The impact of anticipation on accounting students' ethical decision making under time pressure

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Time pressure has been shown to have a negative impact on ethical decision-making. A consistent finding in plagiarism research is that students have been found to have a higher propensity to commit plagiarism when they are faced with time deadline pressure. However, no attention has been directed to the impact of the precursors to time pressure. This paper examines the impact of anticipated and unanticipated time pressure on ethical decision making using an experimental approach and reports the results of between and within-subjects experiments. Utilising 60 business school undergraduate and postgraduate coursework students at The University of Western Australia, we examine the differential impact of whether time deadline pressure was anticipated or unanticipated on students' propensity to commit plagiarism. We find support for our expectation that the propensity to commit plagiarism under time pressure is related to anticipation. Specifically, we find the propensity to plagiarise to be significantly reduced when time pressure is anticipated rather than unanticipated. The implications of this finding for policy development and curriculum design are explored.

Keywords: Plagiarism, accounting education, academic honesty, ethics, time pressure.
Data Availability: Contact the authors

Introduction

It is generally accepted in ethics research that the majority of people will behave ethically, with unethical behaviour being a consequence of circumstances. Time pressure has been shown to be one of those circumstances having a negative impact on ethical decision-making (Moberg, 2000; Sweeney, Arnold & Pierce, 2010). Prior studies have shown that decision makers are less likely to help others when under time pressure (e.g. Darley & Batson, 1973) and are more likely to engage in "ballistic decision making" under stress by making decisions without taking into consideration the consequences of their actions (Dorner, 1990). However, little attention has been directed to the potential impact of the precursors to time pressure. An example of a precursor to time pressure includes the extent to which the time pressure is anticipated. Anticipated time pressure arises when decision-makers are able to predict or 'anticipate' being under time pressure in advance, whereas unanticipated time pressure arises due to unforeseen circumstances (Solomon & Brown, 1992; DeZoort & Lord, 1997). This study aims to contribute to our understanding of the impact of these different types of pressures on one area of ethical decision-making, i.e. student plagiarism.

Prior research has found plagiarism amongst business students is on the rise (e.g. Park, 2003) and reports that students have a higher propensity to commit plagiarism under time pressure (Franklyn-Stokes & Newstead, 1995; Park, 2003; Devlin & Gray, 2007; Koh, Scully & Woodliff, 2010). Understanding the conditions under which students plagiarise should contribute to the ability of educationalists to reduce the incidence of plagiarism.

This paper examines the impact of anticipated and unanticipated time pressure on the propensity to commit plagiarism using an experimental approach. We find support for our expectation that

the propensity to engage in unethical behaviour (i.e. commit plagiarism) under time pressure is related to the extent of anticipation. Specifically, we find the propensity to plagiarise to be significantly lower when time pressure is anticipated than when it is unanticipated. Understanding the distinction between anticipated versus unanticipated time pressure is important, as students seem appear to cope with such pressures differently.

The next section develops the hypothesis. This is followed by an overview of the experimental design, a description of the research instrument and its administration. Results of between and within subjects experiments are then presented. Next, follows a discussion where we examine the implications of our findings for ethical decision making in general, for educationalists in particular and possible extensions of this research. We conclude with limitations and suggestions for future research.

Literature review and hypothesis development

Moberg's (2000) literature review supports the contention that time pressure has a negative impact on ethical decision-making. He reported that decision makers are: less likely to select alternatives with the highest expected value when under time pressure (e.g. Payne, Bettman and Johnson, 1993); less likely to help others when under time pressure (see Cohen and Spacapan, 1978; Darley and Batson, 1973) and more likely to engage in "ballistic decision making" under stress by making decisions without taking into consideration the consequences of their actions (Dorner, 1990). The Darley and Batson (1973) experiment where divinity students were found to be less likely to help others when under perceived time pressure is particularly telling since the participants lost sight of their ethical obligation in their rush to accomplish a pressing goal (Moberg, 2000).

Solomon and Brown (1992) and DeZoort (1998) classify time pressure into anticipated (i.e. foreseeable) and unanticipated (i.e. unforeseeable) time pressure, depending on the extent to which the decision maker is able to anticipate or predict the time pressure before it occurs. However the differential impact of this theorised distinction on decision-making has not been subject to empirical testing. In our current study, anticipated time pressure arises when the hypothetical student in our scenario is able to predict or 'anticipate' being under time pressure in advance, whereas unanticipated time pressure arises unexpectedly due to unforseen circumstances.

