# DO ASK, DO TELL: A SOCIAL COGNITIVE LENS ON WOMEN'S SALARY INCREASE REQUEST OUTCOMES AND EMPOWERMENT OF OTHER WOMEN

By

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#### ABSTRACT

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This study synthesizes and builds on research about backlash against women in STEM careers (see Martin, 2015), social cognitive theory (e.g., Byars & Hackett, 1998; Lent et al., 1994; Thompson, Peterson, & Kray, 1995) and women's salary increase requests (e.g., Bowles et al., 2007; Small et al., 2007). Specifically, the study hypothesizes that a three-way interaction (i.e., one between environmental, behavioral capacity, and situational variables) predicts four outcomes for women in STEM. Expanding works on total rewards strategy (e.g., Kaplan, 2007) and other types of compensation women may want more (see Estes & Glass, 1996; Waldfogel, 1998), this study also poses a research question on the types of non-salary compensation women in STEM are offered and accept. Participants (N = 200) were women from MTurk who are in STEM careers, 18+ years old, currently in a full-time job, and experienced with negotiating their salaries before accepting offers for those jobs. Participants completed a 10-minute survey on three independent variables (pre-negotiation encouragement to ask for a salary increase, prenegotiation experience with asking for salary increase, and pre-negotiation experience with backlash), four outcomes (salary amount asked for, willing to accept, and walked away with as well as perceived likelihood of encouraging other women in STEM careers to ask for salary increases), and demographic questions. The hypotheses were addressed via linear regressions and the research question was addressed via frequency analyses. No support for those hypotheses was found, but multiple sources of prenegotiation encouragement, types of pre-negotiation experience with asking for a higher salary, and examples of pre-negotiation backlash were uncovered. Multiple benefits women in STEM were offered and accepted were also revealed, supporting the need for salary increase requesters and requestees to approach compensation discussions with a total rewards perspective (see Kaplan, 2007).

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#### **INTRODUCTION**

Distinct lines of academic and industry work have discussed environmental, behavior capacity, and situational influences on women's salary negotiation outcomes. For instance, many business books (e.g., Babcock & Laschever, 2009; Miller & Miller, 2002; Sandburg, 2016) have suggested women need to be encouraged to ask for – and ultimately secure – higher salaries. Experiments (Stevens et al., 1993), program evaluations (e.g., Azong et al., 2017), meta-analyses (e.g., Mazei et al., 2015), and survey-only works (e.g., O'Shea & Bush, 2002) have also found that pre-study and study-provided experience with negotiating salary tends to correspond with women asking for and negotiating salary raises. Moreover, several past studies (see Bowles et al., 2007; Moss-Racusin, 2010; Rudman & Glick, 2008) and a recent women's magazine article (Menza, 2017) have suggested previous experience with backlash (i.e., negative messages from others concerning perceived career-related gender incongruity) or the fear of it can inhibit women's self-promotion behaviors and outcomes (e.g., asking for higher salaries) (Amanatullah & Tinsley, 2013; Bowles et al., 2007; Moss-Racusin, 2010).

Women's salary negotiation outcomes likely stem from more complex relationships between those three variables (e.g., three-way interactions) and only represent examples of compensation they can "walk away from the bargaining table" with. However, empirical research has yet to more comprehensively explore what "winning" compensation negotiations look like and are influenced by in working women. Specifically, despite the plethora of research on salary requests in women (e.g., Bowles et al., 2007; Small et al., 2007) and best alternatives to negotiated agreements (e.g., Brett et al., 1996; Kim & Fragale, 2005; White & Neale, 1991), it is unclear whether the pre-negotiation experience and encouragement discussed above can collectively overpower pre-negotiation backlash women face (i.e., make women solicit, plan to walk away with, and actually walk away with higher salaries). Moreover, despite the multiple womencentered social programs (see Azong et al., 2017; Butterfield et al., 2017; Carnegie Mellon University, 2017) and empowerment initiatives (e.g., the Pay Equity for All Act, the Women's March, and career mentorships) (see Million Women Mentors, 2016; Norton, 2016; Stockman, 2017) arising in recent years, research has yet to explore whether that three-way interaction or another would make women financially

empower each other (i.e., encourage others like themselves to ask for higher salaries). Finally, despite the widespread discussion and use of total rewards strategy (i.e., considering compensation as a multi-faceted package including – but not limited to – salary) (see Kaplan, 2007), research has yet to explore the multiple non-salary compensation types (e.g., higher-quality health care and more job flexibility) women may receive instead of and/or along with higher salaries.

This study aims to take this more comprehensive approach to understanding compensation negotiations in women to build on social cognitive theory (e.g., Byars & Hackett, 1998; Lent et al., 1994; Thompson, Peterson, & Kray, 1995) and women's pay equity (e.g., Hartmann et al., 2014; Rubery & Grimshaw, 2014) literature, but also inspire interventions which help women financially empower themselves and each other. It specifically focuses on women in STEM careers because they are prone to "double jeopardy" during workplace conversations (i.e., facing backlash tied to being women and specific nuances of their careers) (see Cheryan et al., 2017; Hunt, 2010; Martin, 2015 for reviews). Essentially, because STEM fields tend to be male-dominated (see Richman et al., 2011) and inspire "queen bee syndrome" (i.e., senior women psychologically rejecting their female identities to succeed in maledominated STEM fields, then harming younger ones' chances at succeeding in those fields) (see Derks et al., 2010; Petrilla, 2015), women in STEM fields may have less access to others who would empower and honor their desire for better compensation than the average working woman. Those interventions would strive to close "wage gaps" (i.e., women being paid 67% to 90% of what men in the same job are paid) (see Brown & Patten, 2017), but could also help prevent nations from losing billions in economic growth each decade, facing more health inequalities, and filing much fewer patents (Ashcraft & Breitzman, 2012; Del Giudice, 2014; The Royal Society in Edinburg, 2012).

Therefore, drawing from psychology, communication, business, human relations, economics, organizational behavior, and related works, this dissertation further describes social cognitive theory perspectives relevant to salary negotiation and discuss factors which have previously influenced job salary negotiation in women. It also advances hypotheses on social cognitive predictors of financial and communicative outcomes for women in STEM careers who have asked for salary increases. Finally, it

poses a research question on compensation those women discuss other than and/or along with salary.

