RESIDENTIAL COMMUNITY IDENTIFICATION AND PSYCHOLOGICAL WELL-BEING

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To my beloved wife, Erica, and children, Benjamin and Anna Kate,

The joy and strength of my life

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CHAPTER I

INTRODUCTION

The oft-recognized father of social psychology, Kurt Lewin, considered psychological processes to be embedded in physical and social situations (see e.g., Lewin, 1936, 1939, 1964). He believed the psychological environment involves "features of the situation that are relevant to the present motives, needs, and characteristics of the person, thereby fusing persons and environments" (Altman & Rogoff, 1987, p. 28). Steele (2002) has appealed for a social psychological renaissance of Lewin's more ecological perspectives and methods. Theories of collective identity (Tajfel & Turner, 1979, 1985), for example, have been criticized for ignoring the role of the physical world in identity development and functioning (Bonnes & Secchiaroli, 1995; Canter, 1986; Dixon & Durrheim, 2000; Proshansky, Fabian, & Kaminoff, 1983; Walker, 1991), despite work in environmental psychology suggesting that identification with the physical world, or place identity, impacts self-functioning and psychological well-being in similar ways as group identity does and with similar results. Both of these concerns are addressed here. Tested is the predictive utility of residential community identification – a fusion of a psychological sense of community with others co-residing on the street block and place identification with that physical space – on distress and well-being. Moreover, this hypothesis is tested using an ecological framework, which is rigorous in its recognition and evaluation of multiple social and physical environmental stressors and social supports and their relationship to personal distress and wellness.

Psychological well-being is generally thought of as being at ease, contented, *well* with oneself. Another label might therefore be psychological *wellness.* This concept is operationalized variously as a sense of life satisfaction, high self-esteem, lack of undue anxiety or depression, and the like. Psychological wellness is operationalized here as lower distress (depression and anxiety) and higher well-being where well-being is measured by responses to survey items tapping energy level, spirits, and general health. To avoid confusion, *psychological wellness* is used henceforth as an overarching term encompassing low distress and high well-being.

Ecological Perspective on Health and Wellness

Researchers have used the term "ecological" across the social sciences. In some segments of sociology, for example, it has come to be associated with an evolutionary or sociobiological framework for explaining social phenomena (e.g., Hannan, Carroll, & Polos, 2003; Nielsen, 2004; Nolan, 2003; Thornhill & Palmer, 2000). This dissertation, however, uses the term "ecological" in the tradition of social psychology (Barker, 1964, 1965; Bronfenbrenner, 1977; Schoggen, 1989), environmental psychology (Stokols & Altman, 1987), social epidemiology (Berkman & Kawachi, 2000), community psychology (Kelly, Ryan, Altman, & Stelzner, 2000; Moos, 2002; Perkins, Brown, & Taylor, 1996), and social ecology (which is itself multidisciplinary`; Moos & Insel, 1974; Stokols, 1981, 1992a, 1992b).

Ecological, in the latter sense, harkens to Lewin's theories of *life space* and *psychological fields,* which take as a fundamental premise that human behavior is always the product of an interaction between person and environment where the environment is both social and physical. Rather than interpreting human environments as merely neutral backdrops against which human behavior occurs, an ecological perspective takes pains to consider the interrelationships between humans and their surroundings. Exactly which elements take center stage often depends on the empirical question, but taking an ecological approach requires acknowledgement of interactions between individuals and their social and physical environment.[1] Because psychological wellness within residential environs is the context of interest here, an ecological perspective in the social ecology and environmental social psychology traditions (Stokols, 1992a, 1992b; Stokols & Altman, 1987) fits most closely the intent of this empirical work.

Lawrence (2002) offered four specific factors for consideration when applying an ecological perspective to the study of psychological distress: (1) the *individual* with all his or her idiosyncratic biopsychosocial traits and habits, which interact to create a specific level of susceptibility to distress; (2) the *agent* or *vector* of distress, including the social and psychological facets of human settings; (3) the *physical* and *social environment* of the person affecting his or her susceptibility and moderating the effect of the agent on the individual; and (4) the *available resources* used by individuals and groups including

[1] This is also the reason "ecological analysis" was chosen as the descriptor over "contextual analysis." The latter sometimes abides by this multilevel ecological framework but other times is used to describe a simple, higher-level investigation. To avoid such confusion, the term "ecological" is employed exclusively here.

shelter, nutrition, and information. Hence, advocates of the ecological perspective assert "individuals become more susceptible to [psychological distress] because of their differential exposure to numerous environmental, economic, and social factors that can promote or harm health and well-being" (p. 398).

Lawrence (2002) also summarized literature on the topic of home environments and health and well-being from an ecological perspective noting,

> few studies identify and measure those characteristics of housing that hinder or promote health and well-being… [and] contributions often lack a broad conceptual framework (including the societal context of housing); they have a restricted methodological approach (owing to a lack of multivariate techniques)…. The majority of contributions identify relations between illness and housing conditions without providing convincing evidence of the mechanisms linking them…. [Findings] have rarely been replicated in the same or different residential environments…. Moreover, many studies have commonly examined the relationship between isolated variables at only one point in time. (p. 400)

Although a comprehensive ecological analysis would include all relevant levels of analysis (e.g., genetic, regional) influencing health and well-being, no approach to the study of well-being will ever be exhaustive nor would such research ever be temporally feasible. Yet using an ecological framework, one can be assured of engaging in ecologically valid research provided: (1) the ecological niche is a behavior setting[2] (Barker, 1968, 1978); (2) aspects of the interrelations of individual, agent, physical and social environment, and available resources are given due attention; (3) an appropriate multilevel, multivariate approach to analysis is employed; and (4) analysis spans at least two time points.

An ecological analysis of the impact of residential community identification on psychological wellness is performed. Before reviewing the empirical literature tying place identification and community identification to distress and well-being, it is first necessary to briefly define these constructs as well as their synthesis – residential community identification.

Place identity

According to Proshansky et al. (1983), place identity is a cognitive component of self-identity apart from, yet integral to, the levels of abstraction of self essential to social identity theory (Tajfel & Turner, 1979, 1985; J. C. Turner, 1985; J. C. Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). The processes that produce place identity are thus no different than those leading to other cognitive structures

[2] A behavior setting is generally thought of as a regularly and naturally occurring social setting, bounded by time and space, and influencing the behavior of participants in relatively predictable ways.

(schemata). An assumption made by Proshansky et al. is that self-identity is developed not merely through differentiation of self from significant others but also from objects and places. If a child learns who she is through her relationships with those who satisfy her needs then it is likewise argued, "contributing to that self-knowledge are the toys, clothes, rooms, and whole array of physical things and settings that also satisfy and support [her] existence" (Proshansky, Fabian, & Kaminoff, 1983, p. 57). Place identity, at its most fundamental level, is thus persons' "socialization with the physical world" (Twigger-Ross & Uzzell, 1996, p. 206), and – as with other dimensions of self – it is intimately tied to psychological wellness.

Schemata regarding specific or archetypal physical settings that make up place identity consist of "memories, ideas, feelings, attitudes, values, preferences, meanings, and conceptions of behavior and experience" (Proshansky, Fabian, & Kaminoff, 1983, p. 59). Place identity is thus identification with places and their properties, i.e., we define ourselves in terms of particular locales, which include their attributes and objects. At the center of these cognitions is the individual's environmental past, which is made up of schemata of places and their properties that have served to satisfy the person's biological, psychological, social, and cultural needs. A place's influence on place identity thus depends on the impact of its successes or failures in satisfying the individual's needs by promoting or supporting self-efficacy and self-esteem. Deriving from these evaluative experiences emerges specific attitudes, feelings and beliefs about that environment and those types of environments.

Korpela (1989) likewise suggested that behaviors of "environmental self-regulation" are indicative of place identity, maximizing the maintenance of a coherent sense of self (i.e., balancing pleasure and pain, achieving favorable self-esteem and environmental self-efficacy, and maintaining self-continuity). In so arguing, Korpela asserted that place attachment (or aversion) is at the center of place identity, and that place identity cognitions are organized around experiences of successful or failed self-maintenance.[3] Korpela (1991) followed up on this notion by suggesting that favorite places serve the restorative functions of emotion- and self-regulation (or well-being maintenance). These regulation experiences of course happen in the context of physical settings, which become regulation anchors. The regulation

[3] Encountering new physical settings, then, one presumably organizes new place identity cognitions around the developing place attachment/aversion to settings falling within the same subjective *place category* as the new environment.

process aids in development of place identity, he argues, through self-experiences enabled by favorite places, e.g., calming down and clearing one's mind after emotionally difficult episodes, "experiences of beauty, control, freedom of expression and escape from social pressures… reflection on oneself and one's place in the world… assimilation of new experiences into one's self-theory and in maintenance of one's conceptual systems" (Korpela & Hartig, 1996, pp. 221-223).[4]

As a means of self-regulation, place identity serves to guard and maintain well-being. Protection and maintenance of self-identity is supplemented by identity adjustments that are made with gradual and even drastic changes due to significant life events. Place identity enactments thus correspond to the thoughts, behaviors, and experiences of individuals that serve to integrate self-identity. Proshansky et al. described five different place identity functions, all of which concern integrating, maintaining or protecting self and therefore well-being. Recognition and meaning functions are diagnostic in that they help one determine "the nature, value, and relevancy of a physical setting" to the self (Proshansky, Fabian, & Kaminoff, 1983, p. 68), assisting, for example, in identifying and appreciating the (un)familiar, (non)threatening, or the very *raison d'etre* for places and their objects. For problem solving purposes, the expressive-requirement and mediating-change functions are action-oriented – these assist in knowing what and how to effect meaningful change of, or control over, an environment. Finally, the anxiety-and-defense function of place identity combines both diagnostic and problem solving aspects in attempts to preserve self-continuity and self-esteem.

Place identity thus functions to support well-being through emotion regulation, self-maintenance and protection – sometimes actively, sometimes more passively. If favorite places are indeed self-restorative, then the residential neighborhood (even a deprived one like the urban slum described by Fried, 1963) may provide numerous opportunities for exerting environmental competence, control, and self-regulation; e.g., participation in homeowners associations, organizing for political solutions to environmental problems, or just picking up trash from common grounds or home-fronts. Place identity should thus help predict self-functioning generally (well-being, depression, anxiety) via a sense of self-worth, control or mastery.

[4] Qualitative cross-cultural research of adults' favorite places shows great similarity across cultures and seems to confirm this notion of restorative benefit; for example, 80% of Newell's (1997) respondents gave reasons for choosing a favorite place that suggested some self-regulatory benefit to the individual.

Indeed, several scholars have theorized about the role of place identity processes in mental health with select populations, such as children (Spencer & Woolley, 2000; Tabin, 1992) and rural residents (Wainer & Chesters, 2000), but Fullilove (1996) provided the most comprehensive analysis. Fullilove argued that "displacement" or "dislocation" has serious consequences for mental health. She first made the case for the problem of dislocation in America and worldwide with statistics on third-world refugees and, here at home, mobility, homelessness, inadequate low-income housing, and urban environmental decline, all of which have been linked to serious health problems. She began her thesis with several assumptions: (1) we each endeavor to gain a sense of belonging to place, which grows from familiarity, attachment and identity; (2) sense of place belonging is necessary for psychological wellness; and (3) displacement disrupts these emotional connections, which leads to injury to place belonging and, more generally, mental health.

Fullilove further argues (1) place is cognitively represented but holds far-reaching social and symbolic implications such as promoting a sense of autobiographical perspective and self-continuity; (2) place is both object of and ground for thought, emotion and action; hence, (3) threats to valued places are threats to self-security and dislocation can cause loss of self; and (4) experiencing the stigmatization of a valued place can lead to feelings of alienation and loss of self-worth. Her recommendations to clinicians who treat dislocated individuals echoes very closely those of Brown and Perkins' (1992): preserving a sense of community in the face of threats to place or its disruption is critical to mental health; such preservation is possible by empowering people with (re)building opportunities, the process and product of which should reinforce place-self-community continuity and stability.

Residential community identification

Although Proshansky et al. (1983) failed to overtly address ties between place identity and forms of collective identity, they clearly did not consider place identity to be an asocial phenomenon: "There is no physical environment that is not also a social environment, and vice-versa" (p. 64). Hence, place identities of individuals from different groups (e.g., ethnic, social class, gender, national) are expressed in ways that reflect relevant group attitudes. For example, the norms and values of privacy, personal space, territoriality, etc., that vary predictably with different groups will be reflected in individuals' expressed

attitudes and behaviors specific to their sociocultural and demographic characteristics. Moreover, other people's place related evaluations – from stigmatization to envy – would influence one's own place identity.

Cuba and Hummon (1993) suggested that place contributes to identity through display and affiliation. Places are used to "communicate qualities of the self to self or other" (p. 112) through personal as well as collective identities, and to "forge a sense of attachment or home" (p. 113), in which shared interests and values accompany emotional ties. Puddifoot (1995, 1996) and others (Pretty, 2002; Pretty, Chipuer, & Bramston, 2003; Twigger-Ross & Uzzell, 1996) took this notion one step further by directly or indirectly suggesting that place influences all aspects of identity but does not necessarily warrant an identity category unto itself. Either way, these scholars in a sense take literally Proshansky et al.'s statement that all environments are both social and place based, arguing for a form of place-based self-identity that operates at varying levels of abstraction from the personal to the small or large group. Indeed, empiricists who have studied both social and place aspects of identity have done so treating them as compatible or synergistic dimensions of self-identity.

Bonaiuto et al. (1996), for example, in their study of children's perceptions of local and national beach pollution, found tendencies to create positive distinctiveness as social identity theory would predict. They suggested observed effects represented an attempt to demonstrate "in-place distinctiveness" as much as community group distinctiveness. Puddifoot (1997) found that residents of a community being absorbed by a larger urban area showed similar attempts to establish in-place distinctiveness. However, the residents who also acknowledged the threat to their community reported higher levels of identification and were more likely to engage in acts of social creativity and competition to preserve their community (e.g., organize demonstrations). Gotham (1999), who studied similar community organizing to fight an expressway development, concluded that, "peoples' identification with place is tied not only to their ability to articulate compelling collective representations of residence, but also to available mobilizing structures that shape the mechanisms by which groups construct their collective identity" (pp. 349-350).

Twigger-Ross and Uzzell (1996) studied attached and nonattached residents of the same community, finding evidence for the use of the "residential environment in the maintenance and development of identity processes" (p. 217). Residents who identified with their settlement found

justification in their physical surroundings for positively differentiating their place in contrast to surrounding areas, while residents who did not identify instead focused on discontinuities between self and environment, e.g., "the people and the facilities [do] not represent [our] values and aspirations" (p. 218). Twigger-Ross and Uzzell concluded that, just as places have social implications, so too do identities have place implications: "place is part of the content of an identification… [not] disembodied from the physical environment" (p. 218).

These varied results suggest place and community group identifications are compatible and operate jointly to maintain or promote well-being. The form of collective identity (or "we-ness"`; Thoits & Virshup, 1997) that most closely links these varied findings together is known as psychological sense of community.

Psychological sense of community (PSOC) was first defined by Seymour Sarason (1974) as the sense that one is part of "a readily available, mutually supportive network of relationships upon which one [can] depend" (p. 1) and, as a result, sustained distress (e.g., loneliness, anxiety, "destructive anguish") is mitigated or avoided. Having PSOC also means one feels needed by his or her community, which allows for the expression of "needs for intimacy, diversity, usefulness, and belongingness" (p. 3). Although Sarason (1974) acknowledged that PSOC attainment "may be associated with hostility toward other community groups" (p. 272), it is not thought of as created and maintained purely through social comparison processes (i.e., in-group versus out-group differentiations), which is a hallmark of social identity and self-categorization theories (Tajfel & Turner, 1979, 1985; J. C. Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Hence, like place identification, PSOC can exist in the absence of a comparative referent such as *other group* or *other place.*

Scholars have since attempted to define or refine PSOC's essential characteristics – such as integration and fulfillment of needs, group membership, influence, and shared emotional connection (McMillan & Chavis, 1986), or mutual concerns, social connections, and community values (Long & Perkins, 2003) – but even after several decades of much empirical attention, it remains a difficult construct to define. Perhaps Sarason (1974) was right that one can only be certain of its absence, which is often accompanied by "themes of unwanted destructive loneliness and social isolation" (p. 3). Hence, like place identity, PSOC is intimately tied to psychological wellness.

