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Rewards at Work:
Using QCA to identify combinations and thresholds of rewards to keep high-achieving teachers in urban schools

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M.A., University of Mississippi, 2010

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An abstract of a thesis submitted to the Faculty of the
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Abstract

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By Jennifer Nelson

Teacher turnover, especially as it affects urban, high-poverty, minority public schools, is a heavily researched topic. This study specifically explores why some top teachers decide to stay in their urban workplaces, while others leave their school or the profession altogether. What particular combinations of intrinsic and extrinsic rewards from teaching influence whether high-achieving teachers will choose to stay, leave, or transfer from their job? Through surveys and interviews with 42 high-achieving teachers in one southern, urban school district, 21 of them having stayed in the district for three or more years, and 21 having left the district, mixed data analysis methods are used. Principle Components Factor analysis and Qualitative Comparative Analysis (QCA) confirm the expected combinations: that teachers who enjoy high levels of both intrinsic and extrinsic rewards tend to stay; those who lack both rewards tend to leave; and those with a mixture of the two have mixed commitment outcomes. Two key findings include the apparent weakness of collegiality in promoting work commitment, as well as the extremely deleterious effect that absence of all extrinsic rewards has on commitment decisions. This finding casts doubt on prior work satisfaction studies, which have suggested that salary and extrinsic rewards have a weaker affect on workers' expressed work satisfaction than intrinsic rewards. QCA results and textual analysis of open interview responses enable the creation of a general teacher typology among high-achieving teachers, such that four major teacher types are identified and described: the Intrinsic Committers, the Extrinsic Acceptors, the Satisfied Stayers, and the Ready Leavers.

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Introduction to the Problem

"How come all my teachers are, like, five years older than me?" asked Natalie, a straight-A student in the urban, public school district in which this study takes place. Her insight is astute: in her school, which serves economically disadvantaged and minority students, about a third of the teachers are in their twenties, and few teachers can be found who have been there more than five consecutive years. The veteran teachers are a select group. She is noticing a trend that this paper also investigates: teachers don't seem to stick around in schools like hers.

The "revolving door" in teaching is typically attributed to four main factors occurring at the organizational, school-, or district-level: salary structure, lack of administrative support, internal conflict, and lack of teacher input into school policies (Ingersoll 2001). Operating as mechanisms of teacher sorting between schools, these organizational characteristics tend disproportionately to impact the most skilled and talented teachers, steering their workplace choices away from urban, high-poverty, high minority schools (Bacolod 2007; Ferguson and Ladd 1996).

The current overemphasis on teachers as both the root of problem and saviors from the problem can be seen in the back-to-back reforms of the No Child Left Behind Act and the Race to the Top Grants – one mandating teacher credentialing, the other focusing on teacher evaluation policies. However, reform movements like these tend to gloss over the meso- level of analysis; what needs to be explored is the interaction between the worker-actor and his/her workplace structure in forming or mediating teachers' own motivations, commitment, and

performance, as these are neither trumped by the macro-level, nor wholly produced at the micro-level. As such, this study asks, How do the intrinsic and extrinsic rewards from teaching influence whether high-achieving teachers will choose to stay, leave, or transfer from their job in a particular school district, in a particular school?

Because this study aims to capture rewards as they are experienced at the meso- level, between macro and micro, a combination of quantitative and qualitative methods is used. Qualitative Comparative Analysis (QCA) gives the researcher the ability to identify configurations of rewards, rather than merely quantities or scales of rewards, that lead to likely outcomes. QCA is a useful method for finding out under what conditions an outcome can and does happen; these conditions are more often a combination rather than a dominant, singular condition. As opposed to regression analyses, QCA analyses allow room for "messiness:" that is, a single case can experience a contradictory combination of rewards and drawbacks, just as a single person can occupy contradictory class positions. As Wright (1982, 112) points out, few people fit the "pure" case, and in reality, one status characteristic or one reward can offset another. Therefore, QCA is well-suited to a study that aims to capture the intricacies of work life as experienced at the meso-level. To supplement QCA, the open-response portion of the interviews offers a confirmatory layer to the data analysis.

This study draws upon interviews with forty-two "high achieving" secondary school teachers in one southern, public, urban school district. Half of the sample has stayed teaching in the district, while the other half has left the district, either for a

suburban or private school, or for a non-teaching job. Interviews elicit teachers' reasons for longevity or transferring by mixing open responses with survey-style work satisfaction scales to measure intrinsic and extrinsic rewards. Results show that in general, stayers cite work satisfaction through both high intrinsic and extrinsic rewards, and thus their expressed work commitment is high. Leavers, on the other hand, cite high extrinsic rewards as a pull factor towards work outside the classroom, but to a greater degree, teachers who remain in the classroom cite low intrinsic rewards as a push factor toward teaching outside the district.

This paper begins with a review of literature on teacher turnover, and situates this multi-method study within it. The following section details conceptualization and operationalization of measures, which leads into the methods section. Finally, an analysis of findings and their theoretical and policy implications will illuminate how choosing to stay or leave a district with high turnover does depend on micro-level motivations, but that rewards, being work environment-dependent, produce work commitment (or lack thereof) as a group-level, rather than individual-level, process.

Theoretical Framework

This study aims to find out if there are school-level factors that contribute to teacher attrition. When sociologists analyze issues of teacher work commitment, they do so from a point of view that treats the school as a particular workplace. This study falls under "between school" stratification studies, rather than "within school"

stratification studies, because the premise is that single workplace will tend to attract and keep a predominate "type" of teacher.

Through interviewing teachers, I find out what the school environment is like, such that I ultimately see what type of urban, public school best holds onto high- achieving teachers. Specifically, the school-level factors of workplace environment, such as principal's administrative style, working conditions, autonomy, and collegiality, are of interest. A theory that addresses these school characteristics will provide the most fitting explanation of what leads good teachers to stay in their school. (What a “good” teacher is, what I call a “high-achieving” teacher, will be elaborated in the methods section.) Guided by theory and literature, teacher interviews have been designed to pick out these school characteristics.

Studies of teacher turnover, and studies of schools more broadly, generally lack the inclusion or development of theoretical explanations for workforce instability (Vanderstraeten 2004). One commonality major studies share is the focus on particular workplace environments being more prone to having high rates of teacher turnover than others. For Stinebrickner et al. (2005) and Hanushek et al. (2004), minority schools and urban schools are identified as most vulnerable to high teacher turnover. Indeed, when teachers decide to leave their work, it is for structural reasons more than any personal reason: Ingersoll (1999) showed that dissatisfaction with distressed or negative organizational conditions within a school accounts for about a third of teacher turnover, over and above most personal reasons related to teacher traits and lifestyle preferences.

Therefore, selecting a theory that links teacher's work to their workplace environment, such as Bidwell et al.'s (1997) Theory of Workplace Control, is fitting for this study of teachers' staying and leaving behaviors. Using Simmel's classical Theory of Social Types as a basis, Bidwell et al.'s theory links the development and dependence of occupational types on occupational environment. The theory is apt for extension into other occupational types as well, beyond education.

Theory of Social Types

Simmel's theory of social types holds that social actors in environments with routine constraints and opportunities will display a central tendency of behavior, "habitual ways of thinking and acting that reinforce one another and become self-sustaining" (Bidwell et al. 1997). These behaviors become so engrained that the actor's conduct can be predicted trans-situationally. In his original text on social types, Simmel (1971) describes five such social types: the Stranger, the Poor, the Miser, the Adventurer, and the Nobility. In each description, the type in question is defined to a large degree by those with whom he interacts, and where the interaction takes place. So it is for teachers: there is not only one type of teacher, but many types, and the teacher's behaviors (actions) and thinking (attitudes) at work will be, to a large extent, formed and reinforced by the opportunities and constraints in the workplace. The theory of social types is also consistent with social structure and personality theory, but I will stick with the former in this study due to its relatability with typologyzing.

Theory of Workplace Control: Professional Strain from Limited Autonomy and Collegiality

As characterized by the bulk of the teaching as labor literature, teachers are in a perennial struggle to acquire and maintain professionalism. Autonomy and collegiality are key tools or dimensions of this professionalism by which teachers recover their sense of themselves as professionals. In the following two sections, I review literature that links autonomy and collegiality to particular work sites.

Autonomy

In organizational theory, the broader theory from which the Theory of Workplace Control is derived, workers undergo a "professionalization project" (DiMaggio and Powell 1991) ripe with normative pressures, in which they seek to define their work and establish occupational autonomy. But this project is "rarely achieved with complete success," resulting instead in a bounded profession (DiMaggio and Powell 1991, 77). According to the literature reviewed by Harris and Rutledge (2010), the more rigid a school's administrative procedures, the more constrained teachers' professional identities will be. The Theory of Workplace Control addresses structural factors such as school size, school's organizational type, parental involvement, and degree of bureaucracy, which together impinge upon teacher autonomy and collegiality.

Under increasing controls and rational pressure, teachers have found coping mechanisms that enhance access to professionalism. Studies in this vein focus first on teachers' autonomy, and second, on teachers' collegiality with their peers.

Organizational theorists Chubb and Moe (1990) equate autonomy with professionalism: "True professionalism requires not simply that teachers be experts in their subject matters and the methodology of learning, but also that they have the autonomy to exercise discretion in applying it to the infinitely varying individuals and circumstances that make up their jobs" (1990, 526). They argue that bureaucratized public schools are ineffective for many reasons, two of them being that no set of rules can transform bad teachers into good ones via rewards and sanctions, and that teachers know better than administrators how to serve students and parents. Essentially, in their occupational roles, teachers have a unique position, power, and insight, but are not allowed to use it. The rule-binding bureaucracy is most severe in "problem-plagued schools," where internal conflict is prone to happen, teacher talent is drained away, and principals have to over-manage and are over-taxed (1990:529).

Collegiality

Teachers value their autonomy highly as an indicator of their professional status, but they also rely on peers (other teachers) to create and sustain a teacher culture that reinforces the self as a professional. Such a teacher culture provides a teacher with expertise, derived from fellow colleagues, which he/she then applies towards his/her own professional enrichment and towards exercising autonomy and discretion within his/her own classroom. By deferring to colleagues, it is assumed that teachers have the latitude to work with trusted peers rather than strictly under the directives of superiors. This culture is also distinct to the

occupational group, and gives rise to a professional identity. Occupational groups, just as other social organizations, have what Collins (1979) calls "consciousness communities:" that is, a common culture, the capacity for strong interpersonal commitments, consensus, or asymmetrical power relations (i.e., horizontal and vertical relationships between teachers in the group).

According to the network perspective, the broader theoretical approach informing the study of workplace collegiality, teachers who affiliate with their colleagues are drawing upon a form of social capital that promotes the adoption of innovative teaching techniques and instruments. Through their shared consciousness communities, teachers in more developed internal structures of school communities "are more able to gain access to each others' expertise informally and are more likely to respond to social pressure to implement an innovation," regardless of their own beliefs about the innovation (Frank et al. 2004, 148; Penuel et al. 2009). Interestingly, this community is composed of many subgroups, within one or two of which a teacher has his/her strongest ties; teachers tend to be close to only a select few teachers in their school who share their beliefs about teaching (Bidwell and Yasumoto 1997 in Penuel et al. 2009).

Conversely, by the organizational perspective, collegiality among teachers can also produce what Bidwell and Yasumoto (1999) call "collegial focus" or collegial social control. Simply put, the concept of collegial focus predicts that a teacher's peer group at work influences the methods he/she adopts in his/her own work (a form of exercised autonomy). The way faculty are socially organized in a given school provides structural and normative pressures that determine overriding

forms of accepted types of instruction, especially within departmental and/or pedagogical cultures – specific sub-groupings within the faculty body. Sadly for teachers, peer groups in bureaucratically-controlled lines of work such as teaching are less important than in occupation-controlled lines of work, like medicine. The latter features a strong cohort culture, community, and "self- sanctioning mechanisms," rather than procedures and rules, to maintain order (Evans 2010, 201). Also, not all collegiality is positive: while some collegiality is truly collaborative, some is "balkanised" (or hostile), some is "contrived" (enforced by administrators), and some is "satellite" (dominated by a larger teacher group) (Hargreaves 1997a in Jacobs and Harvey 2010).