#### **CHAPTER ONE: SOCIAL COGNITIVE PERSPECTIVES**

Two main lines of social cognitive theory stemming from Bandura's (1986) original social cognitive theory are particularly relevant to the study of job salary negotiation.

First, expanding the idea that behavior is governed and shaped by multiple factors (e.g., environmental, situational, and behavioral capability factors) (Bandura, 1986), social cognitive career theory (see Lent et al., 1994; Lent et al., 2002) posits that people's career-related behaviors (e.g., cultivating work-related skills, revising work-related plans, and acquiring work-related support) are changeable rather than fixed and shaped by a mixture of internal and external factors. More recent works (e.g., Brown & Lent, 2017; Tatum et al., 2017) and studies informing them (e.g., Byars & Hackett, 1998) have called for its use in the study of career-related issues pertaining to social justice (e.g., women's career-related empowerment), making it ideal to integrate into research on salary negotiation in women.

Second, the social cognitive perspective on negotiation (see Thompson et al., 1995) posits that negotiators are active information processors and looks at the influence of many internal and external factors (e.g., social relationships and communication structures) on negotiation outcomes. That perspective could be used to understand salary negotiation processes and outcomes from female negotiators' points of view. For instance, the theory could be used to understand whether different environmental, behavioral capacity, and situational factors work with or against each other to improve women's financial and communicative salary negotiation outcomes. An expansion of that work and others on how women often value family-related benefits (e.g., extra job flexibility and family leave) as much as or more than higher salaries (see Estes & Glass, 1996; Waldfogel, 1998) would provide more comprehensive knowledge on compensation offered to and accepted by women in STEM.

Essentially, like other salary negotiation researchers (e.g., Stevens et al., 1993), one could incorporate aspects from these social cognitive perspectives to study communication-related predictors and various outcomes of women in STEM careers' compensation discussions.

# CHAPTER TWO: PREDICTORS OF JOB SALARY NEGOTIATION OUTCOMES IN STEM WOMEN

Consistent with social cognitive theories relevant to job salary negotiation (see Bandura, 1986; Lent et al., 2002; Thompson, Peterson, & Kray, 1995), this dissertation asserts three factors (prenegotiation encouragement to ask for a salary increase, pre-negotiation experience with asking for salary increase, and experiencing backlash pre-negotiation) interact to influence real-world negotiation outcomes for women in STEM careers. Possibilities for what those three-way interactions yield abound, but empirical consensus about which interaction best benefits women (especially those in STEM careers) who are negotiating their salaries in real-world contexts has not been reached. One possibility is women in STEM careers may face "triple jeopardy" effects if they do not receive that encouragement, do not have that previous experience, and have faced backlash pre-negotiation. On the other hand, because messages meant to encourage can backfire (see Fekete et al., 2007) and experience with negotiation can be insufficient in terms of improving negotiation performance (see Nadler et al., 2003), women in STEM who have not received pre-negotiation encouragement to ask for higher salaries, gained that prenegotiation experience, or faced backlash pre-negotiation may experience the most positive outcomes.

Further still, women in STEM careers who are encouraged to ask for salary increases before negotiating may fare the worst during real-life negotiations if they are inexperienced with negotiation (see Bazerman & Neale, 1992) and they are met with backlash (which can inspire "flight", "fawn", or "freeze" responses) (see Stanton, 2016), as they may be less prepared and able to keep negotiating. For instance, women in those negotiation conditions may feel open to asking for higher salaries, but fail to follow through due to insufficient knowledge of effective asking techniques (e.g., framing and justifying the salary increase) (see Bowles et al., 2007; Thorsteinson, 2011) and/or various psychological responses to negotiation-related stress (e.g., exiting the negotiation early, caving to requestees' demands too easily, and temporarily losing the ability to ask) (see Brooks & Schweitzer, 2011).

This dissertation aims to start generating that consensus by exploring relationships between the three social cognitive factors of interest collectively and four outcomes (i.e., salary amounts women in

STEM careers ask for, are willing to accept, and walk away with as well as their perceived likelihood of encouraging other women in STEM to ask for salary increases). Exploring those relationships will provide real world examples of (what influences) women in STEM careers' salary requests, best alternatives to negotiated agreements (BATNAs), and salary gains. Also, aside from expanding works on social contagion effects (see Christakis & Fowler, 2013) and women's empowerment (see Briegel & Zivkovic, 2008; Byars & Hackett, 1998; Malhotra & Schuler, 2005), that part of this research will provide a more holistic look at what actually makes women encourage others to "lean in" (see Sandburg, 2016). Exploring backlash as a predictive phenomenon which has actually happened rather than multiple dependent variables (see Amanatullah & Tinsley, 2013; Bowles & Babcock, 2013; Bowles et al., 2007) or requesters' anticipation and fear (see Amanatullah & Morris, 2010; Moss-Racusin, 2010) could also provide practical insights into what helps women overcome road blocks they have faced in their careers.

Essentially, for multiple practical and theoretical purposes, this study aims to test four hypotheses concerning salary increase requests in women in STEM careers:

- H1: There will be a three-way interaction, such that pre-negotiation encouragement to ask for a salary increase, pre-negotiation experience with asking for salary increase, and pre-negotiation experience with backlash will collectively predict amount of salary asked for.
- H2: There will be a three-way interaction, such that pre-negotiation encouragement to ask for a salary increase, pre-negotiation experience with asking for salary increase, and pre-negotiation experience with backlash will collectively predict amount of salary willing to accept.
- H3: There will be a three-way interaction, such that pre-negotiation encouragement to ask for a salary increase, pre-negotiation experience with asking for salary increase, and pre-negotiation experience with backlash will collectively predict amount of salary walked away with.
- H4: There will be a three-way interaction, such that pre-negotiation encouragement to ask for a salary increase, pre-negotiation experience with asking for salary increase, and pre-negotiation experience with backlash will collectively predict perceived likelihood of encouraging other women in STEM careers to ask for salary increases.

# CHAPTER THREE: NON-SALARY TYPES OF COMPENSATION STEM WOMEN DISCUSS

However, recognizing research on how women may prefer certain benefits as much as or more than higher salaries (see Estes & Glass, 1996; Waldfogel, 1998) and key developments like total rewards strategy (see Kaplan, 2007), this study aims to provide a more comprehensive view of women in STEM careers' compensation discussions. Specifically, to also provide insights on non-salary compensation STEM women discuss, this study poses a research question:

RQ1: Which non-salary compensation types are offered to and accepted by women in STEM careers?

