Social Science Research 41 (2012) 1469–1479

Contents lists available at SciVerse ScienceDirect

Social Science Research

journal homepage: www.elsevier.com/locate/ssresearch

The role of exchange and emotion on commitment: A study of teachers

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ARTICLE INFO

Article history:
Received 5 September 2011
Revised 15 May 2012
Accepted 31 May 2012
Available online 15 June 2012

Keywords:
Education
Teacher attrition
Social cohesion
The affect theory of social exchange

ABSTRACT

Recent experimental work in social exchange offers keen insight into factors that enhance commitment to individuals, groups, and relationships. In this article we explore the relevance of this work to school settings. Specifically, we use structural equation modeling and data from the 2004 Schools and Staffing Survey (SASS) to test whether the commitment-enhancing processes laid out in Lawler's affect theory of social exchange might reduce teacher turnover, an issue plaguing school districts across the country. Our results support such a model and demonstrate the importance of interdependence for fostering commitment among teachers, with interaction, affect, and cohesion as intervening factors.

1. Introduction

Schools today face a number of challenges, not the least of which is teacher turnover. While there is no shortage of new teachers graduating from colleges and universities, the schools that hire these graduates face difficulty retaining them. In fact, approximately 20% of all new teachers leave their positions in the first 3 years (NCTAF, 2007). This phenomenon is particularly prevalent in low-performing schools in urban settings, where 50% of teachers leave within the first 5 years (NCTAF, 2007). These trends negatively affect both students and schools, and are costly to districts, pulling funds from other priorities to recruit and train replacement teachers.

In this paper we draw on insight from recent experimental research in social psychology to both better understand this phenomenon and explore potential solutions. As recent work suggests (e.g., Correll et al., 2007; Taylor and Pillemer, 2009; Tinkler et al., 2007), the benefits of such bridging are twofold. Insight from social psychological theory originally developed in the laboratory not only adds to our understanding of social phenomena outside the laboratory, but the incorporation of social psychology in sociology's substantive areas increases social psychology's visibility and substantiates its importance for sociology in general. In other words, the relationship between experimental social psychology and specific areas (e.g. family, education, and religion) is symbiotic. By examining teacher turnover, an important problem in the sociology of education (Ingersoll, 2001, 2007), through the lens of the affect theory of social exchange (Lawler, 2001), we not only enhance our understanding of teacher attrition, but also illustrate the potential of experimental social psychology to those outside the tradition.

Education is not new terrain for the application of experimental research. Elizabeth Cohen, a Stanford sociologist and professor of education, devoted much of her career to using insights from the experimental research program on status characteristics and expectation states (Berger et al., 1972) to design interventions for teachers to use to ensure student success across racial, ethnic, and gender groups (e.g. Cohen, 1982, 1991; Cohen et al., 1988). Claude Steele's work on stereotype threat (e.g., Steele, 1997; Steele and Aronson, 1995) and the tremendous amount of research it motivated made a similar connection between laboratory research and schools settings. Despite these important examples, such synergistic efforts

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http://dx.doi.org/10.1016/j.ssresearch.2012.05.016

are rare. This is particularly disappointing given what experimental social psychology has to offer, including well-developed, cumulative research programs like Lawler and his colleagues' work on commitment to exchange relations (Lizardo, 2007).

Lawler's (2001) affect theory of social exchange builds on and extends previous work on relational cohesion theory (Lawler and Yoon, 1993, 1996, 1998; Lawler et al., 2000, 2006) as it explores when, and how, individuals become committed to particular relationships. In this paper we test whether the affect theory's model holds true in school settings. Specifically we ask whether the endogenous processes laid out in the theory (frequent interaction, positive emotion, and relational cohesion) is enhanced by interdependence and, if so, can it help to explain teachers' commitment behaviors (including professional investment and desire to stay at the school)? Our finding – that the model indeed holds for teachers in schools – not only addresses an important question and offers insight into reducing teach turnover, but reveals the natural links between the simplistic theoretical models of the laboratory and the "messier" world outside.

2. The problem of teacher turnover

Given the state of education in the United States and the significant number of teachers who leave after just a few years of teaching, it is pragmatically important to investigate both the causes of teacher attrition and strategies for retention.

Difficulty retaining new, energized teachers negatively affects student learning in two ways. Firstly, new teachers come to the profession with updated, research-based pedagogies intended to maximize student learning. However, many students are unable to profit from these innovative teaching methods because teachers leave the profession or particular schools so early in their careers (Carpenter, 2006; Kardos and Johnson, 2007). Secondly, when teacher turnover is unexpectedly high, large proportions of school and district resources drain away from classroom and student learning. A pilot study by The National Commission on Teaching and America's Future estimates that it costs approximately $13,000 to recruit, hire, and train a 'replacement teacher' for each one who leaves a medium sized district (Barnes et al., 2008). For a large and disproportionately poor district (e.g., Chicago Public Schools) the cost is close to $18,000 per teacher lost, for an total annual cost of $86 million to the district (Barnes et al., 2008, p. 3).