Psychological sense of community is not considered bound to specific types of groups, which is similar to other forms of collective self-identity. However, the fact that PSOC, like place identity, is (1) not restrained by social comparison processes and (2) highly consequential to psychological wellness, makes these two constructs particularly amenable to conceptual amalgamation, such as within a residential setting.

Indeed, work by DeLisi and Regoli (2000) suggests residential community identifications help protect well-being. They found that neighborhood residents who had greater place attachment also had less fear of crime than renters, persons wishing to move, and those who did not socialize with neighbors. Devoid of attachment to place, residents failed to socialize with neighbors, which hampered a sense of cohesiveness and thus psychological sense of community (PSOC); or, lacking PSOC, residents failed to develop a sense of place belonging and either or both of these conditions contributed to fear of crime. Regardless, PSOC and place identification processes apparently worked in tandem to predict victimization anxieties.

This dissertation takes a similar approach by studying the predictive utility of residential community identification on well-being and psychological distress (i.e., promotion, maintenance, and protection of psychological wellness), but does so using the entirety of the ecological framework, which is not the case with any previous identity research into wellness.

Wellness Consequences of Place and Community Identifications

Place and community identifications predict psychological distress and well-being as moderated or mediated by a number of processes, including self-esteem, self-efficacy, self-regulation, and self-continuity. For example, place identity is evinced in acts of environmental self-regulation in which places anchor and support the regulation of emotions (Korpela, 1989, 1991). As a result, favorite places become self-restorative environments when they assist in and anchor successful self-regulation. Hence, place identification helps predict self-functioning generally (i.e., well-being, low distress) via a sense of control or mastery (self-efficacy), emotional self-regulation or enhancement (self-esteem), and dependability or stability (self-continuity). Similarly, valued group identities (positive and central to self) have positive consequences for domain-specific and sometimes overall self-esteem (Hunter, O'Brien, & Grocott, 1999;

Hunter, Platow, Bell, Kypri, & Lewis, 1997; Hunter, Platow, Howard, & Stringer, 1996; Rubin & Hewstone, 1998), self-efficacy (C. Brown, Glastetter-Fender, & Shelton, 2000; De Cremer & van Vugt, 1998; Koch, 1993), and self-continuity (Chandler & Lalonde, 1998), whereas subjectively devalued social identities have negative consequences for the same.

Self-efficacy and self-esteem are often discussed and studied as ends unto themselves (i.e., indicators or aspects of psychological wellness), while self-continuity and self-regulation are more often discussed as mediators (or requisites) of wellness. Regardless, because self-esteem, self-efficacy, self-regulation, and self-continuity are all part and parcel psychological wellness, these results are reviewed together but giving particular attention to studies that directly measure distress or well-being.

Place identification and self-esteem, self-efficacy, self-regulation, and self-continuity

Cohen (1993) argued that place boundaries "encapsulate identity" and act to regulate behavior and distinguish the community in-group from others. Similarly, Altman and his colleagues (Altman, 1973, 1975, 1977; B. B. Brown & Werner, 1985; Harris & Brown, 1996) suggest that these and other identity displays relative to territoriality and privacy regulation signal commitment to, control over, and sense of pride in physical locale. Hence, theory would suggest, self-continuity, self-esteem and self-efficacy, are embedded in and exemplified by intimate places. Indeed, naïve judges can accurately discern neighborhood residents' territorial commitment to home/street block just by observing home exteriors (Harris & Brown, 1996), and observers of work and living spaces can accurately discern some of the personality traits of its routine inhabitant (e.g., openness, conscientiousness and extraversion`; Gosling, Ko, Mannarelli, & Morris, 2002). Further, Vinsel, Brown, Altman and Foss (1980) showed that physical privacy displays in students' dorm rooms significantly predict commitment to college life and dropout rates, which, one may presume, is tied to self-esteem and self-efficacy linked to college student identification; drop-outs' self-in-place continuity was likely lower than it might have been in other environs. Pervin and Rubin (1967) showed similar findings regarding dropout rates and perceived discrepancies between self and college environment. Importantly, Pervin and Rubin's findings were independent of perceived self-to-fellow-students discrepancies and were specific to dropouts for nonacademic reasons;

hence, the self-in-place discontinuity that led to dropping out could not, presumably, be attributed to group identity effects or mere academic inadequacies.

Korpela (1989; Korpela & Hartig, 1996) posited that places are used to regulate pleasure and pain, and help to maintain self-continuity and self-esteem. Thematic analysis of Finnish children's writings about their favorite places showed that such environments help in pleasure–pain regulation via freedom of expression, familiarity and belongingness, providing avenues for finding self-coherence and self-esteem (Korpela, 1989). And with Finnish university students, Korpela and Hartig (1996) found that favorite places were reported to be more self-restorative (i.e., successful emotional self-regulation) than neutral or unpleasant places. In a follow-up study with a similar population, researchers compared accounts of favorite and unpleasant places (Korpela, Hartig, Kaiser, & Fuhrer, 2001). Notably, favorite and unpleasant places differed on all four dimensions of self-restoration (being relaxed, being away from everyday life, forgetting worries, and allowing for reflection on personal matters). Lastly, Korpela, Kyttae, and Hartig (2002) showed that over half the children in their study used their favorite places for cognitive restoration and one-third reported using their favorite places for emotion-regulation. Importantly, in these studies by Korpela and colleagues regarding the restorative places identified by participants, natural settings were over-represented among favorite, restorative places and under-represented among unpleasant places. When considering this fact in light of the self-restoration dimensions studied – namely, being relaxed, being away from everyday life, forgetting worries, and allowing for reflection on personal matters – one may surmise that most places that serve self-restorative functions are far more about socializing with the physical environment (place identification) than a proxy for group identification or support.

Twigger-Ross and Uzzell's (1996) study of attached and nonattached residents of an urban redevelopment site (reviewed above) showed evidence of self-in-place continuity and discontinuity, respectively, via descriptions of place as either consistent or discrepant from self-identity. For example, for attached residents, place and its characteristics were described as supporting and facilitating achievement of personal goals (self-efficacy), and the place's symbolic traits were used to achieve positive distinctiveness (self-esteem). Similarly, Wasserman, Womersley and Gottlieb (1998) reported

that migrants to Chesapeake Bay established strong place attachments and used them to bolster self-esteem via positive distinctiveness.

Consequences of place identification are often most evident when such self-in-place processes are disrupted (Bode, 1989; B. B. Brown & Perkins, 1992; Dixon & Durrheim, 2000; K. Erikson, 1976; Fried, 1963; Oliver-Smith, 1986; Stern, 1976; Walker, 1991). For example, Dixon and Durrheim (2000) reported on Whites' reactions to disruptions in valued places due to shifting boundaries, both physical and symbolic, amidst democratizing South Africa. They found, in addition to the expected disruption in group identity boundaries, disruption of (1) *me-ness* in which prior emotion regulation via the "warm, content" place is now lost due to corruption by Black squatters' pollution and "unmannerly dress"; (2) *place-referent (self) continuity* in which place, as the referent to key past experiences and relationships, is now devoid of that referent base; and (3) *ecological self* in which the squatters despoiled the ecosystem and therefore the "solitude and stillness" of the valued place and hence its positive emotion regulation attributes (p. 36). Thus, disruption to a valued place directly impacted place identification,[5] which in turn impacted basic self-regulatory cognitions and behaviors.

To recap, positive place identification provides avenues for enhanced self-efficacy and self-esteem. Place identification can also serve instrumentally in preserving self-continuity by supporting or enabling successful self-regulation. Conversely, disruptions to place identifications have negative consequences to self-esteem/efficacy/regulation/continuity. Absent from this empirical review, however, is the place identification parallel to identifying with a stigmatized, devalued group/category. Because most of the place literature concerns attachment or belonging rather than identification, however, this is not surprising. That is to say, affective bonding is more often thought of as present or absent rather than positively and negatively valenced; thus, although identification with a stigmatized or devalued place is conceivable, its impact to self-esteem and the like has yet to be addressed empirically. However, we may speculate that, just as positive place identification mirrors positive group identification in its consequences

[5] All three aspects are reflective of disruptions in place identity: #1 and #3 relate closely to Korpela and colleague's (Korpela, 1989; Korpela, Hartig, Kaiser, & Fuhrer, 2001; Korpela, Kyttae, & Hartig, 2002) contention that place identity is enacted via environmental self-regulation; and #2 alludes to the role of the environmental past – which Proshansky et al. (1983) contend is at the heart of place identity schemata – as the standard by which continuity or discontinuity is determined. Place attachment is implicated here too in that referent places were valued by respondents; with the corruption of the valued characteristics of place also came a corruption of the emotional bonds to that place.

to self-esteem/efficacy/regulation/continuity, the negative consequences of holding a stigmatized group identity should likewise be shown when possessing a negative place identity.

Place identification and distress or well-being

As with the conceptual literature, it is common for the empirical literature to blur place attachment and place identification. Because most place identity theorists (e.g., Cuba & Hummon, 1993; e.g., Korpela, 1989; Twigger-Ross & Uzzell, 1996) consider attachment to place requisite to place identification, however, research that (explicitly) relate either place attachment or place identity to mental health outcomes are reviewed together.

To reiterate, several scholars have theorized about the role of place identification or place attachment in mental health with specific populations, such as children (Proshansky & Fabian, 1987; Spencer & Woolley, 2000; Tabin, 1992) and rural residents (Wainer & Chesters, 2000), but Fullilove (1996) has provided the most comprehensive conceptual analysis yet. Fullilove's audience was fellow psychiatrists when she argued – along similar lines to those of Proshansky et al. (1983) and Brown and Perkins (1992) – that "displacement" or "dislocation" can and does have serious consequences for mental health.

Fullilove (1996) first made the case for the problem of dislocation in America and worldwide with statistics on third-world refugees and, here at home, mobility, homelessness, inadequate low-income housing, and urban environmental decline, all of which have been linked to serious health problems. She began her thesis with several assumptions: We each endeavor to gain a sense of belonging to place, which grows from familiarity, attachment and identity[6]; sense of place belonging is necessary for psychological wellness; and displacement disrupts these emotional connections, which leads to injury to place belonging and, more generally, mental health.

Fullilove further argues (1) place is cognitively represented but holds far-reaching social and symbolic implications such as promoting a sense of autobiographical perspective and self-continuity; (2) place is both object of and ground for thought, emotion and action; hence, (3) threats to valued places are threats to self-security and dislocation is equated with loss of self; and (4) experiencing the stigmatization

[6] Fullilove expands on these three dimensions of place belonging, but suffice it to say, her overarching construct of place belonging is nearly identical to the present definition of place identification.

of a valued place can lead to feelings of alienation and loss of self-esteem. Her recommendations to those who treat dislocated individuals echoes very closely those of Brown and Perkins' (1992): Preserving a psychological sense of community in the face of threats or actual place disruption is critical to mental health; such preservation is possible by empowering people with (re)building opportunities, the process and product of which should reinforce place-self-community continuity and stability.

There is sound evidence for Fullilove's (1996) contentions regarding loss of self-continuity that comes with dislocation or the disruption of valued place and the subsequent implications for mental health. For example, Norris-Baker and Scheidt (1990) found evidence that older people with strong attachments to small communities in the process of becoming "ghost towns" employed a few select places as "signifiers of psychological continuity" but that uncontrollable changes to the environment "may place them at psychological risk." (p. 333). Ralph Taylor and colleague's (Perkins, Meeks, & Taylor, 1992; R. B. Taylor, 1987, 1988, 1996, 1997, 2002; R. B. Taylor, Gottfredson, & Brower, 1984) work on human territorial functioning shows ties between aspects of "physical incivilities" (or its opposite, signs of human investment in valued place) and fear of crime, which is of course intimately tied to anxiety and general well-being. For example, Perkins and Taylor (1996) found that objective and subjective signs of physical disorder at multiple levels of analysis, such as vandalism, vacant buildings and dilapidation, significantly predicted resident fear of crime.

Analysis of burglary victims (i.e., those having experienced an insult to a valued place`; B. B. Brown & Perkins, 1992), even those living in high crime neighborhoods, showed that they were commonly "caught off guard," believing their homes were essentially an extension of themselves, both stable (i.e., having continuity) and controllable. The severity of victims' distress responses coincided with the degree of symbolic insult suffered (i.e., how intimate an unreciprocated knowledge of the home the burglar gained). "Because attachments involve people, places, and the processes underlying people–place bonds, burglary represents a direct disruption of the [place] bonding process" (B. B. Brown & Perkins, 1992, p. 286); thus burglary victims, post-disruption, evinced uncertainty of self-stability and self-controllability, and uncertainty about neighborhood safety and its social networks, which translated into noticeable levels of psychological distress and a reduced sense of well-being.

The effects of dislocation may also occur with planned relocation, although the severity of the consequences to well-being depends on how the move is perceived and managed. Using a multi-method analysis with spousal partners who moved into a new community one-year prior, Walker (1991) found evidence that voluntary change in dwelling place had a significant effect on identity. Reported effects varied widely for both men and women, from "sanguine or cheerful" to "somber or gloomy," and some experienced a loss of "locational identity," which included systems of social contacts and activity patterns in several environments. Brown and Perkins (1992) also studied planned relocators and noted similar effects, but also documented some of the processes that helped relocators protect a sense of well-being. Before the move, individuals often began loosening ties to home and made cognitive, affective and behavioral efforts to build a new identity around the soon-to-be-home. Planned relocators who looked forward to the move rather than dreaded it evinced fewer mental health problems. After the move, planned relocators acclimated best if they cultivated a new place-related identity rather than clinging to the old; however, even those who approached it healthily felt "that part of their identity derived from the people and places left behind" (p. 289).

Evidence is greatest for the negative impact on mental health when extreme disruptions happen to places of greatest attachment (B. B. Brown & Perkins, 1992; Dixon & Durrheim, 2000). The best examples come from the severest cases: The Buffalo Creek flood and mudslide wiped out an entire town (K. Erikson, 1976; Stern, 1976), and Boston city planners destroyed an entire neighborhood branded an "urban slum" (Fried, 1963). In both instances, the disrupted community and place identifications produced serious mental health consequences including severe grief and depression, anxious uncertainty about personal well-being, and unsettled self-continuity and self-controllability. In each of these cases, as well as others (B. B. Brown & Perkins, 1992; Walker, 1991), the consequences to personal well-being were directly related to pre-disruption degree of place bonding. Hence, the negative impact of place disruption on personal well-being is proportional to the greater investment of self pre-disruption.

Consistent with Fullilove's (1996) recommendations to those who treat such dislocated individuals, Peruvians' who suffered through a Buffalo Creek-like loss of town (also via mudslide`; Bode, 1989; Oliver-Smith, 1986) were able to sustain self-continuity and aspects of personal well-being by rebuilding the community themselves. In doing so, they were able to honor lost places and people by

incorporating appropriate symbols that assisted in reinforcing or re-establishing place–self–community continuity and stability (B. B. Brown & Perkins, 1992).

One might argue, perhaps quite sensibly, that the literature reviewed above linking place identification and attachment to mental health is merely an artifact of the effects of group identification, stressful events and/or social support or networks. Indeed, only Fried (1963) has studied both place identification and group identification effects on mental health for residents dislocated from Boston neighborhood branded an urban slum by city government and therefore destroyed. Fried found independent and additive effects of strength of place identification[7] and group identification[8] (both measured pre-disruption) on severity of grief reactions two years post-disruption:

> *…either* spatial identity or group identity may be a critical focus of loss of continuity [of self] and thereby lead to severe grief; but if *both* bases for the sense of continuity are localized *within the residential area* the disruption of continuity is greater, and the proportions of marked grief correspondingly higher. (p. 158)

Empirical work also suggests identification and bonding to place can have positive effects on psychological wellness and help to buffer distress. For example, Ralph Taylor and colleagues' work in human territorial functioning (reviewed above) shows that neighborhood place attachment moderates the effects of place problems (or "physical disorder") on well-being such that residents with higher place attachments are more likely to mobilize community to combat environmental threats to their neighborhood (i.e., evidence of self- and/or collective-efficacy`; R. B. Taylor, 1996) rather than allow anxiety and fears to dominate their sense of personal well-being. Kurokawa and Seiwa (1986) also reported a moderating effect: level of place identification interacted with actual flood experience to predict flood-related anxiety, with higher place identification helping to buffer anxiety. Also, as noted above, neighborhood residents who had greater place attachment felt safer (i.e., less fear of crime) than people with lower levels of place attachment (e.g., persons wishing to move`; DeLisi & Regoli, 2000). Hence, residents experience greater anxiety when lacking identification to neighborhood, but such a place bond, when present, can help to either buffer feelings of anxiety or promote well-being directly.