#### **CHAPTER FOUR: METHODS**

#### **Participants and Procedures**

To increase the generalizability of the results and prevent restriction in range, this study recruited women in STEM (science, technology, engineering, and math) career fields from across the United States via an online crowdsourcing tool called Mechanical Turk (MTurk; see Landers & Behrend, 2015). Per a power analysis assuming an effect size of .10 (see Hollenbeck, 2017), at least 190 MTurk participants were needed to be more than 90% certain that sampling error would not prevent the achievement of statistical significance at the  $\alpha$  = .01 level with a two-tailed test. Thus, a total of 200 women in STEM careers and using MTurk were asked to complete an online survey about a time they could have asked for a higher salary while on the job market and antecedents as well as outcomes of those salary increase request episodes. The recruitment message described what the study was about using keywords (i.e., women, science, technology, engineering, math, discrimination, resilience, careers, job salary, compensation package, benefits, financial empowerment, hiring, new job, and job seeking) and noted the researcher's interest in using the data to create financial empowerment initiatives for women in STEM careers. Each participant was 18 years or older, living in the United States, and in a job she requested a higher salary for when applying. Participants were recruited within a one-day period, completed the survey within 10.95 minutes on average (*SD* = 6.84), and received \$1.50 for completing the survey.

Other than questions about the main variables of interest, participants were asked to complete several demographic questions. The first four questions concerned participants' ages, education levels, job sectors, and industries worked in. Consistent with research on MTurker demographics (see Berinsky et al., 2012; Ipeirotis, 2010), respondents were 29.78 years old on average (Range = 18-55, SD = 6.84). Most reported a bachelor's degree was their highest education attained (n = 118, 59.00%), but others reported their highest was high school (n = 10, 5.00%), a master's degree (n = 49, 24.50%), a doctoral degree (n = 5, 2.50%), an associate's degree (n = 13, 6.50%), an alternative career education program (n = 4, 2.00%), or an option not provided (n = 1, 0.50%). About two thirds (n = 126, 63.00%) were working in the private sector, but about a third (n = 73, 36.50%) were working in the public sector and one (0.50%)

was working in a sector not listed. Most worked in computers and internet (n = 64, 32.00%), medicine and health care (n = 26, 13.00%), manufacturing (n = 18, 9.00%), research and development (n = 13, 6.50%), biotechnology (n = 11, 5.50%), consulting (n = 11, 5.50%), or education and training (n = 11, 5.50%). Others worked in architecture and construction (n = 10, 5.00%), government administration and relations (n = 7, 3.50%), food and animal sciences (n = 5, 2.50%), aviation and aerospace (n = 4, 2.00%), counseling and mental health services (n = 3, 1.50%), natural resources and environmental services (n =3, 1.50%), defense and military (n = 1, 0.50%), or other fields not listed (n = 12, 6.00%).

The next three demographic questions concerned participants' union membership, years employed, and pre-request salaries. Most participants were in non-unionized jobs (n = 112, 56.60%), but others were in unionized jobs (n = 86, 43.00%) or did not provide their union membership (n = 2, 1.00%). Participants had also worked in their current STEM jobs for 7.66 years on average (SD = 6.20) and pre-request salaries between \$45,000 and \$55,000 on average (SD = \$25,000).

#### Measures

**Pre-Negotiation Encouragement to Ask for a Salary Increase.** Pre-negotiation encouragement to ask for a salary increase was measured with one close-ended question created for this study (i.e., "Before your chance to ask for a higher salary for your current job came up, did you receive encouragement to ask for a salary increase?") with two possible responses (0 = No and 1 = Yes). For informational purposes, one close-ended follow-up question on the sources participants received pre-opportunity encouragement from (i.e., "If you received encouragement to ask for a higher salary before requesting one for your current job, which source(s) did that encouragement come from?") created for this study based on sources of support research (e.g., Armstrong, 2013; Constable & Russell, 1986; High & Steuber, 2014) was asked. Participants answering that question chose one or more of the 15 options provided (i.e., 0 = A family member, 1 = A friend, 2 = A romantic partner, 3 = A coworker, 4 = A supervisor, 5 = A book, 6 = A television show, 7 = A website, 8 = Printed media other than a book, 9 = A trainer, 10 = A legal representative, 11 = A role model you do have direct contact with, 12 = A role model you do not have direct contact with (e.g., a famous writer, thought leader, or television celebrity), 13 = A marcher in an

activist event, and 14 =Other (please describe)).

**Pre-Negotiation Experience with Asking for Salary Increase.** Pre-negotiation experience with asking for a salary increase was measured with one close-ended question created for this study (i.e., "Before your chance to ask for a higher salary for your current job came up, did you have experience with asking for a salary increase?") with two possible responses (0 = No and 1 = Yes). For informational purposes, a close-ended follow-up question on the types of negotiation experience participants had pre-opportunity (i.e., "If you had experience with asking for a higher salary before requesting one for your current job, which type(s) of experience did you have?") inspired by research from Mazei and colleagues (2015) was asked. Participants answering that question could choose one or more of the 4 options provided (i.e., 0 = Prior job situations in which I asked for a higher salary, 1 = Classes or workshops on asking for a higher salary, 2 = Prior times I practiced asking for a higher salary with a partner, and 3 = Other) and were asked to elaborate on their responses via text boxes attached to each option.

**Pre-Negotiation Experience with Backlash.** Pre-negotiation experience with backlash was measured with one close-ended question created for this study (i.e., "At any point before you asked for a higher salary for your current job, did you experience backlash (i.e., negative responses from others concerning you being a woman working in a science, technology, engineering, and/or math career)?") with two possible responses (0 = No and 1 = Yes). That question was created using research on salary negotiation and backlash (e.g., Amanatullah & Tinsley, 2013; Bowles et al., 2007; Small et al., 2007) and challenges women in STEM careers face (e.g., Martin, 2015; New, 2016). For informational purposes, one close ended follow-up question on the types of backlash experienced (i.e., "If you experienced backlash (i.e., negative responses from workplace others concerning you being a woman working in a science, technology, engineering, and/or math career) before requesting a higher salary for your current job, which of the following type(s) of backlash did you experience?") created based on past backlash in self-promoting women studies (e.g., Amanatullah & Tinsley, 2013; Bowles et al., 2007; Moss-Racusin & Rudman, 2010) and other works on backlash against working women (Menza, 2017; Williams et al., 2014) as well as conflict (Gottman & Silver, 2015) was asked. Participants answering that question could

choose one or more of the 8 options provided (see Table 2) and elaborate on all options they selected via attached text boxes.