Research suggests that, contrary to media reports, teachers are unlikely to leave teaching or specific schools due to dissatisfaction with pay or for family reasons (e.g. pregnancy). In fact, the most frequently cited reasons for leaving include feelings of isolation, overwhelming expectations, and unsupportive work environments (Brooks et al., 2008; Ingersoll, 2001, 2007; Kardos and Johnson, 2007; NCTAF, 2007). In other words, the problem appears to be about the connections made (or lack thereof) at work and the workplace and not about the specific requirements of being an educator. Interestingly, Brooks et al. (2008, p. 45) find that most teachers cite alienation (a measure of "five sub-constructs: powerlessness, meaninglessness, normlessness, isolation, and estrangement") as the main problem with teaching. In light of these issues, professional development and teacher mentoring have been suggested as preferred approaches to increase teacher retention (NAEd, 2009). However, we believe that experimental social psychology would suggest another solution. Drawing on the affect theory of social exchange (Lawler, 2001), we expect that enhancing teachers' sense of connection to their colleagues and schools should also foster commitment to work settings. In the next section we briefly introduce the affect theory, including its insight on how such attachments are formed and why they should be beneficial in schools.

3. The affect theory of social exchange

While previous research in sociological social exchange centered on power processes and the distribution of resources, recent developments largely concentrate on integrative outcomes such as trust, affective ties, and commitment (Molm, 2006). The affect theory of social exchange (Lawler, 2001) is representative of this affective turn in social exchange. The theory, as well as Lawler and colleagues earlier relational cohesion theory (Lawler and Yoon, 1993, 1996, 1998; Lawler et al., 2000, 2006), moves beyond previous work in exchange on commitment (Cook and Emerson, 1978; Kollock, 1994) as it considers emotion's role generating loyalty to relations (Collins, 1989, 2004). More specifically, the affect theory offers insight into how exchange processes influence individuals' commitment to particular groups and relationships.

The affect theory is based in large part on earlier work on relational cohesion (Lawler and Yoon, 1993, 1996, 1998; Lawler et al., 2000) which focused on commitment in dyads (for a review see Thye et al., 2002). Relational cohesion theory (RCT) argues that frequent exchanges produce positive emotions that are attributed to the relation and ultimately enhance commitment. This sense of the relationship as the source of positive emotion encourages actors to not only remain in the relationship, but to invest in it. RCT argues that structural power, and specifically high total power and equal relative power, increase exchange frequency and set this endogenous process in motion (Lawler and Yoon, 1996). Relational cohesion's theoretical model is illustrated in Fig. 1.

Several scope conditions (Lawler and Yoon, 1996, p. 91) limit the contexts where the relational cohesion model might apply. First, the theory focuses on dyads, specifically dyads embedded in the context of a larger network structure that offers them alternative exchange partners yet limits them to one. Second, the expected benefits in these relations must be high enough to provide an incentive to choose to exchange in this relation over those with other potential exchange partners. Finally, in relational cohesion theory, exchanges must be negotiated. Later work (Lawler et al., 2000), focusing on productive exchange, demonstrated the endogenous process's utility in larger groups and with other types of exchange. This led to the development of the affect theory of social exchange.

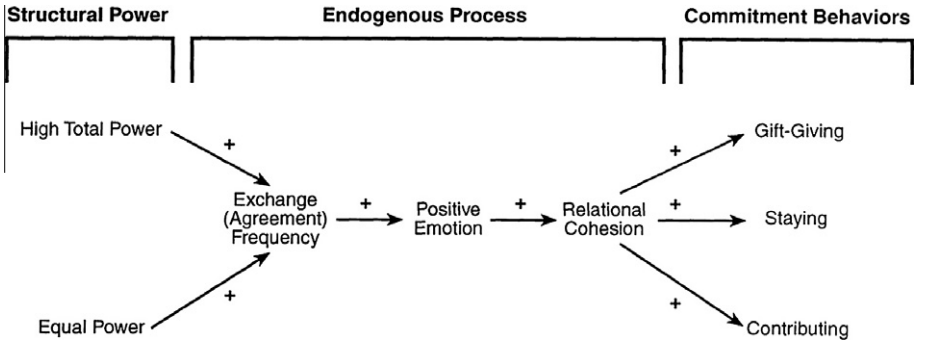

Fig. 1. Relational cohesion theoretical model (from Lawler and Yoon (1996)).

Although the affect theory draws many of its theoretical assumptions from this previous work, it relaxes relational cohesion theory's scope conditions. The affect theory can be applied to groups of any size, including dyads, as the focus is on the generation of person-to-group connections (Lawler et al., 2000). In addition, the exchange process can take a variety of forms, as long as there are repeated exchanges and actors make decisions about "whether to exchange, with whom, and [under] what terms" (Lawler, 2006, p. 250).

In outlining the affect theory, Lawler (2001, p. 327) argues the following: (1) social exchange produces global (e.g. ambiguous, generalized) emotion or feeling, (2) global emotions from exchange are reinforcing (or punishing) stimuli, (3) actors strive to reproduce positive emotions and avoid negative emotions that are experienced as a result of social exchange, (4) the global emotions produced by social exchange trigger cognitive efforts to understand the sources or causes of these feelings; more specific emotions, tied to social objects, result from this attribution process, and (5) in the case of joint tasks, like social exchange, actors interpret their feelings partly with reference to social relations. The last assumption, on the jointness of task, is where the affect theory moves beyond relational cohesion theory and is central to our argument on teachers' commitment to schools. Unlike relational cohesion theory, which focused on power dynamics, the affect theory of social exchange takes interdependence as the most important factor in actors' propensity to both engage in exchanges and to attribute positive emotions to the exchange relation. Lawler (2001) argues that the more interdependent an exchange process is, the more likely that positive emotion generated in exchange will be attributed to the relationship and the greater individuals' commitment to that relation will be.

