Do procrastination-friendly environments

make students delay unnecessarily?

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Abstract

Research on procrastination emphasizes trait explanations for unwanted delay, yet environmental factors are most probably significant contributors to the problem. In this paper, we review literature related to the influence of environmental factors on academic procrastination and describe how such factors may be assessed in facilitating procrastination in students. Study 1 asked students to evaluate three different fields of study – natural sciences, medicine, and humanities – on environmental variables related to procrastination (e.g., structured course progression; freedom in the study situation). In Study 2, participants (N = 215) from these three fields of study rated their own academic procrastination as well as peer procrastination and peer influence. Dispositional (trait) procrastination was also measured. The results demonstrated that environmental factors have a negligible impact on in low- and high-procrastinating students, whereas procrastination-friendly environments seem to facilitate and augment academic procrastination in students at medium-level dispositional procrastination, i.e., the majority of students. We conclude that social and environmental factors should receive increased attention in measures taken to reduce and prevent academic procrastination.

Academic procrastination—the intentional delay of initiation or completion of important and timely academic activities (Ziesat, Rosenthal, & White, 1978) – is common among students. The core characteristic of procrastination is the intention-action-gap (Steel, 2007): Procrastinators demonstrate no lack of good intentions, but too often intentions are not implemented as planned (Dewitte & Lens, 2000). As much as 95 % of students procrastinate, 50 % to the extent that it becomes problematic (Solomon & Rothblum, 1984; Steel, 2007). Academic procrastination typically manifests itself as delay in starting or finishing academic tasks like studying for exams, writing term papers, and keeping up with weekly assignments. Such delays result in suboptimal performance in meeting deadlines (Ellis & Knaus, 1977; Pychyl, Morin, & Salmon, 2000; Steel 2007), and are accompanied by discomfort and stress (Sirois, 2014), depression and anxiety (Flett, Blankstein, & Martin, 1995; Stöber & Joormann, 2001), worry (Antony, Purdon, Huta, & Swinson, 1998; Ferrari, Johnson, & McCown, 1995), and shame and guilt (Fee & Tangney, 2000; Pychyl, Lee, Thibodeau & Blunt, 2000).

Most research on procrastination has focused on the dispositional accounts of the problem. Indeed, procrastination is referred to as the "quintessential self-regulatory failure" (Steel, 2007), and the notion of a "procrastinator" identifies procrastination as essentially a personal problem. In support of this view, a large body of research has investigated the relation between personality dimensions and procrastination, demonstrating the close connection between procrastination and impulsiveness, low conscientiousness, and lack of self-control (Gustavson, Miyake, Hewitt, & Friedman, 2014; Ozer & Benet-Martinéz, 2006; Rozental & Carlbring, 2014; Steel, 2007). Such findings accentuate the stereotypical picture of the procrastinating student as a person who is easily distracted by tempting activities like socializing with friends or surfing the internet, demonstrating little concern for academic work. Additionally, students with high levels of evaluation anxiety, maladaptive

perfectionism, low self-efficacy, and fear of failure have been found to have problems with writing term papers, studying for exams, and keeping up with weekly readings due to procrastination (Alexander & Onwuegbuzie, 2007). Research has further demonstrated that low extrinsic motivation, perfectionism, and external locus of control contribute to academic procrastination (Brownlow & Reasinger, 2000), whereas high intrinsic motivation reduces it (Lee, 2005; Steel, 2007). Negative metacognitive beliefs about procrastination (e.g., thoughts about the uncontrollability of procrastination) tend to increase unnecessary delay, possibly from intrusive thoughts and feelings consuming cognitive resources necessary for concentration and focus (Fernie, Spada, Nikčević, Georgiou & Moneta, 2009). Cao (2012) found that metacognitive beliefs about the adaptive value of procrastination, such as "procrastination helps creative thinking," or "I work better under pressure," play a more important role compared to other motivational variables such as self-efficacy and achievement goal orientation. In sum, research over the past four decades has amply demonstrated that individual factors significantly contribute to the procrastination problem.

Environmental factors in procrastination

Whereas endogenous factors contributing to academic procrastination have been researched extensively, environmental (exogenous) factors have received considerably less attention. This is surprising given the fact that being a student is an inherently social endeavor, and that a multitude of social and environmental factors beyond the students' control may create and sustain unnecessary delay. In the following paragraphs, we review research concerning exogenous factors that foster procrastination. Due to the relative scarcity of this research, we have also included some relevant findings from outside the field of procrastination.

