairness is more important than in actually behaving fairly. The results obtained in this research add to this line of enquiry by showing empirically that it is simply not a matter of just giving an explanation but that the type of explanation does impact on performance and fairness. Further work is now needed to establish the attributes of an explanation that are the most important.

In the following section the literature is reviewed and the hypotheses presented. The third section outlines the research method and the results are presented in the fourth section. The conclusion, implications and future research is discussed in the final section.

## 2. Literature review and hypotheses

This study is based on organisational justice theory. The central contention of organisational justice is that employees who are treated unfairly are less productive, less satisfied, and less loyal to their organisations (Sheppard et al.1992). There are three dimensions of organisational justice theory (Bies and Tripp 1995; Beugré 1998). They are:

1. Distributive justice - how outcomes should be allocated;
2. Procedural justice - the procedures that should be used to make decisions; and
- 3 Interactional justice - how people should be treated interpersonally.



**Fig. 1**

### **Organisational Justice Variables Influence Perceived Fairness and Performance**

Figure 1 contains a diagram of the variables of interest in this study. Generally, the three dimensions of organisational justice have been examined in relation to two main dependent variables. They are perceived fairness and performance. The diagram also contains a link between perceived fairness and performance. In the procedural fairness literature there is an implied theoretical model indicating that fairness motivates effort and commitment thus increasing performance. The importance of perceived fairness has been highlighted in a wide variety of organisational settings, including performance appraisals (Greenberg 1986, 1991; Sheppard and Lewicki 1987; Dulebohn and Ferris 1999), budget decisions (Bies and Shapiro 1988), the allocation of scarce resources (Barrett-Howard and Tyler 1986), and performance monitoring (Niehoff and Moorman 1993).

The focus of this study was on the procedural and interactional justice dimensions in a budget setting.<sup>1</sup> When individuals receive unfavourable outcomes (distributive justice), they then judge the fairness of that outcome on the process (procedural and interactional justice) by which the outcome was determined (Thibaut and Walker 1975). Although, several studies have examined procedural justice and interactional justice, there has been surprisingly little research investigating their combined effect. Further, a literature search found no prior empirical studies examining their use over multiple time periods.

Procedural justice has been mainly examined through the element of voice. Leventhal (1980) defined voice as the ability of subordinates to be involved in a decision process by communicating their views to their superiors. People seek to voice their opinion in the decision process because it allows them a chance to influence the outcomes or decision processes that affect them (Leventhal 1980; Brett 1986; Beugré, 1998; Williams 1999). The provision of voice has been studied in relation to its effect on perceived fairness (Thibaut and Walker 1975; Dipboye and de Pontbriand 1981; Greenberg 1986; Tyler 1987) and on performance (Lind et al. 1990; Lindquist 1995; Chow et al. 1996). Overall, the evidence suggests that the provision of a voice in the decision process increases positively the perceptions of fairness and performance.

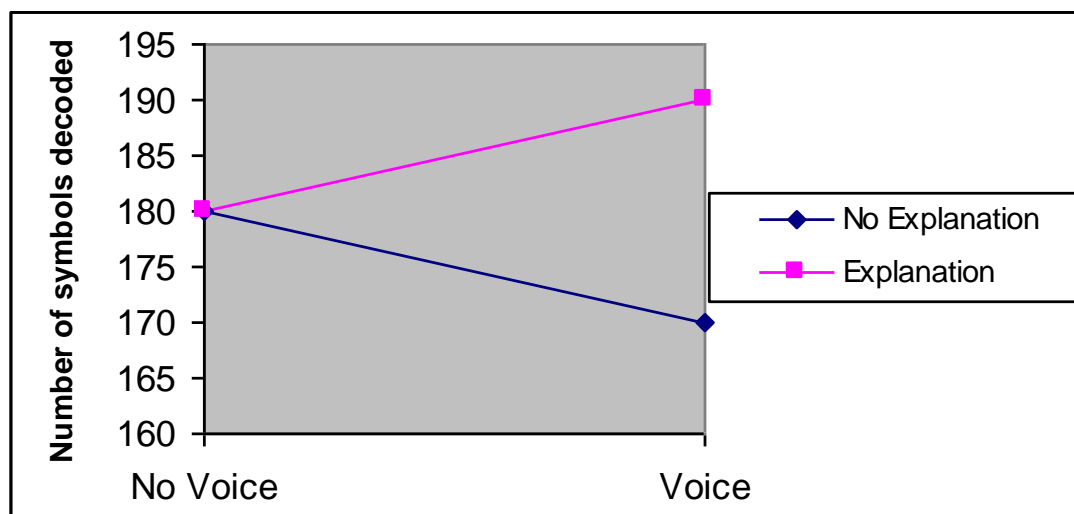
Interactional justice consists of two aspects, the provision of an explanation for a decision and the interpersonal treatment an individual receives during the decision process (Tyler and Bies 1990; Gilliland 1993). Explanation is defined as a justification provided by the superior when the outcome of the decision process was not influenced by the subordinates' input (Bies 1987). Investigations into the provision of an explanation have primarily been concerned with its effect on fairness judgments and subordinates' perceptions of fairness (Bies 1987; Bies and Shapiro 1987, 1988; Greenberg 1991). Generally, this research has found that the provision of an explanation improves perceptions of fairness (Bies and Moag 1986; Bies and Shapiro 1987, 1988). Although some of these studies have also investigated the effects of voice, this effect was found to be independent of the explanation effect. Only recently, has research begun to investigate the effect of an explanation on performance (Libby 1996, 1999; Williams 1999).

Williams (1999) found that providing subjects with a voice did not affect performance but that the provision of an explanation improved performance. Libby (1996, 1999) found that neither voice nor explanation had an independent effect on performance but there was an interaction effect between voice and explanation affecting performance. The absence of main effects of voice and explanation is curious and deserves further investigation. Contrary to Libby (1996, 1999) and Williams (1999), Lind et al. (1990), Lindquist (1995) and Chow et al. (1996) found the provision of voice had positive significant effects on performance. One possible explanation for the conflicting results is the influence of the voice in each of the studies. For example, Libby's experimental design was such that voice did not influence the decision whereas in Lindquist the voice did influence the decision. The conflicting results could be explained by the pseudo-participation phenomenon whereby once an individual is asked to participate in decision making they expect that their contribution will be utilized otherwise demotivation results. It is also unknown as to whether the benefit of an explanation would be the same over multiple time periods. This is an important consideration because the budgeting process occurs over multiple time periods. Given that research investigating the effect of explanation on performance is embryonic a suitable form of advancement would be a replication type study. Replication is considered a foundation for all scientific work (Popper, 1959) and has a major role in exploring the firmness of conclusions found (Otley et al. 1994). Otley and Pollanen (2000) have also argued that results should be replicable before extensions into new areas are progressed.

This study attempts to replicate Libby's (1999) study over multiple time periods. Libby based her hypothesis on the two component model of justice developed by Cropanzao and Folger

(1991). Libby (1999) argued that when the distribution of the budget allocation is perceived as unfair, performance will improve when the subordinates perceive the allocation process as fair (voice plus explanation) compared to when subordinates perceive the allocation process as unfair (voice without explanation). That is, in Libby's study the subjects were given an unfair budget allocation to ensure they concentrated on the process. She then manipulated the voice and explanation variables to capture what she describes as an unfair or fair budget process.

Although Libby's (1999) hypothesis only refers to the voice condition, an interaction was proposed between voice and explanation. The form of the interaction, presented in Figure 2, and the subsequent six predictions made, were based on the premise that subordinates who have voice and receive an explanation would outperform those subordinates who have voice or explanation only or neither voice or explanation.