With teachers citing alienation and isolation as key factors in deciding to leave the profession, we see group bonds as an important component of teachers' decisions and the affect theory of social exchange as a fruitful approach to explore in education. Unlike workers in many other sectors, teachers possess a significant amount of autonomy because, with their skill sets, they are able to switch schools relatively easily and are not as dependent on a particular position as other workers may be. Access to these alternatives not only increases teachers' relative power (Emerson, 1972; Thibaut and Kelley, 1959), but also underscores the importance of commitment to a particular school for a teacher's decision to remain there (Cook and Emerson, 1978). Furthermore, we expect that schools have the potential to generate strong bonds because the structure of work in them may be viewed as productive exchange (Lawler, 2001).

Productive exchange occurs when people "coordinate their behaviors to produce a joint private good" (Lawler, 2006, p. 254). In the school setting, teachers mutually and jointly work toward the goal of educating the students. Although there is good reason to dispute that this goal is not a "private good" per se, successful education of students in a school does benefit from coordinated behaviors of teachers (Goddard et al., 2007). While not all schools work in such a fashion, when teachers coordinate efforts or combine resources to create a joint good they engage in a highly interdependent type of exchange shown to foster commitment (Lawler et al., 2000, 2006). These parallels are similar to those in a study by Taylor and Pillemer (2009) that tests the influence of affective attachment on turnover among nurses in nursing homes.

4. Hypotheses

The affect theory's causal sequence begins with social structure.[1] Specifically, the level of interdependence – or jointness of task – individuals have in exchange increases how frequently they will interact. When individuals are required to work together to reach a goal, they have to interact with each other. We believe that one way that interdependence is manifested in educational settings is through joint control of school decisions (e.g. setting standards and policies, hiring) and that this interdependence will be related to increased interaction among staff (exchange frequency).

H1. Teachers' increased involvement in joint decisions (interdependence) leads to increased frequency of staff interaction.

[1] With what we see as a natural fit between theory and setting, we draw our hypotheses directly from the affect theory and the causal ordering for our modeling strategy – as shown in Fig. 1 – are derived directly from Lawler and Yoon (1996).

In the affect theory, successful joint activity results in positive emotion. The two types of affect studied in previous research are interest and satisfaction. Both generally increase with exchange frequency. Although we reconceive of interest as enthusiasm for one's work, we expect similar increases in positive emotion among teachers and hypothesize:

H2. Frequent staff interaction will increase both teacher enthusiasm for their work and satisfaction with their position.

When teachers have control over the school and interact frequently, they likely see their work as interdependent and the positive emotion they feel should be attributed to belonging to a group, increasing cohesion (a sense of unity).

H3. Increased levels of positive emotion (enthusiasm and satisfaction) lead to increased cohesion.

Finally, research suggests that the cohesion formed in this endogenous process creates a durable commitment to the relation. In other words, people who experience frequent interaction, positive emotion, and this sense of cohesion will engage in behaviors signaling their commitment to the group. For teachers, such commitment behaviors might include staying in the school or professional investment (e.g. additional training, classroom observations). Therefore, we hypothesize that:

H4. Teachers' sense of cohesion will increase both teachers' intentions to remain in their school the following year and their professional investment efforts.

5. Data and methods

We test the above hypotheses, and gauge the relevance of the affect theory in this particular empirical setting, with data from the 2004 Schools and Staffing Survey (SASS). The SASS is a nationally representative survey of districts, schools, teachers, principals, and librarians collected every 4 years. However, for the analyses here, we restrict our sample to teachers. With prior research suggesting that secondary school teachers may independently cohere around their departments rather than their schools (Bidwell and Yasumoto, 1999), we further restrict our sample to elementary school teachers (n = 11,620[2]) in 1820 schools. Descriptive statistics of our sample are show in Table 1.

5.1. Scale construction

We create scale index measures related to the affect theory's concepts by factoring individual items from the SASS. In some cases, there are a variety of items that associate with a concept (e.g., *cohesion*) while in other cases there are only two items that were theoretically plausible to use from the SASS to match to a concept (e.g., *interaction*). We use factor analysis techniques to assess whether the items should be used to construct a scale. For this, we use a minimum Eigenvalue cut-point of 1.000 criteria with no rotation. When this criterion is reached for each theoretical measure, we use the component matrix factor loading score of each item to weight their score in constructing the scale (Bryant and Yarnold, 1995). This method allows us to utilize the maximum number of available items in the SASS without jeopardizing the validity of the scale. For items that are more highly correlated with the factor, they are weighted more heavily than the ones that are more loosely correlated with the factor.

