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Giving thanks: The relational context of gratitude in postgraduate supervision

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Abstract

Successful postgraduate supervision is often dependent upon the quality of the relationship between postgraduates and their supervisors. In this article, we report two studies that focus on grateful affect and grateful expression within low- and high-trust postgraduate-supervisor working relationships. In Study 1, we interviewed a sample of Canadian postgraduates and supervisors ($n = 13$) to explore the consequences of expressed gratitude and identify supervisory behaviors for which postgraduates are grateful. In Study 2, we surveyed a sample of Australian postgraduates ($n = 189$). Results showed that perceptions of supervisors' altruism and the perceived value of supervisors' behaviors were positively related to the grateful affect felt by postgraduates in low-trust working relationships. In contrast, perceptions of supervisors' altruism and the perceived value of supervisors' behaviors were not related to grateful affect in high-trust working relationships. Implications for theory and practice are discussed.

Giving thanks: The relational context of gratitude in postgraduate supervision

The working relationship between postgraduates and their supervisors has been recognized by many as key to a successful supervision process, degree completion rates, faculty research performance, and postgraduate satisfaction with their doctoral education (e.g., Aspland, Edwards, O'Leary, & Ryan, 1999; Hockey, 1996a, 1996b; Holdaway, Deblois, & Winchester, 1995; Ives & Rowley, 2005; Kyvik & Smeby, 1994). Much research has focused on postgraduate characteristics (e.g., Lessing & Schulze, 2002; Seagram, Gould, & Pyke, 1998) or supervisory style (e.g., Delamont, Parry, & Atkinson, 1998; Hockey, 1995, 1996c; Walford, 1981). Other approaches have explored the implications of misuse of power and the creation of psychosocial risks within the postgraduate-supervisor relationship including inequitable treatment among postgraduates (Sullivan & Ogloff, 1998) and sexual tensions between postgraduates and supervisors (Heinrich, 1991). More specific concerns have centred upon supervisors disrespecting or excessively criticising postgraduates' work (e.g., Li & Seale, 2007; McMichael, 1992).

Lee (2008) identified five forms that postgraduate-supervisor working relationships often take: (1) functional, where the aim is project management; (2) enculturation, where the aim is integration into the academic community; (3) critical thinking, where the aim is analysis of the work; (4) emancipation, where the aim is student development; and (5) relationship development, where the aim is to inspire and care for the student. Although Lee (2008) identifies advantages and disadvantages of each of these forms, research within the fields of positive psychology and positive

organisational scholarship suggests the particular importance of high-quality relationships across a range of jobs and occupational contexts (Dutton, 2003). A fundamental assumption of high-quality relationships in postgraduate supervision is that both the postgraduate and supervisor are active constructors of the relationship with the capacity to change it for the better (Grant & Graham, 1999). In this article, we explore a particular aspect of high-quality working relationships in this context, namely gratitude as felt and expressed by postgraduates towards their supervisors.

Conceptualizing gratitude

Within the psychological literature, gratitude is viewed as a reaction or response acknowledging the receipt of another's benevolence (e.g., McCullough, Kilpatrick, Emmons, & Larson, 2001; White, 1999). However, the form which gratitude has taken varies across studies. Many have defined gratitude as an affective or emotional response (e.g., McCullough et al., 2001), while others have studied gratitude as an expressive response, such as saying 'thank-you' (e.g., Okamoto & Robinson, 1997). When examining the postgraduate-supervisor working relationship, we believe it is important to understand both of these forms. In our research, we therefore distinguish between two gratitude constructs: *grateful affect* (i.e., feeling grateful) and *grateful expression* (i.e., enacting gratitude).

Effects of expressed gratitude

Gratitude in postgraduate-supervisor relationships has been referred to obliquely in previous research; for instance, the reaction of a supervisor to a lack of gratitude from a postgraduate can be seen in the following quote from Lee (2008): "I am still angry with the student who passed and dropped off the end of the earth after five years working

together”. However, to our knowledge, it has not yet been directly examined. While it is not the only aspect to the postgraduate-supervisor relationship, we believe that it is important to identify and examine gratitude in this relationship particularly as its significance has been identified in other fields such as social and clinical psychology (Emmons, 2003). For example, Baron (1984) showed that when an arguer expressed gratitude (compared to no expression of gratitude), participants involved in disagreements had better moods, better impressions of the arguer, and increased use of constructive conflict strategies. Stein’s (1989) study of food pantries and soup kitchens found that failure to perceive gratefulness provoked anger amongst those who had expected gratitude. Clinical studies also suggest that psychoanalysts (e.g., Gabbard, 2000) and physicians (e.g., Gardner & Lidz, 2001) expect and desire gratitude from patients, and a lack of such expression can lead to feelings of failure and dissatisfaction.