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[7] Place identification had a multi-dimensional operationalization: familiarity with (cognitive), use of (behavioral), commitment to, and comfort or "being at home" in (affective, evaluative) the residential neighborhood.

[8] Group identification was operationalized as a "sense of belonging, of being a part of [the] social" entity that is the residential community (p. 157), which included perceived membership and/or organizational and relational associations.

In sum, these empirical findings concerning place identification on mental health and well-being (predictably) echo those of place identification on self-aspects (esteem, efficacy, regulation, continuity). Specifically, positive place identification or bonding, like positive group identification, helps to buffer psychological distress and generate a sense of well-being. Also, disruptions to place identification or bonds produce distress and negatively impact psychological wellness. Moreover, the degree of psychological distress experienced post-disruption/dislocation is proportional to the degree of place identification/bonding pre-disruption/dislocation regardless of whether the place disruption/dislocation was planned or unforeseen.

Group identification and self-esteem, self-efficacy, self-regulation, and self-continuity

Self-esteem. Some studies have shown that self-esteem increases when group categorized individuals are allowed to discriminate against out-group members (e.g., Lemyre & Smith, 1985; Oakes & Turner, 1980). Reviews of this literature, however, indicate mixed results (Abrams & Hogg, 1988; Hogg & Abrams, 1990; Long & Spears, 1997; Rubin & Hewstone, 1998). Hunter and colleagues suggest, and show empirically, it is not so much global self-esteem that is affected by these acts of social competition, but rather domain-specific self-esteem (i.e., those self-domains relevant to the category membership; e.g., academic or verbal ability, physical appearance, religion; Hunter, O'Brien, & Grocott, 1999; Hunter, Platow, Bell, Kypri, & Lewis, 1997; Hunter, Platow, Howard, & Stringer, 1996).

Others have found that group members such as sports team fans receive a boost to self-esteem when their group succeeds (or "basking in reflected glory"; Cialdini et al., 1976; Hirt, Zillmann, Erickson, & Kennedy, 1992) and use the pronoun *we* more often when describing the successful performance (Lee, 1985), but also protect self-esteem by avoiding reflected team failure (e.g., taking off group identification badges; Snyder, Lassegard, & Ford, 1986). Dietz-Uhler and Murrell (1998) revealed some of the coping mechanisms used to protect self-esteem when group identity is threatened.[9] The stronger the threat to one's group, the more affirmations (to bolster self-esteem) participants made following the threat. Strength (or centrality) of group identification also played a role. Those identifying more strongly engaged in more "cognitive work" to protect self-esteem after a threat than did those identifying weakly presumably

[9] Threat was operationalized as evaluations that reflect negatively on the university in-group.

because self-esteem is more strongly tied to the group for those highly identified, which made it more difficult to distance self from the group psychologically. Further, for those strongly identified, enhanced self-esteem resulted when participants were given external attributions for their team's failure or when given internal attributions for their team's success. Also important was a main effect showing that people who strongly group identified reported greater domain-specific self-esteem than those who were not strongly identified (Dietz-Uhler & Murrell, 1998).

Also, Bat-Chava's (1993) meta-analysis of 42 empirical studies with deaf participants showed a positive impact to self-esteem when identifying with this disadvantaged group. Bat-Chava (1994) further showed that this enhancement to self-esteem is a direct identification effect rather than mediated by within-group comparisons as others (Crocker & Major, 1989) have suggested.

Self-efficacy. Cameron (1999) studied dimensions of group identification (in-group ties, centrality, in-group affect) and self-esteem, but also incorporated two types of efficacy. He found that group identity centrality (to self) and affect predicted group-based efficacy while in-group ties predicted self-esteem. Both self-esteem and group-based efficacy in turn predicted self-efficacy. Hence, in Cameron's work, self-esteem and group-based efficacy mediated the influence of (dimensions of) group identification on self-efficacy.

Messick and Brewer (1983) suggested self-efficacy is enhanced when an individual is group identified because group identification produces perceptions that personal actions are representative of the collective and therefore have more power to effect change. Kerr (1992) found no support for Messick and Brewer's (1983) hypothesis, while others have shown support. For example, self-efficacy was found to mediate the relation between collective identification and willingness to contribute to a collective cause (De Cremer & van Vugt, 1998). De Cremer and van Vugt argued that this finding was in line with Messick and Brewer's hypothesis: group identification led to perceptions that personal actions were representative of the collective and therefore enhanced a sense, if not an *illusion,* of self-efficacy. Koch (1993) found similar results in the political arena. He showed that appraising one's political group as efficacious predicts both political self-efficacy and interest group membership whereas perceiving one's group as non-efficacious produces lower rates of membership and self-efficacy. Although Britt (1991) did not find the expected task-related self-efficacy effects with assigned or naturally occurring group members, he did

find that participants who were allowed to listen to in-group members discuss the task reported higher self-efficacy than those allowed to listen only to discussion by out-group members.

Similar to Hunter and colleagues' (1999; 1997; 1996) work related to domain-specific self-esteem, Brown et al. (2000) addressed domain-specific self-efficacy. They found that collegiate athletes who self-identified as such to the exclusion of other identities showed significantly lower self-efficacy for career decision-making tasks.

Self-regulation. The only empirical piece relating group identification to self-regulation comes from Abrams and Brown (1989). They found that dispositionally private self-focused participants showed more intergroup discrimination than dispositionally public self-focused participants even when both were equally group identified. According to Abrams and Brown, this suggests the consequences of group identification are moderated by the degree and level of self-regulation by enhancing or diminishing tendencies to show in-group bias and/or out-group discrimination when group identified. Of course, self-regulation in this instance is not a product of group identification, but does moderate enactments of group identification.

Self-continuity. Despite the illustrious history of conceptual work into self-consistency or continuity (e.g., Festinger, 1957; Heider, 1958) and theories of collective identity, only one empirical piece is known to link the two.[10] Chandler and Lalonde (1998) studied native British Columbian (or "First Nations") youth suicide rates. They found that the wide variability in suicide rates across 196 bands could be accounted for largely by collective efforts at rehabilitating and protecting the cultural continuity of the respective group. Hence, increased protection of in-group cultural continuity translated into enhanced self-continuity, which predicted lower youth suicide rates.

Summary. There is evidence that subjectively valued group identities (positive and central to self) have positive consequences for domain-specific (and sometimes general) self-esteem, self-efficacy and self-continuity, whereas subjectively devalued group identities have negative consequences for the same. Furthermore, depending on dispositional qualities (e.g., private versus public self-focus) a person's self-regulation when group identified will help to determine the level of group related behaviors

[10] The tie between self-coherence/continuity and role identity research is much more developed (for review, see Swann et al., 2003). Because these works are not relevant to collective identification, however, they are not reviewed here.

(e.g., in-group favoritism, out-group discrimination) that have been shown to further enhance the affective consequences of identification.

Community group identifications and distress or well-being

Stronger community identity (or psychological sense of community) has been linked to lower depression (Koteskey, Little, & Matthews, 1991; Parker et al., 2001; Pretty, Conroy, Dugay, Fowler, & Williams, 1996; Stevens & Duttlinger, 1998) and lower anxiety (Sagy, 2002; Stevens & Duttlinger, 1998). For example, Stevens and Duttlinger (1998), who studied breast cancer patients involved in support groups, found that established members had the most friends with cancer and perceived the group as more supportive than newer members, but also identified psychological sense of community and coping skills education as the *most* helpful aspects of the group. Established members also exhibited the least anxiety, depression, stress and aggression. Sagy (2002) studied several moderating factors (including psychological sense of community) on state anxiety and psychological distress in Jewish 8th graders living in Israel's West Bank. She found that – controlling for trait anxiety, cognitive appraisal, family coherence, and sex – psychological sense of community significantly predicted lower state anxiety (but not psychological distress) in those in a state of chronic-without-acute stress, but not in those in a state of chronic-with-acute stress.

In an interesting qualitative study by Sundberg (1995), participants wrote brief letters to three hypothetical target audiences (10-yr-old granddaughter, young parents, and a colleague) regarding their personal views about promotion of mental health (i.e., primary prevention). Content analysis showed several themes running throughout letters to all three target audiences, including the importance of having a sense of self-in-community.

Parker et al. (2001) surveyed neighborhood residents showing that psychological sense of community, perceived neighborhood control, and neighborhood participation were all associated with self-reported better general health and fewer depressive symptoms in separate regressions. But when all three of these predictors were added to regression models simultaneously, only psychological sense of community was significantly related to outcomes, suggesting perceived neighborhood control and neighborhood participation are part and parcel of psychological sense of community. Similarly, Koteskey

(1991) found that college students who scored higher on community, family, and religious identity scored lower on depression. Pretty et al. (1996) also studied psychological sense of community in multiple domains – school and neighborhood. Psychological sense of community and social support were in fact distinct aspects of adolescents' community context. Psychological sense of community was the primary correlate of subjective well-being, and – in order of effect sizes – neighborhood sense of community, nondirective guidance, and social support predicted lower self-reported loneliness.

Lastly, Cameron (1999) found that dimensions of university community identification (centrality and in-group ties and affect) indirectly predicted life satisfaction and lower depression as mediated by self-esteem and group-based efficacy. Specifically, in-group ties predicted self-esteem, which in turn predicted both life satisfaction and lower depression. Group identity centrality and in-group affect predicted group-based efficacy, which in turn predicted life satisfaction.

Summary of Identification Literature

It is apparent that positive group and place identifications similarly predict increased self-esteem/efficacy/regulation/continuity and (sometimes in turn, sometimes directly) well-being and diminished distress. The only exception to this assertion is when an individual assumes or is branded with a highly stigmatized identity, which can produce diminished self-esteem and a lower sense of well-being via self-stereotyping.

Such fundamental conceptual and empirical similarities between collective and place identifications perhaps should be of no surprise because, as purported dimensions of an overarching construct (self-identity), they may be expected to abide by the accepted definitional and consequential parameters of their parent.[11] It is therefore appropriate to combine these forms of identification into one predictor (i.e., place-based group identification) of psychological wellness. In combining place and group identifications into an amalgamated construct, this dissertation thus follows the lead of other community and environmental social psychologists who not only argue that the dimensions are, to a certain extent, inextricable, but that studying place-based self-identity (or self-in-place) is the preferable methodology by

[11] Indeed, the only known study (Fried, 1963) to employ both of these types of identification in the prediction of mental health found independent and additive effects but, as one might expect, the direction and size of these effects were nearly identical despite accounting for unique variance in outcomes.

treating the different dimensions as compatible, even synergistic elements of self-identity (e.g., Bonaiuto, Breakwell, & Cano, 1996; e.g., Pretty, 2002; Pretty, Chipuer, & Bramston, 2003; Twigger-Ross & Uzzell, 1996).

Empirical Context

Appropriately combining collective and place identifications into a single measurable construct, however, requires careful consideration of the empirical context. For example, there is now good evidence that self-selected favorite places are those that assist in restoring a positive sense of self (i.e., mental health`; Hartig, Mang, & Evans, 1991; Korpela, 1989; Korpela & Hartig, 1996; Korpela, Hartig, Kaiser, & Fuhrer, 2001); however, these places are more often settings that afford *privacy* (e.g., natural settings, own room) or time to be *apart* from social interactions or groups. This makes for problems of comparability if, for example, one expects the community and place aspects of self-identification to be equally weighted in its measurement because the place of empirical interest may not be both highly restorative and intimately tied to a community group. Conversely, the group of empirical interest may not be tied to a central location with which members might similarly place identify (e.g., presidential candidate supporters who hop from state to state as campaign volunteers). Hence, the choice of an appropriate empirical context is important to any attempt at understanding the predictive utility of place-based group identification on mental health and well-being.

Within the ecological framework, the residential street block as physical space and community group appears to be the ideal empirical context for these purposes. R. B. Taylor (1987) and others (e.g., Pretty, Chipuer, & Bramston, 2003) suggest that, of the many places that have the greatest impact on self, the home and the residential street block[12] is most closely tied to well-being. As well as being one level of place identity (or discrete target of place identification), the street block also represents membership in a group defined by place of residence).

[12] Defined as "the spaces encompassed by the houses on two sides of a street, bounded at the ends by two cross streets" or a cul-de-sac (R. B. Taylor, 1987, p. 981, 2nd note).

An ecological analysis

If indeed self-identity is central to self and self-functioning then the residential street block appears to be an ideal empirical context for studying its impact on distress and well-being. Although these predictors and outcomes are *psychological,* the ideal ecological methods for studying such a problem become far more complicated when considering that both identity processes and psychological wellness are inextricable from broader contexts (or levels of analysis).

For example, Durkheim (1897/1997) long ago showed that population suicide rates are intimately tied to the social connectedness of the *society.* Social epidemiologists (Kawachi, Kennedy, & Glass, 1999) have shown that *state* level social capital significantly influences the perceived health of individuals, nearly to the degree associated with smoking or obesity. The social connectedness of the elderly community in a *city* or *town* predicts the subjective well-being of older adults (Markman, 1993). Moving in still further, cohesive (Pretty, Conroy, Dugay, Fowler, & Williams, 1996) and stable (Ross, Reynolds, & Geis, 2000) census tract *neighborhoods* can promote the psychological wellness of residents (for a review see Shinn & Toohey, 2003). Likewise, characteristics of *residential street blocks* have been shown to relate to measures associated with psychological wellness; e.g., physical incivilities predict resident fear of crime (Perkins & Taylor, 1996). Contextual and compositional variables at higher levels of analysis are thus likely to play a significant role in attenuating, moderating, or even strengthening the association between place-based identification and psychological distress or well-being.

Consequently, an ecological analysis, which takes care to incorporate characteristics of the physical and social context affecting the units of observation, is most appropriate to insure the ecological validity of findings (Winkel, 1987). Naturally, although it would be desirable to incorporate all levels of analysis that *could* be relevant to psychological wellness (e.g., societal pressures, city health initiatives), it is rarely feasible given limited time and resources. As a result, the critical issue with regard to engaging in ecologically valid analyses is to determine whether the empirical context housing such processes is a legitimate behavior setting (Barker, 1968, 1978). R. B. Taylor (1987) makes a strong case for the street block as a behavior setting, because it (1) is physically bounded, (2) has standing behavior patterns occurring from daily to yearly intervals, and (3) has means of informal social control when norms specific to the setting are tested or violated (p. 956). Hence, using appropriate multilevel analytic techniques,

features of the behavior setting itself may be incorporated into multivariate models thereby controlling for these contextual features and even testing for interactions among contextual and psychological predictors.

Much of the multilevel, ecological analyses up to now have been descriptive rather than employing quantitative methods. There are good reasons for this, including – quantitatively – the tendency to under or over-represent the magnitude of effects due to data (dis)aggregation and – interpretively – the tendency to explain inappropriately effects from one level of analysis at another level (for description see Hofmann, 1997). Multilevel statistical modeling (e.g., Hierarchical Linear Modeling or HLM`; Bryk & Raudenbush, 1992), however, avoids many of the pitfalls inherent in ecological analyses by allowing the user to appropriately model multilevel, nested data. These techniques are used here and are described further under Methods.

The contextual and compositional constructs that ecologically ground the present empirical work are explored next in addition to brief mention of appropriate covariates of individual-level distress and well-being.