A number of the scales do have alphas a bit lower than is commonly used for latent variable construction. However, we do not suggest that the items used in our constructs contribute to the affect theory concepts in a latent nature. We treat these constructs as additive scales (indices) where the different items contribute to the different dimensions of the construct. As discussed above, we also weight the constructions by the factor loadings, so the items that are less influential on the scale associated with the affect theory concepts are given less influence on the scale construction. This scale construction differs from assumption of latent variable construction that all of the measures reflect the underlying construct. With this type of additive scale construction, lower alphas are more likely, but do not induce error as it would in latent variable construction processes that use the correlation matrices as the foundation of the construction (Bollen, 1989). Given that the SASS was not designed to measure underlying theoretical concepts from affect theory, this type of scale construction is preferred over latent variable construction (Bollen, 1989; Bryant and Yarnold, 1995).

5.2. Exogenous independent variable

In affect theory, *interdependence* refers to the shared control and responsibility that a dyad or group has over a particular outcome. If a group is interdependent, their individual contributions to success or failure at a joint task are difficult to disentangle, leading to a sense of "nonseparability" (Lawler, 2001, p. 327). Our measure of *interdependence* captures the sense of shared influence over the school in which they work, gauging the jointness of task teachers feel in school decisions. To measure this teachers were asked, "How much actual influence do you think teachers have over school policy AT THIS SCHOOL in each of the following areas?" We created a factor scale out of the following seven items: "setting performance standards for students at this school," "establishing curriculum," "determining the content of in-service professional development pro-

[2] Reported observations are rounded to the nearest 10 digit, in accordance with NCES restricted data rules.

Table 1
Descriptive statistics.

	Range		Mean	(s.d.)	%
	Minimum	Maximum			
Explanatory variables					
Interdependence	4.72	18.89	10.44	(2.87)	–
Interaction	2.38	9.51	7.46	(1.59)	–
Enthusiasm	2.00	8.00	6.08	(1.53)	–
Satisfaction	3.46	13.83	10.65	(2.08)	–
Cohesion Perceptions	2.24	8.95	7.13	(1.29)	–
Investment in Professional Development	.00	7.00	3.89	(1.65)	–
Commitment and staying	2.80	11.77	9.15	(1.86)	–
Control variables: Teacher characteristics					
Gender (female)	–	–	–	–	74
Race (white, non-Hispanic)	–	–	–	–	86
Years teaching in school	0	42	9.20	(8.34)	–
Control variables: School characteristics					
Urban school	–	–	–	–	18
Title 1 school	–	–	–	–	45
% Of teachers who are racial/ethnic minorities	0	100	9.99	(18.69)	–
Total teachers	1	196	30.81	(13.93)	–

N = 11,620 individuals, N = 1,800 schools (in accordance with NCES restricted data rules, observations rounded to the nearest 10).

grams," "evaluating teachers," "hiring new full-time teachers," "setting discipline policies," and "deciding how the school budget will be spent." Responses ranged from "no control" to "a great deal of control" on a four point scale (α = 0.80).

5.3. Endogenous independent variables

5.3.1. Interaction

Interaction among staff members is also measured by a scale of teachers' level of agreement with two items: "the principal lets the teachers know what is expected of them" and "there is a great deal of cooperative effort among the staff members." Possible responses ranged from "strongly agree" to "strongly disagree" on a four point scale and were recoded so that higher scores reflect increased agreement (α = 0.59, factor component loading score = 0.828).[3]

5.3.2. Enthusiasm and satisfaction

Lawler and his colleagues treat enthusiasm (i.e., interest) and satisfaction as theoretically distinct concepts. While both are pleasant, according to Lawler (2001, p. 327) enthusiasm would "entail higher activation of arousal" than satisfaction. Because the SASS was not designed as a psychological assessment of any distinction between enthusiasm and satisfaction, we analyzed relevant question items using factor analysis and found two distinct concepts embedded in the questionnaire – one which we see as related to enthusiasm for teaching and the other related to personal satisfaction with teaching. Both are gauged with similar agreement measures (a four point scale ranging from "strongly agree" to "strongly disagree").

Enthusiasm is a factor scale of teachers' level of agreement with the following three items: "I don't seem to have as much enthusiasm now as I did when I began teaching," "I think about staying home from school because I'm just too tired to go," and "I sometimes feel it is a waste of time to try to do my best as a teacher" (α = 0.69, factor loadings of 0.835, 0.789, 0.724 respectively). These are reverse coded, as each question actually reflects lack of enthusiasm.

Satisfaction is a factor scale of agreement with three items: "In this school, staff members are recognized for a job well done," "I am given the support I need to teach students with special needs," and "I like the way things are run at this school" (α = 0.67, factor loadings of 0.820, 0.688, 0.821 respectively). Although the inclusion of the "I am given the support I need to teach students with special needs" item may seem out of place to some readers, there is much educational literature to suggest that one of the top reasons teachers cite for dissatisfaction is the absence of proper classroom support for students with special needs (NAEd, 2008). Since this lack of support is known to increase teacher burnout, we believe that the opposite effect would be likely: that teachers who have support for their special needs students would be less likely to burn-out, or, more likely to be satisfied with their teaching at their school.