Not only does collegial participation bring about social capital to teachers and social control to the school, it is also a source of social support and engagement, which Berkman and Kawachi (2000) identify as a pathway to attaining a sense of value, attachment, and belonging within one's vocational tasks. According to the authors, occupational roles also provide an opportunity for coherent and consistent identity formation, which has positive effects on the worker's health outcomes (be they physical or psychological). It is expected that realizing such benefits would work against teacher turnover.

As key dimensions of professionalism, autonomy and collegiality form the foundation for building occupational identities. As compared to other, perhaps lesser workplace rewards of salary, principal relationship, student attachment, and the physical workplace environment, autonomy and collegiality are uniquely tied to workplace norms and culture at a supra-individual level. Autonomy and collegiality

are of particular import in the study of institution-level patterns in teacher turnover, for these rewards especially reflect the degrees of institutionalized norms and culture that operate either to constrain or to promote professionalized teacher identities.

Literature Review

First, I review literature on teacher turnover, tracing its history, related reforms, and its connection to popular beliefs about the importance of teacher quality to student achievement. Second, I review literature to establish definitions for intrinsic and extrinsic rewards in the workplace, as well as to identify methods for their measurement.

Teacher Turnover

Teacher turnover is a heavily researched topic. Though it is an occupation historically characterized by high turnover rates (Ingersoll 1999; Dworkin 1980), these turnover rates are not evenly distributed across schools. Rather, they are stratified: teachers in high-poverty schools are twice as likely to move schools than their counterparts in low-poverty schools (Provasnik and Dorfman 2005). Thus, as a stratified phenomenon, teacher choices to stay cease to be mere personal choices, but are rather producers of system-level inequities in education.

Teacher turnover is associated with negative student achievement (Barnes et al. 2007), especially in low-socioeconomic (SES) schools where "teacher effects are much larger …than in high SES schools" (Nye et al. 2004 in Lu et al., 2007). In other

words, this student demographic is most sensitive to and most affected by quality teaching, and furthermore, teacher turnover itself, regardless of the quality of the teacher, poses an obstacle for raising student achievement. Therefore, understanding what motivates a quality teacher to leave or to stay is valuable information on the political and policy level, as well as on the level of educational equity and achievement.

Aside from leaving one's teaching post, the alternate explanation for teacher sorting is that differences in types of teachers across schools is due to a "selection effect" of types of teachers that go to each school in the first place. Whereas this position is tenable, the fact of predictably low teacher commitment in particular schools suggests that is it something about the school itself that fails to keep good teachers. The two overarching theoretical paradigms applicable to studies in sociology of work, of stayers versus leavers, pertain to whether the worker finds satisfaction via conforming himself to the work environment, or via seeking a work environment that suits him. These perspectives are well embodied by Bidwell's application of the theory of occupational control, versus more micro-social theories of preemptive teacher sorting by agents' preference for student types homogeneous with themselves.

State and federal mandates that have tried to prevent homogeneous teacher sorting – such as the Singleton Ratio of 1969, which as a desegregation strategy required that each school maintain a black-to-white teaching staff ratio that reflected the overall district average of black and white teachers within 5 percentage points – have failed to provide equity in teacher quality between

schools; rather, such mandates exacerbate between- school differences between black and white schools (Dworkin 1987). Arguably, the modern-day equivalent effort to mitigate inequity in educational achievement is the No Child Left Behind (NCLB) Act. The Act, passed in 2001, is legislation aimed at increasing student achievement outcomes at Title I (low-income) schools by way of mandating standardized performance expectations for schools and measuring performance with annual testing. NCLB also makes provisions to support Title I schools, including increased funding and higher teacher qualification requirements. However, the Schools and Staffing Survey administered after the implementation of NCLB showed a continuing 10 percent lag in highly qualified teachers being employed in urban schools and schools with a greater percentage of minority students, as compared to non-urban, non-minority schools (Lu et al. 2007).

While there is data that provides reasons for why some qualified teachers find their workplaces dissatisfactory and therefore leave or move, there is a paucity of qualitative data on the topic. Quantitative studies have shown some trends in motivations for attrition: Highly qualified teachers in high-poverty school settings are twice as likely to transfer than their counterparts who taught in school settings that were optimal in terms of high student achievement, low heterogeneity (between teacher and student), and close proximity to teacher's homes (NCES Teacher Follow-up Survey 2005). Interestingly, the location of school also contributes to teacher sorting: Bacolod (2007) found significant variation in teacher quality indicators across urban, rural, and suburban school locations. In addition, Hanushek et al. (2004) and Stinebrickner et al. (2005) found that student

racial composition significantly predicts transfers and exits from the profession, while salary is only modestly connected to transfers and student achievement is only connected to exits. In traditional school districts (i.e., those without a large proportion of charter schools), teacher salaries are set at the district level, but salaries do vary even between neighboring districts.

Bacolod (2007) also found that salary only played an important role in occupational entry into teaching, but not in determining where teachers end up choosing to teach. Rather, working conditions play a more important role in teacher placement decisions. Working conditions, drawing upon Bacolod, include the racial and socioeconomic composition of the student body. Bidwell et al. (1997) take working conditions a step further and posit that workplace environments lead to the formation of distinctive teacher types, with corresponding working attitudes and conduct. Following the theory of workplace control, teacher types depend mostly on the size of faculty and the nature of parent-teacher and administrator-teacher power relations. Therefore these power relations, and the extent to which teachers have autonomy within or in spite of them, are included in working conditions.

Teacher quality indicators are addressed by Ferguson and Ladd (1996), who studied student achievement across 127 school districts in Alabama. The foundational concept of a quality teacher is one who improves the academic achievement gains of one's students relatively more than a less-quality teacher does. Ferguson and Ladd found that students' reading and math test scores were higher with more "skilled" teachers, as measured by their teachers' own test scores and

master's degrees; teachers' years of experience had no effect on student gains. Likewise, Ehrenberg and Brewer (1994) examine the extent to which teacher characteristics influence student outcomes, and find that students' gain scores are higher when the teacher graduated from a selective college or university.

Rewards in the Workplace: Conceptualization, Operationalization, Hypotheses

Four major concepts that follow from the literature are delineated: working conditions, intrinsic rewards, extrinsic rewards, and work commitment. The first three are independent variables; the fourth is the dependent variable. In this study, the independent variables of rewards are multi-faceted. Three dimensions of intrinsic rewards are measured (student attachment, solidarity with colleagues, workable relationship with principal), and three dimensions of extrinsic rewards are measured (satisfaction with working conditions, positive autonomy from leadership, salary). The dependent variable, or outcome, is work commitment, which has three dimensions: work investment, work attendance, and desire to remain in or defect from the profession (operationalized dichotomously by either staying at the school site, or leaving to another school district or a non-teaching job). After concepts and variable measures are established, the hypotheses are formally stated.

Working Conditions

In this study, working conditions is comprised of three dimensions, each derived from prior literature: the student type dimension, the school type

dimension, and the resource dimension. Bacolod (2007) conceptualizes working conditions for teachers as the types and quantities of students a teacher is assigned. As such, she operationalizes working conditions with a composite of percent students in poverty, percent minority students, and class size. Hanushek et al. (2004) parallels this operational definition with his concept of heterogeneity between teacher and student, defined along racial, economic, and academic lines. The authors find that more heterogeneity between teacher and student is linked with teacher turnover. Working conditions are also inclusive of satisfaction with non-pecuniary benefits on-the-job (Bacolod 2007; Stinebrickner et al. 2005), such as non-instructional (i.e., planning) time and access to resources. Gordon (2010) reiterates these "crucial" dimensions of working conditions, drawing upon Johnson's (1990) seven types of school policies and the isolation of these five particular dimensions by the Center for Teacher Quality study: time, facilities and resources, empowerment, leadership, and professional development. Except for Professional Development (PD), which is implemented district-wide, these elements of particular school climates can vary widely within a single school district. Formal organizational practices of mentoring of new teachers is a form of PD that varies by school, and is therefore included as an measure of working conditions.

Student demographics in the district under study are homogeneous across its 20 secondary schools, nine of which are included in this study's sample. Therefore, applying the measures of district average student characteristics, including percent Black, percent subsidized lunch, and average test scores, is an unnecessary step; working conditions would be constant between respondents. Also, using planning

time as an indicator of working conditions infringes upon my conceptualization of autonomy, and better serves as a dimension of autonomy. Therefore, I will apply (1) Bacolod's measure of school size; (2) Hanushek's measure of heterogeneity between teacher and student along racial lines (homogeneous if teacher is Black, heterogeneous if teacher is White); and (3) Bacolod, Stinebrickner et al., and Gordon's measure of access to resources as my operationalizations of working conditions in this study.

Intrinsic Rewards

Drawing from Deci and Ryan's (1985) Self Determination Theory, intrinsic rewards are internal psychological benefits that motivate behaviors toward a task or goal. These internal rewards go towards fulfilling innate needs for autonomy, competence, and relatedness. Feelings of satisfaction, fulfillment, purpose, freedom of choice, receiving positive feedback, and having a sense of belonging are all examples of intrinsic rewards, which, if found in a job, protect against burnout (Fernet et al. 2004). "Satisfaction," as measured by psychologists in studies of job satisfaction, is "an emotional state emerging from a cognitive appraisal of experiences," having an affective aspect, but also, and more importantly, a cognitive aspect (Fritzsche and Parrish 2005 in Steger et al. 2010). As such, the locus of intrinsic rewards is within the worker him or herself; the reward exists in cognitive or emotional form. Satisfaction can be scaled in degrees of feeling, as done in Bidwell et al. (1997) with Likert-scale attitudinal statements and in the Minnesota Satisfaction Questionnaire (MSQ; Weiss et al. 1967).

For the three dimensions of intrinsic reward included here, it is necessary to draw upon literatures beyond the topic of teacher attrition. First, student attachment is an example of such an intrinsic reward. A teacher's attachment towards a student might be conceptualized by using Travis Hirschi's definition of attachment. Attachment is an emotional bond through which moral constraints operate (Hirschi 1969, 88, 127). This bond is made apparent through feelings of affection for and regard and respect for the other. Several studies have shown that student-teacher heterogeneity appear to work in the direction of non-attachment. "Heterogeneity" refers to the extent to which student and teacher are demographically different from one another along racial, economic, and academic lines (Hanushek et al. 2004). As such, student demographic composition will be one indirect indicator or measure of expected student attachment.

Second, solidarity with colleagues (or collegiality) is another possible intrinsic reward. This can be conceptualized as attachment (using Herschi's same conceptualization) between teachers, arising from "face-to-face interaction throughout the faculty" (Bidwell 1997, 287) such that faculty relations are not impersonal or adversarial.

Finally, the third intrinsic reward studied here is a workable relationship with principal. For shaping this concept, I draw from Bidwell et al.'s (1997) study of teacher types within various workplace environments and structural systems. According to Bidwell et al.'s recounting of the theory of workplace control as it applies to schools, schools can have work environments that are controlled in one of four ways: by autocracy, bureaucracy, consultation, or competition. A workable

teacher-administrator relationship is found in the situation of consultation (or "collegium"), that is, where faculties are small enough to remain personal and retain their voice, and clientele power (parent involvement) is large enough to buffer teachers from intrusive administrative intervention. In a workable relationship with the principal, the workers will state whether or not they are comfortable voicing themselves and feel involved in the collegial work environment between themselves, parents, and administrators. Teachers in such a relationship with the principal may also develop progressivism and autonomy in their pedagogical practices.

