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# Fear appeals used prior to a high-stakes examination: What makes them threatening?



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#### ABSTRACT

Prior to high-stakes examinations teachers use messages that focus on avoiding failure as a motivational strategy. Such messages, referred to as fear appeals, have been linked with negative outcomes. The strength of that link is determined by whether fear appeals are appraised by students as threatening. The aim of this study was to examine whether the threat appraisal of fear appeals was predicted from frequency of message use, academic self-efficacy and subjective values (intrinsic, attainment and extrinsic). 544 secondary school students clustered in thirty Mathematics classes completed measures of academic self-efficacy, subjective values and fear appeals (both frequency and threat). Fear appeals were appraised as more threatening when students reported lower academic self-efficacy, were in classes where their teacher made more frequent fear appeals concerning the consequences of failure and when the class was composed of students with low intrinsic, but high extrinsic, values. Students differ in the extent to which they appraise fear appeals as threatening. Teachers and instructors would be advised to consider how they convey the importance of high-stakes examinations to students as well as how messages might be received by different students.

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#### 1. Introduction

Fear appeals are persuasive messages designed to elicit a change in behaviour to avoid some kind of unwanted outcome (Maloney, Lapinksi, & Witte, 2011; Witte & Allen, 2000). The majority of work conducted on fear appeals, to date, has focused on attempts in the health literature to promote behaviour change (e.g., smoking cessation, safe sex practices) by varying the degree of threat and efficacy beliefs in the alternative course(s) of action required to avoid that threat (e.g. Ruiter, Abraham, & Kok, 2001: Peters, Ruiter, & Kok, 2013: Smerecnik & Ruiter, 2010). However, there is a small emerging literature concerning the use of fear appeals in an educational and instructional context as a means to motivate and engage students by highlighting the consequences of examination failure and the associated unwanted outcomes that may follow failure. Research has shown how fear appeals, used in this educational context, have unanticipated negative consequences including higher test anxiety, lower motivation and lower academic performance, especially when appraised as threatening (e.g., Putwain & Best, 2011; Putwain & Remedios, 2014; Sprinkle, Hunt, Simonds, & Comadena, 2006). In this study, we examine the important question of why some students might appraise fear appeals as more threatening.

#### 1.1. Classroom fear appeals: what are they and what is their relevance?

Prior to high-stakes examinations, teachers and school leaders communicate messages to students about the importance of academic credentials for their future life trajectories (Putwain, 2009). Teachers may specify, for instance, how entry requirements for college or entry into the labour market may depend on particular grades or clusters of grades. Fear appeals are examples of such messages that focus on the possibility of failure, what outcomes might arise from failure (e.g., difficulty in finding a job, not being able to further one's education) and how such outcomes can be avoided (e.g., paying attention in class, making an effort to prepare for forthcoming exams) (Putwain & Roberts, 2009, 2012). They are persuasive messages attempting to motivate students to engage in those activities likely to avoid failure (Sprinkle et al., 2006). Both teachers and students report that they are used relatively frequently prior to high-stakes tests such as the General Certificate of Secondary Education<sup>1</sup> (Putwain & Remedios, 2014; Putwain & Roberts, 2012).

Although fear appeals may be intended as a motivational tactic the emerging evidence suggests that they are having a range of unanticipated and unwanted educational outcomes. The use of fear appeals prior to

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<sup>&</sup>lt;sup>1</sup> The General Certificate of Secondary Education (GCSE) is the school leaving qualification taken in England, Wales and Northern Ireland. The GCSE programme of study is usually taken over Years 10 and 11 (the final two years of secondary education) and students sit exams at the end of Year 11 (aged 15–16 years).

examinations has been associated with increased test anxiety (Putwain & Best, 2011, 2012), increased performance avoidance goals (Putwain & Symes, 2011a,b), decreased self-determined motivation (Putwain & Remedios, 2014) and a decrease in examination performance (Putwain & Best, 2011, 2012; Putwain & Remedios, 2014; Putwain & Symes, 2011a). These findings are consistent with research findings from adjacent areas of educational research showing that punishment and threat-based approaches to instruction and classroom interaction are associated with reduced motivation and increased negative affect (e.g., Assor & Kaplan, 2001; Assor, Kaplan, Kanat-Maymon, & Roth, 2005; Kearney, Plax, Richmond, & McCroskey, 1985; Mainhard, Brenkelmans, & Wubbels, 2011; Plax & Kearney, 1992; Reeve, 2009; Richmond, 1990; Richmond, McCroskey, Kearney, & Plax, 1990; Ryan & Deci, 2000).

We would argue that the relevance of fear appeals as an educational practice worthy of investigation can be established on two grounds. First, they may be having unwanted and possibly damaging consequences. Second, they are used relatively frequently. A critical finding to emerge from the fear appeals research cited above is that the degree of perceived threat by the student determines the strength of the outcome. That is, fear appeals predict higher test anxiety and performance-avoidance goals and lower self-determined motivation and examination performance when they are appraised as threatening by students. If the impact of fear appeals depends, in part, on how they are appraised it therefore becomes imperative to establish what influences the appraisal of fear appeals as more or less threatening by students.