The psychology literature suggests that people are more likely to use heuristics (or "short cuts") when faced with time deadline pressure (Payne, Bettman and Johnson, 1988). A logical extension is to examine "to what extent time pressure leads people to use "moral heuristics" rather than their reasoning in terms of consequences" (Bjorklund, 2003, p. 460). Bjorklund (2003) found that subjects under time pressure applied simpler and equally valid heuristics decision rules (i.e. 'justice oriented' reasoning as opposed to the supposedly more effortful 'care oriented' reasoning) to solve moral dilemmas. Furthermore, they used less convincing and less coherent arguments to justify their moral judgments as it seems like "when short of time, one may feel that one cannot readily engage in the kind of reasoning needed to figure out the possible consequences of one's decision" (Bjorklund, 2003, p. 464). The same principle seems to apply in the plagiarism literature with students taking "short cuts" by engaging in plagiarism in order to cope with time deadline pressure (Susskind, 2006).

Research in moral psychology suggests ethical decisions could either be made deliberately and rationally through a "conscious reasoning" process or intuitively through an effortless, automatic reactive process driven by emotions (Cushman, Young and Hauser, 2006; Greene and Haidt, 2002). Haidt (2001, p. 814) proposed a "social intuitionist model" which states "moral judgment is generally the results of quick, automatic evaluations (intuitions)". Haidt (2001, p. 817) argued, "Moral judgment is caused by quick moral intuitions and is followed (when needed) by slow, ex post facto moral reasoning".

Miller's (1981) literature review examines the extent to which an event is "predictable" and how it affects the stress felt by a person. Miller (1981, p. 204) defines two types of "predictability": "knowing the conditions under which the event will occur (contingency predictability) and knowing what the events will be like (what-kind-of-event predictability)" and explores how a person copes with stress when faced with a "predictable" stressful event versus an "unpredictable" stressful event. However, Miller (1981) discussed 'human stress' at a very broad level, (for example, visits to the dentist or undergoing surgery) and did not consider stress that could arise due to being placed in a time-pressured situation. While there has been research in the psychology and medical literature on how people cope when faced with "predictable" as compared to "unpredictable" stressful (or aversive) events, little, if any, research in the psychology literature has extended the concept of "predictability and human stress" (Miller, 1981, p. 204) to directly examine the differential impact of anticipated time pressure and unanticipated time pressure on ethical decision-making.

The findings in Koh et. al. (2010) support the proposition that the greater the pressure a student faces the higher the probability that plagiarism will occur. It follows that foreknowledge of that pressure will lessen the overall pressure being faced. This is in line with the general theory in Miller (1981, p. 204) that "predictable aversive events are less stressful than unpredictable aversive events". However, there are certain specific conditions where the extent to which a stressful event is "predictable" can reduce stress and other conditions in which a stressful event does not reduce stress (Miller, 1981).

Results from clinical, medical and psychology studies also suggest that providing preparatory information about an upcoming stressful event (such as undergoing a surgical operation) can reduce the negative impact of stress on the decision maker, and improve decision-making performance (e.g. Inzana, Driskell, Salas and Johnston, 1996). Prior knowledge increases the predictability of the upcoming stressful event (Cohen, 1978), making the task more familiar and less unique (Ausubel, Schiff and Goldman, 1953), thus enabling the decision maker to reduce cognitive effort spent on monitoring and interpreting unfamiliar stressful events in real time (Cohen, 1978; Inzana et. al., 1996). Inzana et. al. (1996) found that participants in the "high stress" condition, who received preparatory information prior to the decision making task, were more confident about their task performance, made fewer errors and performed significantly better in a decision making task than those participants in the "high stress" condition who did not receive preparatory information.

Taken together the above literature suggests that advance knowledge of upcoming time pressure would reduce stress, avoid the use of reactive responses and improve ethical decision-making. Therefore, we hypothesise that students have a lower propensity to commit plagiarism when they are faced with anticipated time deadline pressure than when they are faced with unanticipated time deadline pressure.

H1: The propensity to engage in plagiarism is lower under anticipated time deadline pressure than under unanticipated time deadline pressure.