Amount of Salary Asked For, Willing to Accept, and Walked Away With. Three close-ended questions created for this study were used to measure the salary amounts women asked for (i.e., "When your chance to ask for a higher salary for your current job came up, what salary amount did you asked for?"), were willing to accept (i.e., "During your chance to ask for a higher salary for your current job, what salary amount were you were willing to accept if you did not get the amount you asked for?"), and walked away with (i.e., "When your chance to ask for a higher salary for your current job came up, what salary amount did you walk away from that situation with?"). For each question, participants chose one of 20 responses (0 = Less than \$30,000 and 19 = More than \$120,000). Responses on each measure were generally consistent, such that about \$45,000-\$50,000 was the average salary amount women asked for, were willing to accept, and walked away with. Responses ranged from less than \$30,000 to above \$120,000 with a median of \$35,000-\$40,000, but generally deviated by about \$25,000-\$30,000.

#### Perceived Likelihood of Encouraging Other Women in STEM Careers to Ask for Salary Increases.

Perceived likelihood of encouraging other women in STEM careers to ask for salary increases was measured using one close-ended question created for this study (i.e., "What is the likelihood of you encouraging other women in STEM (science, technology, engineering, and math) careers to ask for salary increases?") with possible responses ranging from 0 to 100 percent. For informational purposes, two open-ended questions asked participants to elaborate on their perceived likelihood responses (i.e., "What might influence your willingness to encourage other women to ask for salary increases?" and "If you were to interact with women thinking of asking for salary increases, would you say to (not) encourage them to ask for salary increases?"). Participants' mean and median responses hovered around 31-40%, but ranged from 0% to 100% and deviated by about 30%.

**Non-Salary Compensation Types Offered and Accepted.** Non-salary compensation offered and accepted were measured with two close-ended items (e.g., "During the salary discussion you described, were you offered any of the following compensation types instead of a salary increase?" and "During the

salary discussion you described, did you accept any of the following compensation types instead of a salary increase?"). Those items and the 20 options for each (0 = Long-term cash incentives, 1 = Equity (e.g., stock options or restricted stock), 2 = Better work task assignments, 3 = Signing bonus, 4 = Step or mid-year salary increase, 5 = Better health care (dental, vision, or medical) package, 6 = Better life insurance, 7 = Disability benefits, 8 = Retirement benefits (e.g., 401(k)), 9 = Food or nutrition (e.g., access to or subsidy for meals and vitamins), 10 = Child-care resources, 11 = Elder-care resources, 12 = Fitness benefits (e.g., access to or subsidy for gym membership), 13 = Sabbaticals, 14 = Better work hour flexibility, 15 = Legal assistance, 16 = Plan for promotion, 17 = Professional development training, 18 = Telecommuting, and 19 = Other (please describe)) were created for this study based on Kaplan's (2007) dimensions of total rewards. Participants were instructed to choose all types of non-salary compensation they were offered and accepted.

**Demographics.** Age, job sector, work industry, education level, union membership, and number of years employed were measured using one item each. Initial salary offered was measured using one close-ended question which asked participants to report the salary (in dollars) they were offered before asking for a salary increase (0 = Less than \$30,000 and 19 = More than \$120,000). All demographic measures are provided in the Appendix.

#### **CHAPTER FIVE: RESULTS**

## **Preliminary Analyses**

Exploratory analyses were run to understand the prevalence and variety of pre-negotiation (a) encouragement to ask for a higher salary, (b) experience with asking for a higher salary, and (c) experience with backlash for women in STEM careers. Frequency analyses revealed that, before negotiating salaries for their current STEM jobs, 63.30% (n = 126) of participants had received encouragement to ask for a higher salary, 32.50% (n = 65) had experience with asking for a higher salary, and 27.00% (n = 54) had faced backlash. Participants tended to receive pre-negotiation encouragement from personal connections (e.g., family members, friends, and romantic partners) and coworkers, but some received that encouragement from other professional connections, mass media, and other social connections (see Table 1). Participants' pre-negotiation experience with asking for a higher salary provided generally involved prior job situations in which they asked for a higher salary (n = 76, 38.00%), but some had attended classes or workshops on asking for a higher salary (n = 9, 4.50%), practiced asking for a higher salary with a partner (n = 13, 6.50%), and developed experience with salary negotiation through options not provided (e.g., talking about salary negotiation with a parent and hearing salary negotiation stories) (n = 10, 5.00%). Backlash participants faced before negotiating salaries for their current jobs mostly involved remarks on how participants would not be liked if they asked for more money (n = 53, 26.50%) and comments on how other similarly competent women did not ask for more money (n = 25, 12.50%). Participants who reported experience with backlash tended to report facing all those types of backlash, but some also faced comments on other topics (not) provided (e.g., remarks that the requester was ungrateful for her current job or receiving the same pay as other women) (see Table 2).

Though not the main focus of this study, correlations, main effects, and two-way interactions concerning the main variables of interest were also explored (see Tables 3-4). Those analyses involved three independent variables which were discrete (pre-negotiation encouragement to ask for a higher salary, pre-negotiation experience with asking for a higher salary, and pre-negotiation experience with backlash) and four dependent variables which were continuous (i.e., the salaries participants asked for,

were willing to accept, and walked away with as well as participants' perceived willingness to encourage other women in STEM careers to ask for higher salaries). All but six of the correlations were statistically insignificant (see Table 3). The six significant correlations (i.e., those between pre-negotiation experience with asking for a higher salary and the two other independent variables, salary amount asked for and the three other dependent variables, and salary amount willing to accept and salary amount walked away with) were somewhat to strongly positive. Interestingly, main effects of and two-way interactions between the three independent variables were statistically insignificant for all four dependent variables (see Table 4).