Gratitude appears to benefit not only the relationship, but also the provider. In an ingenious experimental study, Emmons and McCullough (2003) instructed one group of students to journal three things for which they were grateful every day and compared them to a group of students who simply had to journal three things about their daily life (placebo-control group). They found that students who kept gratitude diaries reported fewer physical health symptoms, were more optimistic, and had higher levels of alertness, enthusiasm, determination, attentiveness, and energy than the placebo-control group. Given this evidence, we believe that the relational benefit of gratefulness in postgraduate-supervisor working relationships could play an important role in positive outcomes for both postgraduates and their supervisors.

Research Question: What are the consequences for both the postgraduate and the supervisor of a postgraduate's expressed gratitude toward the supervisor?

Determinants of expressed gratitude

A second aim of this study is to examine factors that may influence grateful affect and grateful expression from a postgraduate to a supervisor. Recently, Egan, Stockley, Brouwer, Tripp, and Stechyson (2009) identified different needs that postgraduates have of their supervisors: holistic needs (e.g., time, regular meetings, knowledge of the field, and knowledge of school regulations) and concrete needs (e.g., submission of manuscripts, constructive criticism, and timely feedback). One might initially think, therefore, that a student whose holistic and concrete needs were met would feel grateful to their supervisor.

However, social psychological research suggests that simply meeting someone's needs does not generate gratitude. Instead, it highlights two main factors: the cost to the benefactor and value to the beneficiary. In an experimental study, Tesser, Gatewood, and Driver (1968) found that when a benefit was intentional, costly, and valuable, participants expected that they would feel grateful, with these factors accounting for up to 85% of the variance in participants' grateful expectations. Moreover, Tsang (2006) found that the beneficiary must be perceived to be acting altruistically for the beneficiary to feel gratitude. This is consistent with evidence that appraisals of benefit had a causal effect on grateful affect (Wood, Maltby, Stewart, Linley, & Joseph, 2008). We therefore propose that a postgraduate will feel most grateful (i.e., grateful affect) when they believe that their supervisor has acted altruistically and when the actions have value to the postgraduates.

Hypothesis 1a: Grateful affect of postgraduates towards their supervisors will be positively related to postgraduates' perceptions of their supervisors' altruism and perceptions of the value of the supervisors' behaviour.

Further, we propose that grateful expression is a more distal manifestation of gratitude than grateful affect, and therefore grateful affect will mediate the relationship between the determinants (perception of supervisors' altruism and perceptions of the value of supervisors' behavior) and grateful expression. Previous research by Okamoto and colleagues (Okamoto, 1992; Okamoto & Robinson, 1997) provides some support for this. Although they did not measure grateful affect directly, they demonstrated that the amount of imposition on the benefactor was significantly related to the level, elaborateness, and politeness of the expressed gratitude.

Hypothesis 1b: The relationship between postgraduates' expression of gratitude and postgraduates' perception of both supervisors' altruism and value of supervisors' behaviour will be mediated by postgraduates' grateful affect.

The importance of relational context

While existing research is helpful in understanding the affective and expressive components of gratitude, postgraduates and their supervisors work together in a particular relational context. We define relational context here as the interpersonal climate, which, through ongoing interactions between postgraduate and supervisors, is continually structured and maintained (e.g., Grant & Graham, 1999). The relational context provides a basis for the norms of giving and receiving benefits between the postgraduate and supervisor, and for the nature of the intrinsic and extrinsic rewards that exist within that relationship.

A way of describing characteristics of the relational context is the distinction between communal and exchange relationships (Clark & Mills, 1979, 1993). Communal

relationships are those in which benefits are given on the basis of the need of the recipient; on the other hand, exchange relationships are those in which benefits are given and received on a quid-pro-quo basis. In the context of postgraduate supervision relationships, we suggest that any of Lee's (2008) forms described earlier could be either communal or exchange depending upon whether or not the student's personal needs are identified.