Method

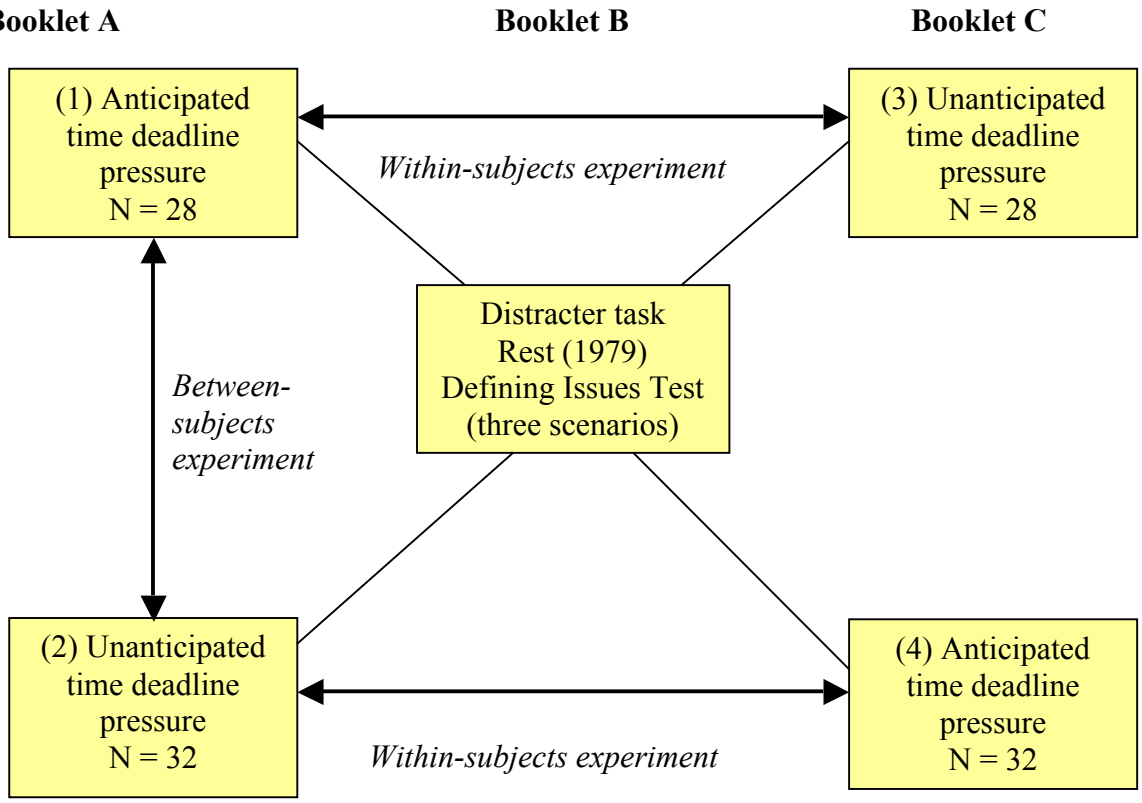
A "scenario-based" mixed design laboratory experiment was conducted to test the above hypothesis, with time deadline pressure (anticipated versus unanticipated) as a between-subjects variable and the severity of the plagiarism act manipulated at three levels (major, moderate and minor) as a within-subjects variable.

Prior research suggests a large range in individuals' propensity to plagiarise, driven by differences in attitudes and beliefs and differences in background (e.g. Franklyn-Stokes and Newstead, 1995; Park, 2003; Sierra and Hyman, 2006 and Devlin and Gray, 2007). Individual

differences in students' attitudes towards plagiarism can be controlled by using a within-subjects design (Harsha and Knapp, 1990; Greenwald, 1976). However, within-subjects designs are particularly sensitive to demand ('halo') and learning effects compared to between-subjects designs (Trotman, 1996). We therefore chose a design that incorporates the best features of both approaches.

Research design

Figure 1 presents an overview of the experimental design. Participants completed Booklet A, followed by Booklet B and then Booklet C. Booklets A and C contained the case scenario and were essentially identical, except for the time deadline pressure manipulation. Half of the participants were randomly assigned to the 'Anticipated' time deadline pressure condition in Booklet A (Cell (1) in Figure 1) whereas the remaining half of the participants completed the 'Unanticipated' time deadline pressure task (Cell (2) in Figure 1)[1]. Booklets B and C were kept in separate envelopes and participants were instructed not to look at them until instructed to do so by the researcher. Hence, Booklet A, represented by Cells (1) and (2), is the source of data for the between-subjects analysis.



N shows the number of participants who passed the manipulation checks.

Figure 1: Overview of experiment design

After completing Booklet A, participants proceeded to Booklet B, which contained the three-scenario Rest (1986) Defining Issues Test (DIT). Booklet B had two purposes. Firstly, it enabled an individual's level of moral development to be included in the analyses. Secondly, it fulfilled the purpose of a filler task aimed at clearing participant's short-term memory thus eliminating or reducing any halo effects when they proceeded to Booklet C (Trotman, 1996).

[1] Earlier versions of the instrument were pilot tested using academic staff, PhD candidates and a separate group of 40 business postgraduate coursework students.

Unfortunately, many participants struggled to provide consistent and useful answers to the DIT and the results proved unhelpful in later analyses (results not reported). However, as reported later, it appeared to successfully fulfil its other purpose.

The participants who were first assigned to the 'Anticipated' time deadline pressure condition in Booklet A (Cell 1 in Figure 1) were now asked to complete the 'Unanticipated' time deadline pressure task in Booklet C (Cell 3 in Figure 1). The remaining participants who first completed the 'Unanticipated' time deadline pressure experiment task (Cell 2 in Figure 1) subsequently completed the 'Anticipated' time deadline pressure task in Booklet C (Cell 4 in Figure 1).