5.3.3. Cohesion

Lawler's affect theory of social exchange conceives of cohesion as a sense that one is part of a "unifying or cohesive unit" (Lawler et al., 2000, p. 628). We measure cohesion with a factor scale of teachers' agreement with the following five items that assess their perception of cohesion within their school: "my principal enforces school rules for student conduct and

[3] Although the Cronbach alpha score is quite low, this construct is a good example of how index constructions allow for items to be included that capture multiple dimensions of the construct. In this instance, Interaction is capturing the principal–teacher interactions and the teacher–teacher cooperative interactions. Although more indicators would be ideal, these two SASS items do provide breadth to the statistical construction of the Interaction scale.

backs me up when I need it," "the school administration's behavior toward the staff is supportive and encouraging," "the principal knows what kind of school he/she wants and has communicated it to the staff," "most of my colleagues share my beliefs and values about what the central mission of the school should be," "rules for student behavior are consistently enforced by teachers in this school, even for students who are not in their classes," and "the teachers at this school like being here; I would describe us as a satisfied group."[4] Like the other measures, possible answers ranged on a four point scale from strongly agree to strongly disagree ($\alpha = 0.81$, factor loadings of 0.789, 0.737, 0.791, 0.634, 0.641, 0.714 respectively).

We include both peer- and leader-based items in the cohesion measure because the education literature shows that principal–teacher interactions are key to a school staff working together and being cohesive in their values and beliefs about teaching (Brewer, 1993; Leithwood et al., 1998; Price, 2012; Wahlstrom and Louis, 2008). Theoretically, teachers are more likely to perceive cohesiveness among school staff if the principal supports them and directly communicates the school values and beliefs to the teachers. This explicitness of the principal with their teachers is shown to correlate with teachers identifying with the group identity of the school, or cohesion. Education literature also shows that clear principal expectations to teacher groups reduce conflict between individual teachers and increases group identity and cohesion (Brewer, 1993; Leithwood et al., 1998; Wahlstrom and Louis, 2008).

5.4. Dependent variables

5.4.1. Professional investment and commitment to staying

Cohesion leads to commitment behaviors, further enhancing the relation (Lawler and Yoon, 1996). In our model we focus on both current behavior (professional investment) and expectations for future behavior (commitment to staying at a particular school).

Professional investment of time and money to one's own teaching is a tangible signal of commitment. We create an additive scale assessing the direct participation of the following professional development activities in the past 12 months: "observational visits to other schools," "activities specific to and concentrating on the content of the subject/s you teach," "focus on reading instruction," "engage in individual or collaborative research on a topic of interest to you professionally," "participate in regularly scheduled collaboration with other teachers on issues of instruction," "observe, or be observed by, other teachers in your classroom," and "act as a coach or mentor to other teachers or staff in your school, or receive coaching or mentoring" ($\alpha = 0.54$).[5] With seven possible activities, the scale ranged from 0 to 7.

While professional investment shows intellectual commitment to teaching, the perception of teachers' *commitment to staying* measures the emotional and mental commitment to their particular school. We create a factor scale of teacher commitment to staying *at this school* behavior by reverse coding agreement with the following two statements: "The stress and disappointments involved in teaching at this school aren't really worth it" and "I think about transferring to another school" ($\alpha = 0.59$, each weighted by the factor score = 0.845).[6]

5.5. Additional exogenous variable

In order to account for the positive effects of a teacher's sense of control over their own teaching in the model (e.g., positive emotion, commitment), we include a classroom control measure as an exogenous variable. To gauge classroom control, or how much involvement teachers had in non-joint decision making, teachers were asked "How much actual control do you have IN YOUR CLASSROOM at this school over the following areas of your planning and teaching?" For each item, responses varied on a four point scale from "no control" to a "great deal of control." We included their responses to the following six items to measure classroom control: "selecting textbooks and other instructional materials," "selecting content, topics, and skills to be taught," "selecting teaching techniques," "evaluating and grading students," "disciplining students," and "determining the amount of homework to be assigned" ($\alpha = 0.75$).

5.6. Control variables

We also statistically control for both school and teacher qualities. Teacher's gender, race, and years of teaching are appropriately designated on each variable of interest in the model. School qualities of urbanicity, Title I status, the percentage of

[4] Although a variant of the term "satisfaction" appears in the statement, perhaps suggesting this measure would fit better in the satisfaction scale, we focus instead on the "group" component of the statement which we believe is more salient.

[5] This is the only instance where varimax rotation was used in the factor construction. We did analyze the factor using only the substantive/topical professional learning, but the Cronbach's alpha and the factor loading did not benefit from that narrowing of the definition. Since some of these indicators are correlated with teaching tenure, we allow all of the items to remain in the factor to gain the broadest number of professional investment opportunities available to teachers.

[6] There were two other items available in SASS regarding commitment, "If I could get a higher paying job, I'd leave education as soon as possible" and "If you could go back to your college days and start over again, would you become a teacher or not," but as a Reviewer noted, the affect theory of social exchange is tied much more to the personal relationship mechanism and so a commitment outcome needs to express the exclusivity of the commitment to the specific relationship, in this case, the school commitment.