**Fig. 2. Predicted relationships between voice, explanation and mean performance within experimental conditions. Source: Libby (1999, p.128).**

Originally, Libby (1996) advocated more specific propositions. Firstly, Libby (1996) expected there to be a voice main effect and an explanation main effect based on the findings of the previous research discussed above. Neither was found. Secondly, the voice/explanation group was expected to outperform the voice/no explanation group. Bies and Shapiro (1988) demonstrated that once individuals are asked to be involved in a particular decision through the voice process, they expect either the superior's final decision to reflect the views they expressed or to receive a reasonable explanation for their lack of influence. This prediction was supported. Thirdly, Libby (1996) also expected that the voice/explanation group would outperform the no voice/no explanation group. This prediction was examining whether or not the assignment of a voice and an explanation during the decision process combined with a budget-based incentive contract results in higher performance than the assignment of a budget-based incentive contract alone. An individual receiving no voice and no explanation is relying solely on the budget-based incentive contract to motivate their performance. The importance of an incentive contract in improving performance was demonstrated by Waller and Chow (1985). This prediction was also supported.

The hypothesis advanced by Libby (1999) that is being replicated in this study is as follows:

***H1: When subordinates are given a voice in the budgeting process, but voice does not lead to influence over the final budget allocation that is made, those subordinates who also***

***receive an explanation for their lack of influence over the budget will have higher performance than those who do not receive such an explanation.***

A key finding in the budget literature is the negative consequences on performance of pseudo-participation (Pasewark and Welker, 1990). Argyris (1952) defines a pseudo-participative process as one in which the subordinates are led to believe that they have influence over the budget that is set, but in reality their input is ignored. Pseudo-participation would result when the subjects were given a voice that did not influence the final budget set. It would be therefore expected that performance would decrease in such circumstances. However, as argued and found by Libby (1996; 1999) the receipt of an explanation for the unfair budget contains any negative consequences of an uninfluential voice.

This conflict in the literature could be resolved by examining a single budget period versus a multiple budget period setting. Libby's study was conducted in a single budget period. Realistically the budgeting process occurs more than once and therefore it seems sensible to study the effects of voice and explanation over multiple budget periods.

It is argued here that in a multiple budget period setting the pseudo-participation effect on performance would outweigh any explanation effects. That is, over a number of budget periods the continual rejection of voice so that there is no influence on the final budget allocation would over time lead to the de-motivating effects as described under the pseudo-participation phenomenon. This would occur despite the receipt of an explanation. Interviews with managers suggest that they would rather be given a budget allocation to work within then spend hours researching, deciding and drawing together plans and projects with an accompanying budget only to have it cutback or rejected. A one time budget cut back with an accompanying suitable explanation may not impact motivation. However, to have the cutback year in and year out would lead to frustration at the process of requiring managers to submit budgets rather than being given budget allocations to work within.

The primary theoretical framework behind the explanation effect is the work titled interactional justice by Bies (1987), Greenberg (1990a, 1991) Bies and Moag (1986) and Bies and Shapiro (1987, 1988). In short this research has found that interactional considerations were more highly regarded than procedural or distributive considerations when analysing perceived fairness (Bies and Shapiro, 1987). This research first demonstrated that providing an explanation for an unfavourable event has a positive effect on perceived fairness. This is due to the significance placed on interpersonal communication and treatment during the enactment of the procedures (Bies & Shapiro, 1987). That is, the explanation eliminates a "worst case reading" of the decision makers intentions and provides an excuse or justification as to why the decision had to be as indicated. Compared to no explanation being provided which may signal a message that the unfavourable decision was deliberate (Bies & Shapiro, 1988).

Additionally, the research highlighted the profound effect the explanation has on perceived fairness. Greenberg (1991) insists that actually behaving fairly and convincing others of ones fairness is unrelated. That is, the perceived fairness of outcomes is often unrelated to the level of those outcomes but on the explanation received. He names this the impression management process (Greenberg, 1990a). Bies et al (1988) also demonstrate that an explanation that was reasonable and sincerely presented led workers to accept negative outcomes.

Greenberg (1991) argues that this is due to the perception that people perceive fairness as related to what benefits them and makes them feel good about themselves (Greenberg, 1991, p.56). If an interaction includes an explanation that accounts for the unfavourable outcome then a greater level of wellbeing and fairness with ensue.

Relating the above findings to multiple budget periods, it is postulated here that the continual receipt of an unfavourable outcome will impact on the perception of fairness and therefore impact on performance. Anecdotal evidence suggests managers dedicate a lot of resources to putting together their budget and are frustrated when cutbacks are required. As demonstrated by Libby (1996, 1999) this potential conflict can be eased in a single budget setting with the provision of an explanation. However, over time the continual rejection of voice would provide a more intense focus on the explanation received. The reasonableness and the sincerity of the explanation could be questioned if time and time again there is an expectation that a manager submit a budget that is then rejected. Greenberg (1991) states that although an explanation generally increases the acceptance of distributive outcomes relative to no explanation there is a potential that explanations could be unravelled to reveal manipulative or artificial behaviour that could cause negative reactions.

Reflecting the discussion above, the second hypothesis is:

***H2: Individuals given the opportunity to voice an opinion in a budgeting process that continually does not lead to influence over any of the final budget allocations, despite receiving an explanation, will encounter decreasing performance over time.***

One positive factor of receiving an explanation is the information received by the individual that the decision maker at least provided thought to the decision at hand and came to a careful judgement. A supervisor not issuing an explanation may have considered all the relevant details and came to a judgement just as carefully as a supervisor that did issue an explanation, however, the non-receipt of an explanation may give the individual the impression that appropriate time and thought was not given to the budget request and therefore the budget allocation is unfair. Greenberg's (1991) impression management theory suggests that giving an explanation improves perceptions of fairness. However, although there is support for the giving of an explanation to improve perceived fairness of an unfavourable outcome, there is also some acceptance that not all explanations would rate equally. To examine this issue empirically it was decided to test the effect of giving simply the same explanation as opposed to different explanations at each budget time period. It is argued here that over multiple budget periods giving the same explanation would produce similar feelings within individuals as if no explanation was given. That is, if the same explanation was given time and time again a manager may become increasingly sceptical of the explanation's reasonableness and sincerity. Reasonableness and sincerity are two factors that help shape an effective explanation (Bies et al, 1988). The same explanation at every budget period may actually be genuine and valid. However, as Greenberg (1987; 1991) has argued, the actual fact is not as important as the appearance. The simple use of the previous period's explanation may give the impression that the supervisor had not devoted the appropriate time and effort to considering the manager's budget request.

Again, reflecting the discussion above, the final hypothesis is as follows:

***H3: Over time, when individuals are given the opportunity to voice an opinion in a budgeting process which continually does not lead to influence over any of the final budget allocations, those who receive a different explanation for their lack of influence will perform better than those who receive the same explanation.***

Covariates

Libby (1996, 1999) suggests that prior research shows that locus of control and performance capability have the potential to influence subject's performance independently of the effect of voice and explanation. To ensure replication to Libby's study these two variables were also included in this study as covariates.

Locus of control is defined as an individual's perception of the degree of control they have over events in their lives (Rotter 1966). An internally orientated individual believes that they

have some control over events in their life. While, an externally orientated individual believes that events are beyond their control and are controlled by fate, luck or powerful others. Sweeney, McFarlin and Cotton (1991) discovered that individual's perceptions of procedural justice when given the opportunity to voice an opinion were moderated by that individual's locus of control. In addition, Brownell (1982), Frucot and Shearon (1991) and Kren (1992) found that internally oriented individuals performed better when participating in budget setting than did externally oriented individuals. The results of these studies suggest that subjects categorised as internally oriented may react more positively to the opportunity for voice than would those subjects categorised as externally oriented.