Similar to Blau (1964), we suggest that communal relationships require high levels of trust. While affect-based trust (i.e., the emotional ties between two people; McAllister, 1995) will doubtless play some role in the relationship between postgraduates and their supervisors, the knowledge and abilities of the supervisor will be at the forefront of the relationship (Mackinnon, 2004). Therefore, in the case of postgraduates and their supervisors, we believe cognitive-based trust (i.e., respect for a supervisor's competence and skills; McAllister, 1995) to be particularly important in defining whether a relationship follows communal or exchange norms. Different trust norms within these relational contexts will likely result in different responses to a beneficent act. Within a high-trust, communal relationship, there is an expectation of benefit (Clark & Mills, 1979) so there is unlikely to be a "spike" of grateful affect following a particular beneficent act by the supervisor. However, the ongoing rewards of being within a high-trust communal relationship (see Clark & Mills, 1993) suggest that there would be continually high levels of grateful affect. Conversely, in a low-trust exchange relationship, there are no expectations for beneficent acts. Therefore, when a beneficent act occurs, it is likely to be noticed and responded to with feelings of gratitude (c.f., Mills, Clark, & Mehta, 1993). Thus, we hypothesise:

Hypothesis 2: Cognitive-based trust within the postgraduate-supervisor relationship will moderate the relationship between postgraduates' perceptions of supervisors' altruism and perceptions of value of supervisors' behaviour on grateful affect, such that conditions of lower cognitive-based trust will produce stronger relationships between perceptions of altruism and perceptions of value on grateful affect than under conditions of higher cognitive-based trust.

Overview of the studies

The present research aims to further our understanding of the postgraduate-supervisor relationship by examining determinants and consequences of both grateful affect and grateful expression within the relational context, specifically the level of cognitive-based trust postgraduates hold for their supervisors. Given there is little information in the literature about the consequences of gratitude, we conducted an inductive qualitative study (Study 1). We then conducted a quantitative deductive study (Study 2) to test our hypotheses relating to the determinants of grateful affect and grateful expression.

Study 1

Method

Organizational setting and participants

Thirteen participants were interviewed: seven faculty members (one assistant professor, four associate professors, and two full professors) and six doctoral students (one in his second year of doctoral studies, four in their third year of doctoral studies, one in his fifth year of doctoral studies) from a mid-sized (approximately 15,000 students) university located in Ontario, Canada. We selected our sample from the departments of Chemistry and English Literature. These departments were chosen for two reasons. First, to ensure distance between the interviewer and interviewees (these were not our home departments). Second, the research supervisory approaches and techniques tend to differ

across “hard” and “soft” disciplines (e.g., Wright & Cochrane, 2000) and we wanted to ensure that our findings were not specific to one type of supervisory approach

Within these two departments, we chose postgraduate participants in their second year of doctoral studies or above so that we could examine working relationships that had developed and been sustained over a number of years, rather than those just newly formed. This clarification ensured that postgraduates had an opportunity to experience (or not experience) beneficent acts from their supervisor. All supervisor-student dyads were initiated by students and were formed freely based on shared areas of research. In total, data from six matched supervisor-student dyads were collected: three supervisor-student dyads from the Chemistry department and three supervisor-student dyads from the English department. This left one associate professor of English without a corresponding student. Since some respondents often described their relationships with supervisors/students from other settings, many other experiences with additional students/supervisors were represented in the data, so we included all supervisory experiences in our analyses.

Data collection procedures

We used inductive grounded theory methods (Strauss & Corbin, 1998) to explore the concept of gratitude from the narratives (cf. Lindén, 1999) provided by the sample. The interviews were semi-structured and open-ended in nature, lasting between 30 and 45 minutes. First, we requested background information from participants (e.g., length of time with the current supervisor). Second, we asked respondents to reflect on times when students were grateful to their supervisors. When interviewing postgraduates, we explored feelings of being the beneficiary, factors leading up to the feelings of gratitude

along with expressions of gratitude and reception of gratitude from supervisors. When interviewing supervisors, we explored feelings about being the benefactor and responses to expressions of gratitude. The third part of the interview examined the absence of gratitude. Here, we were able to gain insight into the norms surrounding gratitude. Postgraduates were asked questions about times when they sensed gratitude was expected (from supervisors), but was not felt or expressed and the reasons why. For supervisors, questions concerned times when they recalled an absence of gratitude.

All interviews were tape-recorded and then transcribed by a professional transcriber who did not know any of the participants. To ensure transcription quality, we double-checked two transcribed interviews with the original recordings. All transcripts provided the foundation for our analysis. The unit of analysis were descriptions of social interactions from the narratives related to the determinants and consequences of gratitude.