Teacher/instructor effects. Several studies have documented how teachers and instructors can affect learning and achievement (Corkin, Yu, Wolters & Wiesner 2014; Sacerdote, 2011), and how effective teachers can make students feel better about school and learning as well as enhance student achievement (Darling-Hammond, 2000). A few studies have investigated how teachers directly affect student procrastination. For example, Corkin, Yu, Wolters and Wiesner (2014) found that procrastination was inversely related to instructor organization, possibly because instructors who are organized "make it easier for students to organize, structure, and plan their own work" (Corkin et al., 2014, p. 299). Similar results were reported in a qualitative study where students indicated unorganized and lax teachers to be a reason for their procrastination (Grunschel, Patrzek & Fries, 2013), whereas instructors with high expectations have been found to increase students' class enjoyment and interest and reduce student procrastination (Corkin et al., 2014). Similarly, teachers who expect less, are more flexible in their grading, and are willing to negotiate deadlines with students have been found to promote procrastination (Schraw, Wadkins & Olafson, 2007). Patrzek, Grunschel, and Fries (2012) interviewed 12 experienced university counselors working with students struggling with procrastination. Although these counselors highlighted the importance of dispositional aspects and task characteristics as important causes of procrastination, they also emphasized the negative effect of poor teaching skills and coaching in lecturers and overwhelming amounts of work put on students by the universities. Concerning deadlines, several studies have shown that instructors who set deadlines help students reduce their procrastination and increase their performance, compared to students with self-imposed deadlines (Grunschel, Patrzek, & Fries, 2013; Lamwers & Jazwinski 1989; Wesp 1986). Accordingly, several authors recommend setting strict deadlines for students in order to reduce procrastination (Ariely & Wertenbroch, 2002; Steel, 2007; Tuckman & Schouwenburg 2004).

Task characteristics. Task characteristics are important for evoking and maintaining procrastination. As many study-related tasks are imposed on students by others, they represent an important environmental context for student procrastination. *Task aversiveness*, i.e., the degree to which a task is unpleasant, boring, and/or uninteresting, is a strong predictor of procrastination (Steel, 2007). Blunt and Pychyl (2000) found different aspects of task aversiveness to be important at different stages of personal projects. During the initial startup stages of a project, task aversiveness is related to aspects of personal meaning such as project enjoyment, pleasure, fun, and communion, whereas later on the feeling of control, initiating work, and feeling of uncertainty play a greater role in the perception of aversiveness. Several studies have found *task difficulty* to be important. On the one hand, the more difficult the task, the more students tend to procrastinate (Scher & Ferrari, 2000; Senécal, Lavoie, & Koestner, 1997). On the other hand, if the task is too easy, it can promote procrastination by appearing boring or uninteresting. Thus, a balance between making a task sufficiently challenging but also achievable seems to be optimal (Steel, 2007; van Eerde, 2000). Ackerman and Gross (2005) found that students procrastinated less on assignments perceived as interesting, required a variety of skills to complete, were accompanied with clear instructions, and were carried out in a milieu with social norms and rewards for starting promptly.

Social environment and peers. Another possibly important factor in procrastination is the role of the social environment and peers (Klingsieck, Grund, Schmid & Fries, 2013). Klingsieck and colleagues (p. 406) noted that "…it seems especially surprising that previous research has virtually neglected social aspects of procrastination." This conclusion may be particularly relevant for students since they interact with other students on a daily basis, both in academic settings and in their free time, creating arenas for modeling and other forms of social influence. Based on interviews with students, Klingsieck and colleagues (2013) found

a three-category divide in social antecedents for procrastination: (1) group tasks versus individual tasks, (2) significant others' attitudes toward procrastination, and (3) procrastinating role models. Students reported procrastinating less when collaborating with others. They also reported that family and friends served as role models for procrastination tendencies (e.g., "because my sisters are very similar with regard to procrastination") and that the influence of significant others depended on both the attitude to procrastination and the model.

These categories are also in line with social psychological research. For example, according to the social facilitation hypothesis, the mere presence of others can speed up or slow down performance, depending on individual skill (Falk & Ichino, 2006; Zajonc, 1966). Also, other students may serve as good or bad models (Bandura, 1977) depending on behavior and consequences relating to procrastination (Stinebrickner & Stinebrickner, 2006). Third, according to social comparison theory (Festinger, 1964), people evaluate themselves by comparing with others. To avoid feeling less capable or intelligent than their peers, students might feel obligated to work harder to keep up. Finally, research indicates that procrastinators may have good reason to believe they are being judged negatively by others. For example, Ferrari and Patel (2004) found that across academic and everyday activities, procrastinators punish other procrastinators by allocating procrastinating peers fewer resources, giving them lower ratings, and attributing more internal negative dispositions to them.

Outside the field of procrastination research, peer effects have been investigated by examining student academic performance related to that of their close peers. The assumption is that pairing students with academically stronger peers will have a positive performance impact for the weaker peers. Coleman et al. (1966) found the expected presence of peer effects in elementary and secondary school, concluding that "...a pupil's achievement is strongly related to the educational backgrounds and aspirations of the other students in the

school." However, results from studies in higher education have rendered mixed results (Carrell, Fullerton & West, 2008; Sacerdote, 2011). For example, Zimmerman (2003), using random assignment of housing for students, found only small positive effects for students in the middle 70 % of the distribution, but no peer effects at all for the top and bottom 15 %. Similarly, Foster (2006), Lyle (2007) and Stinebrickner and Stinebrickner (2006) found no or weak evidence for contextual peer effects on academic grades. In contrast, Hoxby and Weingarth (2005) demonstrated strong peer effects for the top and bottom 15 % students in their sample, and smaller effects in the middle of the distribution, concluding that "higher achieving people are better peers all else equal." Carrell, Fullerton, and West (2008), studying a sample from the United States Air Force Academy, found that the SAT score of peers influenced weaker peers' outcomes on some topics (i.e., math and science), but not on others (i.e., physical education and language).