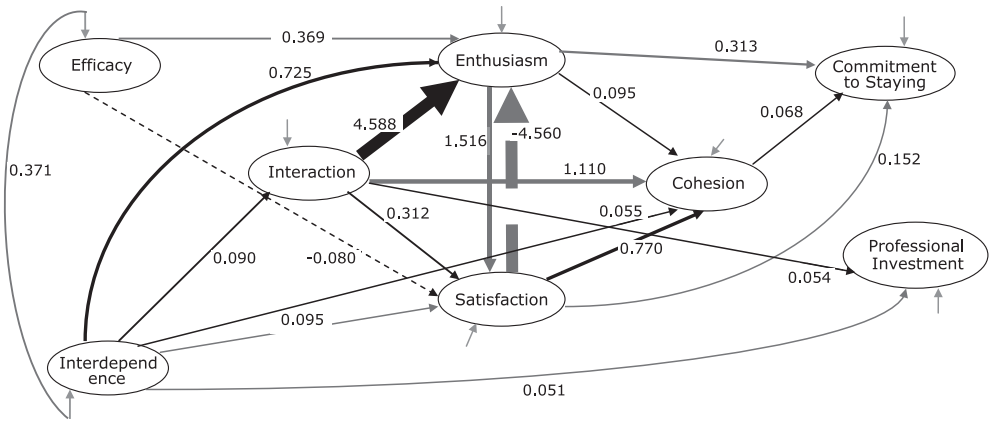

Fig. 2. Best fitting model of relational cohesion on commitment to teaching (standardized coefficients reported). All significant effects displayed, control variables not shown, strength of association by line thickness, negative effects as dashed.

minority teachers in the school, and total size of the teacher faculty are also appropriated to the variables in the model.[7] Controlling for these characteristics isolates the effects of the variables of interest, independent from the context of the school or teacher characteristics which might otherwise bias the results.

5.7. Structural equation modeling

To fully capture the structural endogenity of the affect theory model we employ linear structural equation modeling (SEM) techniques using AMOS software. SEM not only allows us to test the model as a whole process of a series of nested dependent variables, modeling direct and indirect effects, with multiple dependent variables (Bollen, 1989), but is also ideally suited to test indexed variable constructs, such as the ones in our models (Bollen, 1989). SEM also allows for the interpretation of the multicollinear causal effects of endogenous variables in the model (Bollen, 1989) so we can decouple the two sub-dimensions of positive affect (satisfaction and enthusiasm) in order to find a more reliable effect of each measure on our commitment outcomes.[8]

We evaluate the fit between our hypothesized models and the observed data using statistical indices of chi-square, Comparative Fit Indices (CFIs), Root Mean Square Error of Approximation (RMSEA), and Akaike Information Criterion (AIC). In SEM, no significant difference between the model's observed and expected covariance structures, as measured by the chi-square statistic, is desired. However, large datasets typically do not achieve this criterion, as the chi-square statistic is highly prone to Type II error (Garson, 2009). With large datasets, other significant fit statistics can be used if the chi-square discounts the model fit (Garson, 2009). The benchmark for the other fit statistics are CFI scores of 0.90 or higher, RMSEA scores of 0.05 or lower, and decreasing AIC measures, given the change in the degrees of freedom.[9] We use these fit statistics to select the most parsimonious model.

We began with the saturated model where all the possible direct and indirect effects were assumed. The unconditional, direct effects conceptual model with controls fit poorly on its own (X^2 = 7663.47867, p = .000; AIC = 7845.47; CFI = 0.796; RMSEA = 0.122). The saturated conceptual model fits better (X^2 = 2655.03, p = .000; AIC = 2867.93, CFI = 0.930; RMSEA = 0.088). However, we trimmed theoretically irrelevant indirect effects from the model when they dropped below the critical ratio threshold of 1.96. We balanced the trimmed models with the change in fit statistics to achieve the best fitting model. The presented model reached its optimum mode within four trimming iterations. The most efficient model, with standardized coefficients is shown in Fig. 2 (X^2 = 2683.93, p = .000; AIC = 2853.93; CFI = 0.930; RMSEA = 0.067).

6. Results

6.1. Testing our model

The SEM model shown in Fig. 2 suggests that interdependence does modestly affect teacher commitment levels. Further, the exogenous effect of interdependence act as hypothesized in H1. The amount of interdependence in school decisions

[7] Traditional grade structure and proportion of ELL and special education students in a school were orginally used as controls. These controls proved extraneous to the model fit. Critical ratio statistics for these varaibles were near zero. These variables were determined to be unnecessary to include in the final set of model iterations.

[8] In a previous presentation Price (2009), the first author presented a series of stepwise OLS regressions similar to Lawler and Yoon's models. Although a few portions of the model were robust to the statistical model choice, some variables proved sensitive to model specification. The SEM results presented here more accurately estimate the beta coefficients and standard errors than the previous OLS findings presented.

[9] RMSEA scores below 0.08 are commonly reported as good enough fit.

trickles down and positively affects the frequency of teacher interaction; for every one standard deviation increase in interdependence, interactions increase by 0.09 of a standard deviation.

Frequent interactions among teachers increase positive emotions, supporting H2. Satisfaction increases at about one point on a 12 point scale for every standard deviation increase in interaction frequency. Enthusiasm is heavily influenced by interaction frequency, increasing 4.588 standard deviations for every one standard deviation increase in interaction frequency.

Teachers appear to attribute some of their positive emotions to belonging to the group, supporting H3. Satisfaction is quite influential on cohesion perceptions. Enthusiasm effects are smaller, but still significant and positive. The effects of enthusiasm and satisfaction strongly and directly affect commitment to stay independent of cohesion.

Finally, there is modest support for H4. Teachers' sense of cohesion positively affects their commitment levels. One standard deviation rise in cohesion increases commitment to stay by one-third of one point (3%) on a ten point scale. The effect of cohesion on professional investment is completely explained by school interdependence.