A comparison of responses between Cells (1) and (4) and between Cells (2) and (3) was used to test for demand effects. If the distracter task successfully cleared participants' short-term memory, there should be insignificant differences between the responses in each experimental condition. If participants guess the hypothesis and seek to 'please' the researchers, then the responses in Cell (4) (Anticipated) would be influenced by the prior completion of Cell (2) (Unanticipated) resulting in a lower likelihood of plagiarism occurring in Booklet C compared to Booklet A. Similarly such demand effects would be evident if the responses in Cell (3) revealed higher likelihoods of plagiarism than those in Cell (2).

The absence of any demand effects allowed comparisons of Booklet A and Booklet C [i.e. between Cells (1) and (2) and between Cells (3) and (4)] to be undertaken to test the hypothesis on a within-subjects basis.

Scenario and dependent variable

The case scenario is adapted from that used in Koh et. al. (2010) which itself was an adaptation of Scenario 12 in Marshall and Garry (2006). Each participant was presented with a scenario representing either the 'Anticipated' time deadline pressure condition or the 'Unanticipated' time deadline pressure condition and requested to indicate the extent to which they believed the student in the case scenario would commit plagiarism.

The background information applied to both scenarios and set the scene as follows: "It is now Thursday 6pm and Student X has just commenced writing an essay worth 30% of the total marks for a unit due to be submitted at 11am tomorrow (i.e. Friday). Student X has done some preparatory reading and made some notes. Student X estimates that an acceptable essay can be completed in a further 6 to 8 hours"[2]. Consistent with Koh et al (2010), a generic 'Student X' and 'Student Y' are used in the case scenario as the main character in order to avoid sensitising the participants and to avoid introducing other variables such as age, gender, nationality, race which has been shown in prior research (e.g. Perryer and Plowman, 2010) to have an impact on ethical decision making in general and on students' propensity to engage in plagiarism in particular (e.g. Franklyn-Stokes and Newstead, 1995; Park, 2003). Hence, even though under time pressure, it is still possible for the student to complete the task within the time remaining.

Since some students would still plagiarise even if they could apply for an extension while others would not (Zobel and Hamilton, 2002), it is necessary to control for the possibility of applying for an extension. Hence, the following information was provided: "All applications for extensions of time had to be submitted to the lecturer a week ago (i.e. last Friday) and thereafter, no further requests for an extension of time would be allowed. Student X did not apply for an extension".

The case scenario then outlined a situation where the student is confronted with an opportunity to engage in plagiarism described as: "Student X is in the library on Thursday evening and has

[2] The student in the 'Anticipated' time deadline pressure condition is referred to as Student X and the student in the 'Unanticipated' time deadline pressure condition is referred to as Student Y.

just commenced writing. However, while working in the library Student X notices a classmate, who is known for achieving high grades, going to dinner and leaving a hard copy of the completed essay and a thumb drive containing the same essay unattended on the table. Computer and photocopy facilities are easily available".

Since the decision to engage in plagiarism lies on a continuum (Carroll, 2002; Devlin, 2007; Koh et. al. 2010), each participant was first asked to rate the extent to which the Student in the scenario would engage in major plagiarism (i.e. "How likely it is that Student X will copy the classmate's essay entirely and submit as Student X's own work?"), moderate plagiarism (i.e. "How likely it is that Student X will read the assignment, take all or most of the points from the classmate's essay and express them in Student X's own words?"), and minor plagiarism (i.e. "How likely it is that Student X will read the assignment and extract one or two good points without acknowledgement and express them in Student X's own words?"). Their responses were captured on a continuous scale from 0 representing 'definitely will not' to 100 'definitely will' commit the above-mentioned plagiarism acts, numerically marked at every 10th point[3]. Thereafter, participants were asked if they were in the same situation as the Student in the scenario, how likely it was that they would engage in the above-mentioned plagiarism acts, using the same scale.

Hence, perception of the propensity to commit plagiarism was measured first from the third person perspective and next from the first person perspective. The questions were arranged in this order deliberately in an attempt to reduce the sensitivity of the respondents (Margheim and Pany, 1986) and to control for social desirability biases (e.g. Fisher, 1993; Pauls and Stemmler, 2003; Curtis, 2006; Koh et. al., 2010), as participants may be less likely to provide an honest response to "sensitive" questions (Buchman and Tracy, 1982) and to reduce the likelihood of obtaining misleading responses from participants who may not reveal their real attitudes when asked to respond from the first person's perspective (Buchman and Tracy, 1982; Pauls and Stemmler, 2003; Curtis, 2006)[4]. As expected, the results reported later reveal that the responses for the first person (i.e., 'you') are significantly lower ($p < 0.001$) than for the third person in all conditions.