Research on peer effects also indicates an impact on students' procrastination behavior. For example, Foster and Frijters (2010) found that students believed that high-quality peers could positively influence their outcomes and that their effort levels depended on the effort level of their peers. Similarly, Stinebrickner and Stinebrickner (2006) found that first-year grade outcomes and drop-out decisions depended partly on the effort students put into studying, the quality of their study time, and students' beliefs about the importance of education and that their peers could influence these effects. In addition, working with peers has been shown to have motivational effects on students (Eisenkopf, 2009), possibly playing an important role in student procrastination.

Evaluation.

Reviewing the literature leaves the impression that environmental and social factors may be important in facilitating or hindering procrastination, but it is difficult to formulate

clear-cut conclusions about their effects. One reason for this is that social and environmental factors affect people in complex ways, often interacting with dispositional factors. For example, students prone to procrastinate may "thrive" in a procrastination-friendly environment (e.g., peers are procrastinating, teachers are lax), causing them to feel very little pressure to get things done, whereas students low in procrastination might react to the same environment in an opposite way, attempting to distinguish themselves from their less diligent peers. Second, environments are diverse. Within any single student group, some students may procrastinate whereas others do not, putting any one student in contact with a variety of different influences, possibly making a given environment both procrastination-friendly or unfriendly at the same time. Third, factors inhibiting vs. promoting procrastination in a given context may be additive or interactive, implying that a given factor may be unimportant or important depending on other factors. Accordingly, an examination of the effects of environmental factors on procrastination should be prepared for complexity, taking into account also that their effects most probably will be modulated by the dispositional tendency to procrastinate in a given student.

Importantly, existing research has not examined the role of study content and academic climate related to procrastination. This is important because the characteristics of different academic disciplines (e.g., types of knowledge, form of communication, concepts and practices), might differentially affect how students behave and think in relation to delay. This speaks for a closer examination of the general climate associated with different study programs and academic environments. For example, study environments may differ as to whether they are competitive and outcome-focused, or whether they emphasize specific knowledge and skills rather than understanding and reflection. Schachter et al. (1991, p. 362) found that lecturers in different study topics differed in their lecture styles as to whether skills and knowledge can be described accurately or not:

"The academic disciplines differ markedly in the extent to which, let us say, a speaker is required to choose among options in an undergraduate introductory lecture. In the pure sciences, we maintain, there are relatively few options. Consider a statement such as $E = mc^2$. There are no options; it cannot be c^3 or c^4; it is mc^2 and that is it. In contrast, consider the statement, "What Shakespeare probably meant in that passage from Lear was …" or "The reason Jackson Pollack put the patch of red in the corner of the canvas was …" The options seem limitless."

Such differences may be accompanied by structural and cultural differences in the study curriculum, for example in the degree of freedom of the study situation, the way exams are arranged, the types of knowledge and competence tested, and so on (e.g., Becker, 1991). We are not aware of studies documenting the existence of such procrastination-relevant differences as perceived by students, but we find it likely that structural and cultural differences between academic disciplines are associated with overall differences in student procrastination. As noted, it is also likely that structural cultural differences between academic disciplines may act differently, depending on individual procrastination level.

The present studies

To examine the role of academic environments for academic procrastination, Study 1 examined structural and cultural differences between three academic disciplines, natural sciences, medicine, and humanities as perceived by students. Based on the literature reviewed, we identified six dimensions believed to be particularly relevant for academic procrastination (Becker, 1991; Schechter et al., 1991): *Rote learning and memorizing*, *tangible knowledge*, *reflection and afterthought*, *structured course progression*, *high demands and grade pressure*, and *freedom in the study situation*. In evaluating these dimensions, we expected students to rate the humanities high on the dimensions such as *reflection and afterthought* and *freedom in the study situation*, and low on dimensions such as *rote learning and memorizing* and *tangible*

knowledge. Natural sciences, and perhaps medicine, should be evaluated in an opposite way. If correct, such differences between the three selected academic disciplines represent procrastination-relevant dimensions that present differential opportunities for students to procrastinate. Hence, Study 2 examined academic procrastination among students from these three academic disciplines. Assuming that structural and cultural differences between the disciplines are related to procrastination, overall differences in academic procrastination should be observed, with more procrastination in procrastination-friendly environments. More importantly, study environments should affect students differently. For example, a student low in procrastination should be relatively little influenced by a procrastination-friendly environment, whereas students higher in procrastination should be negatively affected. To examine possible mechanisms, we also assessed the role of procrastination in peers as well as the student's own dispositional tendency to procrastinate.