Extrinsic Rewards

Working again from Deci and Ryan's (1985) Self Determination Theory, extrinsic rewards are defined as incentives, the separable outcome of goal-oriented behavior, which are external to the self and external to "satisfaction in its own right" (Lepper et al. 1973). In the literature, examples of extrinsic rewards include money, awards, grades, positive recognition, or special privileges; in this study, extrinsic rewards take the form of environmental working conditions, salary, and positive autonomy from leadership.

First, working conditions have already been conceptualized as pertaining to (1) the school and class size; (2) the student demographic type as being homo- or heterogeneous with the teachers' own background; and (3) the teachers' access to teaching resources. The inclusion of racial and class background is appropriate here because it impacts a teachers' working conditions separately from its impact on the

teacher's attachment to students. Social background of population served has a significant impact on a teacher's experience of interactions with clientele (parents) in ways that may not be equivalent to the teacher's experience of interactions with those parent's children (for example, see Bidwell et al. 1997).

Second, salary is operationalized as self-reported personal annual income, as teacher's salary was also measured in Hanushek et al. (2004) and Fernet et al. (2004).

Third, building off of Rosenholtz's (1989) concept of "task autonomy" as an extra- psychic reward for teachers, my concept will also be a positive "organizational condition of workplace commitment." As a dimension of the organization within a school, autonomy is "the extent to which work provides substantial freedom, independence, and individual discretion in carrying out tasks" (Rosenholtz 1989, 423). Positive autonomy from leadership means that a teacher perceives that s/he has the "capacity to control the terms of work," and choices and opportunities to change classroom situations, apart from administrative demands and consequences. Inasmuch, autonomy is found for teachers within Bidwell's "consultation" organizational typology, as they have power to make choices with curriculum, assessments, and their use of class and work time, apart from overwhelming administrative directives.

In summary, the independent variables are conceptualized as follows:

(1) To measure satisfaction with working conditions, respondents were asked the degree to which they are satisfied with available funds for classroom resources, and satisfied with the mentoring process in their school (MSQ 5- point scale). School size is included as a proxy for class size, and homogeneity between teacher/student background is

included by accounting for teacher's race (nearly all students in the district are black).

(2) To measure student attachment, respondents were asked the degree to which student achievement and interaction influences the teacher's stated feelings of satisfaction and attitude at work, and degree of involvement in students' lives (on an adapted 5-point MSQ scale). Heterogeneity between teacher/student background is accounted for in working conditions variable.

(3) Measurement of collegiality is based on the degree to which teachers feel that their school has morale and cohesion between faculty (on an expanded 7-point scale (extremely low to extremely high levels); and how frequently the teacher has of outside-of-school contact with colleagues, and the nature of this contact.

(4) The quality of the teacher-administrator relationship was measured by the degree to which teachers expressed comfortability with the process for raising grievances with their principal, feeling involvemed in their school's decision-making processes, and perceptions of the principal's competence in enabling teacher involvement (on an adapted 5-point MSQ scale).

(5) Autonomy was measured as how closely teachers follow administrative directives on a scale of 1 to 5, paired with their having ever been cited for not complying with administrators' directives; satisfaction with the provision of uninterrupted non-instructional (planning or break) time is a second measure of autonomy.

(6) Salary was measured in seven continuous brackets ("$25,000 - $35,000" up to "more than $70,000")

Work Commitment

Drawing upon theory by organizational social psychologists such as Hackman and Oldham (1980), Rosenholtz defines work commitment as "the extent of [teachers'] work investment, performance quality, satisfaction, attendance, and desire to remain in the profession" (1989, 422) – all of these indicators tending in the positive direction, of course, as work commitment increases. From this definition, three dimensions in the original concept of work commitment are

included in the survey: work investment, attendance, and desire to remain in the profession.

First, work investment is the degree to which a teacher puts continual effort and resources into his workplace or into the people with whom s/he works. These are “investments” in that the loss of time and the cost of effort on the worker’s part are deemed worthy “expenditures,” because the worker assumes s/he will continue to build upon prior investments, enhancing the output s/he enjoys in the workplace. An indicator of work investment is the teacher's longevity at the school site (number of years taught) and work history (how often teacher has transferred and the demographics of each school). Second, the attendance concept is concerned with a worker’s consistent presence during his/her scheduled times of work, without excessive absences due to illness, personal reasons, or leave. Attendance at work is measured by number of days absent from work in the past school year. Third, the stated desire to remain in one’s school actual departure from urban school site to another school district or to a non-teaching job. While the first two measures may capture gradations of work commitment, the third dichotomous measure is the outcome of interest in this study, and is used as the sole measure of work commitment in the sample selection and in the analyses. Furthermore, range of tenure in the urban school between stayer and leaver groups is very similar (3-18.5 years, and 1-18.5 years, respectively), and average amount of days absent from work is about the same (5 and six days per year, respectively), so these measures of work commitment are less helpful than the third dichotomous measure.

There is the concern that a dichotomous measure of work commitment could conflate the independent and dependent variables, as in the case of a stayer who is contemplating leaving, and therefore already either withdrawing from his workplace or subjectively perceiving his working conditions as more negative in order to justify his future decision. For this reason, I include a question about whether the subject is considering leaving, and can compare whether his/her ratings of rewards are lower than the average stayers', especially stayers with no expressed intent to leave. I find that almost all of the teachers state they looked into teaching elsewhere at some point during their work at the urban school, which is to be expected if work experiences are a "mixed bag" of contradictory positions, as any object of QCA study predicts.

Hypotheses

Generally, the greater the degree and quantity of intrinsic and extrinsic rewards a high-achieving teacher finds (or perceives) in his/her work will affect his/her work commitment in terms of high levels of work investment, low absenteeism, and a stated desire to stay working in his/her current school site. Thus, the direction of the relationship is positive and direct. These rewards and resultant work commitment work against the general trend of high turnover rates of high-achieving teachers in urban, public school settings. The reason for anomalous levels of work commitment may be traceable to specific work environments (or, work climates) with unusually strong intrinsic rewards (i.e., a concentration of high-achieving colleagues, fostering higher levels of coworker solidarity, or a principal

who allows benign noncompliance from high-performing teachers), or to peculiar teacher preferences (i.e., heterogeneity as a preferred working condition, or student attachment independent of student performance, which may occur if teacher sees his/her work as affectively meaningful or missional).

Specifically, I expect intrinsic rewards to account for the majority of these high- achieving teachers' expressed work commitment, as student racial composition (an intrinsic reward measure of heterogeneity and presumed student attachment) significantly predicts job transfers and job exits, while salary (extrinsic) is only connected to transfers and student achievement (also extrinsic, but not measured as such in this study) is only connected to exits (Hanushek et al. 2004). In addition, Bacolod (2007) found that working conditions, rather than salaries, were the most important role in determining where new teachers choose to teach. Salary is a weighty reward impinging mostly only upon the choice to enter the profession, rather than to commit to it.

This hypothesis will bear out if, on a typology of high-achieving teacher-types, the majority of stayers fall in the quadrants of high intrinsic rewards and high extrinsic rewards, or high intrinsic and low extrinsic, and the majority of leavers fall in the opposite quadrants (low intrinsic, low extrinsic; or low intrinsic, high extrinsic).

Methods and Sample

Research Design

A set of interviews from a small sample size is appropriate for this study because I want to examine the reasons why a select group of teachers behaves as it does. The interviews contain both closed- and open-ended items; therefore, mixed methods can be applied to a limited extent. First, the responses to closed-ended survey-items within the interview are sorted into a typology using the structured, quantitative method of factor analysis, which will validate or refute the hypotheses set forth above: whether the majority of stayers fall in the quadrants of (1) high intrinsic rewards and high extrinsic rewards, and (2) high intrinsic/low extrinsic, and the majority of leavers fall in the opposite quadrants: (3) low intrinsic/low extrinsic, and (4) low intrinsic/high extrinsic. Once I establish the predominant patterns in teacher retention and attrition, I will then use the open-ended responses from the same interviews to explain the established patterns. Both the descriptive and qualitative data collected will help explore the mechanisms at work driving patterns in previous quantitative studies' findings about significant causes of teachers' work commitment.

Sample Selection

The high-achieving teacher sample of both stayers and leavers is a cross-section drawn from the population of 794 secondary teachers in the urban school district under study, where 99% of the students identify as black and 78% receive

free or reduced-price lunch. I interviewed 21 "stayers" and 21 "leavers" (see Table 1), drawn from nine of the district's twenty secondary schools.

TABLE 1: Sample Descriptives

	Stayers	Leavers	Total
Female	13	17	30
White	8	14	(22)
Black	5	3	(8)
Male	8	4	12
White	7	4	(11)
Black	1	0	(1)
Total	21	21	42

For the purposes of this study, a high achieving teacher is defined as one with "quality indicators," such as individual ability, academic proficiency, and "higher scholastic aptitude" (Bacolod 2007). Such skilled teachers are school inputs, meaning that teacher achievement inheres in the teacher's own characteristics, rather than in their students' achievement outcomes. Needless to say, some studies measure teacher quality by the output of their students' achievement, but for the sake of this teacher-centered study, conceptualizing high-achieving teachers as inputs is more fitting. Teachers' characteristics are linked to positive student outcomes; thus a teacher who achieves positive student outcomes holds certain characteristics, which are traceable to the teacher's own academic ability.

Bacolod separates academic indicators from personality-based indicators, such as dedication and compassion, which have not been observed or measured in secondary data to date. Hanushek's findings concur with this conceptualization: teacher quality is based more in teacher test scores than in teacher experience or level of education (i.e., master's or doctoral work), as far as consistent effect on

student outcomes is concerned. Since, like Bacolod, Ferguson and Ladd (1996) found that "teacher experience [has] no measurable effect on student achievement," the number of years a high-achieving teacher has been a teacher will not be used as an indicator of high quality teaching. The criteria for "stayers" subjects to have been teaching at least three years was chosen only to control for alternate-route teachers who are in-and-out in two years. "Leavers" only had to have completed one year of teaching.

In defining a high-achieving teacher, I assembled a composite of operationalizations. Meeting any one or more of these conditions qualifies a teacher for the study: (1) having attended a selective college ("selective" as defined by *US News & World Reports'* 4-tier college ranking system); (2) having an SAT or ACT score in the top two quartiles; (3) and/or a National Board Certification, as it is an alternate indicator of teacher behaviors linked to increased student achievement, apart from teacher characteristics. Furthermore, NBCT is a comparable marker of teacher's academic proficiency seen in their students' achievement gains, gains which double or triple the gains obtained by non-NBCT teachers. These discrepancies lead Clotfelter et al. (2007) to conclude that NBCT teachers are more effective than those who are not.

The city in which the urban school district under study is situated is a theoretically fitting research site because it is a microcosm of the American City, in manageable proportion for the researcher. While the particular research site need not be a classic prototype, it is theoretically useful that the site be a city system that

represents pretty standard processes that take place in large urban systems (see note 1).

Respondents, who are or were formally teachers, were selected and recruited via snowball and random sampling techniques (see note 2). A non-random, non-probability sampling technique is appropriate in this study because, as in case studies, "rare situations are often precisely what the researcher wants" (Small 2009). In this study, the goal is to single-out one very specific type of teacher, in a specific setting, and describe the range and patterns of attributes and attitudes among them. By holding constant key factors about teacher background, we can better understand why some top teachers decide to stay while others decide to leave. Top teachers are of particular interest because they are, in theory, the target of NCLB's aim to ensure that quality teachers are employed at low-performing schools.