Individual-Level Covariates of Psychological Wellness

Social support

Social support has been defined as the "information from others that one is loved and cared for, esteemed and valued, and part of a network of communication and mutual obligation" (S. E. Taylor, Klein, Gruenewald, Gurung, & Fernandes-Taylor, 2003, p. 314), which can be differentiated further into notions of functional support – or the extent to which persons (perceive they) can draw on interpersonal relationships to gain resources – and structural support, which is essentially the degree to which a structure of relationships is built up around an individual (e.g., social network) irrespective of the person's actual experiences or perceptions of support. Functional social support is one of the most studied predictors of mental health and well-being (e.g., Carlson, McNutt, Choi, & Rose, 2002; Cheung & Sun, 2000; Coker et al., 2002; Dalgard, Bjork, & Tambs, 1995; Dressler, 1985; Linn, Husaini, Whitten Stovall, & Broomes, 1989; McCulloch, 1995; Nyamathi, Flaskerud, & Leake, 1997; Perodeau & du Fort, 2000;

Roessler, Salize, Cucchiaro, Reinhard, & Kernig, 1999) with results consistently showing positive impact (for reviews, see e.g., Barrera, 2000; McLean, 1995; Schwarzer & Leppin, 1992; R. J. Turner, Frankel, & Levin, 1983). While some argue that social support is only helpful in moderating or buffering stress, others have argued that social support also has a direct impact on psychological wellness (see Thoits, 1982). From Thoits' (1995) more recent review, it is evident that both direct and stress moderating processes are in fact at work. Although some (e.g., Shinn & Toohey, 2003) argue that social support should be considered at higher levels of analysis (e.g., supportive organizations, cohesive and caring communities), the preponderance of research linking social support to well-being has been at the individual level of analysis. This is the approach taken here as well in part because social support is used as a covariate rather than a major predictor of interest. Social support is operationalized here as functional rather than structural; that is to say, of interest is the perceived quality and strength of support (functional) rather than mere membership to social networks (structural).

Stress – personal and neighborhood related

The negative impact of personal and domain-specific stress on psychological wellness is taken as a truism in the social sciences (for a review of stress research and mental health, see Thoits, 1995). Obviously, stress can come from any number of sources. Given the context of this research as well as the outcomes of interest, however, two stressor domains seem most appropriate for use as individual-level covariates: the most commonly researched forms of personal stress, and stress specific to the residential neighborhood context. The major stressor *domains* considered in the literature will be applied here as well: negative life events (crime victimization, negative interpersonal experiences, bad neighboring experiences), chronic strains (worry for safety, perceived crime, indirect crime victimization), and daily hassles. Following Pearlin's (1989) recommendations, each stressor domain (personal and neighborhood-related) are operationalized as combinations of both events and chronic strains.

Sociodemographics

Many sociodemographics are commonly used in studies of psychological wellness, either as predictors of interest or controls (for reviews, see Gispert, Rajmil, Schiaffino, & Herdman, 2003; Mirowsky

& Ross, 1989, 2003). For example, women commonly report higher levels of depression and anxiety than men. Having children in the home increases stress (and hence, often anxiety and depression too), but also can increase the positive well-being of (proud) parents. Greater relative ethnic or racial minority status (such as being black among whites) can be detrimental to psychological wellness (Shinn & Rapkin, 2000). If, as Freud is reputed to have said, well-being derives from love and work, then marital and working status may also have significant impacts on psychological wellness even if women and men are likely to report very different patterns. For example, men commonly get a well-being boost with marriage while women do not and, depending on any number of circumstances, employment may be a well-being benefit or detriment for either sex. Lastly, age and socioeconomic status (including homeownership) can influence well-being on any number of levels. Older individuals are often settled in their careers and no longer have children living at home. Homeowners commonly report greater investment in their community and report greater well-being if, that is, they are average to high in socioeconomic status. Lower SES individuals struggle, presumably, to keep-up their homes (e.g., paying bills, maintenance), producing more stress than if they were not homeowners at all. Of all the sociodemographics, SES (as a combination of income and education) likely has the widest relevance to well-being – with the combination of greater monetary and human capital comes an increased ability to tap buffering resources both internal and external.

Contextual and Compositional Predictors of Psychological Wellness

Neighborhood crime

Crimes reported to police, which are thus more likely to be covered by local media, may serve as a significant contextual influence on the psychological wellness of residents from the victimized neighborhood (or as "spill-over" to nearby neighborhoods). As a contextual determinant of lower psychological wellness, yearly police-reported crime rates per neighborhood are used here, testing for both contextual main effects and as a moderator of the impact of place-based community identity on distress and well-being.

Collective sense of community

Sense of community was first defined (McMillan & Chavis, 1986; Sarason, 1974) and studied as an exclusively psychological construct. More recently, however, scholars (e.g., Long & Perkins, 2003) have noted its significance as a social climate predictor, helping to differentiate groups and predicting outcomes related to well-being (Brodsky, O' Campo, & Aronson, 1999; Sampson, Raudenbush, & Earls, 1997). Indeed, street-block-level sense of community significantly predicted individual collective efficacy, informal neighboring, and participation in community organizations even while controlling for individual PSOC (Perkins & Long, 2002). Collective sense of community (CSOC) is used in the present study only as a social climate variable (because of its measurement similarity to residential community identity), which will be tested both for direct effects and as a moderator of residential community identification on distress and well-being. If CSOC moderates the positive impact of residential community identification on wellness, it should enhance the process.

Contextual defensible space

Human territorial functioning is defined as place-specific, goal-directed attitudes and behaviors concerned with who has access to the space and what activities go on there, which shapes the social, physical and cultural context (R. B. Taylor, 1987). Such functioning becomes personified in the physical characteristics of the external household thereby sending signals to passers-by about such things as resident attachment, investment, and openness (e.g., B. B. Brown & Altman, 1983; B. B. Brown & Werner, 1985; Harris & Brown, 1996). Defensible space is the central aspect of human territorial functioning of interest here. The physical features of the property signal to others a level of control over household access and, therefore, the degree of resident concern and investment in the physical surroundings and thus the likelihood of defending the space from intruders. The impact of observer perspective cannot be underestimated when considering the impact of defensible space on psychological wellness. Namely, low levels of defensible space cues on the block may signal, even to fellow residents, that “this is a safe place to live” whereas high levels may signal, “people in this community need to protect themselves.”

As an indicator of the effect of the physical environment on resident well-being, trained raters observing the exterior of sampled residential properties measured household defensible space. Used in analyses, however, is only the aggregated block-level form of household defensible space, which is used to predict distress and well-being of residents, both directly and as a moderator of residential community identification. Thus, one might expect higher contextual defensible space to produce greater distress and lower well-being and/or moderate the effect of residential community identification on wellness by mitigating its positive effect on wellness.

Social capital

No contextual predictor has received more attention of late than social capital. It is the norms, networks, and mutual trust of "civil society" facilitating cooperative action among citizens and institutions (Coleman, 1988). Alternatively, Kawachi and Berkman (2000) define it as "those features of social structures – such as levels of interpersonal trust and norms of reciprocity and mutual aid – which act as resources for individuals and facilitate collective action" (p. 175). There is widespread consensus, however, that social capital is external to the individual and found at collective levels of analysis or abstraction: it is a "*by-product* of social relationships, and not as the result of conscious investment on the part of members within a social structure" (Kawachi & Berkman, 2000, p. 177). Perkins and Long (2002) suggested social capital may be thought of as a combination of both informal and organized trust and action, e.g., collective efficacy, neighboring, and participation in community organizations. Studies with social capital have found a number of interesting effects related to well-being. For example, lower social capital predicted high school dropping-out (Coleman, 1988); state-wide aspects of social capital predicted self-rated health (Kawachi, Kennedy, & Glass, 1999); state social capital buffered the effect of income inequality on mortality rates (Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997); and neighborhood social capital (alternatively named collective efficacy) reduced individual fear of crime (Sampson, Raudenbush, & Earls, 1997). All of the definitions of social capital above were, to some extent, used in the creation of the contextual social capital construct used here to test for direct and indirect effects (via residential community identity) on psychological distress and well-being.

Compositional sociodemographics

Collective-level sociodemographics have also been shown to significantly impact well-being, independent of individual status on those same variables. For example, Leventhal and Brooks-Gunn (2000) reviewed studies relating higher compositional SES to academic success, and lower compositional SES to criminal activity and substance abuse. Lower compositional SES has also been linked to poor psychological wellness in multilevel analyses (Ross, Reynolds, & Geis, 2000). Compositional ethnic or racial status (e.g., proportion nonwhite), age, homeownership, number of children, and SES will all be tested here as social climate determinants of well-being and distress, both as main effect controls and as moderators of the impact of place-based community identity. Number of children living on the block, for example, may increase stress and anxiety if the resident feels little cohesiveness with fellow resident families. Communities of older residents and more homeowners, which are presumably more stable, may present fewer unexpected environmental and social stressors, which is likely to minimize distress and support well-being. Compositional ethnic/racial status of the group should work quite differently than this characteristic at the individual level in predicting well-being. Minorities tend to be more cohesive in response to societal discrimination in part because being in a societal minority makes the status more salient. And yet, higher proportion ethnic/racial minority neighborhoods also tend to be poorer, which could be an even greater cohesiveness catalyst (shared burden) or could, conversely, counteract any cohesiveness benefit to well-being or distress reduction.

Hypothesis

A general hypothesis statement might thus be: Identification to the residential street block place/community, or "residential community identification," leads to reduced psychological distress and increased well-being. Taking an ecological perspective (Lawrence, 2002; Stokols, 1981, 1992a, 1992b; Winkel, 1987), however, requires one to contemplate how these effects may be moderated by the contextual and/or social climate of the neighborhood. An ecological approach to analysis further emphasizes measuring such effects over time and acknowledging (or controlling for) the sociodemographic characteristics of the individual and the group to which respondents belong, which are

indicative of personal and role identities (individual characteristics), social support and networks of support (available resources), and personal and collective stressors (social and physical environment). Hence, the hypothesis may be more comprehensively stated:

> *[Positive change in] Residential community identification with the street block will significantly predict lower psychological distress and higher subjective well-being [over time], perhaps as moderated by the social and/or environmental climate and when controlling for individual characteristics, available resources, and attributes of the social and physical environment.*

Contribution to the Literature

Several assumptions of the place identity theorists are accepted in principle here: (1) everyone has valued places, or places where they belong; (2) places' infusion into self is subtle yet powerful and the true significance is often not recognized until a valued place is threatened or disrupted or lost; hence, (3) the threatened/disrupted/lost place affords the researcher the *best* opportunity to find and describe mental health consequences due to the threat/disruption/loss. Many of these same principles hold for group identities too: (1) everyone belongs to groups and social categories; (2) such groups/categories are key to self-concept and threats to the in-group (e.g., intergroup conflict) significantly affect well-being, more than in the absence of threat; and therefore (3) one is likely to observe the greatest well-being consequences of group identity when the in-group is threatened, disrupted or lost. However, such results have been shown repeatedly (often with substantial effect sizes), suggesting a study of the impact of place-based community identification processes on wellness within the general population (i.e., those not necessarily experiencing an immediate threat, disruption or loss) is warranted. Moreover, those studies linking self-in-place to wellness are mostly retrospective, for example, following moves or a shared disruption. The impact of place-based self-identification (residential community identity) on psychological wellness is tested here using data collected prospectively, which avoids the methodological problems associated with retrospective accounts.

An additional issue with regard to previous retrospective or cross-sectional research is that the causal direction of effects was assumed to be identification generating mental health or well-being outcomes. Because such studies are analytically recursive, one could as easily make the argument that in fact the causal order is reversed; for example, depressed or anxious people disaffiliate with groups or

significant places. In truth, both processes are likely at work to some extent, although the latter is not the conceptual or empirical focus of this thesis. To avoid the interpretive problems of recursiveness, predictors are here measured one year prior to outcomes.[13]

A good part of the research linking identification to mental health outcomes also does so (at best) thinly veiling the purposes of the study; for example, performing mental health screenings in the wake of dislocation due to a flood (K. Erikson, 1976), or measuring fans' anxiety before and during significantly competitive sporting events (Wann, Schrader, & Adamson, 1998). These may well be the best methods for studying these relations, but they also lend themselves to demand effects – participants guess the purpose of the study and respond in ways that confirm the researcher's expectations. The data collected here were for a purpose rather peripheral to the above hypothesis, thus no demand effects might be expected (e.g., participants were not chosen, as in previous research, because of a common identity disruption experience).

Although at times psychological wellness has been used here as an umbrella term encompassing such things as depression, anxiety, and subjective well-being, these components are not considered interchangeable by some scholars. The identification research reviewed above primarily concerned distress outcomes. Although well-being is often assumed to be the inverse of distress, the more recent positive psychology movement suggests well-being is fundamentally different from the mere inverse of negative emotion (see e.g., Diener, Lucas, & Oishi, 2002; Seligman, 2003; see e.g., Seligman & Csikszentmihalyi, 2000). Well-being is thus studied as an outcome of residential community identification independent of distress, which is defined as the combination of depression and anxiety (i.e., the combination of "a number of uncomfortable subjective states" per Mirowsky & Ross, 1986, p. 24). By studying both of these outcomes rather than one or the other (or uniting them into one variable), one may note any unusual patterns that may emerge when comparing the effects of identification on well-being versus distress.

Lastly, although a few studies tying group identification to distress or well-being include measures of social support in multivariate models, most have not controlled for social support or various stressors,

[13] Also studied will be residualized time-change independent variables predicting residualized time-change outcomes (or "change predicting change") as another test of the proposed relations. Residualized change is used instead of simple change measures because the former measures unexpected change, which tends to be more numerically stable and which controls for statistical regression to the mean (Robinson, Lawton, Taylor, & Perkins, 2003).

which are recognized as the most fundamental predictors of distress and well-being. The same argument can be made for the literature tying place identity to distress or well-being but on an even more inclusive scale. Thus, the ecologically valid, multilevel, longitudinal test made here of the impact of residential community identification on psychological wellness in the general population and controlling for social support and stressors is the most conservative and empirically appropriate next step for research in the area.

CHAPTER II

METHODS

The Data

Site selection and sampling procedure

Panel data from residents of 50 neighborhoods throughout Baltimore, Maryland, in 1987 and 1988 is used to test the hypothesis (R. B. Taylor & Perkins, 1993).[14] A multistage, clustered probability sampling frame was constructed. Fifty empirically delineated census block neighborhoods out of over 200 in the city, and one street block per neighborhood, were selected with probability proportional to population size using a geographic ordering with random start and, for neighborhoods, a sampling interval.[15] Reverse telephone directories were used in each neighborhood to select one street block per neighborhood with a probability proportional to block size as indicated by number of households with telephones. The mean number of households on the 50 study blocks was 43.2.

All blocks in each of the 50 neighborhoods – excluding boundary streets, public housing projects and blocks with no usable household listings – were entered in a cumulative household population distribution for each neighborhood.[16] Listings not used included businesses, offices, and addresses with more than 15 listings (generally, high-rise apartment buildings). Change of address and new listings were included as were mixed commercial–residential or high-rise/low-rise blocks as long as they met the selection criteria. One block per neighborhood was then randomly selected.

If the phone numbers differed at an address, but there was only one last name at that address, the two numbers were counted as one household. If a given address had two or more names and two or more

[14] This 17-year old data set was chosen because it was the only one available with the desired combination of variables, and meeting the rigorous requirements of an ecological analytical approach, e.g., multilevel, representative, longitudinal panel sample.

[15] There were 27 neighborhoods excluded from the study at this point. Public housing projects and the downtown business district were excluded because they were not representative of the population of interest (i.e., households with telephones).

[16] Boundary streets were excluded for three reasons: (1) half the block shares a boundary with another neighborhood, (2) to avoid confusion over what neighborhood the respondent would claim as his/her own, and (3) boundary streets tended to be large thoroughfares with qualitatively different environments from the rest of the neighborhood.

phone numbers, it was considered a multi-unit building and each phone number constituted a separate household.

Occupied households on each block were tallied in the field, and 12 households per block were randomly selected using interval sampling. Eligible respondents were heads of households or their spouses.[17] Replacement households were allowed only after several unsuccessful attempts at obtaining an interview. In order to minimize potential bias, within household replacements were not allowed. Concurrent with household sampling, pairs of trained raters coded environmental characteristics of the study blocks and, independently, eight individually sampled households per block (for purposes of calculating inter-coder reliability statistics).

Interview procedures

The first survey was carried out in late winter 1987 (Time 1) and the second was completed a year later (Time 2). The interview took approximately 30-40 minutes to complete. Of the 412 interviews completed at Time 1 (eight or nine per block), 191 (46%) were by telephone and 221 (54%) were in-person. The survey medium – telephone or in-person – depended upon the availability of the respondent by phone. If the respondent could not be interviewed by telephone, an interviewer was sent door-to-door to try to conduct the survey.[18] The response rate was over 70%.[19]

Respondents

Time 1 sample

The racial make-up of the sample was representative of the overall city population (52.4% black and 46.3% white), but – as is typical of surveys conducted in the household – females were over-

[17] Where more than one head of household or spouse was available, a designated respondent was randomly selected (Kish, 1949).