Performance Capability is operationally defined as a subject's level of task performance on a pre-contracting trial (Waller and Chow 1985). Conceptually, performance capability is defined as the subjects' skill at a task multiplied by their motivation to perform. In other words, performance capability captures both skill and effort. Waller and Chow (1985) argue that the use of performance capability as a proxy for skill alone is justified in practice if the task allows the subjects to compensate for low skill by exerting greater effort. This was supported by Libby (1996), where it was found that while self-efficacy may matter to one's fairness judgement in theory, it did not appear to matter in practice. It is therefore appropriate for this study to measure performance capability based on skill alone.

### 3. Research method

Data was collected for this study using a laboratory experiment. The task, the incentive contract (fixed pay plus bonus) and the conduct of the experiment was similar to Libby (1996, 1999). A comparison of the laboratory experiment with that of Libby is shown in Table 1. The main difference was the extended work time of groups four and five to allow testing of hypotheses two and three.

**Table 1**  
**Experiment Comparison with Libby (1996 & 1999)**

	<b>This Study</b>	<b>Libby (1996, 1999)</b>
Task	Decoding of Symbols	
Incentive Contract	Fixed-pay-plus-bonus Earning of Tickets	
Prize per group	\$230 worth of goods	\$150 cash
Independent Variables	Voice Explanation Trial Explanation Type	Voice Explanation
Dependent Variable	H1: Work Period Performance H2&3: Work Period Performance adjusted for the Budget Goal	Work Period Performance
Covariate Variables	Locus of Control Performance Capability	
Subjects	<ul style="list-style-type: none"> <li>• 83 Undergraduate Business Students</li> <li>• Voluntary</li> <li>• Conducted outside class</li> <li>• Allocated to groups based on their time available</li> <li>• Conducted in 5 groups of approx 16 subjects</li> <li>• Males (45%); Females (55%)</li> </ul>	<ul style="list-style-type: none"> <li>• 171 Undergraduate Business Students</li> <li>• Voluntary</li> <li>• Conducted in class</li> <li>• Allocated to groups based on class time attended</li> <li>• Conducted in 8 groups of approx. 20 subjects</li> <li>• Males (49%); Females (51%)</li> </ul>



	<ul style="list-style-type: none"> <li>• Mean: <ul style="list-style-type: none"> <li>- months work experience – 36</li> <li>- no. of accounting courses – 1</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Mean: <ul style="list-style-type: none"> <li>- months work experience – 33</li> <li>- no. of accounting courses – 1</li> </ul> </li> </ul>
Location	Australia	Canada
Symbol Budget	H1: 200 H2 & 3 for trials 1-4: 190, 215, 195, 210	H1: 200
Incentive Contract	If actual > budget : Payment = 3 tickets + 2 tickets x (actual symbols decoded – symbol budget) If actual < budget: 3 tickets	

The experiment called for a 2x2 between subjects' factorial design for testing hypothesis one and a 2 x 4 within-subjects factorial design for hypotheses two and three. For the purpose of this study, five groups were formed. For testing hypothesis one, group one represented the no voice/no explanation cell, group two represented the no voice/explanation cell, group three represented the voice/no explanation cell and a random selection of subjects from groups four and five represented the voice/explanation cell. It was necessary to take a random sample of subjects from groups four and five to ensure comparable cell sizes. Group four represented the same explanation cell and group five represented the different explanation cell for the testing of hypotheses two and three. The experimental design is summarised in Table 2.

**Table 2**  
**Experimental Design**

<b>Hypothesis One</b>		
<i>Effect:</i>	No Voice	Voice
No Explanation	Cell 1 (Group 1)	Cell 3 (Group 3)
Explanation	Cell 2 (Group 2)	Cell 4 (Groups 4 & 5)
<b>Hypotheses Two and Three</b>		
<i>Effect:</i>	Between-Subjects Factor	
	Same Explanation (Group 4)	Different Explanation (Group 5)
Within-Subjects Factor	Cells 1 – 4	Cells 5 – 8
Trials One – Four		

### 3.1 Subjects

A total of 101 students volunteered to participate in this experiment. Students were assigned randomly to the groups after consideration of their time commitment (that is, whether available for one hour only, four hours only, or either) and their time available (that is, which days and times available). This semi-random process led to 93 students being assigned to groups. However, the final number of students that undertook the experiment was 83, 16 subjects in groups one, two and four, 17 subjects in group three and 18 subjects in group five. As mentioned above, for the purposes of testing hypothesis one, 16 subjects were randomly selected from groups four and five to form the voice/explanation cell. In order to make the analysis more robust against heteroskedasticity it was decided to make each cell uniform in size (Shavelson 1996). Sixteen was selected as the cell size as this was the minimum number of subjects in any of the groups.

Demographic data was collected and compared to ensure that there were no systematic differences across groups. One-way analyses of variances (ANOVAs) showed that there were no differences with respect to gender, year in course, months of part or full time work experience or number of accounting courses studied. The demographic data of the subjects in this study was also similar to the subjects in the Libby study.

### 3.2 Subjects Compensation

Subjects worked at the experimental task to earn raffle tickets that granted them a chance in winning a prize valued at approximately \$230. The incentive structure was in the form of a fixed-pay-plus-bonus compensation scheme and was designed so that the more symbols a subject decoded, the more tickets they earned. The incentive structure was that followed by Libby (1996, 1999) and adopted from Waller and Chow (1985). Kren (1992) successfully used a similar budget-based incentive scheme. There was one prize per group for the first work period, so that the subjects were given an equal opportunity to win a prize. That is, all five groups were under the same incentive structure for work period one. Further prizes were offered to groups 4 and 5 during the subsequent trials. This was necessary to ensure the subjects operated under similar conditions from one work period to the next. The prizes were drawn by a raffle.

Subjects were paid a set rate of one ticket for every 25 symbols correctly decoded during the practice period. For the work period the fixed-pay-plus-bonus compensation scheme used was operationalised as shown in Table 1.

The symbol budget set by Libby was 200. Recall that Libby (1999) wanted to present a budget the subordinates perceived as unfair so as to focus their attention on the budget process. She defined an unfair budget as one “that is more difficult to achieve than the one they request” (1999, p.127). Libby pre-tested the experimental task and performance ranged from 117 to 177 symbols with a mean of 146 symbols (Libby, 1996). She selected 200 symbols as the budget, stating that this was difficult but attainable.

The pre-test in this study produced similar results (range: 96-165, mean: 133) to Libby and therefore the symbol budget of 200 was deemed appropriate to produce similar perceptions of fairness, motivation and commitment for the subjects in this study. The subsequent budgets used for the trials in testing hypotheses two and three were set within a maximum 10% deviation of this 200-symbol standard. The symbol budgets for trials one to four were 190, 215, 195 and 210 respectively. It was necessary to alter the symbol budget over trials to promote the sincerity of the process and the explanations given. The degree of variation, however, was small enough to ensure a similar standard across the different trials.

### 3.3 Independent Variables

The independent variables used in this study were voice, explanation, explanation type and trial number. The voice and explanation variables were used for testing hypothesis one. For testing hypothesis two and three the voice and explanation variables were held constant. That is, all subjects received a voice and explanation. The manipulation required conducting the experimental task over a number of trials and on altering the explanation type.

Voice was defined as the opportunity for subordinates to be involved in the decision process by communicating their views to their superiors (Leventhal 1980). All groups were told the symbol budget. In the voice conditions, subjects were then given the opportunity to communicate their preferred budget to the superior. However, subjects in the no voice conditions were not given this opportunity.

An explanation was defined as a justification provided by the superior when the final budget outcome was not affected by the subordinates' communicated preferences (Bies 1987).

Explanation was operationalised as a written justification given for the subordinates' lack of influence over the final budget set. The explanation used for testing hypothesis one was the same as that used by Libby (1996, 1999) and was only given to subjects under the explanation condition.