Independent variable

The extent of anticipation was operationalised by using the words 'had always planned', 'had made sure that there were no other commitments on Student X's time for this Thursday night, leaving Student X enough time to complete the essay' and 'as expected' to represent anticipated time deadline pressure and 'had not planned', 'but unfortunately, other circumstances prevented Student Y starting early as planned' and 'contrary to expectations' to represent unanticipated time deadline pressure.

Manipulation checks

Three manipulation checks were included in Booklets A and C. The first asked for the due date of the essay and all 60 usable responses correctly answered that the essay was due for

[3] To control for any order effects the order of the questions for the dependent variable was randomised, producing three unique orders for each experiment condition (Harsha and Knapp, 1990). Analysis revealed the different orders of the questions had no impact on the test variables.

[4] Although Tyson (1990) found that participants perceived themselves being more ethical their peers, he found a significant order effect as participants who provided responses from the third person perspective followed by the first person perspective reported higher propensity to engage in unethical behaviour than participants who provided responses from the first person perspective followed by the third person perspective. These findings implied that the respondents in Tyson (1990, p. 716) anchored and adjusted their responses so as to "maintain a positive differential between themselves and others, and that absolute values should be interpreted carefully".

submission tomorrow. The second check asked participants: 'how much time pressure is Student X (or Student Y) under?' on a continuous scale marked at every 10th point from '0' representing 'a little' to '100' representing 'a lot'. Interestingly although the due date of the essay is tomorrow in both treatment groups, the mean response (72.68) for the 'Anticipated' time deadline pressure condition was significantly lower at the 10% level than the mean response (83.66) for the 'Unanticipated' condition (t = -1.91, p = 0.064, two tailed). This suggests that while participants correctly perceived time pressure under both conditions, participants in the 'Anticipated' condition perceived a significantly lower extent of time deadline pressure than participants in the 'Unanticipated' condition. The implication that anticipation reduces the perceived pressure is discussed later.

The third manipulation check asked participants: 'had Student X always expected to be in the library on Thursday night?' on a continuous scale marked at every 10th point from '0' representing 'No (Totally Unanticipated)' to '100' representing 'Yes (Totally Anticipated)'. Participants in the 'Anticipated' condition correctly perceived a significantly greater extent to which Student X anticipated being in the library on that Thursday night (mean = 86.32) than participants in the 'Unanticipated' condition (mean = 18.94) (t = 16.03, p < 0.001).

Participants and procedure

Participants were recruited from a third year undergraduate auditing unit, a postgraduate accounting unit and a postgraduate business ethics unit at The University of Western Australia Business School. Sixty usable responses were received from the sixty-six participants who completed the experiment under laboratory conditions. Fifty three percent of the students were enrolled in either the Master of Professional Accounting or other coursework master's degrees while the remaining were undergraduate Auditing students in their final or penultimate year of studies (47%). Fifty-seven percent of the participants were females and 82% were international students. Most participants had no work experience and English was not the first language for 76% of the participants. Chi-square tests revealed no significant differences in the demographic variables across experimental conditions.

Results

Between-subjects experiment

A 2 X 3 X 2 analysis of variance with repeated measures was conducted with time deadline pressure (anticipated or unanticipated) as a between-subjects variable, the severity of the plagiarism act (major, moderate or minor) and point of view (first or third person) as within-subjects variables.

Results (not reported) showed a statistically significant main effect for the severity of the plagiarism act (F = 102.284, p < 0.001) and a statistically significant main effect for point of view (F = 116.723, p < 0.001). In fact, post hoc tests (also not reported) showed, across all conditions, that perceptions of plagiarism occurring were significantly lower for major plagiarism than for moderate plagiarism which in turn was significantly lower than for minor plagiarism. This result was expected and is in line with previous research (Warn, 2006; Yeo, 2007; Koh et. al., 2010). Similarly, as expected, tests revealed that in all conditions, perceptions of plagiarism from the first person's point of view were significantly lower than from the third person's point of view (Tyson, 1990). Neither of these two variables showed a significant interaction with each other or the main test variable (anticipated/unanticipated) and are not discussed further, except to the extent the results for the main test variable differs across the conditions.

The analysis of variance showed a marginally significant main effect for time deadline pressure (F = 1.705, p = 0.099, one tailed) providing some support for the hypothesis. Examining this

variable across the 3 levels of plagiarism and across the different points of view discloses the source of the significant effect. Table 1 shows the results of interest for the between-subjects experiment with Panel A reporting third person perceptions and Panel B first person perceptions. Descriptive statistics are given for the three levels of plagiarism along with the results of Bonferroni adjusted *t*-tests for differences in perception between the 'anticipated' and 'unanticipated' conditions[5]. Simple observation reveals the earlier mentioned strong hierarchical effect across the three levels and comparisons of the two Panels show the significant differences between the points of view.