Other advantages of the sampling technique is that it is convenient, ensuring an adequate number of respondents. Upon describing my research criteria to a human resources employee in the district, he/she referred me to my first case. I contacted this first case and all others by email (with the exception of one of my "leaver" subjects, who I recruited at a Professional Development conference during my own employment as a teacher). From there, I was referred by the teacher subjects to other high-achieving teachers by previous subjects. I confirmed each referral's high-achieving status before beginning each interview. One participant provided me with a list of National Board Certified Teachers in the District, a list I then used to email every secondary teacher listed in the district. As a former teacher

in the district within an alternate-route teaching program, I also had knowledge of leavers across five of the schools.

Data Collection

I gathered responses in person, and typed them into an electronic surveying program, Google Documents. The interview apparatus itself is a mixture of 42 multiple-choice, Likert scale, and open-ended questions (See Appendix A). Both types of questions were asked because each offers an advantage (see Note 3). The inclusion of survey-style, scaled-response questions in with open-ended in-depth interview style questions creates a semi- mixed-method instrument, preventing the researcher from putting too much confidence in any one method (Pager and Quillian 2005). I revised the instrument after two initial pilot interviews. Logistical problems encountered during the pilots were corrected in the data collection process in an effort to reduce communication error and increase construct validity and inter-item reliability (see note 4).

The location of the interview administration varied, although in all cases, it was in a meeting place of the subject's choice, including public places (five in a local restaurant, one in a coffee shop, one in a subject's church) and more private venues (one in the subject's house). The timeframe of meetings took place between August 2010 to January 2012, and meetings were on weekdays and weekends alike between 8:00 a.m. and 4:00 p.m. Interviews lasted anywhere from twenty minutes to 75 minutes; most were about 30 minutes long.

My role as researcher was a complex one. First, I was viewed as somewhat of an "insider," a person of a similar social group as the interviewee. I have formerly been a teacher in the district, and so subjects tend to feel that I can sympathize with their experiences; the felt need to appear psychologically healthy and competent (termed evaluative apprehension by Rosenberg 1969 in Cook and Campbell 1979) was minimized. In addition, respondents often felt they did not need to elaborate on certain feelings about the district, such as that it needs fixing or that "people leave because they can;" in these instances, it was incumbent on me to insist upon further elaboration and explanation. Also, being an insider helps to eliminate the need for the subject to explain particularities about the district, especially its bureaucratic lingo. My part-insider role created a non-threatening demeanor (Lofland et al. 2006), which likely influenced subjects to be more at ease and to feel an automatic shared understanding, which tended to expedite the rapport-building process during the course of the interview. In no case did pre-interview familiarity reach the extent of excessive rapport (Scully 1990), but friendliness in the respondent-researcher relationship usually worked to my advantage with regards to approaching sensitive topics (see Note 5).

In part, though, I am an outsider too, because I have a different social status from those who remained teachers. My age at the time of data collection (25) helped to counteract any response effects connected to the perception of my status as higher than the respondent's (Branburn 1983). I was a graduate student at the time of the interview, so officially had removed myself from the teacher role. The greatest obstacle in my role as researcher would be expected to come in cross-racial

interviews, which comprised about one-fourth of the interviews (see Table 1). Since I ask no direct questions about race, except that the respondent identify his/her race at the end of the interview, this response effect is presumably lowered; however, I see it unlikely that Black respondents would willingly launch into elaborate discussions about how race affects the experience of their work environment, as much as White respondents did, perhaps because I myself am White.

I think my ex-teacher status helped subjects feel free to say more; if I were still employed by the district, they may have hesitated to disclose comments about specific work situations in which they assess administrators' actions negatively, especially during my interviews with stayers. In other words, being a student in a university in another state supplied a comfortable social distance for the subjects within the bounds of our rapport. I encouraged the development of rapport by ordering questions such that sensitive topics (i.e., relationships with administrators) came after "easy" questions (i.e., demographic descriptions of prior workplaces).

Data Analysis

Analysis of interview data will follow a three-step process. First, closed-response items of the interview instrument will undergo factor analysis and Qualitative Comparative Analysis. Second, open-ended responses of the interview data will be coded for dominant themes among teacher types' justifications for staying or leaving. The goal of both analyses is to see the factors (among the three intrinsic reward factors and three extrinsic reward factors) that account for leavers'

and stayers' work commitment choices. Is there any one factor that trumps all others and can confidently predict staying or leaving? More importantly, are there cumulative or counter-combinations of factors that predict staying or leaving? Third and finally, QCA and textual analyses results will be consolidated within a constructed teacher typology.

Step I: Quantitative Data Analysis

I call the first portion of analysis "quantitative" simply because it involves compiling numerical survey data into a truth table, using statistical software (STATA) to construct indexed variables, and algebraic reduction techniques to simplify combinations (of rewards) and their predicted outcomes (staying or leaving). These procedures encompass QCA.

First, constructing a typology – the end goal of steps one and two of this data analysis -- relies for its base upon a case-by-case, binary tally of a host of causal variables, or "truth table." Constructing a typology is an appropriate analytical method in educational research, and in this study in particular, because its main advantage is its capacity to serve as analytic "shorthand" (Ragin 1987, 149) that helps social scientists understand diversity within a select group. It is a starting point for understanding the teaching profession itself, apart from its usual frames of student achievement or teaching best practices.

The reductionism of typologies is especially helpful in the context of teachers' work, as school workplaces can vary widely (i.e., public versus private sector; urban versus rural; wealthy versus poor student bodies, etc.), so there are

nuances particular to the educational work environment around which to navigate (Frank 1998). When form is emphasized over content, these particularities become easier to navigate or control. In addition, typologies can be an asset to redress the "age-old theory-evidence disconnect [that] remains" in educational research (Harris and Rutledge 2010), as some of the most famous typologies, such as Durkheim's suicide typology, are substantially theoretical in nature, if not a theoretical tool altogether.

The tentative typology to accompany my teacher interview project is inspired by Bidwell et al. (1997) and Phillippo (2010), but will have distinct dimensions, since I am studying a different aspect of teacher behavior than either of them did. Along one axes will be intrinsic rewards (low to high); along the other, extrinsic rewards (low to high). I will not be defining these dimensions as Kaufman and Richardson, but instead will draw from sociology of work literatures for my conceptualizations. By these literatures, intrinsic rewards would include measures of student attachment, collegiality, teacher- administrator relations, and working conditions (such as resources). Extrinsic rewards include salary and autonomy allowed to the teacher.

Like Phillippo, I will cluster the groups and present findings of mean or modal demographic indicators for each group, and establish a cutoff point, using additive factor analysis as described by Ragin, to divide substantive groupings. I will first analyze the sample of stayers to see their distribution across the typology; I will then employ the typology for comparative purposes, between the stayer/leaver groups. I expect that teachers who indicate both high intrinsic and high extrinsic

rewards in their jobs will be stayers; low intrinsic and low extrinsic to be leavers; and for the mixed quadrants, high intrinsic and low extrinsic to be stayers; and low intrinsic and high extrinsic to be leavers. Either way, using a typology should reveal in simplified terms what factors are most important to keeping high-achieving teachers in minority, poor schools.

Before reaching the point of building a truth table, I had to use data reduction procedures to make the data compatible with STATA and the QCA software. This included the conversion of scaled responses into binary code, confirmatory Principle Components Factor analysis, and the creation of indexed variables. Using the quantitative portion of my data, I converted Likert scale responses into binary categories – "strongly disagree" or "disagree" (Likert responses of 1 and 2) as zero, and responses of "agree" and "strongly agree" (Likert responses of 4 and 5) as one. After several comparative analyses, I chose to code neutral responses (Likert responses of 3) as one, or as more akin to the presence of the given dimension of rewards (See Appendix for PCF output; see also Notes 6-7).

Using these dichotomized data, I then was able to reconfigure my expected indices. Table 2 below shows what I expected the indexed rewards to be comprised of, along with the dimension codes and associated survey questions. Table 2 shows the reconfigured rewards. Note that two of the rewards, student attachment and salary, are not indexed, as they each have only one dimension or indicator, and so were not entered into the factor analysis. However, they are present on the truth table (see Note 8).

TABLE 2: Expected Indexed Variables		
Variable Name	*Components*	*Code*
Working conditions	How satisfied are/were you with the way EEF (Educational Enhancement Funds) were distributed?	EEF
	How satisfied were you with the mentoring process when you first arrived at your school?	mentoring
	Teacher's race, as a measure of teacher-student heterogeneity	Race_B
	School Size (schools below 600 students small; large schools at about 1,200 students)	SS_Large
Student Attachment	Does your attitude at work depend largely on how well your students achieve?	S
Collegiality	Do you maintain friendships outside of work with your coworkers? (Yes/No)	CoF
	If you had high-achieving teachers as friends who opted to move or transfer, did their actions influence your thoughts about staying with or leaving your school? (Yes/No)	CoA
	Rate the cohesion of the faculty at your school (scale of 1-7).	CoCoh
	Rate the morale of the faculty at your school (scale of 1-7).	CoM
Satisfaction with Administration	How comfortable are/were you with the process for raising grievances at your school?	ADMg
	How closely do/did you follow administrative directives?	ADMc
	Positive evaluation of principal's competency (textual analysis)	ADMp
Autonomy	Were you ever cited for or otherwise reminded about meeting administrators' expectations?	citations
	How satisfied are/were you with non-instructional time at your school?	nontime
	Teacher has additional leadership roles, such as departmental chair or teaches a state-tested subject	TchrLeader
Salary	What is your annual salary? (response categories in bracketed amounts)	W

Comparing Table 2 to Table 3 below shows that some of the dimensions that I anticipated to map onto one index did not do so – especially the three administrative measures. For this reason, I eliminated factors produced by running a Principle Components Factor analysis (PCF) that do not pertain to the six

dimensions of workplace rewards that I established based on prior literature. PCF output simply names "factors" with the host of correlated variable dimensions it encapsulates; I proceeded to name the factors based on which conceptualization of rewards it most nearly approximates. Factors 3 and 6, indicated in italics, were removed from the truth table via the process of data reduction, since "confidence in approaching authority" and "noncompliance" on their own are not helpful dimensions within the matrix of the six rewards that I have established theoretically and will use in the QCA portion of the data analysis.

Factor One confirms that dimensions of working conditions and collegiality do correlate with each other, but for the sake of maintaining the six dimensions of workplace rewards for QCA, I will treat Factor One as an index for working conditions only, as two of the four expected dimensions of working conditions are present in this factor, and Factor Five is a separate but tenable index for collegiality. The other two factors stand as reconfigurations of my preconceived configurations, and make sense conceptually, even though I did not anticipate them to map onto each other in these combinations. For example, dispersing classroom funds (variable "EEF") would be more a reflection of administrator-controlled procedures than working conditions, and indicate functional or dysfunctional teacher/administrator relations; on the other hand, being influenced by competent colleagues' decisions to leave (CoA) could be a measure of autonomy, in that such a decision indicates the discretion of the stayer to resist the bandwagon to leave, and instead to reinforce and instill what Evans (2010) calls self-sanctioning

mechanisms, akin to occupationally-controlled (rather than bureaucratically-controlled) professional groups.

Also, in Table 3 below, dimensions within each index were also weighed by executing a "predict" command on the factors, which gives coefficients for each dimension within each index (see the Appendix for STATA output). This procedure reveals the relative contribution of each component within an index upon the index's effect as a whole. In cases where no weighing was necessary, I simply added up the dimensions and divided by the number of dimensions in that index, or a simple average. For weighted dimensions, I multiplied the larger dimension by two, added it to the other dimension, and divided by the number of dimensions in the index plus one for the extra weight. This weighting is not exact, but rounded, in order to support the binary format of the truth table.