Analysis

Transcripts were analyzed using the grounded theory processes of coding and constant comparative analysis (Strauss & Corbin, 1998). First, following Strauss and Corbin (1998), we examined the narratives, line by line, to analyze for content. We categorized units of analysis into concepts that emerged from the data (“open coding”), reflecting the properties and dimensions of gratitude in this context. To help establish consistent coding practice and to develop an initial coding template, two authors coded one interview together and created a list of themes. We created a more complete list of codes that captured the major categories of determinants, consequences, and the process of the postgraduates’ gratitude experience. Using this information, we then created a brief descriptive label for each category and subcategory that allowed us to check whether the

issues mentioned in the commonly-coded interview were mentioned in each subsequent transcription.

Once we had screened all the data in this way, we organized and labelled the resulting concepts by recurring theme. As the open coding provided many different single categories, we then used “axial coding” to judge all the data as to whether or not they fit the categories appropriately. We then selected another category and judged all the remaining data in relation to that category; this was repeated until all the data had been evaluated against all categories and classified into appropriate categories. After coding the data in this way, constant comparative analysis (Strauss & Corbin, 1998) was conducted. For example, we compared data across different levels of hierarchy, disciplinary context, and gender of participants.

Results for Study 1

Consequences of gratitude

Positive feelings. According to the participants, gratitude expressed by postgraduates enabled supervisors to feel recognized and accomplished for their efforts; however, it also produced other positive feelings:

I feel that I am good at my job, recognition and also motivation to continue since it is easy to get discouraged working in a very isolated situation. Whenever I am in a position to help someone or someone thanks me, I'm just oh, you're welcome, and it's like I am ridiculously pleased by it because, you know, it makes a real difference to how you feel about yourself.

Satisfaction and contentment were felt not only for the self, but also for the job. As one postgraduate states, “I'm just happier doing the work, if I know someone wants it done and they like the way that I am doing it...” And another said, “you feel good after saying

it.” This indicates that positive feelings are produced for both parties in the expression and reception of gratitude.

Improves working relationships. According to postgraduates, another consequence of expressed gratitude is an improvement in the relationship. An expression of gratitude acts not only as a communication tool or cue that signals that postgraduates are benefiting from supervisors, but also that overall the relationship between them is alive. Since gratitude involves both awareness and recognition of positive benefits and efforts that others had in helping to achieving them, it is no surprise that expressed gratitude improves relationships. While postgraduates are often made to feel cared for, supervisors also benefit by looking good in the eyes of others. As one postgraduate expressed, “I didn’t realize what he thought of the students, how much he cared for us.... It definitely did raise my opinion of him.”

Another common answer was that gratitude helps to both strengthen and extend the relationship between supervisors and postgraduates. This is because gratitude says something not only about the relationship between dyads, but also communicates respect to the supervisor.

Validation and affirmation of roles. Although formal teaching is often formally structured and there are espoused norms, research supervision lacks similar structure and consistent norms. As such, both supervisors and postgraduates are expected to figure out the best way of working together. A lack of a clear job description in this regard forces supervisors to question what behaviours and efforts are expected of them. Often, they spoke of “fuzzy” and invisible boundaries as they described their confusion with both behaviour and limits. One supervisor said, “there’s a fine line...I have no idea if I’m

putting it (the line) in the right place or not...I'm learning as I go but it feels right as it is now.”

Since supervisors suffer from lack of structure, they are forced to look for other cues that signal that they are “doing their jobs” and helping students. According to a number of supervisors, expressed gratitude can be that cue. While existing literature does examine the use of social cues for sense making and the creation of meaning (Wrzesniewski, Dutton, & Debebe, 2003), no literature was found that considered the expression of gratitude as a social cue or as a structuring device. Gratitude was found to not only validate and affirm that supervisors are doing their jobs, but that they are performing their roles as needed. In other words, “it confirms that you’re doing the right thing, which we all need to hear...It confirms that the things that I’ve done are making a difference to the students which it’s all about.” And as another supervisor said, “gratitude validates what I do, it makes me feel like I’m doing something right. Sometimes you always question yourself, you know....am I doing this....am I actually doing a good job?”

Based on the above comments, it is evident that the expression of gratitude is not only a way to communicate positive outcomes, but that it also acts as a social cue indicating that individuals are properly fulfilling their job and role requirements.

Summary of the consequences of gratitude. The expression of gratitude causes supervisors not only to feel recognized and accomplished for their acts, but also to engage in improved working relationships. Finally, for unstructured working environments, gratitude provides structure as it acts as a cue to both validate and affirm that the supervisors are filling their roles as required.