Table 1: Between-subjects experiment

Panel A: Third person perceptions of probability of plagiarism (0-100%)

	Time Deadline Pressure			
	Anticipated Mean [Median] (Std Dev)	Unanticipated Mean [Median] (Std Dev)	t	p
Major plagiarism	20.75 [13.50] (22.27) N = 28	25.97 [20.00] (21.65) N = 32	-0.919	0.362
Moderate plagiarism	43.96 [50.00] (20.21) N = 28	53.91 [51.00] (19.49) N = 32	-1.938	0.029*
Minor plagiarism	61.25 [65.00] (21.03) N = 28	67.28 [70.00] (16.97) N = 32	-1.229	0.224

Panel B: First person perceptions of probability of plagiarism (0-100%)

	Time Deadline Pressure			
	Anticipated Mean [Median] (Std Dev)	Unanticipated Mean [Median] (Std Dev)	t	p
Major plagiarism	1.86 [0.00] (4.74) N = 28	7.72 [0.00] (12.42) N = 32	-2.471	0.009*
Moderate plagiarism	22.46 [15.50] (22.55) N = 28	29.59 [28.50] (27.48) N = 32	-1.089	0.281
Minor plagiarism	43.68 [50.00] (28.22) N = 28	39.06 [30.00] (30.91) N = 32	-0.601	0.550

* one-tailed probability, adjusted for bonferroni for multiple comparisons.

In five of the six comparisons perceptions for 'anticipated' are lower than for 'unanticipated'' although only two of these five cases are statistically significant. For moderate plagiarism third person perceptions are 9.94 percentage points significantly higher (t = -1.938, p = 0.029) for 'unanticipated' than 'anticipated' while from the first person perspective the 5.86 percentage points higher for 'unanticipated' major plagiarism is also significantly different (t = -2.471, p = 0.009).

[5] Tables 1 and 2 report the results of parametric tests. In all instances the results of non-parametric tests are essentially the same.

These results suggest perceptions of minor plagiarism might not be affected by the manipulation and that the impact of anticipation is not overly strong. However, as explained earlier, this could be due to the very high standard deviations underlying individual differences regarding perceptions of plagiarism which might not be as obstructive in the within-subjects design.

Within-subjects experiment

Two separate analyses of variance (not reported) were run to test the effectiveness of the distracter task and to test for demand effects. No significant main effects were identified between Booklets A and C for those doing 'anticipated' first (i.e. between Cell (1) and Cell (4) – see Figure 1) and those doing 'unanticipated' first [i.e. between Cells (2) and (3)]. However for Cells (1) and (4), there was a significant interaction with the severity variable. Investigation via *t*-tests between Cells (1) and (4) revealed the mean for perceptions of major plagiarism in Cell (1) of 1.86 (median 0.00) to be significantly lower ($p<0.05$) than that in Cell (4) (8.34, median also 0.00). As explained earlier, if participants' responses in Booklet C were influenced by demand effects (due to their experience with Booklet A) then this difference would be in the opposite direction. 'Picking' the hypothesis would suggest a lower probability of plagiarism (not a higher) in the 'anticipated' case for those who had done the 'unanticipated' version first [i.e. Cell (2)].

Since there appeared to be no contamination issues, we proceeded to the within-subjects analysis. A 2 X 3 X 2 analysis of variance with repeated measures was conducted with time deadline pressure (anticipated or unanticipated), the severity of the plagiarism act (major, moderate or minor) and point of view (first or third person) as within-subjects variables. As before, results (not reported) showed statistically significant main effects for time deadline pressure ($F = 18.819$, $p < 0.001$), the severity of the plagiarism act ($F = 120.064$, $p < 0.001$) and a statistically significant main effect for point of view ($F = 124.025$, $p < 0.001$). As before, post hoc tests (also not reported) showed, across all conditions, that perceptions of plagiarism occurring were significantly lower for major plagiarism than for moderate plagiarism which in turn was significantly lower than for minor plagiarism.

Table 2 shows the results of interest for the within-subjects experiment with Panel A reporting third person perceptions and Panel B first person perceptions. Descriptive statistics are given for the three levels of plagiarism along with the results of paired *t*-tests for differences in perception between the 'anticipated' and 'unanticipated' conditions[6]. In all six of the comparisons the perceptions for 'anticipated ' are significantly less than for 'unanticipated'; three times with $p < 0.001$, twice where $p < 0.05$ and once (major plagiarism, third person view) at the 10 percent level. The percentage of participants who perceived 'anticipated' to be less than or equal to 'unanticipated' ranged from a low of 75% (major plagiarism, third person view) to a high of 90% (major plagiarism, first person view).

Together with the results of the between-subjects testing, these results provide strong support for the view that the propensity to engage in plagiarism is lower under anticipated time deadline pressure than under unanticipated time deadline pressure.