TABLE 3. Actual PCF Mapping of Dimensions onto Each Index, and Coefficients and Weights of Indexed Variables

	New Index Name	**Components w/ Coefficients**	**Weighting necessary?**
Factor 1	Working Conditions	0.29 Mentoring 0.21 Race_B 0.38 CoM 0.36 CoCoh	No
Factor 2	Autonomy	0.36 nontime 0.32 CoA -0.43 citations	No
Factor 3	*Confidence approaching authority*	0.35 SS_Large 0.62 ADMg	Yes, 1:2
Factor 4	Administration	0.26 ADMp 0.67 EEF	Yes, 1:2
Factor 5	Collegiality	0.62 CoF 0.38 TchrLeader	Yes, 2:1
Factor 6	*Non-compliance*	-0.57 ADMc	No

Upon finishing the data cleaning process, I had a truth table with all 42 respondents' measures on six primary rewards, three categories being intrinsic (satisfaction with administration, collegiality, student attachment, abbreviated as A, C, and S, respectively), three being extrinsic (working conditions, autonomy, and salary, abbreviated as E (for workplace Environment), T (for auTonomy), and W (for Wages), respectively). This truth table was used in the second part of the data analysis process: implementing QCA (Quantitative Comparative Analysis) with the Kirq program. QCA is a useful method for finding out under what conditions an outcome can and does happen. Using Kirq, I produced sufficiency tables, which further reduced the patterns shared by the 42 subjects and their "stay" or "leave" outcomes (stay coded as 1, leave coded as 0). See the outcomes of the sufficiency reduction analysis below (Table 4).

TABLE 4: Sufficiency Table

STAYERS (*n*=16)	**STAYERS & LEAVERS (*n*=10)**	**LEAVERS (*n*=16)**
ACSETW (x3)	ACSEtW (x2)	ACSEtw (x2)
AcSETW	ACSeTW (x2)	ACsETw (x2)
ACSETw	ACsETW (x2)	ACSTew
ACsEtw	ACSetW (x2)	ACsTeW
ACsEtW	ACSetw (x2)	Acsetw
ACseTw		aCsTew
aCSETw (x2)		aCstEW
aCSeTw (x2)		aCsEtw
acSetW		aCsetw (x2)
acsETW		aCSetw
aCSEtW		acSetw
aCSeTw		aCsetW
		aCSetW

Legend: Capital letters indicate present of a condition ("1"); lowercase indicates absence of condition ("0"). A=satisfaction with administration; C=Collegiality; S=Student Attachment; T=Autonomy; E=Environment at work, or working conditions; and W=wages, or annual salary.

The sufficiency table (Table 4) enabled me to then factor the results, a process not computed by the Kirq program, but rather by my own reducing into the simplest terms. Indeed, in QCA, each row of data in the truth table "represents a logically possible combination of causal conditions," and it is up to the researcher to determine which combinations reflect real-world cases (Rubinson and Ragin 2007, 380). Different factoring forms will tell different "stories" about the data, but efficient factoring (i.e., grouping like terms as much as possible) is perhaps most effective for revealing what conditions are necessary, and which are inconsequential, in predicting staying or leaving outcomes. One possible interpretation follows, applying the reducing procedures outlined by Ragin (1994):

Stayers

First, taking a basic inventory of individual rewards that many Stayers share in common may indicate which of the six rewards operates most strongly in promoting staying decisions. Twelve of the 16 stayers in column 1 in Table 4 above have autonomy (or, a capital "T"); 13 have collegiality ("C"); 11 have a good work environment; and ten have student attachment ("S"). The other two rewards (administration, wages) are split fifty-fifty. This surface-level observation suggests that autonomy and collegiality are highly linked with staying decisions.

Second, turning more careful attention to what <u>combinations of rewards</u> promote staying decisions may reveal countering, compounding, or balancing effects that rewards have on one another as they form into a "reward package." To

examine combinations, mathematical factoring operations and QCA data analysis methods are used. The equation below shows four ways to explain the bulk of the 16 cases of respondents whose "reward packages" always predicted that they would be stayers in the teaching profession in the Southern, urban school district. Only two cases are not accounted for in this reduced equation, as they are irreducible.

$$1 = ASTE + aCSTw + ACEst + acW$$

The equation suggests that staying occurs when high-achieving teachers:

1. have positive evaluations of their administrators, are attached to their students, have autonomy, and have a positively-rated work environment (conditions), so that absence or presence of higher salary or collegiality does not matter (5 cases); or
2. lack good administration and higher salary, but the presence of collegiality, student attachment, and autonomy make up for this lack. (5 cases); or
3. have positive evaluations of their administrators, the presence of collegiality , and like their environment, such that these *cover for* the absence of students attachment and autonomy (2 cases); or
4. lack good administration and collegiality, but salary makes up for it (2 cases).

The first three terms feature the presence of two intrinsic rewards and one or more extrinsic rewards. These indicate "bare minimum," or threshold, conditions that are necessary for a teacher to consider staying. *An insight we gain here is that a balance of intrinsic and extrinsic rewards must be present to promote staying decisions, rather than an intrinsic-heavy or extrinsic-heavy reward situation.* That being said, intrinsic factors still occupy two of those three "present" positions.

Another key insight here is that no one intrinsic factor calls the shots. While popular wisdom among teachers may hold that a good administrator can make or break your work life, this analysis suggests that student attachment operates equally in magnitude to competent administrators in making a teacher's work experience a "stayable" one.

In two of these three terms, lowercase letters are present, signifying that the presence of the capital letters is making up for the lack of the lowercase letters. This is an exemplification of Horng's idea of teacher trade-offs. For example, a teacher justifies her decision to stay by being satisfied with the rewards that matter most to her, and giving a pass to the ones that matter less. If administration and salary are low, but collegiality, student attachment, and autonomy are there, then she decides that the former are more important than the latter.

The fourth term indicates that if administration and collegiality are absent ("ac"), then basically a high salary is a sufficient condition to stay. But I argue that these are exceptional cases, or at least should not be overanalyzed, as they are 2 of only 3 cases in the whole sample that have high salary plus only one other reward (the other case decided to leave). Alternatively, one could argue, maybe salary alone is enough of a tipping point, since more often than not, higher-earners stay put.

The Either/Or's: Indeterminate Cases

Ten of all cases fell into a category of predicting either staying or leaving. In other words, these combinations of rewards do not give us certainty about what a teacher will do with regard to staying committed or leaving. The either/or cases are

non-reducible into a simpler equation form, as none of their reduced terms are distinct from staying cases which have all six rewards present. But, this category can be simplified in written form: in six either/or cases, only one reward is missing: student attachment, autonomy, or environment. We can safely assume that in these cases, leavers did not leave for lack of work satisfaction, but for extraneous reasons, such as new family roles (i.e., parenting) requiring changed work arrangements; or teacher's greater desire for higher educational and occupational attainment; or promotion opportunities taking the teacher out of the classroom. One key insight of cases in the either/or category is that *all have presence of good administration and collegiality; these alone are not enough to consistently win a teacher's commitment to her workplace.*

Leavers

In sixteen cases, the outcome of conditions was distinctively predicted to be leaving the urban school district, either for a suburban school district, a non-instructional educational position, or a non-educational job altogether. For 13 of these cases, two or all three extrinsic rewards are absent; by comparison, only in six cases are two or more intrinsic factors absent. We might take this to mean that the absence of extrinsic rewards is especially corrosive on teacher retention, or else this could mean that extrinsic rewards are less available, in less supply, than are intrinsic rewards in the teaching profession.

Collegiality is present in all but two cases, which certainly suggests that it is a weak reward on its own, and furthermore, collegiality fails to be an influential factor

even when paired with two and sometimes three other rewards. Administration, student attachment, environment, and autonomy are present half or less of the time among the leavers. Higher salary is especially sparse, appearing among only three cases of leavers, which could indicate that *this group is among the lowest-paid in the sample population,* and therefore either has the least years of experience or the least advanced credentials in the sample, as these guarantee pay scale increases. There are two especially disasterous combinations that on their own account for nine cases of leavers, as noted in the reduced equation below:

$$0 = aCs + tew$$

These combinations of rewards can be interpreted as follows:

1. When strong collegiality and poor administration and lack of affect for students combine, this actually acts as a catalyst for leaving.
2. When absence of autonomy, environment, and salary combine, the presence or absence of any intrinsic factors will not deter leaving.

In other words, the first term shows that in a large number of cases (six of the 16 leavers), *strong collegiality actually has a negative effect on retention if administrative support and student attachment are at the same time lacking*. This is another major finding. It confirms the suspected weakness of the collegiality reward factor that we suspect by glancing at the leaving column in Figure 4. In the second term, we see that in the bleakest of scenarios, when a teacher has no extrinsic rewards, the teacher will leave. This again validates what the either/or cases

suggested: intrinsic rewards on their own are not enough to "make up for" gaping extrinsic lacks. Finally, the seven non-simplifiable cases not included in the above equation, taken together, verify the above observation from the either/or cases, that is: the presence of administration and collegiality together are not enough to prevent leaving.

Step II: Qualitative Data Analysis

A second source of data analysis comes from within the same survey/interview data collected, and is concerned with analyzing open responses as well as field notes. The following section applies interview excerpts that illustrate how contradictory reward combinations function to promote staying decisions or leaving decisions. Textual excerpts are taken from participants who fall within the certain "teacher type" as identified by both QCA and the resultant teacher typology created; their words explain the mixed stories represented by the lettered combinations.

Interview coding was done as an iterative process, meaning that coding began after the first group of interviews, and continued while successive interviews were being conducted. Also, interviews were re-read and re-coded multiple times, to prevent under-coding or mis-coding errors by the researcher. To analyze open-response items, the electronic textual analysis program MAXQDA was used. Using the software, coding schemes or "trees" were constructed by first establishing broad categories based upon the independent and dependent variables in the research question. Many of these codes were simply descriptive, i.e., differentials in salary

earned, before and after moving school sites. Subcodes were then developed, themes and patterns that recurred under the "auspices" of given variables (rewards). For example, under broad code of "student attachment," three subcodes were separated out: Positive student-teacher relations; Parent-teacher relationships; and Negative student relations (see Table 2). From subcodes, broad analytic codes (usually titled by an abstract noun) were developed, such as "Loyalty" on the basis of "Positive student-teacher relations."

As for field notes, my taking of parenthetical notes during and following the interview about the location of the interview, the subject's disposition, contradictions in responses and/or discrepancies between what was said and other responses that seemed to indicate otherwise, and the overall impression of the interviewer's reasons for leaving the school district helped to corroborate the other data collection methods (Lofland et al. 2006, 87). Ultimately, the product of univariate and factor analyses, text coding analyses, and field note analyses is a robust typology of teacher types based on conjoint variations in intrinsic and extrinsic rewards and work commitment outcomes.

Step III: Toward a Typological Application of QCA

In an effort to attain still greater simplicity and reduction in data analysis, I have applied Ragin's (1987) Boolean analysis method to sort cases into a typology by selecting thresholds that determine the placement of cases into quadrants. After a trial and error application of different threshold or cut-off points, I decided to use two or more intrinsic rewards and two or more extrinsic rewards as the threshold

determining quadrant-placement of cases, for this best reflects the trend in the factoring equations above. The factoring equations showed that the presence of two or more uppercase rewards on both intrinsic and extrinsic axes tends to predict, or at least not preclude, staying outcomes, whereas only one reward along either or both axes tends toward non- predictive or leaving outcomes. Figure One below shows the results of this placement analysis.