Explanation type was operationalised at two levels: the same explanation and a different explanation. In the same explanation condition, subjects were given the same explanation as to why their input into the budget process (voice) lacked influence for each trial. The explanation used was the same as that used for testing hypothesis one. In the different explanation condition, there were different explanations given at each trial. The different explanations developed were based on Bies et al. (1988), who put forward a number of different explanation types, including budgetary constraints, restrictions due to company policy, inconsistent company norms, limitations due to organisational politics, controls imposed at higher levels of management and claims of incompetence. Appendix one presents the explanations used.

The first explanation was concerned with budgetary constraints by arguing that a minimum budget requirement had to be met by the subject. The second explanation implied restrictions due to company policy by arguing that the university policy (specifically, fairness and equity policies) restricted the final budget set. The third explanation was based on inconsistent company norms through the referral to a normal standard of performance. The final explanation applied claims of incompetence by stating that the subjects' work performance was below that of fellow workers, and that their poor work rate (incompetence) was driving the final budget. For an explanation to be considered as adequate, it needs to be logical, sincere (Bies and Shapiro 1987; Bies et al. 1988; Greenberg 1990b) and informationally valid (Greenberg 1993). The explanations were considered logical as they claimed that the final budget set was based on the performance of all workers. Sincerity of the explanations was inferred by the reference to the difficulty of achieving the final budget. All explanations were considered informationally valid by referring to previous work periods as a benchmark for setting the budget. Additionally, the subjects observed the checking of information and the double-checking of calculations for accuracy by an independent reviewer. According to Greenberg (1993) this reinforces informational validity. Each subject in the different explanation condition received each explanation only once. The order in which each subject received each of the different explanations was random. Consequently, each trial had all of the different explanations being distributed.

The final variable was trial which was a within subjects variable. There were four trials in which the subjects performed the decoding task. Due to the limited number of students a control group was not used. The internal validity threat of maturation was addressed by changing the symbols used at each trial to combat learning, supplying two refreshment breaks to combat fatigue and boredom and by reinforcement of the incentive. Changing the symbols was deemed necessary to discourage memorising of the symbols. The simple nature of the decoding task remained the same and therefore the likely effect of student judgements about their ability to meet the budget would be minimal. Also, to ensure the validity of the various explanations, the assigned budget was altered at each trial. This alteration was kept to a minimum (+/-10% of the original 200 symbols) so that no matter which explanation the subjects received, the explanation was still considered to be sincere. However, given the threat of a goal effect the work period performance was controlled for the budget assigned in the statistical analysis.

### 3.4 Covariates

Performance capability was measured as the number of symbols correctly decoded during the practice period. Locus of Control was measured using Rotter's (1966) locus of control instrument that provides a score between 0 – 23 with the higher score representing an external

locus of control personality. Descriptive statistics for this study, as well as Libby's study, are presented in Table 3.

### 3.5 Dependent Variable

Descriptive statistics are presented in Table 3. The dependent variable for hypothesis one was measured using the subjects' work period performance (number of symbols correctly decoded).

**Table 3**  
**Descriptive Statistics**

		<b>Mean</b>	<b>Standard Deviation</b>	<b>Range</b>
Performance Capability	This study	108.98	23.42	58 - 161
	Libby (1996, 1999)	130	30.11	66 - 227
Locus of Control	This study	11.09	3.8	2 - 21
	Libby (1996, 1999)	12.3	3.11	4 - 21
H1: Work Performance	This study	143	34.74	81 - 252
	Libby (1996, 1999)	175.63	46.71	86 - 318
H2 & H3: Work Performance prior to budget goal adjustment	This study:			
	Trial one	107.81	21.31	73-149
	Trial two	137.97	33.35	71-175
	Trial three	129.00	26.89	84.175
	Trial four	145.69	36.75	85-216

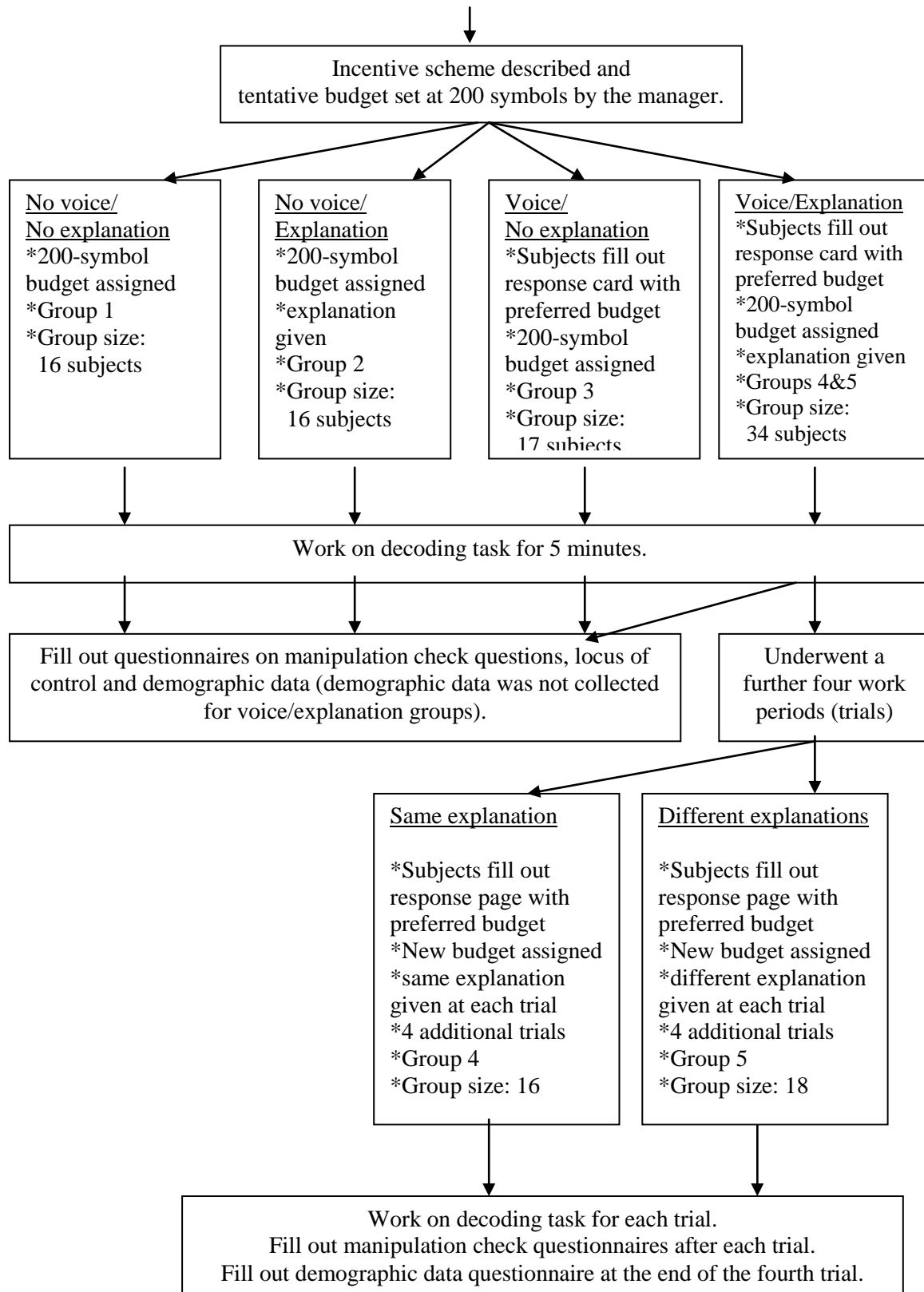
For hypotheses two and three the dependent variable was work period performance adjusted for the budget goal assigned. The adjustment of the budget goal assigned was necessary to control for any goal effect. Goal-setting theory states that, assuming commitment to the stated goal; difficult goals should induce more effort and consequently better performance than easy goals (Murray 1990). In other words, goal-setting theory advocates that establishing difficult goals will induce more effort and consequently better performance than moderate or easy goals (Locke et al. 1981). To control for the budget assigned, the work performance of each subject was altered to compensate for the difference in the budget. That is, the budget assigned at each trial was subtracted from the subjects' work performance. This changed the work performance variable into the subjects' deviation from the assigned budget.