[18] Response medium data were unavailable, thus statistical tests of differences between those who were interviewed in person versus those interviewed by phone cannot be reported here. However, one of the original data collectors has indicated (personal communication, 01/31/2004) that, as he recalls it, "either there were no significant differences or, more likely, just a few – fewer than the 5% one would expect by chance."

[19] Out of an initial sampling frame of 601 potential respondents, 13 households were never used and 13 others were verified in-person as vacant, leaving $N = 575$ households where contacts were attempted. Using this as the denominator, the response rate was 72% for Time 1. When using households reached as the denominator ($N = 492$), however, the per-household-contacted response rate then becomes 84% (n of refusals, break-offs, and language problems = 80).

represented (270 females, or 65.5%; 142 males). The mean age of respondents was 49 years, and the mean length of residence was 12.6 years at current address and 14.6 years in the current neighborhood. Homeowners made up 58.5% of the sample; the rest were renters. The mean household size was 2.9 persons. Roughly half the sample had a household income of $20,000 or more (in 1987 dollars) and half were high school educated.

Respondent and non-respondent households were compared on the environmental features objectively assessed (items shown in **Table 3**, p. 55). Out of 17 different comparisons of respondent and non-respondent households, only one (#12; "place to sit outside") was significantly different at $p < .10$ between groups, which is about what one would expect by chance. Nonetheless, item #12 is not used in analyses.

Time 2 sample

At the time of the follow-up interview (one year later), 336 of the original respondents were eligible. Seventy of the Time 1 respondents had moved off their block and were thus ineligible. Another 6 had died. The response rate for the 336 eligible Time 1 respondents was 91%. Time 2 respondents and non-respondents were compared to see if the follow-up sample was representative. At the Bonferroni adjusted alpha level, the two groups were not different on sex, age, race, or education, but there was a slight over-representation of owners compared to renters in Time 2 respondents versus non-respondents, which is consistent with the notion that renters are more transient than homeowners.

Table 1 shows summary statistics for sociodemographic characteristics relevant to multivariate analyses at the respondent/household and street block levels.

Survey Protocol

The purpose of the original data collection was to measure the effects of fear of crime on mental health.[20] Consequently, the survey was designed to elicit residents' (a) perceptions of the quality of the surrounding social and physical environment, (b) social support resources, including both the formal and informal network of neighbors helping neighbors, (c) behavioral, organizational, and emotional responses to crime and victimization, and (d) mental health status.

[20] Research was supported by NIMH grants (1_R01_MH40842_01 and _02) from the center for Violent and Antisocial Behavior. Ralph B. Taylor was principal investigator; Douglas D. Perkins was project director.

Table 1: Individual/Household-Level Sociodemographics of Survey Respondents and Relevant Compositional Sociodemographics per Street Block

Level of Analysis Sociodemographic Variable	*N*	Min	Max	*M*	*SD*†
Individual/Household Level					
*Sex (female=1; male=0)	412	0.00	1.00	0.66	
*Married (yes=1; no=0)	412	0.00	1.00	0.49	
*Working FT/PT (yes=1; no=0)	412	0.00	1.00	0.58	
*Nonwhite (yes=1; no=0)	410	0.00	1.00	0.54	
*Age (in years)	303	19.60	87.60	49.26	15.52
*Homeowner (yes=1; no=0)	412	0.00	1.00	0.58	
+Number of Children under 18 years	326	0.00	8.00	0.80	1.26
+Income	370	1.00	10.00	5.42	3.00
*Education (years completed / 2)	410	1.00	10.00	6.05	1.60
SES (mean of Income & Education)	370	1.00	10.00	5.74	2.03
Block Level (aggregated)					
Nonwhite	50	0.00	1.00	0.53	
Age	50	28.40	71.60	48.67	9.15
Homeowner	50	0.00	1.00	0.58	
Number of Children	50	0.00	2.14	0.79	0.56
SES	50	3.32	9.18	5.75	1.38

* Characteristic of the respondent.

+ Characteristic of the household.

† Omitted standard deviations are those for dummy variables, which is a relatively meaningless statistic.

Notes: All sociodemographics reported here derive from survey responses and not census data (e.g., number of children living on the block is a sum per block of the number of respondents' children. Income (for 1987) ranged from 1= "Less than $5,000" to 10= "More than 40,000." Education was recoded to match the 1-10 scale for income by dividing years of education completed by 2 because the full range for education was 2-20 years. Thus, SES reflects the mean of household income and respondent education. Marital and working statuses are the only panel demographics available; all other demographics were measured just at Time 1.

Measures

A brief description of variables relevant to this study follows divided into general domains. For variable properties including range, mean, standard deviations, and coefficient alphas, see **Table 2**.

Indexes (sum of responses to items) were computed per respondent only when complete data were available. Scales (mean of item responses), however, were computed by summing responses then dividing by the number of valid responses. This method of "mean computation" also produced missing scale values if there were too many missing data points.[21]

Psychological Health and Wellness

Well-being

A 3-item measure of (mental) health-related well-being was administered. The items were essentially a representative sample from Dupuy's (1973, 2001) General Well-being Schedule created for the National Center for Health Statistics.[22] For each item, respondents were asked how they had "been lately" (excellent, good, fair, poor) specific to energy level, general health, and spirits.[23] Responses were coded 1-4 with higher scores indicating greater well-being. Responses to the three items were combined using mean computation.

Depression

The six depression factor items of the Center for Epidemiological Studies–Depression scale (or CESD`; Radloff, 1977) were used. For each item, respondents indicated whether they rarely, sometimes, or often felt "this way during the past week": fearful, lonely, depressed, sad, had crying spells, and could not shake off the blues even with help from family or friends. Responses ranged from 0-2 (with higher scores indicating more depression) and were combined using mean computation.

Anxiety

Anxiety was measured with 20 items adapted from Spielberger's (1975; Spielberger & Vagg, 1984; Spielberger, Vagg, Barker, Donham, & Westberry, 1980) State-Trait Anxiety Inventory (STAI).

[21] For example, if a scale is composed of 3 items, a scale score was computed only if at least 2 of the responses were valid. When the scale contained numerous items, however, a 75% valid responses rule was employed.

[22] The Schedule started out with 22 items (H.J. Dupuy, 1974) administered in the psychological section of the Current Health and Nutrition Examination Survey funded by the National Center for Health Statistics. It was later narrowed to 18 items (H.J. Dupuy, 1978). It has been referred to variously as a Schedule, a Scale (Edwards, Yarvis, Mueller, Zingale, & Wagman, 1978), and an Index (Wan & Livieratos, 1978), and each time it seems to have been adapted in some way. The "energy level" and "spirits" items used here are quite similar to the original items, but the "general health" item is essentially a proxy for Dupuy's "health concerns" factor. For empirical evaluations of Dupuy's Schedule, see for example Ware et al. (1978), Chi (1986), Wan and Livieratos (1978).

[23] There is certainly shared variance with depression/distress for these items, particularly with spirits and energy level. However, the decision to divide outcomes into distress and well-being derived also from empirical evidence for construct differentiation. Whereas depression and anxiety scales (described next) correlated in the .66 to .70 range (and were thus combined into a single measure of distress), this 3-item well-being measure consistently correlated with anxiety and depression at substantially lower levels (-.44 to -.54) suggesting enough differentiation to proceed with separate outcomes.

Instead of querying respondents about their feelings both "right now" (state) and "generally" (trait), respondents were instead asked if they felt "this way in the past week" (rarely, sometimes, often): calm, secure, tense, strained, at ease, upset, worried over possible misfortunes, satisfied, frightened, comfortable, self-confident, nervous, jittery, indecisive, relaxed, content, worried, confused, steady, and pleasant. Like the CESD, responses ranged from 0-2 (with higher scores indicating more anxiety; hence, positive items were reverse-coded) and were combined using mean computation.

Psychological distress

Because the measures of depression and anxiety described above are highly correlated (Time 1 r (405) = .66; Time 2 r (305) = .70) and because predictions relate to general psychological distress rather than to depression or anxiety separately, a mean distress composite measure was created. Response options for items of both the adapted STAI and the CESD ranged from 0-2 with higher scores indicating greater anxiety or depression. Although the internal consistency would be maximized by combining items rather than scale scores for the CESD and STAI, this method would weight anxiety too heavily in the distress composite (20 of 26 items are STAI); a mean of the two scale scores (STAI and CESD) was therefore used to create the psychological distress composite. In this instance, in which only two items went into creating the distress variable, cases with missing data for either the STAI or CESD were dropped.

Residential community identification

The measure of residential community identification (RCI) taps both place identification and community group identification. In this case, the residential place was defined as the street block and the community group was defined as those living on the same street block. The RCI measure consists of five items: (1) how many people on the block are known by sight or name (all/most all, more than half, about half, less than half, few/none), (2) degree of shared interests and concerns felt with fellow block residents (great deal, somewhat, not at all), (3) feel part of the block, or that it's just a place to live (dichotomous), (4) degree of attachment to the lived-on block (strongly, moderately, somewhat, not at all attached), and (5) "all things considered," resident's general level of satisfaction with "this block as a place to live" (satisfied, somewhat satisfied, somewhat dissatisfied, dissatisfied). Each item response was coded to match the 0-1 dichotomous #3 item (e.g., #1 was coded all/most = 1, more than half = 0.75, about half =

Table 2: Scale or Index Characteristics by Domain and Time 1 and Time 2 Panel

Domain		Time 1 Panel						Time 2 Panel					
Scale or Index	# Items	a	*N*	Min	Max	*M*	*SD*	a	*N*	Min	Max	*M*	*SD*
Psychological Wellness													
Well-Being	3	.70	405	1.00	4.00	2.90	0.66	.75	305	1.00	4.00	2.84	0.67
Depression (CESD)	*6*	*.83*	*405*	*0.00*	*2.00*	*0.33*	*0.43*	*.86*	*305*	*0.00*	*2.00*	*0.28*	*0.41*
Anxiety (adapted STAI)	*20*	*.92*	*405*	*0.00*	*1.85*	*0.49*	*0.40*	*.93*	*305*	*0.00*	*1.90*	*0.43*	*0.41*
Psychological Distress (CESD & STAI)	2	.80	405	0.00	1.93	0.39	0.38	.82	305	0.00	1.87	0.35	0.38
Residential Community Identification	5	.74	412	0.00	1.00	0.60	0.28	.76	305	0.00	1.00	0.64	0.27
Individual/Household-Level Controls													
Household Defensible Space (sum)	6	-	283	0.00	6.00	2.05	1.40						
Social Support	8	.88	407	0.13	2.00	1.70	0.41	.88	305	0.13	2.00	1.70	0.42
Negative Life Events (sum)	*7*	*-*	*407*	*0.00*	*7.00*	*1.69*	*1.44*	*-*	*305*	*0.00*	*6.00*	*1.63*	*1.30*
Daily Hassles	*5*	*.68*	*407*	*0.00*	*2.00*	*0.55*	*0.46*	*.67*	*305*	*0.00*	*2.00*	*0.52*	*0.45*
Negative Interpersonal Experiences	*8*	*.85*	*406*	*0.00*	*2.00*	*0.56*	*0.48*	*.83*	*305*	*0.00*	*2.00*	*0.53*	*0.44*
Personal Stress Composite	3	.71	406	-0.94	2.00	-0.00	0.64	.64	305	-0.94	1.87	0.00	0.60
Perceived Neighborhood Crime	*7*	*.83*	*399*	*0.00*	*2.00*	*0.35*	*0.44*	*.83*	*302*	*0.00*	*1.86*	*0.27*	*0.38*
Victimization (sum)	*22*	*-*	*412*	*0.00*	*17.00*	*0.88*	*1.80*	*-*	*305*	*0.00*	*11.00*	*0.57*	*1.32*
Indirect Neighborhood Victimiz. (sum)	*2*	*-*	*410*	*0.00*	*2.00*	*0.39*	*0.59*	*-*	*302*	*0.00*	*2.00*	*0.31*	*0.58*
Worry about Neighborhood Safety	*5*	*.86*	*409*	*1.00*	*4.00*	*2.30*	*0.88*	*.87*	*302*	*1.00*	*4.00*	*2.11*	*0.83*
Bad Neighboring Experiences (sum)	*5*	*-*	*412*	*0.00*	*5.00*	*0.93*	*1.17*	*-*	*305*	*0.00*	*5.00*	*0.83*	*1.11*
Nbhd Related Stress Composite	5	.62	412	-0.78	2.63	-0.00	0.57	.64	304	-0.70	3.09	0.00	0.58

Note: Italicized rows represent elements of the variables that follow them in the table and are not used by themselves as predictors.

Table 2 continued: Scale or Index Characteristics by Domain and Time 1 and Time 2 Panel

Domain		Time 1 Panel						Time 2 Panel					
Scale or Index	# Items	a	*N*	Min	Max	*M*	*SD*	a	*N*	Min	Max	*M*	*SD*
Block/Neighborhood-Level Compositional and Contextual Variables													
(Social Capital; individual level)	*14*	*.81*	*412*	*0.00*	*1.00*	*0.47*	*0.25*	*.79*	*305*	*0.00*	*1.00*	*0.50*	*0.24*
Social Capital (block aggregate)			50	0.19	0.74	0.47	0.14		50	0.23	0.73	0.49	0.14
Collective Sense of Community			50	0.19	0.91	0.60	0.16		50	0.14	0.95	0.62	0.18
Block Defensible Space			50	0.08	4.75	2.05	1.26						
Nbhd Related Stress (block aggregate)			50	-0.49	0.83	-0.00	0.29		50	-0.51	1.33	0.01	0.35
Neighborhood Crime Rate (per 100,000)			Calendar Year 1986						Calendar Year 1987				
police reports *(sum of 7 crime categories)*			50	1640	20168	8402	4179		50	1348	21132	8559	4748

Note: Italicized rows represent elements of the variables that follow them in the table and are not used by themselves as predictors.

0.5, less than half = 0.25, few/none = 0) before being combined via mean computation. The final 0-1 range thus indicates higher values represent greater residential community identification.

Social environment

Social support

Functional social support was measured using items from a survey developed in 1985 for a medical outcomes study (MOS) by the Rand Corporation.[24] Selected items from this scale were administered. Respondents signified whether the following were available in the past 4 weeks (most, some, little of the time): someone to (1) help if the respondent were confined to a bed, (2) take the respondent to the doctor if needed, (3) show love and affection, (4) give information to help the respondent understand a situation, (5) confide in, (6) give valued advice, (7) do something with, and (8) loan the respondent a significant amount of money.[25] Responses were coded 0-2 and higher values represent greater availability of social support. Because the eight items were combined via mean computation, the final scale range remained 0-2.

Social capital

A mean composite measure was created from 14 survey items, which was then aggregated to the street block level to be used as a compositional predictor of social capital. The items were: (1) member of a neighborhood association (yes/no); (2) have friends who are not relatives living in the neighborhood (yes/no); (3) as a block resident, amount of responsibility felt for what happens on the sidewalk in front of home (big responsibility, some responsibility, no responsibility at all); (4) amount of perceived control by self and neighbors over what goes on in the neighborhood (lot, some, little control); in the past 12 months, worked with neighbors to (5) improve neighborhood appearance (yes/no), or (6) get better police service or protection (yes/no); and separately for instrumental neighboring behavior *given* and *received* in the past 12 months within a couple blocks, (7 & 8) kept watch on house or apartment while owner was away (yes/no); (9 & 10) brought in newspapers or mail while away from home (yes/no); (11 & 12) gave/been given key so that animals could be fed, plants watered, or house checked while owner was away (yes/no); and (13 & 14) lent/borrowed tools or household items (yes/no). Before creating a mean

[24] The 20-item social support survey resulting from the MOS work was published by Sherbourne and Stewart (1991), but the scale was made available to the developers of the Baltimore survey in time for the first wave in 1987.
[25] The first seven items are from the MOS work, but the 8th was created and added by the Baltimore study developers.

composite of items, responses other than dichotomous were recoded to match this 0-1 scale (e.g., #4 was recoded lot = 1, some = 0.5, little = 0) with higher values indicating greater social capital.