#### Substantive Analyses

Four simple linear regressions were run to address H1 to H4. In those regressions, the predictor variable was always the three-way interaction term for pre-negotiation encouragement to ask for a salary increase, experience with asking for salary increase, and experience with backlash. The outcome variables concerned three monetary amounts (salary amount asked for, willing to accept, and walked away with) as well as participants' perceived likelihood of encouraging other women in STEM careers to ask for salary increases. In all four regressions, the three-way interaction term did not significantly predict or account for any variance in the outcome (see Table 4). Essentially, participants did not necessarily ask for, have alternatives concerning, or walk away with higher salaries if they had completely "ideal" backgrounds (i.e., received pre-negotiation encouragement to ask for a salary increase, had pre-negotiation experience with asking for higher salaries, and had not faced backlash pre-negotiation). Also, participants with the same interaction between the three pre-negotiation variables did not perceive themselves significantly more likely to encourage other STEM women to ask for higher salaries.

Two frequency analyses were run to address RQ1. There were five top non-salary compensation types STEM women were offered and accepted: long-term cash incentives, signing bonuses, better work task assignments, better work hour flexibility, and plans for promotion (see Table 5). The bottom five non-salary compensation types offered and accepted were fitness benefits, telecommuting, sabbaticals, disability benefits, and food or nutrition (see Table 5). Most non-salary compensation types were accepted

less often than they were offered, but the reverse was true for five (i.e., disability benefits, child- and elder-care resources, fitness benefits, and legal assistance) (see Table 5). Also, a few participants were offered and/or accepted other unspecified types of non-salary compensation (see Table 5).

#### **CHAPTER SIX: DISCUSSION**

Several past works have encouraged women to ask for higher salaries (e.g., Babcock & Laschever, 2009; Miller & Miller, 2002; Sandburg, 2016), offered ways for women to gain experience with asking for higher salaries (e.g., Azong et al., 2017; Stevens et al., 1993), and discussed backlash women in STEM careers face (e.g., Cheryan et al., 2017; Hunt, 2010; Martin, 2015). Others have outlined examples of non-salary compensation for employees (see Estes & Glass, 1996; Waldfogel, 1998). Expanding and synthesizing the first three bodies of literature, this study aimed to uncover whether three pre-negotiation variables (encouragement to ask for a higher salary, experience with asking for a higher salary, and negotiation-related backlash) collectively predict salary increase request outcomes in women in STEM careers. Building on the last body of literature, this study aimed to uncover which non-salary type(s) of compensation women in STEM careers discuss during salary increase request episodes.

Specifically, applying social cognitive theory (see Byars & Hackett, 1998; Lent et al., 1994; Thompson, Peterson, & Kray, 1995), this study predicted those three pre-negotiation variables would interactively predict four outcomes in STEM women (i.e., salary amount asked for, willing to accept, and walked away with as well as perceived likelihood of encouraging other STEM women to ask for higher salaries). Also, expanding the total rewards approach to compensating employees (see Kaplan, 2007), this study asked about which non-salary compensation type(s) women in STEM careers are offered and accept. Simple linear regressions did not lend support to the study's four hypotheses (see Table 4), but follow-up frequency analyses revealed five main sources of pre-negotiation encouragement to ask for a higher salary, four main types of pre-negotiation experience with asking for a higher salary, and types of backlash in STEM women (see Preliminary Analyses and Tables 1-2). Additional frequency analyses suggest women in STEM are offered several five types of non-salary compensation the most and five others the least, but do not always accept those forms of compensation (see Table 5).

Though reasons the three-way interactions failed to significantly predict all four outcomes for STEM women, this dissertation advances some possibilities. First, variance in responses to two independent variable measures was limited, such that only about a third of participants had experience

with asking for higher salaries and only about a fourth had faced backlash pre-negotiation. Having a more balanced set of responses to those independent variables' measures or weighing participants' responses during all regression analyses may have uncovered support for the hypotheses. Second, instead of incorporating perspectives looking at individual- to cultural- or systemic-level predictors of organizational behavior (e.g., ecological systems theory or multilevel analysis) (Bronfenbrenner, 1979; Klein & Kozlowski, 2000), this study looked at just individual- and dyad-level predictors of salary negotiation outcomes in STEM women. Many negotiation outcomes are affected by group- to cultural- or systemic-level variables concerning workplace policies, sector trends, and city-, state-, and/or federal-level pay regulations (see Azong et al., 2017; Bernhardt et al., 2013; Brown et al., 2003), meaning the effects of negotiation-related experience, encouragement, and backlash may be have been quashed by a host of higher-level factors not measured. Third, pre-negotiation backlash and encouragement to ask for a higher salary may not be as impactful as mid-negotiation backlash and/or encouragement from the salary increase requestee. Essentially, STEM women attending to situational – not historical – cues on asking for higher salaries may experience and encourage others to pursue better salary-related outcomes.

Job characteristic theory scholars and those studying generational differences in work-related cognitions probably would not be surprised to learn about the top five non-salary compensation types women in STEM were offered and accepted (i.e., long-term cash incentives, signing bonuses, better work task assignments, better work hour flexibility, and plans for promotion). Specifically, those results may not be surprising because workers in general tend to value four main job characteristics (i.e., autonomy, task significance and variety, and feedback) (see Fried & Ferris, 1987) and millennials (i.e., the twenty- to thirty- year-olds mainly making up this study's sample) tend to value financial rewards more than older generations do (see Hansen & Leuty, 2012). Similar lines of thinking could also be used to explain some of the bottom non-salary compensation types women in STEM were offered and accepted (i.e., disability benefits, child- and elder-care resources, and legal assistance), as millennials are probably less likely to be disabled, have dependents (i.e., children and parents), and need legal assistance. However, given millennials' growing interest in work-life balance and wellness programs (see Cervantez, 2014; DuRrett,

2004), the presence of fitness benefits in the bottom five non-salary benefits women in STEM were offered and accepted seems odd. However, studying multiple samples of women in STEM (i.e., those with more versus less physically active careers) might reveal career-specific variance in fitness benefits offered versus accepted.

## **Implications**

This study has several key theoretical and practical implications. For instance, though its tests of social cognitive theory (see Byars & Hackett, 1998; Lent et al., 1994; Thompson, Peterson, & Kray, 1995) failed (such that the pre-negotiation variables' three-way interaction insignificantly predicted the four salary request outcomes examined), the study did support how compensation-related discussions should be approached from a total rewards lens (see Kaplan, 2007). Specifically, the study supports the idea that women are offered and accept multiple compensation types, including higher salaries and various (un)popular benefits which they may (not) walk away from the negotiating table with. Those results suggest women in STEM careers' expectations concerning the effects of all three pre-negotiation variables and exactly what is negotiable may need to be managed upfront, especially before salary negotiation programs start. Specifically, STEM women may need to be told their salary request outcomes will not necessarily be (a) improved via negotiation-related experience and encouragement or (b) harmed by past experiences with backlash. Also, facilitators may want to list, describe, and show ways to obtain different types of non-salary compensation in addition to – or in place of – higher salaries (see Table 5).