Altogether, there appears to be substantial support for affect theory among teachers in this natural setting.

6.2. Other effects

Several of the endogenous variables have direct effects on other variables in the model beyond the expected linearly hypothesized process. After emotions are accounted for, interaction frequency persists in directly increasing perceptions of cohesion and levels of professional investment. Moreover, enthusiasm and satisfaction directly increase levels of commitment despite the mediating role of cohesion. In other words, interaction works directly to influence cohesion – and not simply through its propensity to increase the experience of positive emotion. Interacting as a group allows members to feel united and encourages them to engage in professional investment. This finding is likely showing the positive effects on the individual teachers from intentional school-wide professional development activities. This may also be related to more recent work by Lawler and colleagues on the micro-social order that emerges from interaction (e.g., Lawler et al., 2008; Thye et al., 2011).

There is also a strong cyclical influence between enthusiasm and satisfaction, albeit in opposite directions. Enthusiasm positively influences satisfaction levels, but greater satisfaction levels reduce enthusiasm levels at a three times faster rate. Without this feedback loop accounted, our results could be severely underspecified and misrepresented. This suggests that those with lower levels of affective arousal may be satisfied, but this state may suppress their motivation to feel enthused. This finding confirms that enthusiasm is a higher state of arousal than satisfaction. Higher satisfaction levels indicate less enthusiastic responses, or, to state it another way, when teachers cognitively "settle" for satisfaction responses, they suppress the likelihood of enthusiastic arousal. Yet, when aroused with enthusiasm, there is a positive boost to their overall satisfaction with teaching.

Several exogenous variables continue to directly affect the dependent variables despite the fit of the affect theory and its associated variables. Both interdependence and classroom efficacy directly increase enthusiasm and satisfaction levels of teachers. Classroom efficacy negatively correlates with satisfaction even though it is not related to frequency of interaction. Interdependence also directly affects professional investment levels, despite mediation from multiple other components.

Most of the control variables significantly influence the affective process (table available by request). For individuals, gender plays the most consistent role in the process. Female teachers provide a notable upward bias (β's ranging from 0.113 to 0.207) on interaction, cohesion, commitment, and professional development interest, although they are lower on perceptions of classroom control and interdependence. White, non-Hispanic teachers report overall higher exogenous power levels ($\beta = 0.178$), emotion levels ($\beta = 0.523$), and commitment levels ($\beta = 0.113$). Number of years teaching decreases affect levels ($\beta = -0.065$).

Of the school level controls, only urbanicity is worthy of note. Urban schools report lower levels of exogenous power ($\beta = -0.304$), lower affect ($\beta = -0.661$), and lower levels of cohesion ($\beta = -0.089$). Urban schools do report higher levels of interaction ($\beta = 0.059$) and professional investment ($\beta = 0.116$) as compared to suburban and rural schools. Interestingly, the proportion of minority teachers in the school does little to influence the level of interaction or positive or negative affect among teachers. For example, it would take an increase of nearly 20% minority teachers in the school to decrease emotion levels by a fraction (0.095) of a standard deviation.

7. Discussion

The results strongly support the affect theory of social exchange's relevance to school settings and teacher attrition. Teachers who work in schools where they share school-level decisions demonstrate more commitment to their schools. Similar to Taylor and Pillemer's research on turnover among nurses (2009), we find that much of this effect works through the affect theory's endogenous processes. Increased interdependence in the school is positively related to interaction among teachers and this interaction corresponds with positive affect, including enthusiasm and satisfaction. This affect is positively related to a sense of cohesion which correlates with commitment.

However, it is important to note that the theoretical model does not fit as cleanly as it has in Lawler and his colleagues' experimental research. We find a number of additional interesting, yet largely intuitive, relationships. First, both interdepen-

dence and classroom control are directly related to teachers' levels of enthusiasm in their positions. Greater autonomy in a classroom, and more involvement in school-wide decisions, likely make teachers feel more involved and interested in their positions and stimulate a desire to try new interesting pedagogies and practices (Zuckerman et al., 1978). Such educator involvement can also have an effect on students, as research suggests that students who perceive their instructors as autonomous experience more interest and enjoyment, as well as less anxiety, in classes (Black and Deci, 2000). Involvement in school decisions also directly influences teachers' satisfaction and professional investment. The link between interdependence and satisfaction is expected given research on procedural justice that suggests that involvement in a process (Thibaut and Walker, 1975, 1978) that represents parties' interests (Leventhal et al., 1980) and promotes within-group relations (Lind and Tyler, 1988) increases satisfaction with both the procedure and outcome (Tyler et al., 1997). Similarly, previous research (Bolger and Somech, 2004) suggests that efficacy also increases commitment and organizational citizenship behaviors.

The heavy influence of interaction on enthusiasm suggests that enthusiasm is more prone to external stimuli than satisfaction levels. It is reasonable to think that satisfaction in work may be influenced by an internal psychological state-of-mind, such as teacher self-efficacy (Bolger and Somech, 2004; Chan et al., 2008) whereas enthusiasm for one's job is much more likely to be influenced by the surrounding ethos of the work environment. The uneven and opposite effects of enthusiasm on satisfaction and satisfaction on enthusiasm may indicate a cognitive dissonance effect (Festinger and Carlsmith, 1959) where people who report higher levels of satisfaction are psychologically compensating for lower than expected levels of enthusiasm or, alternatively, it could be that these teachers who are satisfied are more likely to have resigned themselves to a less-enthusiastic and lower-pressure standpoint (Jensen, 2003). That interest increases satisfaction is unsurprising, as is the direct effect between interaction and cohesion (Friedkin, 2004).