[6] As for the between-subjects experiment, observation of the descriptive statistics clearly show the strong hierarchical effect across the three levels and comparisons of the two Panels show the significant differences between the points of view. Also similarly non-parametric analyses produce virtually identical results.

Table 2: Within-subjects experiment

Panel A: Third person perceptions of probability of plagiarism (0-100%)

	Time Deadline Pressure				
	Anticipated Mean [Median] (Std Dev)	Unanticipated Mean [Median] (Std Dev)	% Anticipated <= Unanticipated	Paired *t*	*p*
Major plagiarism	24.12 [20.00] (25.55) N = 60	27.85 [20.00] (23.77) N = 60	75%	-1.296	0.100*
Moderate plagiarism	41.72 [40.00] (22.92) N = 60	52.87 [52.00] (23.79) N = 60	78%	-3.936	<0.001*
Minor plagiarism	56.82 [60.00] (23.32) N = 60	68.40 [70.00] (19.11) N = 60	83%	-4.174	<0.001*

Panel B: First person perceptions of probability of plagiarism (0-100%)

	Time Deadline Pressure				
	Anticipated Mean [Median] (Std Dev)	Unanticipated Mean [Median] (Std Dev)	% Anticipated <= Unanticipated	Paired *t*	*p*
Major plagiarism	5.32 [0.00] (12.14) N = 60	8.65 [0.00] (15.19) N = 60	90%	-2.056	0.022*
Moderate plagiarism	21.32 [11.50] (23.05) N = 60	30.73 [30.00] (26.90) N = 60	85%	-3.892	<0.001*
Minor plagiarism	37.97 [30.00] (29.28) N = 60	43.47 [42.50] (29.67) N = 60	80%	-2.346	0.011*

* one-tailed probability, adjusted for bonferroni for multiple comparisons.

Discussion

Plagiarism amongst business students is on the rise and the fact that this current study and prior research (Koh et. al., 2010) reports that students will plagiarise even when under no perceived time pressure suggests a two pronged approach to reducing plagiarism. As noted previously, most people will behave ethically given the opportunity; however, circumstances may lead to unethical behaviour. This study shows that time pressure, more specifically unanticipated time pressure can lead to unethical behaviour, specifically plagiarism. One approach is to address plagiarism when no pressure exists and the second approach to address plagiarism is motivated by time pressure, both anticipated and unanticipated. The first group could be addressed through a broader set of policy responses and the second through curriculum design.

Research into plagiarism among business students has failed to consistently answer the question of whether students will continue to act unethically when they enter the workforce. The relationship between students' propensity to engage in unethical acts in school and their propensity to act unethically in their professional career is mixed. The need to address the first group is extremely important given that a large proportion of business students will commence careers in the accounting profession at the completion of their degree. Although no relationship between actual plagiarism by students and the propensity to act unethically in their professional career was found in a recent study by Martin, Rao and Sloan (2009); consistent and opposite

results were present in earlier studies by Sims (1995), Haswell, Jubb and Wearing (1999), Lawson (2004) and Abdolmohammadi and Baker (2007) who found that students who engaged in unethical acts while they were in school were more likely to continue to act unethically in their professional careers. Hence, the above research suggests, whilst inconsistent, does in some instances suggest that this unethical behaviour may continue into their professional careers. While we do not directly address this longitudinal issue, by exploring factors that impact on unethical behaviour, we set the scene for such an examination.

A policy approach could include a pro-active educational program ensuring students understand the nature of plagiarism and the fact that it is wrong, followed by a reactive approach that imposes penalties on plagiarism. The University in this study (i.e. The University of Western Australia) and in prior studies by the same authors (Koh et al, 2010), consistent with most other Australian universities have adopted very strategic and educative approach towards the education of students about the unethical nature of plagiarism, associated penalties and information relating to how such pitfalls can be avoided (see The University of Western Australia, 2004). For example, the existence of proactive programs when students first commence their studies (such as the requirement for students enrolling into a new course at The University of Western Australia to complete the Academic Conduct Essentials, The University of Western Australia, 2004) may assist with this.

Where plagiarism results from time pressure, educationalists could, through appropriate curriculum design, reduce the propensity for students to plagiarise by reducing or managing that time pressure. As noted in the literature review results from clinical, medical and psychology studies show that providing preparatory information (e.g. Inzana et al. 1996), prior knowledge of the task (Cohen, 1978; Ausubel, Schiff and Goldman, 1953) can reduce stress, cognitive effort required to complete the task and the number of errors made, whilst increasing confidence and improving performance. This translates very easily into the education context via curriculum design, whilst the impact of the educationalists response may vary depending on the nature of the time pressure that is, anticipated versus unanticipated.