Determinants of Gratitude

Help with the attainment of earning a PhD was the most common reason for the grateful affect felt by the postgraduates. Ninety-two percent of beneficent acts mentioned by postgraduates concerned help in coursework, thesis work, and unrelated research projects. This occurred equally across both Chemistry and English postgraduates.

The second most common reason for grateful affect centred on the support and care offered by supervisors (77% of beneficiary incidents; one postgraduate claimed, “I feel that [my supervisor] has been very receptive and supportive of letting me explore my own ideas and develop as a scientist on my own terms.” Another postgraduate was grateful for the care offered by his supervisor: “He makes sure that you’re okay, he wants to makes sure you’re progressing in your studies. He also wants to make sure you’re well off outside of school; he tries to make sure that everything is going well on both sides of the fence.”

Gratitude for material items such as conference funding, grants, and financial stipends (31% of beneficiary incidents) along with gratitude for opportunities created by supervisors (30% of beneficiary incidents) was also discussed by postgraduates. Examples of these opportunities varied from an initiation of a relationship required for thesis work, an opportunity to study at the university, and gratitude felt for being selected into a specific lab or research group.

Finally, while a few postgraduates expressed gratitude to their supervisors for simply “doing their jobs” (e.g., marking and reading work), the majority of postgraduate students felt grateful for acts provided by their supervisors that were viewed as “above and beyond” what was expected by the postgraduates:

When I was writing my master's thesis my supervisor helped a lot, he took the time and patience to revise my thesis a couple of times. He did more than he needs to help me for that thesis and I find myself really grateful.

And:

If you feel that someone is doing their job...well that's their job, they should be doing it. [If t]hey are doing what they're expected [to], I wouldn't say I'd feel grateful for that but definitely if they are going above and beyond that.

Summary of the Determinants of Gratitude

While gratitude was felt for various reasons, the common thread was that gratitude was invoked when the postgraduate felt a direct personal benefit had been achieved. This was especially true for benefits that were unexpected and involved a sacrifice on behalf of the supervisor.

Study 2

Study 2 was designed to test the hypotheses regarding the determinants of grateful affect and expressed gratitude within a relational context. Using the information about the reasons for gratitude provided in Study 1, we constructed measures appropriate for the postgraduate-supervisor context. This then allowed us to test the hypotheses in a contextually-sensitive manner.

Method

Sample and Procedure

The Associate Deans for Research in two universities in Queensland, Australia, were contacted and asked to forward an email to the postgraduates in their respective faculties. A link to an online questionnaire was included in the email. To increase response rates, postgraduates were told that participation in the study placed them in a

draw for an iPod Nano. Given this sampling strategy, we do not know how many emails were sent and therefore cannot derive accurate response rates. In total, 189 postgraduates responded; there were no significant differences on the hypothesised constructs across the two universities. The majority of respondents were female (70.6%) and studying health-related sciences (56.1%). Most respondents were aged in their 20's (46%) and 30's (26.7%) and were studying full-time (73.8%).

Measures

There were three sections to the online questionnaire. The first section asked general questions about the postgraduate and his/her perceptions of the relationship with the supervisor. The second section focused on a specific act of beneficence by the supervisor and the postgraduate's reaction. The third section covered demographic information. Where possible, we used existing scales with their validated Likert-type response scales.

Beneficent Act. Participants were asked to recall a time they felt grateful to their supervisor. There were six options for the participant to best categorise the behaviour that caused them to feel grateful. These options were based on categories of incidents drawn from Study 1 and included: the supervisor helping them to attain goals in their PhD; providing emotional and social support; providing material items; presenting opportunities to network; providing opportunities to present their research; and caring for them as a person rather than just a "student". If participants could not recall an event for which they felt grateful to their supervisor, they left the answer blank.

Characteristics of the Beneficent Act. Five characteristics measured the altruism of the beneficent act on a 5-point Likert-type response scale; for example participants

were asked the degree to which the act was “above and beyond the call of duty of the supervisor”. Two characteristics measured the value of the beneficent act; for example participants were asked the degree to which the act “had a large or powerful effect on your PhD life”. As this was a measure developed for the purpose of this study, an exploratory factor analysis was conducted to ensure adequacy of measurement. We found that a two-factor solution was most appropriate explaining 63.9% of the variance with all communalities above .45. As shown in Table 1, the items loaded cleanly onto their hypothesized factors. This supports our contention that perceived altruism and perceived value are distinct constructs. These two variables were therefore calculated and both were found to have satisfactory reliability: Cronbach alpha was 0.87 and 0.61 for altruism and value respectively..