FIGURE 1: A Typology of Stayers and Leavers

← Increasing Extrinsic Rewards	Increasing Intrinsic Rewards →	
	Either/Or [1 Stayer, 1 Leaver] *quadrant II*	**Stay** [12 Stayers, 6 Leavers] *quadrant I*
	Leave [1 Stayer, 7 Leavers] *quadrant III*	**Either/Or** [7 Stayers, 7 Leavers] *quadrant IV*

The typology above is helpful for further reducing the results of the factored results in the first portion of the data analysis. The typology suggests that conditions of low intrinsic and low extrinsic rewards paired together are, as we might expect, are conditions under which leaving is highly likely (quadrant III). Conditions of high intrinsic and high extrinsic rewards paired together, as we might expect, are

conditions under which staying is highly likely (quadrant I). Quadrants II and IV fail to predict work commitment outcomes, in cases where extrinsic rewards dominate in the absence of intrinsic rewards, or the teaching job offers only intrinsic rewards to the teacher. Neither of these circumstances is enough to repel the teacher, or ensure longevity in the workplace. These are the most tenuous conditions. Whereas workplaces with a poor reward structure all around are obviously in need of addressing, these comprise a minority of cases (n=8). Rather, it is the tenuous conditions (n=16= quadrants II + IV) that pose an even greater danger to urban school districts, for they feed the uncertainty and instability that already pervade such schooling environments.

A further exploration of the tenuous quadrants (II and IV) lends some rich insight into how certain combinations of rewards can result in divergent outcomes. First, in quadrant II, the teacher who stayed had a high salary and good working conditions in place, to the exclusion of all else. The teacher who left had two extrinsic rewards total. We can read this result as, salary and working conditions are very weak predictors of work commitment. Hardly any cases fall into this category.

In quadrant IV, however, a large faction of both stayers and leavers fall under the category of heavy intrinsic rewards paired with light extrinsic rewards. Four of the fourteen cases in quadrant IV are cases with either/or outcomes; five are purely cases of stayers, and five are purely leavers. This quadrant tells a mixed story: with a high amount of intrinsic rewards, but a lack of extrinsic rewards, teachers either become resilient to economic, aesthetic, or professional disincentives, or else they

do not develop this resilience and opt not to stick around. The stayers in this quadrant we might call the "Intrinsic Committers" who derive meaning from their work apart from and above its extrinsic payoffs. Accounting for a third of all stayers (n=7), this is a significant group deserving further investigation. Conversely, we might call the leavers in this quadrant the "Extrinsic Acceptors." Aware of the possible stigma of this status, most leavers I interviewed, especially in this quadrant, felt a need to defer to some kind of values-based rationalizing mechanism to explain their choice: religion, family, and effect on society as prime examples:

> Sarah (leaver): I did not seek to leave; I was offered an opportunity. Having received the Teacher of the Year opportunity, I knew God had my back. But I've gotten some 'eyebrow up' looks for being NBCT and being in curriculum [now]. I wouldn't have left where I was for average curriculum position pay.
>
> Alice (leaver): I felt fierce loyalty to her [the principal]. But the requirements got deeper, and I have a growing family, and with new principals and shifting administrators, my loyalties weren't as fixed as they were. I saw it as an offer I couldn't refuse.
>
> Quinn (leaver): The first time [I left], I wanted to do something different, try something else, maximize my opportunities as much as possible. The second time, I felt pretty much the same thing. I thought I could be a benefit and affect more than 150 students. I thought if I worked with teachers I could affect hundreds of kids.

The Intrinsic Committers, on the other hand, say some of the challenges or trade-offs of working in an urban school district as intrinsically motivating for them to remain committed to the work:

> Paul (stayer): I worked [here] in 1990 … when [this school] was the bright light on the hill, you couldn't touch us in sports or academics or anything. We were a family, we worked and cared about each other and supported each other as a family. Now we are in school improvement. I remember the way [this school] used to be, and that's why I am here and working to do anything I can to raise student scores and student achievement. It's a personal thing to me.

> Rose (stayer): I can understand them [leavers] wanting to get away from urban factors: parental involvement, apathy. But I saw that as a factor to make me stay.
>
> Linda (stayer): The talking they [leavers] did about how bad the school was, how bad the kids are, it makes me wonder, well if we all abandon them, who will be here? Or have you contributed to some of it, maybe? It had the opposite effect on me.
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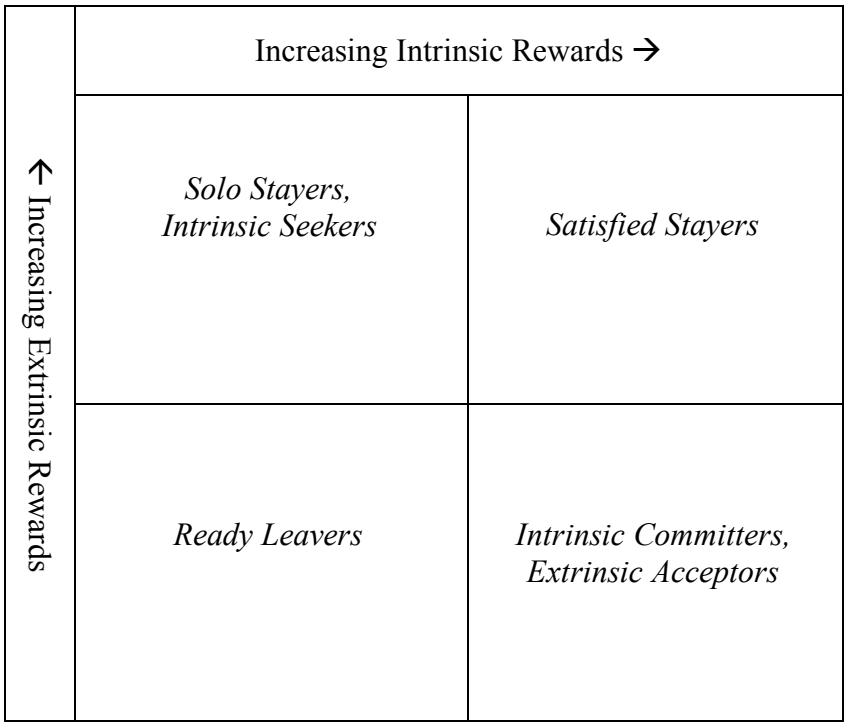
> Drew (stayer): Continuity is something that our school really needs. For instance, the demise of a club or a teacher not being around for mentoring: students almost wait for you to leave, which is kind of crazy. When I started teaching here, I resolved that I would stay here. [Another suburban high school] is a mile away from [my house], but I wouldn't go there. I would not hop around to another school or district. What we need more than anything is stability for our students.

Tying back to the theoretical framework, this study aimed not only to find out if there are school-level factors that tend to attract or repel high-achieving teachers, but also to classify teacher types, in line with Bidwell et al.'s application of the Theory of Workplace Control and Simmel's Theory of Social Types. Here we have identified two types of teachers, the Intrinsic Committers and the Extrinsic Acceptors. The factoring equations and the typology in Figure One are useful not only for data reduction purposes, but also for the purpose of identifying other teacher types.

FIGURE 2: Teacher Types



In quadrant I, these stayers (comprising the majority, 11 of the 16 cases total) might be called the "Satisfied Stayers," as they express a high degree of satisfaction especially along the lines of administrative support, collegiality, autonomy, and working conditions, generally all at the same time. As Bonnie, Drew, and Maya, three "Satisfied Stayers," state, administrative support is pre-eminent among the intrinsic rewards available at work:

> Bonnie (stayer): I like the people I work with. I also like my toys-- we have good toys, like all the computer technology we have: Promethean Boards, Activote remotes, the rolling computer labs. I like the strict discipline. I like knowing when you punch that security button, someone's coming. [And] I've got this thing about breaking a contract -- I feel if you can possibly do it, you should stick it out.
>
> Drew (stayer): I think that the administration does a pretty good job at finding places to plug you in. As opportunities have come up, they have come to me with

> options. I have served on some committees. This year I served on Site Council. They've been very supportive with new ideas, like starting clubs or my ideas in the classroom, where I feel I am open to experimentation. I feel involved in those ways.
>
> Maya (stayer): I feel involved in decision making about what to teach; master planning and scheduling; how to handle tutorials and remediation in general; and how to use the planning time that we have.

It is interesting to note that even though Bonnie felt supported by administration, she also said she would "rather rip her arm off than go to the principal for something." Thus, the simultaneous presence of strong collegiality with administrative support creates an interplay of intrinsic rewards for Bonnie, and other similar stayers, helps to offset the negative interactions with even the most competent administration. As Cynthia and Tony, two other Satisfied Stayers articulate, principals walk a fine line in having to please different groups of people, and therefore if the administration can at least manage to be fair, they're considered good enough for teacher to stay:

> Cynthia (stayer): The principal allowed a parent to badger this [one] teacher, daily by email. At the end of the year, the student didn't make the grade, and the parent yelled at the teacher. She got an offer to go to [the suburbs], and she left, just boom, out of the blue. [The teacher must have thought,] OK, I'll just take an art teacher position anywhere, even though the satisfaction will be so much less. But there is so much on the line emotionally [in teaching]. I would think more about leaving, if I had more stress with the principal. Things are even now, and I am not wanting to go anywhere.
>
> Tony (stayer): Something that drives people off is if administration starts running interference; the teacher will say, you can be incompetent, but don't make me incompetent. If you don't want to burn out, you have to ignore some edicts that are handed down. Some principals do not demand what central office says. They're torn in both directions. [As a principal,] you only have a bank of asking for so much [from your teachers]. You want to be able to insist on getting to work on time, teaching the kids everyday.

Satisfied Stayers with less glowing reviews of their administrators, like Mary and Derek, compensate for this lack by drawing a high level of satisfaction from strong collegiality and autonomy:

> Mary (stayer): [I'm] not really [involved]. We have lots of concerns, but I just learned early on that it doesn't do a lot of good to express them. I just do what I need to do, vent to a colleague, and then we move on.
>
> Derek (stayer): Do I follow directives closely? No. I constantly disregard what I am told to do by the district, because I know exactly what I need to do for my students' success, which is why my students are successful.

Whereas Bonnie, Drew and Maya emphasize administrative support as essential rewards that keep them happy at work, Cilia, Tina, Lisa, and Clay emphasize the importance of working conditions to their happiness at work. Like Bonnie and Mary, Tina and Lisa also mention collegiality as a salient reward that keeps them happy at work – but never collegiality alone; it was always accompanied by another reward.

> Cilia (stayer): I have the ability to ask for things I need in the classroom. The resources are given most of the time. I ask that subject area classes not be taught 4th period, and that was granted. Students are just spent by 4th period. Common planning was granted.
>
> Tina (stayer): I like the student population here. I am entrenched here. I know the ropes, there's a lot to be said for that. And I definitely enjoy my colleagues. As a family, we're strong proponents of living and working in [the city and [its] public schools.
>
> Lisa (stayer): I'm an alumni, so I have loyalty, for one. The camaraderie is big; it's nice to have people you'd like to hang out with, even if you don't hang out with them after work. You know, it's the best high school in [the district], and even in [the state]. … Also, I like the demographic of students I am teaching. In the [rural parts], it's [sic] so much apathy. The middle school structure nationally doesn't prepare students. If you're teaching at Yale, what value added have you really added? At [this school] though, a lot of these students wouldn't turn out the way they do if it weren't for us [teachers]. It gives you a good sense of meaning. Some of these kids have the 'I am going to be the first doctor in my family' thing. It's good to have some of the apathetic [students] too, so it's not a monolithic thing.

> Clay (stayer): The subject I teach I like. I like what I am teaching. If you end up teaching 9th graders something you don't like.... Then, the proximity to the house; I wouldn't have to move. And it's easier being in the same building as my wife.

In Quadrant II, the other either/or quadrant with "tenuous conditions" for predicting work commitment, there were only five teachers who experienced low intrinsic rewards with high extrinsic rewards. Therefore, generalizations drawn in this category are themselves tenuous at best. In general, autonomy accounted for the stayers, whereas wages were not enough to keep the leavers in place, hence their name, the "Intrinsic Seekers." For those who stay even when intrinsic rewards are low, we might call them the "Solo Stayer" teachers, in honor of Kurt's comment on his reliance on autonomy to keep him satisfied (enough) at work:

> Kurt (stayer): And it's different if you're not [a state-tested subject area teacher]. The English teachers may choose something, and what they say, goes. I, however, am a one-man gang. But I like that. I don't have to conform to someone else.