The final unexpected, yet logical, results were the direct effects of enthusiasm and satisfaction on teachers' commitment to stay. It is reasonable that both interest in and satisfaction with a position makes one more likely to remain in that position net of any relational attachment predicted by the affect theory's endogenous process (Van Dick et al., 2004).

The effects of the control variables align with other research. Females tend to report higher levels job commitment overall (Abbott, 1993). The reasoning behind this finding is still unclear. Theories on the influence of relative perception (women comparing themselves to other women) and lower economic expectations have been purported, but not verified. Given the sample for this study, the 'female' effect may also be due to a homophily effect since elementary schools are heavily staffed by females. This homophily effect is also a likely explanation for the positive white, non-Hispanic effect on relational cohesion and affect processes. Homophily is a characteristic associated with stronger relationship formation and maintenance (McPherson et al., 2001). Moreover, the mostly negative proportion minority teachers in the school and urbanicity effects are additive since the vast majority of minority teachers teach in urban schools (Lippman et al., 1996).

In sum, while the final model articulates a more complex relationship between power, commitment, and the intervening variables than the affect theory's model, we see the extraneous effects as complementary rather than discouraging. The affect theory's processes are certainly at work in school settings. Interdependence increases interaction, which raises positive affect that amplifies cohesion. This cohesion increases commitment. Although the process appears more robust with female teachers, the endogenous process appears to work for teachers across the spectrum (e.g., new and old, urban and rural, etc.).

8. Conclusion

Educators, policy makers, and researchers are well aware of the issues facing schools as a result of teacher turnover (NCTAF, 2007). However, effective strategies for dealing with the problem have largely eluded these groups. While professional development and mentoring, approaches recommended by the National Academy of Education (NAEd, 2009) will likely help educators feel more equipped for the struggles they encounter in the classroom and more invested in their careers, our results suggest other tactics that might be valuable. Given that the issues cited by teachers themselves relate to a sense of alienation and isolation, and the results here suggest the importance of interdependence and interaction in teachers' commitment, more should be done to enhance interaction among teachers. Specifically, schools could ensure that teachers have power in a way that increases interaction and interdependence, like the school-level decisions that we include in our model (e.g., setting performance standards for students at this school, establishing curriculum, determining the content of in-service professional development programs, evaluating teachers, hiring new full-time teachers, setting discipline policies, and deciding how the school budget will be spent). Engaging in this type of interaction should naturally increase positive affect and cohesion, leading to both staying and professional investment, therefore reducing teacher turnover.

Of course, such practices should not be seen as a panacea. The research presented here has a number of limitations. First, life outside the laboratory is a bit messier than what experiments show. Although the endogenous process of the affect theory is nested in our model, we see many more direct effects between variables that demonstrate a complex array of influences teacher commitment. In addition, we did not always have access to measures that fit the affect theory's concepts as well as we would have liked. This could contribute to the extraneous relationships in the model and threaten our ability to directly test the theory using this data. Future research should work to find a data set with measures that are a better fit to the concepts central to the theory. Second, these are only cross-sectional data. It would be ideal to test these processes over several time points in order to test the causal nature of the theoretical assumptions. SASS data is a longitudinal survey conducted every 4 years, but it does not use a panel sample of teachers. Moreover, the question wording for the survey that followed the 2004 data we used changed the answer categories of commitment by omitting the "neutral" middle option and so

the differences would not be comparable. We also only tested teachers in elementary school settings. With settings varying greatly between elementary and secondary school, these findings might not translate cleanly to more advanced school settings. Despite these limitations, we hope that future research in education considers the affect theory and its mechanisms as it explores effective strategies to reduce teacher turnover or enhance other important outcomes.

Realizing the mutuality of the relationship between the laboratory and the "real" world, we also argue that there is insight here for future research in the affect theory and the related relational cohesion theory. While Lawler and Yoon (1996) found no gender effects in early RCT research, discussion of gender has been notably absent in related research since then.[10] Given our finding that gender plays a dominant role in the commitment-generating process, it is worth considering gender more pointedly in future experimental research. With the basis of the theory centering on affect and relations, it could be that women are more susceptible to the central mechanisms of the theories. This could be exacerbated in a women-dominated context like elementary education, where most of the interactions and relationships are with teachers of the same sex (Maccoby, 2002; Reis et al., 1985). It is important for future research on micro-social orders to consider more pointedly both gender and organizational context.

We began this article by describing the problem of teacher turnover and the dynamic relationship between experimental social psychology and life outside the laboratory. To forge connections between the two we explored the relevance of Lawler's affect theory (2001) to a significant problem in education, teacher turnover. Our results not only suggest that great insight can emerge from experimental social psychology, but also that relatively simply school-level policies and norms may hold great promise for enhancing teacher retention.

Acknowledgments

The authors would like to thank both the editors and reviewers for their helpful comments and suggestions on previous drafts.

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