Other implications of this study concern two results from its preliminary analyses. First, researchers and practitioners can use results revealing multiple sources of encouragement (see Table 1) to ask for a higher salary to create network-based interventions and training for women in STEM careers. Some initiatives could use constructivism theory and/or dual-process theory of supportive communication to explore specific features of encouraging messages STEM women receive (see Bodie & Jones, 2012; Burleson, 2009; Delia, 1977), apply social network analysis to uncover trends on encouragement sources for women in STEM (see Scott, 1988), and/or expand on memorable messages in organizations works

(e.g., Stohl, 1986) to see which encouraging messages impact women in STEM the most. Second, researchers and practitioners could use this study's results on different examples of backlash women in STEM face (see Table 2) and apply inoculation theory (see Banas & Rains, 2010) to train women in STEM to anticipate yet handle and press past negotiation-related backlash. Understanding sources of the different types of backlash could also help those trainers create role-playing exercises for workshop participants, such that participants could practice confronting different professional contacts (e.g., bosses, hiring managers, and coworkers) with assertive rather than aggressive communication (see Connelly & Rotella, 1991; Kubany et al., 1992).

#### Future Directions and Limitations

This study had several measurement-, outcome-, and analysis-related strengths. For instance, measures for its independent and dependent variables were relatively straightforward in terms of their wording and response options. Moreover, though it failed to support all four hypotheses posed, this study had high statistical power and revealed demographic- as well as benefits-related information about the surveyed women in STEM. Studies building on this one and others (e.g., Bear & Babcock, 2017; Hong & Wijst, 2013; Stevens et al., 1993) could explore the effects of multiple encouragement as well as negotiation experience variables (e.g., timing, quantity, and quality of encouraging messages and training) on compensation discussion outcomes in STEM women. Research simultaneously exploring any variable(s) in that list and pre-negotiation backlash may uncover support for hypotheses based on those from this study or more complex predictor-outcome relationships (e.g., curvilinear relationships involving amount of encouragement and "diminishing return" relationships involving amount of training).

Future research could also expand on three interesting trends this study revealed. First, research could build on the strong correlations between this study's dependent variables (see Table 3) by connecting those variables through mediation, moderation, and/or larger path models. That new work could unveil whether salary amount willing to walk away with mediates or moderates the relationship between salary amount asked for and salary amount walked away with, but also link those variables with

other mediators or moderators (e.g., strength of request or requestee supportiveness) through more comprehensive path models. Second, because there was a positive relationship between pre-negotiation backlash and pre-negotiation experience with asking for a salary increase (see Table 3), additional research could study whether backlash in general or particular instances of it pushed women in STEM to gain more experience with negotiating their salaries. Learning more about why STEM women are seeking additional salary negotiation opportunities could help trainers, negotiation practice partners, and actual salary request targets create more supportive salary negotiation experiences for those women. Plus, future work could explore why the benefits women in STEM were offered did not always match those they accepted. In particular, gauging women in STEM careers' appraisals of different benefits across the lifespan or by generation could help human resources professionals and other salary increase requestees prepare for different types of compensation discussions they may take part in.

Several other limitations of this study are worth noting, but could be addressed via future research. For example, the results may have been skewed in one or more ways because the number of participants in unionized jobs (*n* = 86, 43.00%) greatly exceeded recent estimates of how many STEM workers are unionized (3.90% to 8.30%, with life, physical, and social science personnel most represented) (Department for Professional Employees, 2016) and most other participants were not in unions (*n* = 112, 56.60%). If researchers replicated this study using larger samples of women in each unionization category, they may find results which support the social cognitive theories tested (Byars & Hackett, 1998; Lent et al., 1994; Thompson, Peterson, & Kray, 1995) and provide information necessary to tailor negotiation-related training to women from each group. Also, the current study only explored one type of social support (encouragement) and one sampling methodology (Mechanical Turk). Future research could replicate this study using other types of support (e.g., advice) and sampling methodologies (e.g., random digit dialing and in-person organizational samples), such that other theories (e.g., Advice Response Theory and the Integrated Model of Advice Giving) (see Feng, 2009; MacGeorge et al., 2016) would be expanded on and possible issues associated with MTurk samples (e.g., higher social desirability or external validity not comparable to other sample types) (see Casler et al., 2013) would be addressed. Finally, researchers may want to distinguish between non-salary types which are standard versus nonstandard for companies and industries to provide. A study expanding the current one in that way may show other examples of discrimination not explored here (e.g., STEM women successfully negotiating for benefits they should – but did not – have per company or industry standards). APPENDIX

## **APPENDIX: DEMOGRAPHIC MEASURES**

# Age:

What is your age in years?

# Job Sector:

Which of the following best describes your company or organization?

0 = Public Sector

- 1 = Private Sector
- 2 =Other (please describe)

## **Union Status:**

Which of the following best describes your job?

0 =Unionized

1 =Non-Unionized

2 =Other (please describe)

# **Industry for Full Time Work:**

Which of the following industries do you work in?

| 0 = Architecture and Construction | $\beta$ = Consulting                         | 7 = Education and<br>Training                     | 11 = Medicine and Health<br>Care                        |
|-----------------------------------|--|---|---|
| <i>l</i> = Aviation and Aerospace | 4 = Computers and<br>Internet                | 8 = Food and Animal<br>Sciences                   | 12 = Natural Resources<br>and Environmental<br>Services |
| 2 = Biotechnology                 | 5 = Counseling and<br>Mental Health Services | 9 = Government<br>Administration and<br>Relations | 13 = Research and<br>Development                        |
|                                   | 6 = Defense and Military                     | 101 = Manufacturing                               | 14 = Other (please record)                              |

# **Education Level**

Which of the following represents your highest level of education completed?

| 0 = High School                                   | 2 = Master's Degree<br>(e.g., M.A. or M.S.)                  | 4 = Trade, Vocational,<br>or Apprenticeship<br>Program | 6 = Other (please specify) |
|---|--|--|----------------------------|
| <i>1</i> = Bachelor's Degree (e.g., B.A. or B.S.) | $\beta$ = Doctoral Degree<br>(e.g., Ph.D., J.D., or<br>M.D.) | 5 = Associate's Degree                                 |                            |

## Number of Years Employed

How many years have you been employed for?