The final quadrant of teacher type that has not been addressed is quadrant III, the leavers. These teachers experienced both low intrinsic and low extrinsic rewards. The theme that emerges from their comments pertains to an imminent sense that they couldn't stay, that they had to leave, and that they couldn't do it; therefore, they fall under the "Ready Leaver" teacher type, as they made up their minds about leaving and took their first opportunity to leave. Beth gives voice to the toll that low student attachment combined with stressful interactions with administration takes on one's intention to stay. Kayla, Alice, and Ginny, three other leavers, were mostly swayed by a lack of administrative support combined with a

lack of autonomy. Jerry, on account of difficult working conditions, likewise knew he couldn't stay:

> Beth (leaver):It wasn't ever about the kids -- well, in my honors class, four of them got kicked out for pot -- but because I wanted to remember why I started teaching, I needed to see the light come on, and be in a situation where teachers were treated as professionals. Saying that, none of my [name redacted] principals were unfair to me, I saw people mistreated, but I was never mistreated. … In essence I had half a prep period. When [my principal] told me she would only have me do both just this year, I didn't say, but I thought, 'No, you will.' … I couldn't do it anymore. … [When the principal wanted to assign me a subject I didn't know,] that just cut me up, I couldn't do that.
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> Kayla (leaver) (*on why she left*): Always having to justify, fight parents. Responsibility without authority. You reach a brick wall when something goes downtown. All of us in [the honors program] felt, we were under the gun. Downtown would have preferred to shut us down. We were constantly in the news, limelight, needing to do a dog and pony show, and win awards. Of course, it's still that way. Constantly feeling that you have to justify the district's outlay of funds for the [honors] program.
>
> Alice (leaver): [I was] called to the office because of grading papers during a faculty meeting. It was about the fact that I wasn't giving him enough attention. The other time [I was called to his office] was about lesson plans: I did mine for the nine weeks [term]. He was upset because mine weren't submitted every week.
>
> Ginny (leaver): The new principal used every off-block, everyday. That was something I couldn't do. I don't mind meeting, but everyday? … I knew I had to leave.
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> Jerry (leaver): Around that time I thought, I need something easier. It came to be a battle going on everyday with the kids. I thought, 'To make it to 25 years to get retirement, I can't do another 14 years of this.'

As the data analysis as a whole has shown, the mixed methods of principle components factor (PCF) analysis, Qualitative Comparative Analysis (QCA), and typologizing with the supplemental use of textual analysis all mutually reinforce and confirm each other. The factored equations shed light on general patterns of effective and ineffective reward combinations and conditions, whereas the typology confirms a common sense pattern of staying and leaving patterns in more simple

terms, while still highlighting the "middle ground" of "tenuous conditions" (the Either/Or quadrants). Taken together, the QCA results allowed for an understanding of different paths that lead to teacher turnover or retention, and showed the varieties in teachers' working experiences as a reality of the profession. From these analyses, text analysis of teachers in these categories helped towards the construction of teacher types in the study of retention and attrition of high-achieving teachers: there are the Intrinsic Committers, the Extrinsic Acceptors, the Satisfied Stayers, the Ready Leavers, the Intrinsic Seekers, and the Solo Stayers. The final two types have few empirical cases as their basis and so are considered only minor types.

Conclusion

The factored equations and the typology mutually reinforce each other in terms of explanation. The typology, more so than the equations, offers an intuitive breakdown of cases into types, and these types are useful both for making structural adjustments to urban schools' working conditions, and to their meso-level practices, such as hiring practices. With these adjustments, the aim would be to reduce the number of teachers who fall under tenuous circumstances in their work commitment, and to select and develop types of teachers who are more likely to be Intrinsic Committers than to be Extrinsic Acceptors. Quadrant IV, with such a large proportion of the sample (n=14 of the 42), especially illuminates that hiring practices are not yet at that level, in order to foster high levels of teacher retention.

The results partially confirm my hypotheses, but also reveal combinations of workplace rewards and their outcomes that could not have been predicted. I expected to find that, on a typology of high-achieving teacher-types, the majority of stayers would fall in the quadrants of high intrinsic rewards and high extrinsic rewards, or high intrinsic and low extrinsic. In fact, 19 of the 21 stayers were in these categories. As for leavers, I expected that the majority of leavers would fall in the opposite quadrants (low intrinsic, low extrinsic; or low intrinsic, high extrinsic). In fact, only about one-third of all leavers (8 of the 21 leavers) did fall in these quadrants; a sizable portion of eight leavers occupied the low extrinsic, high intrinsic quadrant with the stayers. In addition, I expected intrinsic rewards to account for the majority of high-achieving teachers' expressed work commitment, over and above the effects of salary. This finding of Hanushek et al. (2004) was not confirmed here.

The six key insights of the study constitute a major step forward in the literature on teacher turnover. Here I have both isolated the role of specific rewards in feeding or mitigating turnover, as well as pointed out surprising combinations of rewards that serve as case studies of teacher trade-offs in action. My findings suggest that: (1) A balance of intrinsic and extrinsic rewards is necessary to promote retention. (2) Among intrinsic factors, administration and student attachment are stronger rewards than collegiality. (3) The presence of collegiality is a weak and sometimes even parasitic reward in its role in shaping work commitment decisions. (4) The combination of presence of good administration and collegiality alone are not enough to ensure retention. (5) The absence of extrinsic

rewards is especially corrosive on teacher retention, or perhaps extrinsic rewards are in shorter supply than intrinsic rewards in the urban school workplace. (6) Leavers are the lowest-paid group among high-achieving teachers. By way of PCF, QCA, typology-building, and confirmatory textual analysis, this paper has made a unique contribution to teacher turnover and retention literature.

The typology was also successful in so far as it took these insights and transformed them into an empirically useful, parsimonious teacher typology. The teacher types capture a "complex but systematic interrelation" of "conjoint variations" existing in the data itself (Lofland et al. 2006). The typology accounted for contextual and other effects, by including reward dimensions that contain structural components within their measures, including race effects (in the working condition measure) and workplace control effects (in the autonomy and administration measures). Finally, the typology was successful in that it did not contain too many residual, unclassifiable cases; quadrant II was the least helpful in explaining patterns of attrition and retention, as only two cases fell in this category, so generalizing for its teacher types is not robustly supported by the applicable data. The number of contradictory ("both") cases is somewhat large (n=10; 5 on each side), but not too large. This is not necessarily indicative of a flaw in causal factors examined, though adding another explanatory reward factor in the analysis may help eliminate contradictory cases. Rather, the existence of contradictory cases may indicate the non-linear nature of work commitment outcomes, and the fact that satisfaction with rewards doesn't always account for work commitment decisions.

Limitations to the data include its snowball sampling method, which may have limited the variation observed in the sample when the network used to refer new subjects was highly clustered, as this sample was in certain network spots (Mouw and Verdery 2010). A related issue is that teacher respondents were not drawn from all 21 secondary schools in the district, but only nine of the schools. This was not purposeful, but merely the result of the convenience sampling technique. To improve representation, a stratified sampling approach mixed in with snowball and convenience sampling would improve generalizability to similar Southern, public, urban school districts. Third, a lack of a second measure for student attachment, which is necessary to establish the same inter- item reliability that the principle components factor analysis helped to confirm, weakens the conclusions we can draw about this intrinsic reward in the urban, public school as a workplace. While I did ask the leaver group to what extent they were involved in extracurricular activities with their students as a second measure of student attachment, I did not have the question prepared for the stayers, who I interviewed first, and I could not include the question in the PCF analysis, because it would create different measures between the stayers and leavers' data (also, the truth table simply would not allow for blank fields).

In terms of measurement, the strength of the study is that its survey items covered reward dimensions within collegial, working conditions, and autonomy indices thoroughly, and in a manner that aligns with prior research on teacher attrition. As such, although the student attachment measure as well as the administrative index measure perhaps did not capture these particular rewards in

their full power as well as they could have, I argue that the most important dimensions of rewards in the teaching profession have been adequately captured, and that the four major teacher types presented here -- Intrinsic Committers, the Extrinsic Acceptors, the Satisfied Stayers, and the Ready leavers -- accurately reflect the ways in which high- achieving teachers shape their professional identities within the schooling structures they're in.

Policy Implications

What does all of this mean for making teaching a more sustainable occupation, and for attempting to eliminate or prevent mechanisms that promote teacher sorting across school types? Can policies reverse the trend of teacher exodus from urban schools out to suburban and private schools? If so, what aspects of teachers' working conditions ought to be the priority and target for policy-driven regulation? By way of Qualitative Comparative Analysis, this study was able to elucidate which aspects of work rewards contribute more or less to teachers' staying and leaving decisions, relative to other rewards. QCA also illuminated under what conditions certain key "tipping point" rewards were most powerful; or, in other words, in combination with what other rewards (or absence of rewards) a given reward was most potent or powerful.

By considering intrinsic and extrinsic rewards separately from one another, the results of this study suggest that policy does in fact have a vital role to play in shaping teacher turnover patterns and teacher work commitment decisions. As expected, the simple *accumulation* of rewards predicts for increased staying decisions. A less expected finding, however, is that intrinsic rewards alone are *not*

enough to motivate high-achieving teachers to stay in their workplaces. Indeed, 13 of the 21 leavers – about two-thirds – reported having a high level of intrinsic rewards and satisfaction in their former positions as urban school teachers. In light of this finding, policy ought to focus on how to alter and increase the extrinsic sources of work rewards available to teachers. That is, policies that aim to enhance equitable teaching resources between schools ought to focus on securing the extrinsic rewards in urban school environments: salary, working conditions, and autonomy.

In this particular city under study, teacher salaries are actually marginally higher in the city schools than in the surrounding districts. Generous salary supplements are available to NBCT teachers as well, guaranteed for 10 years. However, among the high-achieving leavers, salary is low in all but two cases, suggesting that maybe this is the youngest group of teachers without pay increases due to teaching experience, or higher credentials. To keep young, high-achieving teachers from leaving, a policy intervention could include professional developments that guide new teacher through the NBCT process, or providing benefits toward paying a portion of higher education tuition for teachers to secure higher credentials.

Altering working conditions and autonomy are also priority rewards to address. They are each equally malleable to policy intervention insofar as the former has to do with *organizational protocols and procedures* that secure resources for the teacher or that buffer the teacher from stressful working conditions (such as large class size or demanding parents), and the latter has to do with *organizational*

conditions that allow the teacher a sufficient measure of discretion in decision-making and problem-solving.

These two rewards are rewards that exist at the meso-level, and thus can and do vary by school within a district – unless the rewards are somehow standardized by way of regulation. Such policies may require that (1) class size limits be enforced; (2) that mentoring of new teachers by experienced teachers be a more highly monitored and supported venture; and that (3) morale and cohesion among teaching faculty by enriched by way of allowing for more opportunities for collegial exchange within the workday (i.e., professional development time, activities, and interventions designed specifically to build working relationships intra- and inter-departmentally, where previously they were lacking or negative).

In terms of regulations that could enhance teacher autonomy, perhaps new organizational practices and procedures such as the following could be implemented across the district: (1) grounds for citations or the citation procedure itself should be altered to allow for greater teacher discretion in the tasks required of him/her, for which he/she will then be held accountable, rather than assuming tasks and responsibilities should and do apply equally to all teachers without examining the level of teacher buy-in for different communal tasks, or the role of partiality in administrators' enforcement on different teachers; (2) when a high-achieving teacher does decide to leave, a meeting, survey, or some other form of communication should ensue in which the administrators acknowledge the departure, rather than not addressing the problem of teacher exodus, which can turn into an epidemic within the school. Lastly, regulations that protect a teacher's

planning time during the day against last-minute subbing duties or other infringements and extra responsibilities would be a powerful way to increase teacher autonomy.