### 3.6 Experimental procedure

The experiment took place over a 10-day period. The experiment time was approximately 45 minutes for groups one to three and three hours for groups four and five. To control for leakage of information, subjects were asked not to discuss the experiment with any other students. Groups four and five were provided with two breaks where refreshments were provided so as to reduce any effects of fatigue. All groups were treated in a similar manner; with the subjects reading the instructions. No additional information was given to the subjects.

Figure 3 depicts a flowchart of the procedures undertaken. Subjects acted as subordinates performing a production task. The production task consisted of the translation of symbols into alphabetical characters using a decoding key. This task was used by Libby (1996, 1999) and adopted from Chow (1983) and Waller and Chow (1985).<sup>2</sup> There were four parts to the experiment for testing hypothesis one: practice period, work period, manipulation check questions and questionnaires measuring locus of control and demographic data. Groups one, two and three (no voice/no explanation, no voice/explanation, voice/no explanation) underwent these parts in that order. Groups four and five also undertook the practice period

the work period and the manipulation check questions, but did not complete the questionnaires until after all work periods (trials) had been completed. The experimental procedures for testing hypothesis one followed that of Libby (1996, 1999). Subjects were given booklets that corresponded to the different parts of the study. A description of the task, decoding sheet and a practice work sheet were contained in the first booklet. The subjects completed a five minute practice period. The subjects were then given the answer key to check their work and were required to enter the number of correctly decoded symbols on a tally sheet. The tally sheet was reviewed by the manager and was checked by the assistant while subjects moved on to read the instructions in the second booklet. The second booklet contained the incentive scheme, the work period decoding key and work sheets. The instructions of the incentive scheme included practice examples to ensure that subjects understood how raffle tickets would be issued.



**Fig. 3. Experimental Procedures**

For the five minute work period subjects in the no voice conditions were assigned a budget goal of 200 symbols. Subjects in the no voice/explanation condition were also given an explanation as to why the 200 budget goal was assigned. The subjects in the voice conditions

were required to enter their preferred budget goal on a response card. The response cards were collected and reviewed and subjects were handed a sheet indicating that the budget goal would remain at 200 symbols. In the voice/explanation condition subjects also received the same explanation as in the no voice/explanation condition as to why the budget remained at 200 symbols. After completing the five minute work period subjects in groups one, two and three completed the locus of control and demographic questionnaire. Subjects in groups four and five completed a further four work periods.

Each work period was similar to that described above. After the subjects were given their performance score from their previous work period, all subjects were asked to indicate on a response card their preferred budget goal for the next work period. The response cards were collected and reviewed. The subjects were then handed a sheet indicating the budget goal for the next 5 minute work period and an explanation as to why the budget goal had to remain at the initially indicated level. The subjects in the same explanation group were given the same explanation at each work period and the subjects in the different explanation group received a different explanation at each work period.

The researchers playing the roles of manager and assistant led all experimental sessions. All subjects were invited to a final session, which was scheduled to provide feedback to the subjects about their performance, to explain the purpose of the experiment and to conduct the draw for the prizes. There was an atmosphere of excitement at this final session as students were keen to know their performance and to find out the winners of the prizes. The odds of winning a prize per group were the same as for Libby however the prize was different. Libby had a cash prize of \$150 per group compared to this study where the prize was \$230 worth of goods. It is hard to determine whether the subjects in each study valued the prizes equally, however, part of the \$230 prize was a 3 month gym membership worth \$150. Student comments indicated that was highly sought after and was the impetus for them volunteering for the study.

An analysis of questions from the post-experimental questionnaire show no significant difference between groups with respect to the motivation of the prize, however the analysis showed that the effectiveness of the incentive scheme was greater for the no voice/explanation group compared to all other groups. Libby (1996; 1999) did not report these results so no comparison could be made.

## **4. Results**

### **4.1 Hypothesis one**

To test hypothesis one, which was a replication of Libby (1999), a 2 (voice/no voice) x 2 (no explanation/explanation) between subjects analysis of covariance was performed with locus of control and performance capability as covariates. The dependent variable was work period performance.

Assumptions of linearity and homogeneity of regression were met; however, tests revealed that the work period performance variable was skewed with a peak (leptokurtic) shape. The non-normal distribution appeared to be driven by two outliers.<sup>3</sup> Given that these values were extreme and not just part of a long tail of a skewed distribution, it appeared rational to remove them from the analysis (Hamilton 1990). Further given that the values are far above the budget set, the perception of an unfair budget may not exist for these two subjects. The values (248 and 252) were within the no voice/explanation group. Libby (1996) who attempted to remove the outliers from her analysis also supported this notion. However, in the case of Libby (1996), there were 47 (27.5%) outliers which, once removed, resulted in a loss of statistical power. It is unknown whether these outliers were as extreme as the ones found in this study. Given the removal of the two outliers, thus resulting in non-even cell sizes, the assumption of homogeneity of variance was also conducted. No assumptions were violated.<sup>4</sup>

The results are presented in Table 4<sup>5</sup> and the cell means, adjusted for locus of control and performance capability are shown in Table 5. Table 4 shows that there was no significant interaction between voice and explanation affecting performance, however there was a significant explanation main effect. This is contrary to the results found by Libby (1999) which showed no significant main effects but a significant interaction effect. An inspection of the adjusted means in Table 5, show that the no voice/explanation group decoded the most symbols, followed by the voice/explanation group, no voice/no explanation group and finally the voice/no explanation group decoded the least number of symbols.

To further examine the results t-tests were used to compare means across groups. Although the voice/explanation group's adjusted mean was higher than the voice/no explanation group the difference was not significant,  $t = .793$ . This leads to a rejection of hypothesis one. Also, it was expected that the voice/explanation condition would significantly outperform the no voice/no explanation group. Again the adjusted mean scores were in the right direction but were not significant,  $t = .907$ . The lack of significance could be due to the small sample size rather than the lack of effect.

**Table 4**  
**Analysis of Covariance for Work Performance for Hypothesis One (n = 62)**

Source of Variance	Adjusted SS	df	MS	F	sig
Voice	1150.344	1	1150.344	2.580	.114
Explanation	2648.893	1	2648.893	5.941	.018
Voice x Explanation	926.171	1	926.171	2.077	.155
Covariates					
Performance Capability	22679.588	1	22679.588	50.864	.000
Locus of Control	526.299	1	526.299	1.180	.282
Error	24969.663	56	445.887		

$R^2 = 0.523$  (Adjusted  $R^2 = 0.481$ )

**Table 5**  
**Work Performance Group Means (Standard Errors) Adjusted for Performance Capability and Locus of Control for Hypothesis One (n = 62)**

Effect	No Voice	Voice	Marginal Means
<b>No Explanation</b>	133.94 (5.30) n = 16	132.96 (5.35) n = 16	133.45 (3.74) n=32
<b>Explanation</b>	154.86 (5.67) n = 14	138.35 (5.28) n = 16	146.61 (3.87) n = 30
<b>Marginal means</b>	144.40 (3.89) n = 30	135.65 (3.76) n = 32	140.23 (2.67) n = 62

The results do indicate that provision of an explanation is a significant factor affecting performance. That is, when subordinates have no influence over the final budget that is set (regardless of voice) the provision of an explanation is crucial for performance improvement. This result supports previous researchers who found significant explanation main effects on fairness and performance (Bies 1987; Bies and Shapiro 1987, 1988; Greenberg 1990a, 1991; Williams 1999). Libby (1996) did in fact expect an explanation main effect on performance.