Grateful Affect. While considering the beneficent act above, participants were asked: ‘How grateful were you?’ Participants were asked to rate their level of grateful affect using a 10-point Likert scale (1= not at all to 10=to a great extent).

Grateful Expression. While considering the beneficent act above, participants were asked the extent to which they “said thank you to my supervisor because I meant it”. Responses occurred along a 5-point Likert scale (1= not at all to 5= to a great extent).

Cognitive-based Trust of Supervisor. Trust was measured via a modified version of the 5-item cognitive-based trust scale developed by McAllister (1995). Example items include “My supervisor approaches his/her job with professionalism and dedication” and “If people knew more about my supervisor and his/her background, they would be more concerned and monitor his/her performance more closely” (reverse-scored). The response scale ranged from 1 (not at all) to 5 (to a great extent). Cronbach’s alpha was .90.

Grateful Disposition. To control for individual differences in baseline grateful affect, we measured grateful disposition using the six-item scale developed by McCullough, Emmons, and Tsang (2002). Participants were asked to indicate their level of agreement on a 5 point Likert scale (1 = not at all to 5 = to a great extent) to items such as “I have so much in life to be thankful for” and “I am grateful to a wide variety of people”. Cronbach alpha was .81.

Demographic Information. Respondents provided demographic details including gender, age, faculty of study, university, enrolment status, and the length of time they had been enrolled in their PhD.

Results

Similar to Study 1, the most commonly reported events for which postgraduates felt grateful were those instrumental acts in which the supervisor helped the participant to attain the goals of their PhD (38.3%) or provided material items such as grants (20.2%). Socio-emotional beneficence was the next most highly rated with 15.4% reporting being treated as more than a student and 10.1% reporting social and emotional support. Finally, beneficence around networking or publishing opportunities were each reported by eight percent of participants. Only six participants (3.1%) could not recall an act for which they felt grateful to their supervisor.

As can be seen in Table 2, correlations show initial support for the hypotheses, with perceptions of altruism and value correlated with both grateful affect ($r = .62, p < .001$; $r = .54, p < .001$; respectively) and grateful expression ($r = .42, p < .001$; $r = .25, p < .01$; respectively). The gender of the postgraduate student was related to perceptions of value and grateful expression with females rating these more highly than males ($r = -.24,$

$p < .05$; $r = -.17$, $p < .05$; respectively). Finally, there was no significant relationship between grateful disposition and either grateful affect or expression of gratitude ($r = .06$, n.s.; $r = .10$, n.s.).

Although the correlation analyses reported above were in accordance with our expectations, we tested our hypotheses using hierarchical multiple regression analyses. This enabled us to control for a number of factors that might impact upon both grateful affect and grateful expression. More specifically, grateful disposition was included to control for propensity to experience gratitude, and student gender (dummy-coded) and faculty (dummy-coded) were included to control for demographic effects.

As can be seen in Table 3, after controlling for grateful disposition, gender and faculty, we regressed grateful affect on altruism and value of behavior. Supporting Hypothesis 1a, both altruism and value were significantly and positively related to grateful affect ($\beta = .37$, $p < .05$; $\beta = .29$, $p < .05$; respectively).

Hypothesis 1b explored the mediating effect of grateful affect on characteristics of the beneficent act (altruism and value) and the expression of gratitude. We first regressed grateful expression on altruism and value, after controlling for grateful disposition, gender, and faculty (see Table 4). Altruism was positively and significantly related to grateful expression ($\beta = .38$, $p < .05$), but value was not significantly related to expression once altruism had been entered into the regression equation ($\beta = .04$, n.s.). As value was not significantly related to grateful expression, it did not satisfy Baron and Kenny's (1986) first criterion for a mediating effect. Perceived altruism of the act, however, was significantly related to expression. Following Baron and Kenny's guidelines for full mediation, the relationship between altruism on grateful expression

should be decreased to non-significance while the relationship between grateful affect and grateful expression should be significant. This analysis showed that while affect was significantly related to expression ($\beta = .28, p < .05$) and the effect of altruism was decreased, this effect was not diminished to non-significance ($\beta = .28, p < .05$). Nevertheless, the Sobel statistic was significant at 2.82 ($p < .01$), indicating there was a significant indirect relationship between altruism and grateful expression via grateful affect. Thus, in partial support of Hypothesis 1b, grateful affect partially mediated the effects of altruism on grateful expression.