Collective sense of community

Residential community identification is a *psychological* construct. However, as the number of community identified individuals living in the same community changes, the social climate of the place may also change. Naturally, persons' community identification can differ dramatically from the social climate in which they live (e.g., one may be non-identified amongst a highly cohesive and satisfied group). In other words, individual-level processes can contribute to collective processes and vice versa, but one is not necessarily dependent on the other.[26]

By aggregating the individual-level residential community identification variable to the street block level of analysis, it becomes something akin to the group-level sense of community measure used by others (e.g., Kingston, Mitchell, Florin, & Stevenson, 1999; Perkins & Long, 2002). Hence, collective sense of community, which is the block aggregate of residential community identification, is used as a social climate variable, both as a contextual predictor of distress and well-being and as a potential moderator of the effect of residential community identification on outcomes.[27]

Block environment

The objective assessment of place characteristics – including traits of the street, landscape, and residential and nonresidential properties – performed by trained raters is the Block Environmental Inventory or BEI (Perkins, Florin, Rich, Wandersman, & Chavis, 1990; Perkins, Meeks, & Taylor, 1992). Seventeen domains were inventoried for survey-sampled properties. **Table 3** displays inter-rater reliabilities for these items. When subjected to factor analysis,[28] the BEI items rendered four interpretable domains (in order of eigenvalues): (1) defensible private space, (2) place apathy or uncontrollability, (3) defensible public space, and (4) place pride.

[26] For example, Perkins and Long (2002) found that sense of community, both in individual and community aggregate form, significantly, simultaneously, and differentially predicted individual neighboring behavior, sense of collective efficacy, and participation in community organizations.

[27] Multilevel modeling allows the user (after appropriate centering of variables) to enter individual and aggregated variable counterparts in the same multilevel model while avoiding shared variance.

[28] Exploratory factor analysis (principal axis factoring with oblique rotation) was used in conjunction with parallel analysis (for determining the appropriate number of factors given the number of variables and cases, as recommended by Fabrigar, Wegener, MacCallum, & Strahan, 1999). Five factors were rendered, but only the first 4 were interpretable.

Defensible space

Factor 2 (place apathy/uncontrollability) and factor 4 (place pride) were dropped from further consideration after preliminary correlational analyses with outcomes showed little relation, and factors 1 and 3 were combined into one index of defensible space (to preserve power and create a more comprehensive public-private measure of defensible space). The six BEI items (from **Table 3**, numbers 5, 6, 7, 9, 11, 13) used to create this index were: (1) barrier on property other than perimeter of property (yes/no), (2) unbroken outdoor light on private property (yes/no), (3) trees, shrubs, or garden on the private lot (yes/no), (4) barrier around perimeter of property (yes/no), (5) gate to property (none, open, closed), and (6) sign of dog, e.g., "beware" sign, droppings (yes/no). Yes and no questions were coded 1 or 0, respectively, and #5 was coded closed=1, open=0.5, and none=0, so the summative index ranged from 0-6 with higher scores indicating greater human territorial functioning (R. B. Taylor, 1987) or defensible space. This household-level index of the physical environment had valid cases for just 283 surveyed properties.[29] To preserve statistical power, defensible space was thus aggregated to the street block and is used only at that level.

Table 3: Block Environmental Inventory Total, Respondent Household, and Aggregated Inter-Rater Reliabilities

Sample Homes:	Household				Aggregate	
	Respondent (*n*=254)		Total (*n*=365)		Total (*n*=44)*	
	IC *r*	alpha	IC *r*	alpha	IC *r*	alpha
1. Litter (visible, shoe sized)	.60	.75	.61	.76	.83	.90
2. Vandalism	.40	.57	.47	.64	.67	.80
3. Dilapidation	.54	.70	.53	.70	.71	.82
4. Outside visibility from 1st floor	.45	.62	.46	.63	.52	.69

* 50 blocks were sampled with 44 rated by two raters and six by one rater.

Notes: IC = Intra-class. Items 12, 15, and 17 did not load on any of the four factors described in the Measures section.

[29] Using listwise deletion dropped the number of valid individual/household level cases to 210 or fewer (see Appendixes with Level 1 correlations).

Table 3 continued: Block Environmental Inventory Total, Respondent Household, and Aggregated Inter-Rater Reliabilities

Sample Homes:	Household				Aggregate	
	Respondent (*n*=254)		Total (*n*=365)		Total (*n*=44)*	
	IC *r*	alpha	IC *r*	alpha	IC *r*	alpha
5. Barrier on property	.73	.84	.72	.84	.86	.92
6. Barrier around property's perimeter	.68	.81	.73	.84	.80	.89
7. Gate (open, closed)	.70	.82	.77	.87	.87	.93
8. Public streetlight in front of prop.	.81	.90	.77	.87	.81	.90
9. Private outdoor light	.88	.93	.90	.95	.98	.99
10. Security bars on windows	.80	.89	.78	.87	.92	.96
11. Sign of a dog	.80	.88	.65	.79	.87	.93
12. Place to sit outside	.65	.78	.68	.81	.87	.93
13. Private property greenery	.90	.95	.93	.96	.98	.99
14. Public greenery	.76	.86	.74	.85	.91	.95
15. Security/watch signs	.80	.89	.74	.85	.69	.79
16. Number of personalizations	.31	.43	.27	.38	-.02	-.02
17. Number of decorations	.77	.87	.76	.86	.74	.84

* 50 blocks were sampled, but just 44 were rated separately.

Notes: IC = Intra-class. Items 12, 15, and 17 did not load on any of the four factors described in the Measures section.

Stressors

Several respondent-level stressors were measured, which distributed into personal and neighborhood related domains. To save statistical power in multivariate analyses, standardized versions of the personal and neighborhood related stress indexes/scales were combined into two predictor variables so named. Personal stress is made up of three commonly employed scales (negative interpersonal experiences,[30]

[30] *Negative interpersonal experiences* – Non-redundant negative items from the Interpersonal Experiences Questionnaire (developed as a measure of social "strain" by Shinn, Lehmann, & Wong, 1984) were used as a measure of negative interpersonal experiences. Like daily hassles, the time frame for these 8 domains was the past 4 weeks (all/most, some, little/none): too many demands made by others, unneeded advice given, people made things more difficult, others not understanding, being upset or bored by someone, disagreeing with others, and

daily hassles,[31] and negative life events[32]), which were standardized and combined using mean computation. Similarly, neighborhood related stress is a mean composite of six standardized indexes/scales: Perceived crime in the neighborhood,[33] victimization,[34] indirect victimization,[35] bad neighboring experiences,[36] and worry about neighborhood safety.[37]

Neighborhood crime reported to police is a contextual stressor variable and therefore remains separate from the neighborhood related stress composite. Annual crime rates (incidents per 100,000 people) per sampled neighborhood[38] were obtained from the city for the calendar years 1986 and 1987. Because these data are only by calendar year, and because the survey data were collected in late winter

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someone adding to own problems. Like daily hassles, responses were coded 0-2 (with higher scores indicating more negative experiences) and combined via mean computation.

[31] *Daily hassles* – Five domains from a long inventory of "daily hassles" (DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982) were adopted. Respondents were asked whether any of the following had happened in the past 4 weeks (many, few, none): household problems (e.g., home maintenance), health problems (illness), time pressure, financial responsibilities, and work hassles (e.g., unpleasant duties). Responses were coded 0-2 (with higher scores indicating more hassles) then combined using mean computation.

[32] *Negative life events* – Seven unpleasant event domains were used to tap negative life events occurring in the past 12 months (yes/no responses): death, serious illness, accident or attack/robbery of close friend or relative; major household financial difficulty; divorce or break-up of family or close friends; major family conflict; and serious work problems. Responses (coded 1=yes and 0=no) were then summed.

[33] *Perceived crime in the neighborhood* – Perceived crime was assessed using 7 crime/social disturbance domains (people insulting others, vandalism, fighting/arguing, burglary, illicit drug activity, robbery, assault) in which respondents indicated how "big a problem" each was on their block (big, somewhat, not). Responses were coded 0-2 (with higher scores indicating greater perceived crime) and combined using mean computation.

[34] *Victimization* – Interviewers queried for 11 specific types of direct victimization in the past 12 months (yes/no): home break-in, in-home theft, outdoor property theft, vehicle theft or theft of anything in or on vehicle, vandalizing including graffiti on property or vehicle, mugging or other forms of robbery, threatening violence, and physical or sexual attack. Because 82% of all reported victimizations occurred within 2 blocks of home (79 of 96 at Time 1; 40 of 49 at Time 2), all 11 items were used to create this index, with responses to questions "was this attempted" and "did it happen more than once" coded yes=1 and no=0, and responses summed to produce an index with possible range of 0-22.

[35] *Indirect neighbor victimization* – Two items assessed respondents' knowledge of victims of two types of crime that may have occurred on the block in the past 12 months (yes/no): (1) home break-in, and (2) physical attack while on the block. Like victimization, responses (1=yes; 0=no) were then summed.

[36] *Bad neighboring experiences* – Like the personal stressor negative interpersonal experiences, but specific to neighbors, this variable consisted of five items regarding bad neighboring experiences occurring within the past 12 months and within "a couple of blocks" of home (yes/no responses): (1) become annoyed with something a neighbor did; (2) complained or (3) had a neighbor complain to respondent about something done; and (4) took action or (5) had a neighbor take action against respondent "such as call the landlord, police or residents' association." The sum of responses to these 5 items (yes=1; no=0) made up the index of bad neighboring experiences.

[37] *Worry about neighborhood safety* – Worry may be considered a chronic strain. Five items assessed respondents' worry about personal and familial safety in the neighborhood (very worried, somewhat worried, just a little worried, not at all worried): How worried respondent was about (1) home break-in; and (2-5)"being held up on the street, threatened, beaten up, or anything of that sort" (2) on the block, or (3) in the neighborhood, and "other members of your household" (4) on the block, or (5) in the neighborhood. Responses were coded 1-4 (with higher scores indicating greater worry) and combined using mean computation.

[38] These crime statistics are per neighborhood, which is the census block in which the street block resides. As noted above, the street block sampling procedure took care to choose only street blocks that fairly represented the broader census block (e.g., not using street blocks that are on the census block boundary). It is yet possible, of course, that a sampled street block is unrepresentative of the census block in crime (higher or lower). With *N*=50 blocks (at just one street block per census block), however, we may presume such crime representativeness is fairly normally distributed.

1987 (and again one year later), the effects of these crime data will be lagged. Crime rates for calendar years 1986 and 1987 thus correspond to the Time 1 and Time 2 survey data, respectively. Categories of crime included homicide, rape, robbery, assault, larceny, burglary, and auto theft. A summative index of these seven crime rate categories is used as an overall measure of neighborhood crime.

Strategy of Analyses

Multilevel regression modeling (e.g., hierarchical linear modeling or HLM`; Bryk & Raudenbush, 1992) is the preferred analytic technique for an ecological framework because it allows one to predict lower-level phenomena (e.g., psychological) with predictors from similar as well as higher levels of analysis (e.g., group, environment). It is "preferred" because the statistical power of multilevel predictors can be preserved at their original level. Furthermore, HLM does not violate the general linear modeling assumption of independence of observations (or uncorrelated error terms); rather, the knowledge that social phenomena are nearly always nested within other social and physical phenomena is mathematically managed *a priori.* HLM thus recognizes the partial interdependence of lower-level units nested within higher-level units (e.g., homeowners within street blocks) and models the data accordingly, thereby allowing the user to reliably determine the simultaneous influence of higher and lower-level phenomena on lower-level outcomes. Lastly, and critical to the ecological framework, HLM allows the user to model cross-level interactions while controlling for group affiliation and multilevel main effects. For example, it is possible that neither residential community identification nor social capital predicts psychological distress directly, but in interaction is robustly predictive. Such ecological complexity can be neatly captured with HLM.

Multilevel regression modeling with HLM software (Bryk & Raudenbush, 1992) is used to test the hypothesis that residential community identification predicts psychological distress and well-being while controlling for individual and block-level covariates. Because the data are panel, analyses suggest a causal order to effects: predictors are used to estimate psychological distress and well-being measured one year later. Also, as an alternative test, predictors' unexpected changes (i.e., residualized) in status from Time 1 to Time 2 are used to predict unexpected change in outcomes.

It is common to peruse multilevel, bivariate relations when evaluating potential predictors for multilevel analyses. Zero order and partial correlations among the variables described in the measures section are provided here in Appendixes.[39] Appendixes A, C, E, and G are at the individual/household level of analysis; Appendixes B, D, F, and H are at the street block/neighborhood level of analysis. All variables in these analyses are at the appropriate level of analysis (i.e., how they are used in HLM analyses) with the exception of block-level measures of psychological distress and well-being[40] and household defensible space, which has too many missing data points to include in HLM analyses. Marital and working statuses are the only demographic variables measured at both time points thus allowing for residualized change-in-status predictors. Appendixes A and B are at Time 1; C and D are at Time 2 (where possible); E and F are with Time 1–Time 2 residualized change variables (where possible); and G and H are with Time 1 demographics and predictors and Time 2 outcomes.

HLM model creation

HLM methodologists (e.g., Bryk & Raudenbush, 1992) recommend theory-driven model building for achieving the most parsimonious final results, which preserves statistical power by trimming (i.e., removing from the model) those predictors that show little predictive utility before adding additional predictors for consideration. The ecological approach espoused here, however, would suggest beginning with a comprehensive model (rather than building the model incrementally). Namely, an ecological approach takes into consideration not only aspects of the *individual* in predicting psychological distress and well-being, but also the *agent* or *vector* of psychological distress, the *physical* and *social environment* of the person affecting his or her susceptibility and moderating the effect of the agent on the individual, as well as the *available resources* used by individuals and groups. Provided that general rules of thumb regarding limits for over-specification are followed,[41] therefore, beginning with a comprehensive model that incorporates these multilevel predictors (and interactions) is most ecologically appropriate.

[39] The full contingent of available data is used to compute correlations; thus, deletion per bivariate correlation is pairwise. For HLM analyses, however, listwise deletion of data is necessary.

[40] HLM allows one to model only lower level outcomes, hence block level psychological distress and well-being will never be used in HLMs.

[41] Because HLM software and research is still in development, the jury is still out about what constitutes over-specification in HLM. Even with regular regression analysis, some recommend a 10-to-1 ratio of cases per variable modeled, while others suggest a 5-to-1 ratio is adequate (Tabachnick & Fidell, 2000). With HLM, which is a

Efforts *are* made however to preserve statistical power. The number of predictors is streamlined: income and education are combined into an SES composite, and the several individual-level stressor variables are combined into personal stress and neighborhood-related stress composite predictors. All individual-level predictors other than residential community identification are "fixed" (i.e., their slopes are set at the block mean rather than allowed to vary within block), which is consistent with treating them as covariates. Finally, predictors are trimmed that are not critical covariates, and that show little predictive utility, so long as the act of trimming does not significantly reduce the fit of the model (to the observed covariance matrix) from the fit of the comprehensive model. Such trimming procedures begin with interaction terms, proceed to block/neighborhood predictors, and end with individual/household predictors because group-level statistical power is generally most difficult to come by and because individual-level predictors often account for more variance in psychological outcomes.

Four 2-level HLM models are created here, two predicting well-being and two predicting distress. For the respective outcome, a model using Time 1 predictors is used to predict the outcome measured at Time 2.[42] The complementary test is "change predicting change"; where possible, residualized Time 1–Time 2 change predictors[43] (at both levels) are used to predict residualized Time 1–Time 2 change in the respective outcome.

Because of their robustness in previous empirical work predicting distress and well-being, respondent-level sex, nonwhite ethnic/racial status (relative to their street block community, e.g., nonwhite among whites), and SES are used as true controls (i.e., they are retained in models regardless of their predictive utility); the main predictor of interest, residential community identification, is also retained throughout model trimming. Cross-level interaction terms (i.e., ecological moderating effects) are

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regression-based analysis, the comparable ratio of interest is cases-per-estimated-parameter. Parameters estimated is a function of the number of variables in the model, but also includes such things as method of estimation, and whether or not the lower-level variables' slopes are allowed to vary within group. The other important ratio unique to HLM is the number of groups-to-group-level predictors. With all models reported here – even the comprehensive models, which use the greatest number of parameters – neither ratio exceeds 5-to-1. Lastly, most methodologists agree that >5 cases per group is adequate for reliable modeling; however, this decision is taken out of the user's hands to some degree because the software will remove from consideration groups (and therefore cases nested within those groups) that do not have enough cases for adequate statistical modeling. The current data set had enough cases per group to create models using all 50 street blocks sampled.

[42] The Time 1 counterpart to the Time 2 outcome is not included as a predictor because doing so effectively models residualized change in outcome, which is the purpose of the complementary "change predicting change" models.