Understanding the difference between this study and Libby provides insight into the generalisability of the voice and explanation variables. A comparison of the mean work performance (see Table 3) between this study and Libby shows that the mean work performance in the Libby study was closer to the set budget of 200. In fact for Libby's study the budget of 200 was approximately half a standard deviation away from the mean compared



to this study in which the budget was almost two standard deviations away from the mean. This suggests that although the 200 symbol budget was technically the same under both studies, it could have had differing effects for the subjects in each study. The research setting required an unfair budget so that subjects would concentrate on the process. The range values in Libby (1996, 1999) show a highest score of 318 which is well beyond the 200 budget. This together with the number of outliers could suggest that the budget goal of 200 symbols was not difficult and therefore the subjects didn't perceive the budget as unfair which in turn did not turn their attention to the process. In fact some subjects may have voiced 200 symbols or greater as their suggested budget. This could explain the lack of expected explanation main effects.

The hypothesis proposed rests on the issue of fairness. If the budget allocation is unfair then giving a voice and an explanation should reduce the perception of unfairness. Following Libby this study also tested subject's perceptions of fairness by asking subjects to indicate on a scale from one (completely unfair) to five (completely fair) "How fair would you judge the procedures used to set the budget assigned to you?" and "How fair would you judge the final budget itself?". Average mean ratings across the two questions for each group and overall is presented in Table 6. Libby's results are also included for comparison.

**Table 6**  
**Mean Rating of Fairness, Commitment and Level of Influence**

	NV/NE	NV/E	V/NE	V/E	Overall
<b>Fairness:</b>					
This study	2.86 (1.19)	3.33 (0.79)	2.67 (0.97)	3.03 (1.16)	2.97 (1.04)
Libby (1996; 1999)	3.54 (0.16)	3.41 (0.15)	3.18 (0.16)	3.7 (0.17)	3.45 (1.17)
<b>Commitment:</b>					
This study	3.6 (.85)	4.03 (1.32)	3.46 (1.45)	3.96 (0.77)	3.77 (1.13)
Libby (1996)					4.06 (1.13)
<b>Influence:</b>					
This study	2.04 (1.3)	2.03 (0.98)	1.68 (0.78)	2.66 (1.27)	2.10 (1.14)
Libby					Not reported

The results show that the subject's perceptions of fairness follow the same pattern as performance. That is, subjects in the no voice/explanation group recorded a higher level of perceived fairness and also performed the highest. Subjects in the voice/no explanation group recorded the lowest level of perceived fairness and also performed the worst. Overall, subjects in this study had a lower perception of fairness than subjects in the study conducted by Libby. This also mirrors the subject's performance across the two studies.

This suggests that performance is related to perceptions of fairness and specifically the higher the perception of fairness the higher the performance. What is less clear is the reason for the difference in results from Libby's study and this study and what consequence this has on the theory. As indicated above Libby's subjects may not have viewed the budget allocation as unfair, thus not leading to an emphasis on the process. There is some dispute surrounding the concept of an unfair budget. Lindquist (1995) views an unfair budget as one that is unattainable, whereas Libby viewed an unfair budget as one that is unfavourable but attainable. Despite this conflict in definition, what the results do suggest is that the research setting is sensitive to the budget set and that conflicting results between this study, Libby and

previous studies could be explained within the definition and operationalisation of an unfair budget.

Libby (1996) also examined commitment by asking respondents to indicate from one (not at all committed) to five (fully committed) “How committed were you to meeting or exceeding the final budget assigned to you by the manager?” Her mean score together with the results from this study on the same question are presented in Table 6. The results show that the level of commitment also follows the same pattern as perceived fairness and performance. That is, the higher the commitment, the higher the perceived fairness and the higher the performance. Libby (1996) also found that commitment was correlated with fairness and performance. This variable was examined due to suggestions that fairness effects performance through its effect on commitment (Cropanzano & Folger, 1991).

The final variable presented in Table 6 shows the level of perceived influence the subjects felt they had over the final budget that was set. This was measured as the average score on a scale of one (low input/low degree of influence) to five (high input/high degree of influence). The scale included the following questions: “How much input were you able to give in the process of setting the final budget?” and “How much influence do you feel that you had over the final budget that was set?” The results indicate that overall subjects felt their influence was low (mean = 2.1; sd = 1.14). Those in the no voice conditions recorded similar perceptions of influence, while the voice/no explanation group felt the least amount of influence and the voice/explanation group felt the most amount of influence. Intuitively this result is as expected and provides some evidence to suggest that the subjects were affected by the voice and explanation process.

It is worth emphasising the finding that the no voice groups decoded more symbols than the voice groups. Although this difference was not significant, it does suggest that when a voice has an uninformal impact or an unfair budget is intended, participation is likely to lead to inferior performance.

#### 4.2 Hypothesis two and three

Hypothesis two and three were concerned with the affect on performance of the explanation over a number of work periods. A mixed design was employed with one between-subjects factor (explanation type) and one within-subjects factor (trials). Explanation type had two levels (same and different) and trial had four levels. Table 7 contains the work period cell means adjusted for locus of control and performance capability. The scores are presented to allow comparison to scores presented for hypothesis one testing. The scores were then adjusted for the budget target. As discussed previously goal setting theory advocates that difficult goals will induce more effort and consequently higher performance than easy goals (Locke et al, 1981). Figure 4 graphically presents the cell means for the dependent variable (work performance adjusted for the budget goal).

To accept hypotheses two and three the 2 x 4 factorial analysis needed to show a significant negative main effect for trial and a significant positive interaction effect of explanation type and trial.

**Table 7**  
**Work Performance Group Means (Standard Errors) Adjusted for Performance Capability and Locus of Control for Hypothesis Two and Three (n = 32 x 4 trials)**

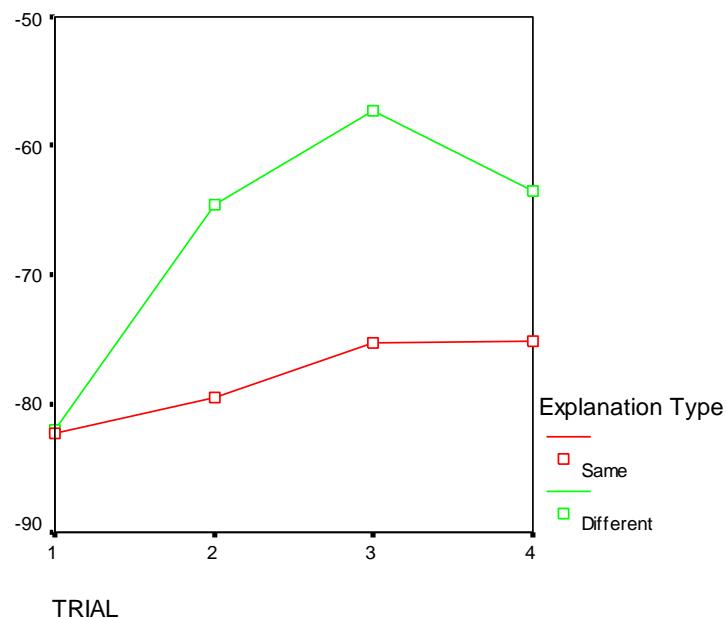
<b>Effect (Budget Goal)</b>	<b>Same Explanation (n = 16)</b>	<b>Different Explanation (n = 16)</b>	<b>Marginal Means (n = 32)</b>
Trial One (190)	107.66 (3.21)	107.97 (3.21)	107.81 (2.24)
Trial Two (210)	130.52 (5.17)	145.42 (5.17)	137.97 (3.62)
Trial Three (195)	119.69 (3.96)	137.75 (3.96)	128.72 (2.77)

Trial Four (215)	139.89 (6.02)	151.49 (6.02)	145.69 (4.21)
Marginal Means	124.44 (3.79)	135.66 (3.79)	130.05 (2.65)

The dependent variable was the subjects work period performance deviation from the budget goal. A repeated measures analysis of covariance was used and the results are shown in Table 8. There was no significant main effect for trial and therefore hypothesis two is rejected. Figure 4 graphically presents the cell means for the dependent variable. An inspection of Figure 4 shows that there was an increase in performance from trial one to three and then a decrease in performance for trial four. This may be suggesting that further trials were needed to capture the essence of the negative effect expected when a subordinate's input is ignored time after time.