# **Initial Salary Offered:**

What was the salary you were offered before making the salary increase request you described?

| 0 = Less than  \$30,000 | 5 = \$50,001-\$55,000 | 10 = \$75,001-\$80,000 | 15 = \$100,001 - \$105,000 |
|-------------------------|-----------------------|------------------------|----------------------------|
|-------------------------|-----------------------|------------------------|----------------------------|

| 1 = \$30,000-\$35,000 | 6 = \$55,001-\$60,000 | 11 = \$80,001-\$85,000  | 16 = \$105,001-\$110,000                        |
|-----------------------|-----------------------|-------------------------|---|
| 2 = \$35,001-\$40,000 | 7 = \$60,001-\$65,000 | 12 = \$85,001-\$90,000  | 17 = \$110,001-\$115,000                        |
| 3 = \$40,001-\$45,000 | 8 = \$65,001-\$70,000 | 13 = \$90,001-\$95,000  | 18 = \$115,001-\$120,000                        |
| 4 = \$45,001-\$50,000 | 9 = \$70,001-\$75,000 | 14 = \$95,001-\$100,000 | <i>19</i> = More than \$120,000 (please record) |

| Source                            | Number of Participants Who | Percent of Participants Who |
|-----------------------------------|----------------------------|-----------------------------|
|                                   | Received Pre-Negotiation   | Received Pre-Negotiation    |
|                                   | Encouragement from Source  | Encouragement from Source   |
| A family member                   | 74                         | 37.00                       |
| A friend                          | 70                         | 35.00                       |
| A romantic partner                | 39                         | 19.50                       |
| A coworker                        | 53                         | 26.50                       |
| A supervisor                      | 30                         | 15.00                       |
| A book                            | 12                         | 6.00                        |
| A television show                 | 9                          | 4.50                        |
| A website                         | 11                         | 5.50                        |
| Printed media other than a book   | 8                          | 4.00                        |
| A trainer                         | 35                         | 17.50                       |
| A legal representative            | 22                         | 11.00                       |
| A role model you do have direct   | 15                         | 7.50                        |
| contact with                      |                            |                             |
| A role model you do not have      | 8                          | 4.00                        |
| direct contact with (e.g., a      |                            |                             |
| famous writer, thought leader, or |                            |                             |
| television celebrity)             |                            |                             |
| A marcher in an activist event    | 8                          | 4.00                        |
| A subordinate                     | 12                         | 6.00                        |
| A professional association        | 12                         | 6.00                        |
| Other (please describe)           | 5                          | 2.50                        |

Table 1: Sources of Pre-Negotiation Encouragement for Women in STEM Careers

Note. N = 200. Participants were to select all sources they received pre-negotiation encouragement from.

| Backlash Form                     | Number of Participants Who | Percent of Participants Who |
|-----------------------------------|----------------------------|-----------------------------|
|                                   | Faced Backlash Form Pre-   | Faced Backlash Form Pre-    |
|                                   | Negotiation                | Negotiation                 |
| One or more remarks about         | 53                         | 26.50                       |
| people not liking me for wanting  |                            |                             |
| more money                        |                            |                             |
| One or more remarks about me      | 25                         | 12.50                       |
| not being competent enough at     |                            |                             |
| the job to deserve more money     |                            |                             |
| One or more remarks suggesting    | 20                         | 10.00                       |
| I would have to justify the extra |                            |                             |
| money more than the average       |                            |                             |
| male job candidate probably       |                            |                             |
| would                             |                            |                             |
| One or more remarks about my      | 20                         | 10.00                       |
| ability to handle balance the job |                            |                             |
| with parenting                    |                            |                             |
| One or more comments on how       | 15                         | 7.50                        |
| other similarly competent         |                            |                             |
| women did not ask for more        |                            |                             |
| money                             |                            |                             |
| One or more comments              | 21                         | 10.50                       |
| suggesting the job offer would    |                            |                             |
| be revoked if I kept asking for   |                            |                             |
| more money                        |                            |                             |
| One or more comments              | 20                         | 10.00                       |
| attempting to change the subject  |                            |                             |
| from me wanting more money        |                            |                             |
| One or more comments              | 17                         | 8.50                        |
| conveying disgust with my         |                            |                             |
| request for more money            |                            |                             |

Table 2: Forms of Pre-Negotiation Backlash Against Women in STEM Careers

Note. N = 200. Participants were to select all forms of backlash they faced pre-negotiation.

| Table 3 | : Correlatio | ns Between | Main | Independent | and De | pendent | Variables |
|---------|--------------|------------|------|-------------|--------|---------|-----------|
|         |              |            |      | 1           |        | 1       |           |

| Variable   | Pre-<br>negotiation<br>encouragement<br>to ask for a<br>salary increase | Pre-<br>negotiation<br>experience<br>with asking<br>for salary<br>increase | Pre-<br>negotiation<br>experience<br>with<br>backlash | Amount of<br>salary<br>asked for | Amount of<br>salary<br>willing to<br>accept | Amount of<br>salary<br>walked<br>away with | Perceived<br>likelihood<br>of<br>encouraging<br>other<br>women in<br>STEM<br>careers to |
|--|---|--|---|----------------------------------|---|--|---|
|  |   |  |   |                                  |   |  | ask for<br>salary<br>increases  |
| Pre-<br>negotiation<br>encouragement<br>to ask for a<br>salary increase  | 1   | .174*  | .112  | .043                             | 002   | .035                                       | .117  |
| Pre-<br>negotiation<br>experience<br>with asking for<br>salary increase  |   | 1  | .433**  | .033                             | .047  | .098                                       | 095   |
| Pre-<br>negotiation<br>experience<br>with backlash   |   |  | 1   | .041                             | .127  | .097                                       | 115   |
| Amount of<br>salary asked<br>for   |   |  |   | 1                                | .838**                                      | .870**                                     | .158**  |
| Amount of<br>salary willing<br>to accept   |   |  |   |                                  | 1   | .895**                                     | .094  |
| Amount of<br>salary walked<br>away with  |   |  |   | <u> </u>                         |   | 1  | .126  |
| Perceived<br>likelihood of<br>encouraging<br>other women<br>in STEM<br>careers to ask<br>for salary<br>increases |   |  |   |                                  |   |  | 1   |