[43] These change predictors are the standardized residuals from regular regressions in which Time 1 of a respective variable is used to predict Time 2 of that same variable. These change predictors were chosen over the more parsimonious difference scores because they account for regression toward the mean, which is why some researchers refer to them as predictors of "unexpected change."

only tested with the main predictor of interest, residential community identification. Thus, so called "comprehensive models" include all predictors at the individual/household and block/neighborhood levels as well as all possible contextual moderators of residential community identification.

A "full model" is one that retains all individual/household and block/neighborhood main effects predictors, but is trimmed of all nonsignificant cross-level interaction terms (one at a time) using the .05 alpha level. It is deemed "full" because included in the model is the full breadth of individual and environmental covariates and only those contextual moderators that help explain the "true" relation between residential community identification and psychological distress and well-being. A "trimmed model" is one that has been trimmed (one at a time) of all nonsignificant cross-level interactions (at $p<.05$), block/neighborhood predictors (at $p<.10$), and individual/household predictors (at $p<.05$), and that does not significantly differ in fit from its comprehensive model counterpart.[44] The exceptions to these trimming rules are: (1) demographic true controls and residential community identification are always retained regardless of significance level, and (2) block/neighborhood-level main effects counterparts to cross-level interaction terms are retained for customary control purposes.

HLM allows the user to model lower-level predictors uncentered, group mean centered, or grand mean centered, and higher-level predictors uncentered or grand mean centered. HLM methodologists recommend not centering predictors unless there is good theoretical or methodological justification for doing so. Here, all predictors are uncentered with three exceptions. First, individual nonwhite ethnic/racial status is block mean centered because some (Shinn & Rapkin, 2000; Snowden, 2001) suggest it is one's relative rather than absolute status that has psychological consequences of interest (e.g., white among blacks).[45] Second, if a block-level counterpart to an individual-level predictor is tested when the individual-level predictor is also in the model (e.g., individual and composite SES), the lower-level counterpart is block mean centered to avoid shared variance with the block-level predictor. The latter is only implemented when both variables are in the model; if, for example, the block-level counterpart is trimmed from the model, the individual-level counterpart is changed to uncentered (with the

[44] It is common to have a higher p-value significance threshold for level-2 predictors because of limited N. The standard .05 alpha level is used for the other terms because they are or include level-1 predictors, which have greater overall N.

[45] Unlike today, Baltimore in the mid-1980s was almost exclusively black and white with few other minority races or ethnicities. Blacks therefore make up nearly all the nonwhite individuals represented here. This group will nonetheless be referred to largely by the literal operational definition, i.e., nonwhite.

exception of nonwhite race/ethnicity, which will always remain block mean centered). Third, while sociodemographics, at both levels, are entered as raw scores, the scales and indexes are entered as standardized predictors.[46] All scales and indexes, at both levels, are uncentered in HLM models.[47] Because block-level demographics are raw scores, however, they are grand mean centered in HLM models; such centering makes the city the context of block level relevance.[48]

Models are estimated using full maximum likelihood estimation so Chi-Square change-in-fit significance tests are possible using model-to-model difference in HLM's deviance statistic (with df determined by the difference in parameters estimated by the models). Also, reported effects are those using robust standard errors.

The hypothesis is tested in two ways that complement each other. One analysis presents the one-year lagged effects of residential community identification on psychological distress and well-being; the complementary model analyzes the effect of one-year residualized change in residential community identification on residualized change in psychological distress and well-being.[49] Namely, where panel data are available, residualized change predictors are used to predict residualized change in outcomes[50] (i.e., "unexpected change" predicting "unexpected change"). Of course, essential to the reliability of the latter analysis is the stability of the measured constructs across time. **Table 4** provides several customary statistics examining such stability indexes for all variables with panel data.

Test-retest reliability is evaluated via bivariate *r* where Time 1 of a respective variable is correlated with its Time 2 counterpart. It is often helpful when evaluating variable stability over time to examine standard deviations relative to means for Time 1 and compare these with comparable statistics for the difference between the variable from Time 1 to Time 2. From review of **Table 4**, it is plain that there is construct stability across time for the panel variables. Furthermore, there is not *too much*

[46] The block level scales and indexes are aggregated as raw scores before being converted into standardized variables (i.e., these block level predictors are not aggregates of standardized individual level predictors).
[47] Because collective sense of community is the aggregate of residential community identification, however, the latter is group mean centered when the former is in the model to avoid shared variance between the two.
[48] In other words, it is not the *absolute* value of the block level predictor that is of interest, but its relative position within the city context.
[49] Applicable covariates and moderators are measured similarly to the residential community identification predictor.
[50] When panel data are not available, the predictor measured at Time 1 is used to predict change in outcome.

stability; that is, there is enough change from Time 1 to Time 2 that the change scores represent more than just measurement error.[51]

Table 4: Test-Retest Reliabilities and Descriptive Statistics for Evaluating Panel Construct Stability

	Test-Retest Reliability		Time 1			T2-T1 Difference		
Individual Level	N	*r*	N	*M*	*SD*	N	*M*	*SD*
Well-being	303	.64	406	2.90	.66	303	-0.11	.57
Psychological Distress	302	.63	405	0.39	.38	302	-0.01	.33
Resid. Comm. Ident.	305	.74	412	0.60	.28	305	0.02	.19
Social Support	303	.55	407	1.70	.41	303	-0.04	.38
Personal Stress	303	.64	407	-0.00	.64	303	0.05	.51
Nbhd-Related Stress	304	.64	412	-0.00	.57	304	0.02	.47
Block/Neighborhood Level								
Social Capital	50	.80	50	0.47	.14	50	0.02	.09
Collective Sense of Comm.	50	.81	50	0.60	.16	50	0.03	.11
Nbhd-Related Stress	50	.67	50	-0.00	.29	50	0.01	.26
Crime Reported to Police	50	.93	50	8402	4179	50	157	1764

Data preparation before multilevel modeling

Following recommendations of Fidell and Tabachnick (2003), the data were first "cleaned" of univariate and multivariate outliers, and egregious distributional problems were managed, before HLM analyses were performed.[52]

[51] Although simple change scores are evaluated in Table 4, hypothesis tests use more stable change metrics – residualized change or "unexpected change," which is the deviation from predicted outcomes.

[52] Univariate outliers per variable at the individual/household level (max. N=412) were those with standardized scores greater than ¦ 3.30¦ (Fidell & Tabachnick, 2003). There were no outliers among the sociodemographic variables. Of the scales/indexes, individual/household level outliers were identified with Victimization (n=7 at Time 1; n=7 at Time 2; just one cross-over case), Negative Life Events (n=2 at Time 1; n=1 at Time 2; no cross-over), and Bad Neighboring Experiences (n=2 at Time 1; n=1 at Time 2; one cross-over case). These were corrected by changing the standardized score to ±3.30, e.g., -3.49 becomes -3.30 (Fidell & Tabachnick, 2003). The indexes personal stress and neighborhood-related stress were then computed using the outlier-trimmed scales (among others). Change score variables could be evaluated for outliers in much the same way because a change predictor consists of the standardized residual of the predictor at Time 1 predicting itself at Time 2; hence, the same rules for determining and correcting outliers were used. Individual/household level change predictors with corrected outliers included well-being (n=1), psychological distress (n=2), personal stress (n=2), neighborhood-related stress (n=1), residential community identification (n=1), and social support (n=2).

HLM software is still in development. One of its current difficulties is in dealing with missing data. No missing data is allowed in the outcome variable or any higher-level predictors. Although the user may create HLM data files that include missing data in lower-level predictors, the safest option is to use listwise deletion rather than risk unreliable results. Hence, data for multilevel regression analyses included only those cases with complete data on all variables: Individual/household N = 270 [53] and block/neighborhood N = 50.

Univariate outliers per variable at the block/neighborhood level (N = 50) were those with standardized scores greater than ¦ 2.58¦ (Fidell & Tabachnick, 2003). Outliers identified and corrected (by changing the standardized score to $\pm$2.58) were Time 1 neighborhood crime reports (n=1) and Time 1 neighborhood-related stress (n=1), and the change predictors neighborhood crime reports (n=3; no cross-over with the Time 1 outlier case), neighborhood-related stress (n=1; no cross-over with Time 1 outlier), and sense of community (n=1).

Multivariate outliers were also identified via regular regression analyses using the case-wise diagnostics function of SPSS in which any case with standardized residuals exceeding ¦ 3.30¦ is flagged as an outlier. The regression analyses used for identifying multivariate outliers mirrored the HLM comprehensive models (see e.g., Appendix I), but used median-split dichotomized counterparts to the HLM block/neighborhood level predictors. Of the four outcome variables, only regressions with Time 2 psychological distress showed multivariate outlier cases. On the first run, two cases were found to be outliers and were omitted from further consideration. A follow-up run with the same outcome showed one more outlier, which was also omitted from further consideration. No more multivariate outlier cases were shown on subsequent analysis; thus, individual/household level cases for HLM analyses went from max. N = 412 to max. N = 409.

Fidell and Tabachnick (2003) suggest that quantitative rules-of-thumb for identifying distributional problems are often not appropriate with large samples (N = 300) due to inflated likelihood of rejecting distributions as non-normal. Hence, distributional normality was assessed by inspecting the shape of distributions. Only Time 2 psychological distress deviated enough from normality to warrant using a normalizing transformation (even residualized change in distress over time was fairly normally distributed). Time 2 psychological distress was positively skewed – the bulk of respondents reported little distress. Arcsine transformation is recommended for the most severely positively skewed distributions (Fidell & Tabachnick, 2003); but the original range of scores (prior to arcsine transformation) must fall between –1 and 1. Because the original scores for Time 2 distress ranged from 0 to 1.80, 1.00 was subtracted from each score (making the range –1 to 0.80) before transforming the data. This transformed distribution had the following characteristics: Range = -1.57 to 0.93; $\underline{M}$ = -0.84; SD = 0.52. Prior to HLM modeling, however, this transformed distribution for Time 2 distress was standardized for ease of interpretability of HLM results.

[53] Omitted also are the 3 multivariate outlier cases identified in data preparation. It is impossible to know the impact – other than reduced statistical power – of omitting these 66 individuals from multilevel models because their missing data precluded their entry in the first place. Means comparisons (t-tests) for omitted respondents to those included in HLM analyses, however, showed no significant differences (at $p<.05$) in distress or well-being outcomes, either lagged or residualized change forms. They did, however, differ in Time 1 RCI with omitted respondents reporting lower average identification, but these differences were not seen in Time 2 RCI or residualized change in RCI. Groups also did not differ in sex, ethnicity or SES, although, compared to those included in HLM models, omitted respondents were more likely to be single without children, older, unemployed, and renting than those included in HLM analyses.

CHAPTER III

RESULTS

The hypothesis received consistent and significant support when using the one-year lagged method of analysis, but inconsistent and ultimately (i.e., after trimming) no support when using the "change predicting change" method. These results held for both outcomes, well-being and distress, and are described below. Presentation of results below proceeds from the general (variance in outcomes explained) to the more specific and complex (contextual moderating effects) and ends with a higher-level summary of findings across models.

Variance explained

All HLM models – whether comprehensive, full or trimmed, or whether predicting residualized change or lagged effects – explained significant variance in the respective outcome ($p<.001$). As expected due to the psychological nature of outcomes, more variance was apportioned to individual-level factors than street block-level ones. For example, just 0.09% of the variance in Time 2 psychological distress (PD) and 0.4% of the variance in residualized change in well-being (WB) was due to block membership differences, whereas Time 2 WB (3.5%, $p<.09$) and residualized change in PD (5.1%, $p<.07$) had more block-level variance, yet not a large amount.[54] Even with the small proportion of variance accounted for at the higher level of analysis, however, methodologists suggest that multilevel modeling is nonetheless the analysis of choice for such nested data structures when the covariance matrix is numerically stable (du Toit, 2004).[55] Multilevel modeling is preferred because higher-level data can remain in its original form rather than being dichotomized or disaggregated. Also, there were significant block-level predictors in each HLM model, which might be considered an indicator of "modelable" variance. Moreover, several interesting and elucidating contextual moderating effects were discovered, which would be missed with individual-level regression analyses.

[54] Variance explained proportions are provided in the notes of each table, whether in Results or Appendixes.
[55] Time 2 psychological distress was the least stable of the outcomes, but was made numerically stable after arcsine transformation (and standardization) to improve the distribution's normality.

As with any regression-based analysis, more variance in the outcome was explained with each predictor added to an HLM model.[56] However, the trimming process employed here showed that no full or trimmed model differed significantly in fit from its comprehensive model counterpart, which suggests that – although trimmed models do not fully control for individual and contextual predictors – they explain the outcome's modelable variance as well as the respective fully controlled model.[57] Although the proportion of block-level variance per outcome was small, the proportion of this variance explained by the models ranged from 76% to nearly 100%. Ironically, the lowest proportion of block variance explained by the model was with the outcome Time 2 psychological distress (76-80%), which had the least modelable block-level variance, whereas the outcomes with the most available block variance (Time 2 WB and residualized change in PD) had models that each explained over 99% of modelable variance at the block level.

As noted above, variance in outcomes accounted for at the block level is <1% to 5%, which leaves 95% to >99% variance accounted for elsewhere.[58] Comprehensive HLM models, which include all predictors, account for 21% to 37% of individual-level variance in outcomes; that is, for example, the comprehensive model predicting Time 2 PD explains 37% individual-level variance from the 99.6% non-block-level variance available, and the comprehensive model predicting PD Change explains 25% individual-level variance from the 94.9% non-block-level variance available.

Despite the fact that there were no significant changes in model fit from respective comprehensive to trimmed models, with fewer predictors the full and trimmed models by necessity will explain less variance in outcomes. Full models explain between 20% and 36% and trimmed models explain between 15% and 28% of individual-level variance in outcomes. Hence, total explained variance in outcomes (at both levels of analysis) range from 22% to 38% for comprehensive models. Further, the

[56] In HLM parlance, this is termed Deviance in relation to Parameters estimated.

[57] For example, via Chi-Square test, trimmed model Deviance did not differ significantly from the comprehensive model Deviance (using Parameters difference as df). These results are shown with each full and trimmed model table.

[58] Although most of this 95% to 99% variance will be due to individual differences, there is likely to be small portions of variance at levels of analysis unmeasured here (e.g., work/religious group, city, region, nation). One response to this information would be to conduct a simpler, individual-level analysis under the premise that block context does not directly affect distress or well-being. Doing so, however, would eliminate the opportunity to discover the myriad ways in which block context moderates individual-level wellness via processes such as residential community identification. Moreover, small proportions of variance in psychological outcomes accounted for at higher levels of analysis does not preclude discovery of direct, significant effects with interesting conceptual and empirical implications.

HLM lagged effects analyses in which RCI is a significant and stable predictor, explain the most total variance in outcomes (38% Time 2 PD; 33% Time 2 WB), whereas HLM change-predicting-change analyses in which RCI is not a significant or stable predictor, explain less total variance in outcomes (22% WB Change; 29% PD Change).

Residualized change in RCI over time, however, does not reliably predict residualized change in psychological distress or well-being over the same time period.

Lagged Effects

Predicting Time 2 well-being

As a main effect, higher Time 1 RCI predicts higher Time 2 WB as expected. In addition, there were four significant contextual moderating effects (or cross-level interactions) with Time 1 RCI. The positive relation between lagged RCI and WB is enhanced by more block numbers of children, more block-level SES, more collective sense of community, and lower block proportion home owners. The comprehensive and full models predicting lagged well-being are displayed in Appendixes O and P, respectively. The trimmed model counterpart appears in **Table 5** below.[59] Figures 1-4 chart the contextual moderating effects.[60]

Of the demographic controls, Time 1 marital and parent statuses were consistently NS while the others (Time 1 sex, SES, and relative nonwhite status) were reliably significant predictors of Time 2 well-being. Namely, having higher Time 1 SES, being male, and having greater relative nonwhite status (nonwhite among whites[61]) predicted higher Time 2 WB. Higher Time 2 WB was also associated with younger respondents, those with greater Time 1 social support, and lower levels of Time 1 personal and neighborhood-related stress. Significant block-level main effects of higher Time 2 WB included greater Time 1 numbers of children living on the block, higher block SES, and greater proportion nonwhite

[59] The significant multilevel main effects and interaction effects in the comprehensive model remained predictive in the full and trimmed models. RCI interaction effects with block proportion homeowners and block SES, however, began NS in the comprehensive model but became significant (at $p<.03$) in the full and trimmed models.