**Table 8**  
**Repeated Measures Analysis of Covariance for Work Performance Controlled for the Budget Assigned for Hypothesis Two and Three (n=32 x 4 trials)**

Source of Variance	Type III Sum of Squares	df	MS	F	Sig.
Covariates:					
Performance Capability	50404.014	1	50401.014	55.881	.000
Locus of Control	1118.505	1	1118.505	1.240	.275
Between subjects:					
Explanation Type	3863.172	1	3863.172	4.283	.048
Error	25254.105	28	901.932		
Within subjects:					
Trial	830.495	3	276.832	1.689	.176
Trial x Explanation Type	1377.790	3	459.263	2.802	.045
Error	13765.910	84	163.880		



**Fig. 4. Work Performance Group Means over Trials and Explanation Type Controlled for the Budget Assigned and Adjusted for Performance Capability and Locus of Control**

The results support hypothesis three by showing that there was a significant positive interaction effect of explanation type and trial at the 0.05 level. The group that received a different explanation at each trial outperformed those who received the same explanation at

each trial. An examination of figure 4 shows that the different explanation group improved at a faster rate than the same explanation group to trial 3. However, their performance decreased in trial 4 compared to the same explanation group whose performance levelled in trial 4. This is curious and contrary to the hypothesis's prediction. It could suggest that the subjects have become increasingly sceptical regarding the differing explanations. Insight is provided through the examination of the subject's perceived fairness throughout the trial.

The perceptions of fairness rating as indicated previously was based on the answer to two questions concerning the fairness of the procedures and the fairness of the budget. The scores on these questions were summed to give a fairness score. Average mean ratings for perceptions of fairness across the two groups over the trials are presented in figure 5. In relation to explanation type, a comparison of figures 4 and 5 show that performance and perceptions of fairness follow the same pattern. That is, the different explanation group had higher performance and higher perceptions of fairness than the same explanation group. This supports the notion that perceived fairness and performance are linked.

However, for the variable of trial, the performance and fairness ratings are moving in opposite directions. That is, performance improves up to trial 3 and then decreases slightly in trial 4 whereas perceived fairness decreases to trial 3 and then increases in trial 4.

What are the implications of this for the current study? In hypothesis two it was expected that performance would decrease over the duration of the trials. This wasn't the case. However, perceived fairness did decrease over the trial period. It may be that perceived fairness and performance are related but not contemporaneously. That is, the student's perceptions of fairness shows the immediate impact of the manipulated variables however with performance it takes individuals some trials to realise that, although motivated by the prize their ability to influence the number of tickets received is minimised due to the unfair budget allocation.

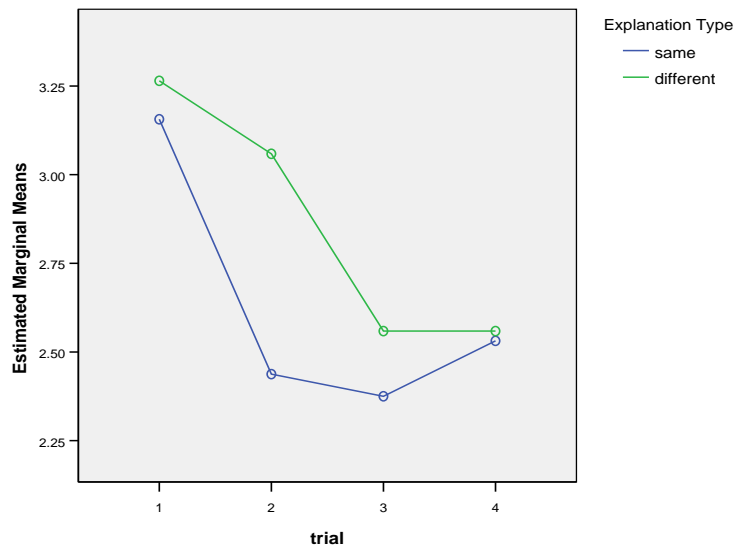


Fig. 5. Perceived Fairness Group Means over Trials and Explanation Type

## 5. Conclusion and discussion

This study set out to examine the effect of voice and explanation on performance over multiple budget periods. The theoretical framework utilised was that of organisational justice theory. This theory examines the fairness attached to outcomes, procedures and interactions of organisational participants. Generally, it espouses the need to ensure fairness to help

motivate effort and in turn improve performance (Greenberg, 1987; Bies and Tripp, 1995). The purpose of this study was to examine the performance differences across voice (procedural justice) and explanation (interactional justice) over a number of budget periods. The research process and results highlight several important findings.

Firstly, one of the key contributions of this paper is the empirical support for the relationship between perceived fairness and performance. More specifically, the results showed that the higher the perceptions of fairness, the higher the performance. In the main, psychological research in organisation justice theory assumes this positive relationship between fairness and performance. The reliance on this relationship is rarely tested.

Secondly, the results indicate that the provision of an explanation significantly affects performance. This supports the arguments put forward by Bies (1987), Bies and Shapiro (1987, 1988), and Greenberg (1990a, 1991), who found positive effects of explanation on the perceptions of fairness and Bies (1987) and Williams (1999) who found positive effects on performance. These results are contrary to Libby (1996, 1999) who did not find an explanation main effect on performance.

Thirdly, the research highlights the sensitivity of the budget to the results. Libby(1996) relying on Cropanzano and Folger's (1991) two component model set out to test the difference between the combination of a budget allocation that is unfair and a budget process that is fair (voice and explanation) with a combination of a budget allocation that is unfair and a budget process that is unfair (voice and explanation). Giving an unfair budget allocation across all conditions was to ensure concentration on the budget process. Although technically the budget allocation was the same in this and Libby's study, Libby's subjects recorded higher performance and perceptions of fairness and commitment than the subjects in this study. This indicates that the perception of a budget allocation that is unfair differed across the two studies. Interesting, Lindquist (1995) defines an unfair budget as one that is unattainable. However, Libby (1996; 1999) defines an unfair budget as one that is unfavourable but attainable. The differences in the definitions and in the subsequent operationalising of the budget set could help explain the conflicting results.

Fourthly, the process highlighted that statistical usage is paramount in the research process. It is difficult to assess whether the lack of explanation significance in Libby's (1996, 1999) study is due to the problem she encountered with outliers. While arguing for the removal of outliers, she did not do this due to a loss of statistical power and thus there is uncertainty as to their overall effect.

Fifthly, the operationalising of explanation type as same and different indicated that it is not simply a matter of providing an explanation. This supports previous researchers (e.g. Greenberg, 1991; Bies et al, 1988) who claim that the delivery of an explanation is all part of the impression management process. The impression management process helps eliminate concerns of unfairness. It could be argued that different explanations over time helped improve the sincerity of the process, especially if subordinates took account of the previous explanations used in submitting their voice for a subsequent period. Greenberg (1991) warns that there is a risk of negative reactions if individuals view explanations as artificial or manipulative. Therefore, there is a need to examine carefully the attributes of an explanation. It is possible that explanation could be of a multidimensional nature or as Dubin (1969) would describe a summative variable. That is, an explanation could contain many dimensions. Bies et al (1988) put forward several explanations and argues that an explanation needs to be logical, valid and sincere. Previous research has only explored explanation as a single variable. However, further investigation of the effects of explanations over time or of different explanations would necessitate an examination of whether the three dimensions, logicity, sincerity and validity, can occur at differential rates within each explanation. In this

study, all subjects in the different explanation treatment group received, in random order, every explanation and therefore this was of little concern. However, if different explanations are to be used in different treatments then the multidimensional nature of the variable should be investigated.