Communication via unit outlines, which is consistent in application within a unit and between students in a degree program, would assist in managing student expectations. This would include early provision of assessment information and assessment rubrics to reduce the likelihood that students will face time pressure by encouraging students to work from the beginning of the semester. The unit outline should also include workload expectations for students to enable them to organise and plan their study time. For both forms of time pressure but more specifically for unanticipated time pressure, educationalists should provide information at the start of semester that is consistent with a pastoral care role, which supports students through their studies by recognising that a limitless number of unanticipated problems may arise amongst our student body. This would include clear articulation and communication of the availability of extensions information in the unit outline, clear consultation times and guidelines and information regarding University counselling. In both cases however, might reduce the need to plagiarise.

It would seem a better understanding of the pressures, both anticipated and unanticipated, that increase the likelihood of student plagiarism will not only enable educators to better control the problem but also have the potential to improve ethical behaviour in the students future professional lives. Moreover, the findings in this study may enable educators to have a better understanding of why students plagiarise and at the same time, enable students to have a better understanding of the reasons why they find themselves in a situation where plagiarism is the choice. Given this it is surprising that little investigation of the underlying nature of the time pressures facing students has occurred.

Conclusions

This paper supports prior studies that time pressure has a negative impact on ethical decision-making (Moberg, 2000; Sweeney, Arnold and Pierce, 2010). While a consistent finding in plagiarism research is that the incidence of plagiarism is related to time pressure, no attention has been directed to the precursors of such time pressure. This paper reports the results of between and within-subjects experiments, utilising 60 undergraduate and postgraduate coursework students at The University of Western Australia Business School, examining the differential impact of anticipated and unanticipated time deadline pressure on ethical decision making. Our results provide strong support for the view that the propensity to engage in plagiarism is lower under anticipated time deadline pressure than under unanticipated time deadline pressure. Our research is a first step towards examining the potential negative impact of the precursors to time pressure on ethical decision making and contributes to our understanding of the impact of these different types of pressures in one area of ethical decision-making (i.e. student plagiarism).

As with all experimental research there are a number of limitations. Although we believe we have measured what we set out to measure, namely: perceptions of the likelihood of plagiarism occurring under different types of time pressure, external validity is, as ever, an issue. Our participants were undergraduate and postgraduate students pursuing a coursework undergraduate or master degree without work experience or with, on average, some small level of work experience. Whether our results also apply to professionals is unproven. Further research including extending this study to undergraduate and postgraduate business students from other universities or students from other disciplines would certainly extend the external validity of our findings.

Similarly, by necessity, we focus on one situation in which plagiarism can occur. Abstracting these results to plagiarism in general (and by extension to ethical decision making at large) is problematic. However, some of our results confirm earlier research and we see no reason our findings should not equally apply in a larger sphere and in other ethical decision-making contexts.

While Solomon and Brown (1992, p. 83) described the distinction between anticipated and unanticipated time pressure as "a critical feature that separates coping mechanisms into strategic and tactical responses", they did not empirically examine this distinction. They suggest a decision-maker is able to use strategic proactive responses to cope with anticipated time pressure whereas only tactical reactive responses such as filtration, omission and acceleration (see Miller, 1960) are available to cope with unanticipated time pressure. It follows that having knowledge of the differential impact of the extent to which time pressure is anticipated on ethical decision making could enable us to have an understanding of how individuals cope with or react to time pressure. However, since our research occurs at a point in time when the time pressure is present, we cannot investigate whether students would react strategically by rearranging their work and study schedules to allow sufficient time for research and preparation.

Many participants struggled to provide consistent and useful answers to the short form of Rest's (1986) Defining Issues Test (DIT) and the results proved unhelpful in later analyses (results not reported). Future research may include Kohlberg's (1969) cognitive moral development theory or Kohlberg's (1969) moral development scale or other suitable measures of moral development as a covariate to help explain the extent to which "conscious reasoning" impacts on ethical decision-making.

From a broader perspective, further research into the precursors of time pressure is warranted. For example, in the auditing context, survey and experimental studies (such as Rhode, 1978; Alderman and Deitrick, 1982; Otley and Pierce, 1996 and Coram, Ng and Woodliff, 2004) have found that auditors, when conducting financial statement audits, use heuristics such as engaging

in reduced audit quality acts when faced with time budget and / or time deadline pressure. Further extension of our findings to examine the differential impact of anticipated and unanticipated time pressure on auditors' propensity to engage in reduced audit quality acts would contributes towards our understanding of the pressures faced by auditors.

Timmermans, Arentze and Joh (2001) found that risk avoiders were more likely than risk takers to adjust their schedule to cope with anticipated time pressure. Hence, it is possible that student's propensity to engage in plagiarism under different types of time pressure could be influenced by their risk propensity. Future research may extend our study to examine the effect of individual differences such as propensity to take ethical risks.

On the educational front this study suggests management of plagiarism requires not only sound policy development but also well-designed curricula that communicate expectations to students clearly and consistently.

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