Boosting teacher retention in urban schools may indeed be a function of attending to and strengthening organizational conditions. Too often, teacher turnover is assumed by teachers themselves to be a byproduct of poor administrative support in the face of unruly students. This study, however, shows that for the types of teachers who initially choose to work in urban schools, the organizational conditions there often end up being the actual tipping points that catalyze their decisions to leave—not the unsupportive administration or unruly students. And these conditions can be addressed. We cannot leave such an important component of educational equity – teacher distribution – to the happenstance case of the "Intrinsic Committer" teacher type. Indeed, there is more variation within the camp of high-achieving teachers than only the intrinsic committer teacher types; this study has identified five other teacher types. Strong attachment, ease, and respect for the people in one's workplace simply aren't enough to mitigate the organizational pulls that fuel the systemic tendency towards educational inequality.

NOTES

(1) A capitol city in the regional South of the United States, this city has a population that has been declining annually since 1980. Racially, the city is about 70:30, black: white. The population is young, with one-third of the population being under 18 years old, and poor, with average personal annual income at about $17,000. Despite its size, the city has all the main features of a major urban center: headquarters of state and commercial agencies; the divergent and simultaneous processes of ghettoization and gentrification (Park 1925); urban decay, a declining city center and booming suburbs, testament to "unchecked industrialization" (Jacobs 1961; Mumford 1902); typical urban problems of social disorganization and isolation, as expressed in high crime rates and pervasive residential and educational segregation by race and class. The anomalies of the city's structures of schooling, more than anything else, make it an ideal site for education research. The city exemplifies problems with urban public schooling to an extreme extent -- teacher turnover and de facto racial segregation being two of the premier problems. De-emphasis on and anti-progressivism in education are indicated in part by the fact that the state's teachers are among the five states with the lowest-paid teachers in the nation (National Education Association 2011).

(2) To prevent selection effects via the systematic exclusion of portions of eligible respondents, efforts were made to interview at least two teachers per secondary school site in the district. However, in one case, I opted not to interview an eligible respondent because of his/her close ties with the principal at my former high school, as I was wary of negative or skeptical perceptions of the study disseminating throughout the district. This introduced some selection bias into the sample.

(3) On close-ended survey questions, Likert scaling has the advantage of ease, both for the subject's understanding and the researcher's evaluation using standard analysis techniques. Also, surveys (which often employ scaled responses) are better than interviews for measuring less complex behaviors (Pager and Quillian 2005), a few of which the researcher is interested in measuring. The drawback of scales like Likert and MSQ is that they assume a common, single underlying attitude, and responses are not easily reproducible (Anderson et al. in Rossi et al. 1985). The advantage of including open-ended questions is that they reduce underreporting of threatening or sensitive behaviors -- not the admission of, but the discussion of their frequency and nature (Bradburn 1983).

(4) Problems I encountered in the pilot interviews, which I later fixed, had to do with question wording and the lack of multiple measures for a question about student attachment. External validity, specifically construct validity, was addressed by adding one additional question about student attachment to increase internal consistency reliability. However, I only did this in the second group of interviews,

with the leavers only, so I could not include both items for comparison between groups. Two other ways that I checked that closed-response interview items were measuring what they were intending to measure was by using a mixture of positively- and negatively-worded questions to capture the same variable, and using Cronbach's alpha to assess inter-item correlations (Bradburn 1983; Cook and Campbell 1979).

(5) In some cases, though, familiarity worked against collecting rich data; during an interview with a former coworker within my own school, in the most intimate of settings (her own home), I left soon after the interview started, twenty minutes later, with the least amount of open-ended responses of any of my interviews. Perhaps in that situation, having at one time shared the same principal made the respondent reluctant to disclose feelings about her perceptions of the workplace. Experimenter expectancies and the Rosenthal Effect account for interview scenarios where respondent sharing is comparatively low to other interview scenarios; a former coworker may feel that s/he is expected to give glowing reviews to a teacher (the researcher) who is perceived as being a compliant employee. Conversely, the respondent's perception of me as an imperfect employee with school system critiques of my own (not shared with the respondent, of course) could work to increase his/her view of me as a viable confidant.

(6) In addition to Likert scale conversions to binary code, in two cases, the scale was from 1 to 7, so 1-3 were coded 0, and 5-7 coded was coded 1. For three measures, responses were already binary, with “yes” or “no” rather than a scaled response. Only one dimension, positive perception of administrators, was coded yes/no based on textual analysis across open-ended responses.

(7) At first, I was going to leave the “neutral responses” (coded 3) as blank fields, but upon using STATA and the Kirq program to analyze the truth tables, I could not. Of the 546 response fields, 49 were neutral responses (about 9% of all responses); this could have the potential to represent the general sway of the data in very different ways. Therefore, I tested replacing “3” with both 0 and 1, and the distribution of dimensions across the six measures of rewards – (1) satisfaction with administration; (2) working conditions; (3) autonomy; (4) collegiality; (5) student attachment; and (6) salary – was quite similar (See rotated principle components factor [PCF] analyses in Table 2). Two of the six factors did not change at all; one factor changed only slightly; and one added factor became less conceptually coherent with the zero-coding. Conceptually, when a teacher responded “3,” their attitude in doing so was not one of indifference, but more of compromising with a fair response that they could live with. In general, the attitude of giving a “3” response was either one of trying to make the situation at work seem acceptable to the interviewer, to give a better impression of the school than the teacher actually felt was her experience, or, it was to indicate that the teacher was not thrilled with the state of things at work, but that they were livable. As a general rule, respondents were not secretive about expressing how they felt about their workplace. Leavers certainly had no pressure to protect the namesake of their former school, especially

since some had strong feelings about how they had seen the school change over their tenure there. Stayers were also, as a general rule, realists about their working conditions, rather than optimists who would only present their school in a positive light. For example, a respondent who said "3" in response to the question, "On a scale of 1 to 5, from very unsatisfied to very satisfied, how satisfied are you with non-instructional time given at your school?" is more likely to feel that the quality and amount of her break time is sufficient (though perhaps not great) and not reason enough to be displeased, or else she would have responded with a lower number. Therefore, I chose to code neutral responses as "presence of" the given dimension of rewards (See Appendix for output and comparisons of cutoff point factor loadings).

(8) Student attachment was coded like the other scaled responses were converted, and salary was coded as $50,000/yr and up as "1," to separate higher-salary-earning from lower-salary-earning. The "cutting point" for this measure was established as a result of comparing data output using experimental thresholds; a $50,000 annual salary is twice as much as the starting salary bracket, and 47% of the sample, by this standard, was high- salary earning. This cutoff point was chosen as best-fitting by evaluating the output given.

APPENDIX: Cutoff Comparisons and PCF Output

TABLE 5. Factor Loadings using Principal-Components Factoring		
	With "3" Coded as "Presence of" (One)	**With "3" Coded as "Absence of" (Zero)**
Factor 1	Mentoring+Race_B+CoM+CoCoh	CoM + CoCoh
Factor 2	CoA+ nontime + -citations	nontime + CoA
Factor 3	SS_Large + ADMg	SS_Large + ADMg
Factor 4	EEF + ADMp	EEF + ADMp + Race_B
Factor 5	CoF + TchrLeader	CoF + TchrLeader
Factor 6	-ADMc	-ADMc
Factor 7	*n/a*	Mentoring + citations
**See Table 2 for variable code names.*		

Table 6: STATA Output, PCF With "3" Coded as "Presence of" (One)

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
EEF	0.1433	0.0456	-0.0616	0.9002	0.108	-0.0267
nontime	0.519	0.6511	0.0628	-0.0481	-0.0371	-0.1897
mentoring	0.3732	-0.4628	-0.3336	-0.2232	-0.2542	-0.0102
ADMg	0.0859	-0.0206	0.8725	-0.1042	0.0926	-0.0512
ADMc	-0.1668	-0.1082	-0.0547	0.0588	0.0643	-0.7617
ADMp	0.2908	0.4522	0.176	0.4733	-0.04	0.0088
citations	0.2066	-0.7735	0.0617	-0.1348	0.1017	-0.0988
CoM	0.7734	-0.0301	-0.0447	0.1093	0.1099	0.3117
CoCoh	0.7481	-0.0113	0.0426	0.2449	0.2437	-0.1074
CoF	0.1033	0.0716	0.0623	0.0162	0.8542	-0.1434
CoA	0.172	0.579	-0.214	-0.0971	0.2632	0.3971
TchrLeader	0.0942	-0.245	-0.0926	0.3781	0.6013	0.3319
Race_B	0.5397	0.1224	0.403	0.4311	-0.2972	0.1822
SS_Large	-0.1061	-0.047	0.6483	0.1316	-0.1491	0.5647

Table 7: STATA Output, PCF With "3" Coded as "Absence of" (Zero)

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
EEF	0.1746	0.8367	-0.103	0.0922	-0.0059	0.0197	0.0833
nontime	0.2077	-0.0911	0.8574	-0.0372	0.1771	-0.2123	-0.1101
mentoring	0.011	-0.0273	0.1169	0.7946	-0.1675	-0.1155	-0.0508
ADMg	0.0449	0.0173	0.0477	-0.0551	0.9417	-0.0282	0.0815
ADMc	-0.197	0.0442	-0.0145	0.1578	0.025	-0.8439	0.0031
ADMp	0.1262	0.6978	0.2829	-0.2675	0.1016	-0.0529	0.042
citations	0.1606	-0.1344	-0.3611	0.7405	0.1338	-0.1116	-0.0204
CoM	0.7654	0.1488	0.1351	0.103	-0.0754	0.3026	0.0709
CoCoh	0.8569	0.1397	0.0767	0.0624	0.0336	-0.073	0.1826
CoF	0.1388	-0.0013	-0.0204	-0.0527	0.0464	-0.0693	0.9268
CoA	-0.0344	0.1248	0.8281	-0.0262	-0.1307	0.2499	0.1324
TchrLeader	0.0037	0.327	0.1433	0.5087	-0.0316	0.2348	0.5178
Race_B	0.5024	0.5354	-0.04	-0.1346	0.2967	0.2318	-0.2649
SS_Large	-0.164	0.2619	-0.0407	0.0916	0.5733	0.5672	-0.2086

Table 8: STATA output, PCF Predicted Coefficients with Cutoff at 3=1

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6
EEF	-0.09854	-0.05951	-0.12111	0.66898	-0.03821	-0.06948
nontime	0.28542	0.3538	0.04852	-0.18983	-0.03838	-0.22076
mentoring	0.28697	-0.25043	-0.21866	-0.14173	-0.20816	0.03008
ADMg	0.05878	-0.02099	0.62083	-0.18968	0.13899	-0.14399
ADMc	-0.04319	-0.02514	0.05721	0.12382	0.03177	-0.57105
ADMp	0.05051	0.19326	0.05783	0.2608	-0.08056	-0.07983
citations	0.17529	-0.4263	0.08921	-0.08742	0.07311	-0.05968
CoM	0.38021	-0.07063	-0.07797	-0.08439	0.02853	0.18582
CoCoh	0.36384	-0.05419	0.02882	0.02184	0.11172	-0.15453
CoF	0.01798	0.04899	0.11935	-0.11231	0.61682	-0.11825
CoA	0.04762	0.31744	-0.17951	-0.19199	0.19055	0.30609
TchrLeader	-0.06545	-0.18106	-0.09122	0.22335	0.38312	0.26268
Race_B	0.20818	-0.01359	0.18201	0.20931	-0.25958	0.02082
SS_Large	-0.12492	-0.0732	0.35467	0.05417	-0.06221	0.36316

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