Finally, the results showed that the manipulation of the voice condition did not significantly affect performance. This is in line with Williams (1999) who also didn't find a voice main effect but did find an explanation main effect. It is worthwhile noting that the subjects in the voice conditions on average performed worse than the subjects in the no voice conditions with the group that received a voice and no explanation performing the worst. This supports Argyris (1952) and Pasewark and Welker (1990) who stated that ignoring input can lead to pseudo-participation which de-motivates and lowers performance. In fact the findings suggest that if an 'unfair budget' is intended, participation is likely to lead to inferior performance.

This study contributes to the literature in several ways. Firstly, the importance of replication in advancing knowledge has been emphasized (Lindsay and Ehrenberg 1993; Otley et al. 1994; Otley and Pollanen 2000). Most importantly, this study has added support for the argument by Bies (1987) that in the presence of an uninfluential voice, the provision of an adequate explanation has a positive effect on subordinate performance.

Additionally, this study attempts to better represent the budgeting process in organisations. Firstly, by employing a consultative budget process that does not influence the final budget set the research design attempts to mimic the real world of scarce resources. Secondly, the budget process is undertaken by most organisations at least yearly. The examination of the explanation effect over multiple budget periods is essential to improve our understanding of this phenomenon. This study examined two levels of explanation, same and different. Bies et al. (1988) contends that not all claims of mitigating circumstances (explanations) are perceived as 'equal' by subordinates. An examination of the different types of explanations on performance would be a worthwhile avenue for future research.

A number of limitations apply to the results of this study. As in all experimental studies the external validity is the major limitation. The generalisability of the results to practice needs to be confirmed through field studies. The use of student subjects as surrogates for managers also requires consideration. In this study the students did not need broad knowledge and experience to complete the task and a practice period was undertaken giving some assurance that the subjects understood the task, thus increasing experimental realism. In relation to internal validity, the major limitation was the lack of full randomisation of subjects to the experimental treatments. However, comparisons of demographic data did not show any significant differences between the groups. Also, the use of a control group for testing hypotheses two and three would have strengthened the control over the experimental setting giving greater reassurance that the variations were due to the manipulated variables. This limitation was a function of the number of subjects available. The sample size also affected the strength of the statistical analysis.

Notwithstanding these limitations the study does have important implications for the budget setting process in organisations. The sincerity and fairness of the procedures and interactions employed in the budget setting process are important organisational considerations. The evidence suggests that it is not so much the voice in the budget procedure but the explanation that can enhance performance.

## Appendix

### Explanation types

*Explanation used for testing Hypothesis One and for the Same Explanation Condition for Hypothesis Two.*

The manager would like to provide you with the following explanation for finalising the budget at \_\_\_\_ symbols. Although the manager is aware that this final budget may be difficult to reach, this budget was set based on a review of performance during the practice period and on performance of previous groups of students on the decoding task. This budget has been assigned in order to challenge even the most skilled participant in the study. The calculations made to arrive at this number have been reviewed and were double-checked for accuracy against the information about the practice session results recorded on the Manager's Report. No errors were detected.

*Explanations used for the Different Explanation Condition for Hypothesis Two.*

1. Your opinion regarding the budget of 190 symbols has been carefully considered. However, to keep up with the manager's needs and maintain a level consistent with other workers; you must fulfil the budget requirement. Therefore, you have to meet a budget of at least 190 symbols. Therefore, the budget is finalised at \_\_\_\_ symbols.

Although this final budget may be difficult to achieve, it was determined based on a review of the performance of all workers. This budget should challenge even the most skilled person in the group. The calculations made for all workers during their previous work periods have been reviewed and were double-checked for accuracy by an independent reviewer. No errors were detected.

2. Your opinion regarding the budget of 190 symbols has been carefully considered. However, due to the university policy (specifically, fairness and equity policies regarding the dispensing of tickets), the budget needs to be finalised at \_\_\_\_ symbols.

Although this final budget may be difficult to achieve, it was determined based on a review of the performance of all workers. This budget should challenge even the most skilled person in the group. The calculations made for all workers during their previous work periods have been reviewed and were double-checked for accuracy by an independent reviewer. No errors were detected.

3. Your opinion regarding the budget of 190 symbols has been carefully considered. The normal performance for this type of task is regarded to be \_\_\_\_ symbols. Therefore, this budget is finalised at \_\_\_\_ symbols.

Although this final budget may be difficult to achieve, it was determined based on a review of the performance of all workers. This budget should challenge even the most skilled person in the group. The calculations made for all workers during their previous work periods have been reviewed and were double-checked for accuracy by an independent reviewer. No errors were detected.

4. Your opinion regarding the budget of 190 symbols has been carefully considered. Compared to other workers, your performance in previous work periods demonstrates that you have not been working at your optimum level. Due to your poor work rate, the budget will be finalised at \_\_\_\_ symbols.

Although this final budget may be difficult to achieve, it was determined based on a review of the performance of all workers. This budget should challenge even the most skilled person in the group. The calculations made for all workers during their previous work periods have been reviewed and were double-checked for accuracy by an independent reviewer. No errors were detected.

## Notes

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<sup>1</sup> In this study the distributive justice dimension was held as a constant in the experimental design by giving every subject the same incentive performance contract.

<sup>2</sup> The materials relating to the experimental task can be obtained from the first author.

<sup>3</sup> Another explanation for the non-normal distribution of the work performance variable could be that the variable is actually a Poisson distribution. That is, the cell variances are functions of the cell means: the larger the mean, the larger the variance (Winer, Brown & Michels, 1991). For this distribution, the data needs to undergo a square-root transformation. Once a square-root transformation was performed on this data the distribution was normal (skewness = 0.209, kurtosis = 0.450). However, the two outliers were still present. For the purpose of comparability to Libby (1999), the data was not transformed but the outliers were removed. Further investigation was undertaken into the effects of square-root transformation on the results. The ANCOVA was also run on this data. The results were similar to the actual testing reported.

<sup>4</sup> Normality: The skewness statistic (0.218), kurtosis (-0.357), Boxplot, histogram and normal probability plots supported normality.

Linearity: Matrix scatterplots containing work period performance, practice period performance and locus of control for each group were examined.

Homogeneity of Regression: Comparison of the full regression model, including interactions between the covariates and the treatments, to the reduced regression model resulted in an insignificant result,  $F(4.52)=0.8509$ ,  $p>0.05$ .

Homogeneity of Variances: The Levene's test was insignificant,  $F(3.58)=0.711$ ,  $p=0.555$ ) thus indicating that the population variances are approximately equal.

Independence of covariates and treatments: Performance capability was measured prior to the treatment. Locus of control was measured after the treatment and therefore a contingency table containing two levels of locus of control and four categories corresponding to the four cells of the experiment was examined. Locus of control was found to be independent of the treatment,  $\chi^2(3) = 3.338$ ,  $p = 0.342$ .

<sup>5</sup> To test the randomness of the selection of 16 subjects from groups 4 and 5 for cell 4 the statistical analysis was also conducted on the 81 responses and the results were similar. The Levene's test statistic [ $F(3, 77) = 1.265$ ,  $p=0.292$ ] was insignificant and thus the homogeneity of variance assumption was not violated.



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