*Note:* N = 199. \* = significant at the .05 level and \*\* = significant at the .001 level. Correlations involving independent variables are point biserial, and correlations only involving dependent variables are Pearson's product-moment. All measures were self-reports.

| Dependent      | Independent Variables | В      | SE B  | β    | $R^2$ |
|----------------|-----------------------|--------|-------|------|-------|
| Variables      |                       |        |       |      |       |
| Amount of      | Α                     | .495   | .818  | .043 | .002  |
| salary asked   | В                     | .380   | .835  | .033 | .001  |
| for            | С                     | .497   | .881  | .041 | .002  |
|                | A*B                   | .298   | .909  | .023 | .001  |
|                | B*C                   | .491   | 1.028 | .034 | .001  |
|                | A*C                   | .780   | .986  | .057 | .003  |
|                | A*B*C                 | .460   | 1.144 | .029 | .001  |
| Amount of      | Α                     | 022    | .808  | 002  | .000  |
| salary willing | В                     | .543   | .821  | .047 | .002  |
| to accept      | С                     | 1.542  | .869  | .127 | .016  |
|                | A*B                   | .082   | .894  | .007 | .000  |
|                | B*C                   | 1.493  | 1.009 | .106 | .011  |
|                | A*C                   | 1.545  | .964  | .115 | .013  |
|                | A*B*C                 | .733   | 1.123 | .047 | .002  |
| Amount of      | Α                     | .396   | .799  | .035 | .001  |
| salary walked  | В                     | 1.120  | .815  | .098 | .010  |
| away with      | С                     | 1.165  | .864  | .097 | .009  |
|                | A*B                   | .759   | .889  | .061 | .004  |
|                | B*C                   | 2.056  | 1.001 | .146 | .021  |
|                | A*C                   | 1.093  | .965  | .081 | .007  |
|                | A*B*C                 | 1.276  | 1.118 | .082 | .007  |
| Perceived      | Α                     | .806   | .487  | .117 | .014  |
| likelihood of  | В                     | 671    | .501  | 095  | .009  |
| encouraging    | С                     | 860    | .530  | 115  | .013  |
| other women    | A*B                   | 449    | .547  | 058  | .003  |
| in STEM        | B*C                   | -1.004 | .619  | 115  | .013  |
| careers to ask | A*C                   | 589    | .595  | 071  | .005  |
| for salary     | A*B*C                 | 795    | .689  | 082  | .007  |
| increases      |                       |        |       |      |       |

Table 4: Main Effects of Independent Variables on Four Dependent Variables

Notes. N = 194-197; \*\*\*p < .001, \*\*p < .01, \*p < .05, and \*p < .10. A = pre-negotiation encouragement to ask for a salary increase, B = pre-negotiation experience with asking for salary increase, and C = pre-negotiation experience with backlash. Results are from simple linear regressions, such that main effects and all interactions were entered as separate predictors of each dependent variable.

| Non-Salary               | Number of           | Percent of Participants | Number of           | Percent of Participants |
|--------------------------|---------------------|-------------------------|---------------------|-------------------------|
| Compensation Type        | Participants Who    | Who Were Offered        | Participants Who    | Who Accepted Non-       |
|                          | Were Offered Non-   | Non-Salary              | Accepted Non-Salary | Salary Compensation     |
|                          | Salary Compensation | Compensation Type       | Compensation Type   | Туре                    |
|                          | Туре                |                         |                     |                         |
| Long-term cash           | 49                  | 24.50                   | 30                  | 15.00                   |
| incentives               |                     |                         |                     |                         |
| Equity (e.g., stock      | 25                  | 12.50                   | 16                  | 8.00                    |
| options or restricted    |                     |                         |                     |                         |
| stock)                   |                     |                         |                     |                         |
| Better work task         | 41                  | 20.50                   | 30                  | 15.00                   |
| assignments              |                     |                         |                     |                         |
| Signing bonus            | 42                  | 21.00                   | 36                  | 18.00                   |
| Step or mid-year         | 25                  | 12.50                   | 23                  | 11.50                   |
| salary increase          |                     |                         |                     |                         |
| Better health care       | 21                  | 10.50                   | 17                  | 8.50                    |
| (dental, vision, or      |                     |                         |                     |                         |
| medical) package         |                     |                         |                     |                         |
| Better life insurance    | 26                  | 13.00                   | 21                  | 10.50                   |
| Disability benefits      | 7                   | 3.50                    | 10                  | 5.00                    |
| Retirement benefits      | 22                  | 11.00                   | 21                  | 10.50                   |
| (e.g., 401(k))           |                     |                         |                     |                         |
| Food or nutrition (e.g., | 14                  | 7.00                    | 8                   | 4.00                    |
| access to or subsidy     |                     |                         |                     |                         |
| for meals and            |                     |                         |                     |                         |
| vitamins)                |                     |                         |                     |                         |
| Child-care resources     | 21                  | 10.50                   | 25                  | 12.50                   |
| Elder-care resources     | 9                   | 4.50                    | 18                  | 9.00                    |
| Fitness benefits (e.g.,  | 14                  | 7.0                     | 15                  | 7.50                    |
| access to or subsidy     |                     |                         |                     |                         |
| for gym membership)      |                     |                         |                     |                         |
| Sabbaticals              | 13                  | 6.50                    | 12                  | 6.00                    |
| Better work hour         | 41                  | 20.50                   | 34                  | 17.00                   |
| flexibility              |                     |                         |                     |                         |
| Legal assistance         | 9                   | 4.50                    | 16                  | 8.00                    |
| Plan for promotion       | 36                  | 18.00                   | 29                  | 14.50                   |
| Professional             | 22                  | 11.00                   | 17                  | 8.50                    |
| development training     |                     |                         |                     |                         |
| Telecommuting            | 16                  | 8.00                    | 14                  | 7.00                    |
| Other (please            | 4                   | 2.00                    | 3                   | 1.50                    |
| describe)                |                     |                         |                     |                         |

# Table 5: Non-Salary Compensation Women in STEM Were Offered and Accepted

*Note:* N = 200. Both measures were self-reports, and participants selected all options relevant to them.

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