#### 1.2. Frequent classroom fear appeals leads to increased threat

Previous research has reported that when teachers make more frequent fear appeals those fear appeals are appraised as more threatening (Putwain & Best, 2011, 2012; Putwain & Roberts, 2009; Putwain & Symes, 2011a,b). This finding fits with long-standing evidence from the social-psychological literature that repetition of persuasive messages can lead to greater impact (e.g., Cacioppo & Petty, 1989; Garcia-Marques & Mackie, 2001; Moons, Mackie, & Garcia-Marques, 2009). The frequency of teachers' fear appeals is ostensibly a classroom environment, or climate, construct (cf. Marsh et al., 2012); the referent is the (verbal) behaviour of the teacher that is common across the class. However, the classroom-based fear appeals research cited above has not used the appropriate techniques to aggregate self-reports from individual students to create a classroom level construct. There is a danger that classroom level influences might have been wrongly attributed to idiosyncratic student perceptions of the environment. In this study we correct this limitation by aggregating student reports of the frequency of fear appeals across different classes and using a multilevel approach to the modelling of data.

## 1.3. Individual predictors of threat: subjective value and academic self-efficacy

Appraisal is considered a two-part process (Carver & Scheier, 1998; Folkman, 2008; Lazarus, 2006). Primary appraisal is judged through the meaning or significance of an event and secondary appraisal is judged through the resources or options available to deal with that event. This framework is consistent with health-based models of fear appeals, such as the extended parallel process model (Maloney et al., 2011; Witte & Allen, 2000), and models of appraisal specific to educational settings, such as the control-value theory (e.g., Pekrun, 2006; Pekrun, Frenzel, Goetz, & Perry, 2007; Pekrun, Goetz, Titz, & Perry, 2002). According to the extended parallel process model the threat content of the messages is established through an appraisal of the importance of the negative outcome and one's capability of performing those actions required to avoid failure (Anderson, 2000; Cismaru, Nagpal, & Krishnamurthy, 2009; Feng & Burleson, 2008; Umphrey, 2004).

Similarly, the control-value theory suggests that in competence-evaluative situations appraisals are made on the basis of the subjective value of the activity or outcome and one's capacity to effect and control the desired outcome (Frenzel, Pekrun, & Goetz, 2007; Pekrun, Goetz, Frenzel, Barchfeld, & Perry, 2011; Pekrun et al., 2004).

A fear appeal made prior to a high-stakes examination would be appraised as significant and meaningful if the examination outcome was valued. Drawing on the expectancy-value theory (Eccles, 2007; Eccles, O'Neill, & Wigfield, 2005) perceived value judgements can be made in relation to intrinsic, attainment or extrinsic values. Intrinsic value is when a task or subject is seen as enjoyable and interesting in itself. Attainment value is when performance and grade outcomes are perceived to be important for core personal values. Extrinsic (or utility) value is when a task or subject is viewed as instrumental in reaching short- or long-term goals. Psychological threat is higher when extrinsic goals are valued over intrinsic goals (e.g., Kasser, 2002; Sheldon & Kasser, 2008) and intrinsic value has been shown to protect against out-group threat in adolescent students (Duriez, Meeus, & Vansteenkiste, 2012). Fear appeals are appraised as more threatening when attainment value is high because failure threatens personal aspirations and goals (Putwain & Symes, 2014). Thus, variations in subjective values (intrinsic, attainment and extrinsic) might be an important explanation of whether appraisals are perceived as threatening.

The appraisal of a fear appeal as more or less threatening would also depend on academic self-efficacy; the belief that one is capable of performing actions required to effect a particular outcome (Bandura, 1997). If a student holds competence beliefs that they are capable of passing or performing well on the examination in which fear appeals are being made (i.e. they have control over the outcome), they are less likely to appraise the fear appeal as threatening, even if valued for extrinsic or attainment reasons. Research has shown that test anxiety, which is indicative of a threat appraisal (see Zeidner & Mathews, 2005), is lower when students hold efficacious beliefs indicative of success rather than failure (Pekrun et al., 2004; Preiss, Gayle, & Allen, 2006), even when task importance and value are high (Nie, Lau, & Liau, 2011). The evidence, therefore, strongly suggests that academic self-efficacy should play at least some, if not a critical, role in determining the likelihood of threat appraisals.

#### 1.4. Contextual predictors of threat

Subjective value and academic self-efficacy may explain the variance in the threat appraisal of fear appeals at both individual and classroom levels (referred to as a contextual predictor). Classroom fear appeals and contextual subjective value/academic self-efficacy are all classlevel constructs that can be built out of aggregated student reports, but differ in their referent (Marsh et al., 2012). The student is the referent for contextual subjective value/academic self-efficacy and the teacher's (verbal) behaviour is the referent for fear appeals (as a classroom environment/climate construct). Classic work into contextual predictors (the 'big-fish, little pond' effect) has shown how a positive relationship can exist between academic self-concept and academic achievement at the student level, but a negative relationship at the class level (e.g., Marsh, 2006; Marsh & Martin, 2011). Thus it is possible that the threat appraisal of a fear appeal may be influenced by the overall composition of class subjective value and academic self-efficacy in a direction opposite to that expected by extended parallel process model and control-value theory.

#### 1.5. Aim of the study

The aim of the study was to examine those factors that might lead to the appraisal of fear appeals as threatening using a multilevel approach. We hypothesised  $(H_1)$  that fear appeals would be appraised as more threatening when teachers made more frequent fear appeals. As the frequency of fear appeals was a classroom environment variable, this

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