To test Hypothesis 2, we calculated multiplicative trust terms after centering all three variables (Aiken & West, 1991). Because of the high shared variance amongst the three variables and to reduce multicollinearity in the multiplicative terms, we ran separate regressions for altruism and for value of the beneficent act (see Table 3). Supporting Hypothesis 2, we found that cognitive trust moderated the effect of altruism ($\beta = -.25, p < .05$) and of value ($\beta = -.27, p < .05$) on grateful affect. These interactions, modelled in Figure 1, are in the hypothesized direction. In total, the regressions accounted for 54.3% and 56.1% of the variance in grateful affect ($F(8,164) = 24.37, p < .05$; $F(8,164) = 26.21, p < .05$; respectively).

Figure 1 about here

Discussion

The relationship between a postgraduate and his or her supervisor is key to a number of supervision-related outcomes. Past research in social and clinical psychology (e.g., Baron, 1984; Emmons & McCullough, 2003) has shown gratitude to have

important effects on relationship maintenance and well-being. Our research adds to the understanding of the postgraduate-supervisor relationship discussed in the higher education literature by conceptualizing and operationalizing the formation and expression of gratitude.

More specifically, we found that postgraduates' expression of gratitude had consequences for both students and supervisors in terms of increased positive affect, improved working relationships, and validated roles. Although it may initially sound trivial to suggest that saying "thank-you" can have positive repercussions, we believe that our findings have important implications for higher education practice. For instance, although we were all told to say "thank-you" when we were young, our research suggests that not everybody follows this counsel. The relationship between grateful affect and grateful expression was moderate, indicating that even when postgraduates felt gratitude towards their supervisor, they did not always express that gratitude. It would be interesting in future research to more fully examine the reasons why postgraduates do not express their gratitude to their supervisors. Using Lee's (2008) typology described earlier, perhaps a supervisory relationship marked by project management is less likely to engender expressions of gratitude than one marked by relationship development. Or perhaps norms for grateful expression need to be established for both parties to feel comfortable. On the whole, however, given the positive consequences of expressing gratitude it is perhaps worthy to remind both postgraduates and supervisors of these benefits at the beginning of the relationship.

Furthermore, we found that although high-trust relationships have a relatively high level of grateful affect, a specific act of beneficence is more powerful in reaping

grateful affect in those relationships marked by low cognitive trust than in those marked by high cognitive trust. Mentoring relationships, such as those between a supervisor and a postgraduate, will always have their ups and downs. Our research gives some hope to supervisors who find themselves in a relationship characterised by low cognitive-based trust. We have shown that an act that is seen as altruistic and of high value to the postgraduate student can help improve the working relationship and bestows similar levels of gratitude to a relationship characterized by high levels of trust. This must be a genuine act of beneficence rather than one manipulated to manage impressions, however, and we are certainly not advocating that a supervisor erratically bestows favours upon particular students. The postgraduate must feel that the supervisor has their best interests in mind (i.e., is acting altruistically). In aspiring to improve the working relationship between postgraduates and their supervisors, therefore, we suggest that those supervisors finding themselves in low-trust working relationships aim to find ways of being beneficent to the postgraduate.

Reflective research on the dynamics of postgraduate-supervisor relationships (e.g., Chapman & Sork, 2001; Styles & Radloff, 2001) describes the importance of opportunities to talk frankly about the relationship, as well as taking stock of accomplishments outside formal mechanisms such as annual reviews or performance appraisals. Mechanisms for systematic dialogue that help to address supervision problems, as well as issues concerning the working relationship more widely, have garnered support from action research (e.g., Grant & Graham, 1999; Wisker, Robinson, Trafford, Warnes, & Creighton, 2003). Although we are not suggesting that gratitude is the only, or even the dominant, motif within high-quality supervisory relationships, our

research adds value to this conversation by providing another angle on exploring high-quality working relationships.

Those in high-trust supervision relationships are recipients of high levels of grateful affect regardless of the presence of a specific beneficent act. This lack of a “spike” may have negative effects for the supervisor who may feel that they are taken for granted. However, whilst specific beneficent acts do not seem to increase the grateful affect of postgraduates, there is a consistent high level of grateful affect at play. Furthermore, we are not advocating that supervisors actively decrease the level of trust between themselves and their postgraduates, nor do we suggest they stop acting in beneficent ways. Rather, we call for future research to explore how grateful affect is facilitated in high-trust relationships and how the dynamic relationship between postgraduates and their supervisors develops over time.

Finally, by delineating grateful affect from grateful expression, we were able to surmise that the latter is likely a more distal manifestation of the former. Our research, therefore, also contributes to the wider gratitude literature by highlighting the importance of separating these two constructs. Previous literature has often used the label “gratitude” to cover the constructs of either grateful affect or grateful expression or a mixture of both. Through testing a mediation model, we demonstrated that these constructs need to be considered separately but in conjunction, at least within the higher education context.

As with all research, the two studies presented here are not without limitations. Our results are only relevant for postgraduates’ gratitude towards their supervisor and not supervisors’ gratitude towards students; future research could examine the additional benefits gained by supervisor gratitude. The first study used an inductive approach and

further studies would be useful in determining the boundary conditions under which the different consequences occur. In the second study, the consistently high grateful response in high-trust relationships may indicate a ceiling effect within these relationships.

However, the presence of higher scores being both available on the scale and being used in some instances in low-trust relationships provides support to our interpretation of the findings. Finally, the use of a cross-sectional survey in this initial test of our hypotheses has the attendant problems of response bias and restrictions of not being able to establish causality. The presence of moderating effects provides some evidence of minimal response bias (Wall, Jackson, Mullarkey & Parker, 1996); however, it is important that future research building on our study uses multiple sources of data preferably across time.

In conclusion, our research has demonstrated the importance of examining gratitude within the postgraduate-supervisor working relationship. We believe that this approach is valuable in furthering our understanding of the factors underlying successful postgraduate-supervisor working relationships.

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Table 1. Rotated factor loadings

	Altruism	Value
More than other supervisors seem to do?	.839	.109
Done unselfishly?	.812	-.007
Above and beyond the call of duty of the supervisor?	.771	.202
More than what you expected him/her to do?	.751	.255
Done to help you rather than to help him or herself?	.741	.155
Done at cost to him or herself?	.633	.238
Relatively meaningless in comparison to the rest of your PhD life?	-.006	-.896
Quite large / powerful / in its effect on your PhD life?	.442	.667
<i>Eigenvalue/percent variance explained</i>	4.05/50.64%	1.09/13.29%

Table 2. Means, Standard Deviations, and Bivariate Correlations.

	Mean (SD)	Gender	Health Humanities	Grateful disposition	Altruism	Value	Cognitive trust	Grateful affect
Gender	1.29(.46)							
Faculty of Health	.55(.49)	-.26**						
Faculty of Humanities	.06(.23)	.04	-.27***					
Grateful disposition	3.30(.47)	-.01	.01	.06				
Altruism	3.19(.98)	-.08	-.02	.02	.09			
Value	3.89(.96)	-.24**	.02	.05	.03	.47***		
Cognitive trust	4.16(.87)	-.05	-.01	.01	.08	.56***	.36***	
Grateful affect	8.05(1.7)	-.14	.11	.03	.06	.62***	.54***	.51***
Grateful expression	4.25(.91)	-.17*	.07	.08	.10	.42***	.25***	.38***

*p<.05, **p<.01, ***p<.001.

Table 3. Regressions of Grateful Affect on Altruism, Value and Cognitive Trust

Moderators

	Altruism moderated		Value moderated	
	Beta-weight	R ²	Beta-weight	R ²
Gender	-.12		-.12	
Health sciences	.10		.10	
Social sciences	.07	.03	.07	.03
Grateful disposition	-.01		-.01	
Altruism	.37***		.37***	
Value of behaviour	.29***		.29***	
Cognitive-based trust	.20**	.50*** ¹	.20**	.50*** ¹
Moderator trust*altruism	-.25***	.54*** ²		
Moderator trust*value			-.27***	.56*** ³

¹F(7,165)=23.34, p<.001.

²F(8,164)=24.37, p<.001

³F(8,164)=26.21, p<.001.

p<.01; *p<.001

Table 4. Regressions of Grateful Expression on Altruism, Value, and Grateful Affect

	Beta weight	Beta weight
Gender	-.14	-.12
Health sciences	.15	.14
Social sciences	.16	.16
Grateful disposition	.10	.10
Altruism	.38***	.28**
Value of behaviour	.04	-.07
Grateful affect		.28**
	$R^2=.22$, $F(6,177)=7.96$,	$R^2=.26$, $F(7,163)=8.23$,
	$p<.001$	$p<.001$

Figure 1. Moderating effect of trust on the altruism-affect relationship & on the value-affect relationship.