[60] HLM provides several options for graphing cross-level interaction effects. Three levels of the block moderator were chosen for illustration purposes here. On a cautionary note, however, one may not wish to interpret too literally each regression line and instead bear in mind the overall interaction coefficient (in this case from Table 5).

[61] Whites living on predominantly black blocks showed the lowest Time 2 WB, while being part of the local racial majority (i.e., white among whites, or black among blacks) predicted middling levels of Time 2 WB.

residents; and these effects are statistically independent of residents' individual demographic statuses. These main effects are generally consistent with the well-being literature.[62]

Table 5: HLM Trimmed Model: One-year Lagged Effects Predicting Well-being

FOR:	gamma	SE	p	Var(*U*)	p
Level of Analysis					
Intercept	3.334	0.143	.000	0.001	.288
Individual/Household Level					
RESIDENT. COMM. IDENTIFICATION (or RCI)	0.161	0.074	.035	0.036	.100
FEMALE	-0.211	0.070	.003		
MARRIED	-0.083	0.080	.302		
PARENT	-0.014	0.078	.856		
NONWHITE STATUS (relative to block)	0.510	0.149	.001		
SES	0.068	0.026	.009		
AGE	-0.007	0.003	.014		
SOCIAL SUPPORT	0.146	0.045	.002		
PERSONAL STRESS	-0.233	0.070	.001		
NEIGHBORHOOD-RELATED STRESS	-0.138	0.071	.052		
Block/Neighborhood Level					
CHILDREN ON BLOCK	0.154	0.082	.066		
NONWHITE (block proportion)	0.214	0.084	.014		
SES OF BLOCK	0.133	0.037	.001		
HOMEOWNER (block proportion)	-0.198	0.131	.138		
COLLECTIVE SENSE OF COMMUNITY	0.042	0.057	.471		
Cross-level Interactions					
RCI * CHILDREN ON BLOCK	0.414	0.107	.001		
RCI * SES OF BLOCK	0.149	0.064	.023		
RCI * HOMEOWN (block proportion)	-0.720	0.301	.021		
RCI * COLLECTIVE SENSE OF COMMUNITY	0.271	0.115	.023		

Notes: The model had 24 parameters and approximate df = 44:250; and df = 45 for the random effect for Residential Community Identification. There was no significant change in model fit between the Comprehensive Model and this Trimmed Model, X^2 (13) = 8.38, NS. The trimmed model explains a significant amount of variance in the outcome, X^2 (21) = 100.46, p<.000; specifically, >28% of Level 1 and >99% of Level 2 variance is explained by these multilevel predictors.

[62] The literature regarding the impact of race and ethnicity on WB is mixed. Few studies have operationalized ethnic status as context dependent (relative to one's community) as this study does at the individual level.

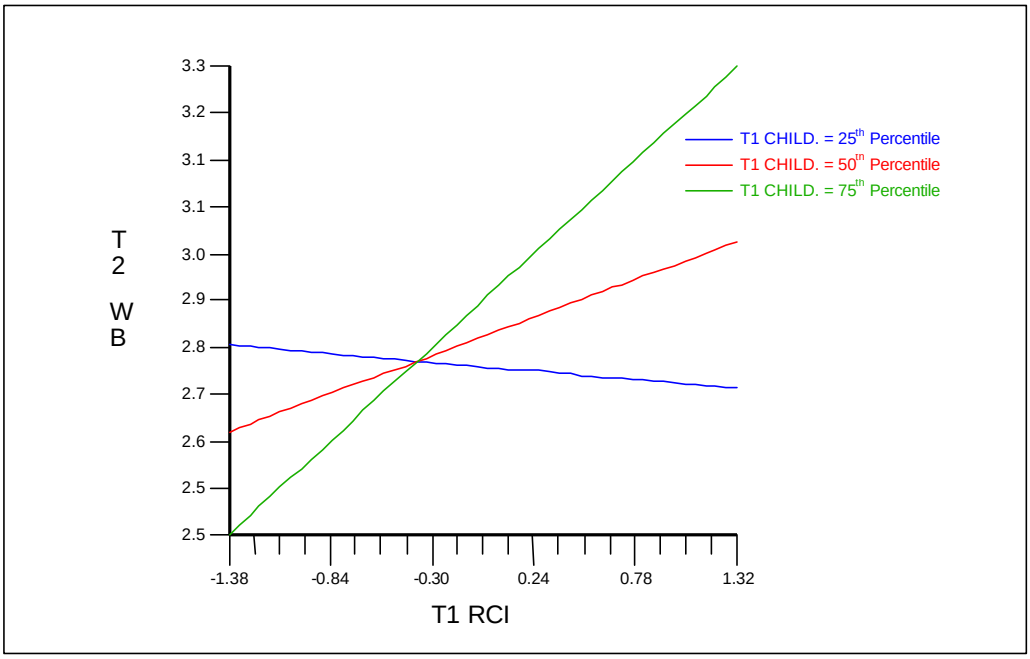

Figure 1: HLM Cross-level Interaction: Time 1 Individual-Level Residential Community Identification and Time 1 Block-Level Number of Children Predicting Time 2 Well-being.

Note: Time 1 Residential Community Identification (RCI) is standardized; –2 and +2 SDs of Time 1 RCI is used for computation.

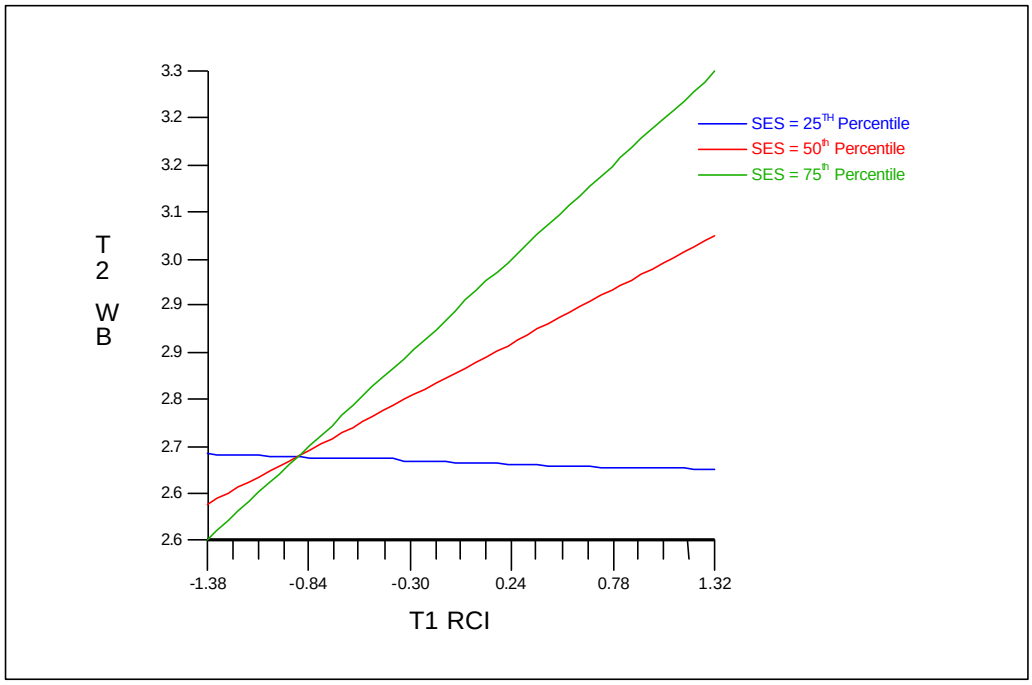

Figure 2: HLM Cross-level Interaction: Time 1 Individual-Level Residential Community Identification and Time 1 Block-Level SES Predicting Time 2 Well-being.

Note: Time 1 Residential Community Identification (RCI) is standardized; –2 and +2 SDs of Time 1 RCI is used for computation.

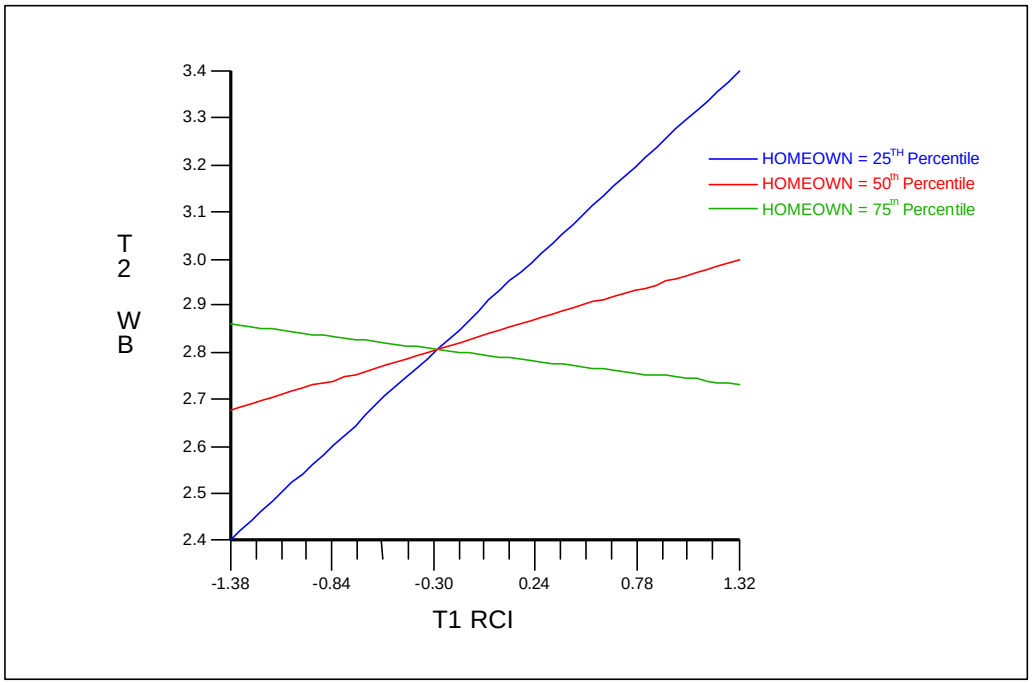

Figure 3: HLM Cross-level Interaction: Time 1 Individual-Level Residential Community Identification and Time 1 Block-Level Proportion Homeowners Predicting Time 2 Well-being.

Note: Time 1 Residential Community Identification (RCI) is standardized; –2 and +2 SDs of Time 1 RCI is used for computation.

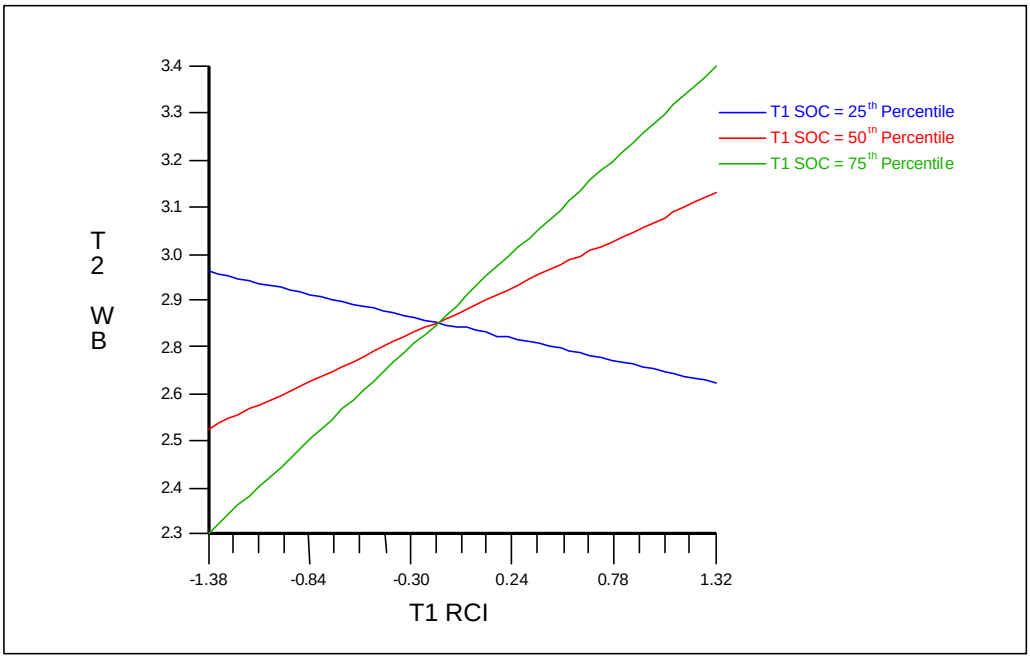

Figure 4: HLM Cross-level Interaction: Time 1 Individual-Level Residential Community Identification and Time 1 Collective Sense of Community Predicting Time 2 Well-being.

Note: Time 1 Residential Community Identification (RCI) is standardized; –2 and +2 SDs of Time 1 RCI is used for computation.

Predicting Time 2 psychological distress

Time 1 residential community identification is a robust predictor of lower Time 2 psychological distress (p=.007 full model, **Table 6**; p=.000 trimmed model, Appendix R). RCI also predicts psychological distress (PD) when moderated by two to three block-level predictors. Unlike the change-predicting-change and lagged well-being analyses, however, there is considerable fluctuation in the effects sizes for main effects of Time 2 PD from the comprehensive/full model to the trimmed model.[63] Because the major fluctuations happen in the trimming process from the full model to the trimmed model, and because there is consistency between the comprehensive and full models, the full model is shown in **Table 6** and described below (comprehensive and trimmed models appear in Appendixes Q and R, respectively).

[63] For example, block-level SES, age, and defensible space are significant predictors (at p<.05) in the comprehensive and full models, but are removed for non-significance for the trimmed model. Also, individual-level SES and block-level social capital are nonsignificant predictors in the comprehensive and full models, but become significant for the trimmed model.

For this full model, three block-level variables interact with RCI to predict PD one year later. The distress buffering benefits of higher RCI are enhanced by higher block SES (Figure 5). Interpreting the interaction coefficients for crime and social capital literally suggests that elevated RCI predicts higher PD when neighborhood crime or block social capital is elevated. Perusing charts of the latter effects (Figures 6 and 7), however, suggests that the story lies instead with lower crime and lower social capital. That is to say, lower crime neighborhoods and lower social capital blocks enhance the distress buffering benefits of higher RCI.

Of the demographic controls, only relative nonwhite status significantly predicts psychological distress one year later. The valence of the relative nonwhite status effect is consistent with the well-being outcome describe above; that is, being black among whites predicts lower PD (and higher WB) while being white among blacks predicts higher PD (and lower WB), with nonwhite status similarity predicting average levels of PD and WB. Social support and personal stress are the only other individual-level predictors to significantly predict PD, and do so in the expected direction: Higher Time 1 social support, and lower Time 1 personal stress, predict lower PD one year later.

Table 6: HLM Full Model: One-year Lagged Effects Predicting Psychological Distress

Level of Analysis FOR:	gamma	SE	p	Var(*U*)	p
Intercept	0.133	0.144	.362	0.000	.366
Individual/Household Level					
RESID. COMMUNITY IDENTIF. (or RCI)	-0.240	0.084	.007	0.001	.461
FEMALE	0.128	0.111	.249		
MARRIED	-0.172	0.110	.116		
PARENT	0.153	0.153	.320		
NONWHITE STATUS (relative to block)	-0.601	0.258	.020		
SES	-0.051	0.039	.185		
AGE	0.003	0.005	.490		
HOMEOWNER	-0.045	0.172	.794		
WORKING	-0.101	0.113	.373		
SOCIAL SUPPORT	-0.353	0.085	.000		
PERSONAL STRESS	0.413	0.101	.000		
NEIGHBORHOOD-RELATED STRESS	0.159	0.125	.204		
Block/Neighborhood Level					
CHILDREN ON BLOCK	-0.063	0.107	.561		
NONWHITE (block proportion)	0.036	0.123	.770		
SES OF BLOCK	-0.159	0.062	.015		

Table 6 cont.: HLM Full Model: One-year Lagged Effects Predicting Psychological Distress

	gamma	SE	p
Level of Analysis			
FOR:			
AGE OF BLOCK RESIDENTS	-0.016	0.007	.025
HOMEOWNER (block proportion)	-0.015	0.246	.951
DEFENSIBLE SPACE	0.150	0.072	.045
SOCIAL CAPITAL	0.102	0.072	.162
COLLECTIVE SENSE OF COMMUNITY	-0.047	0.031	.716
NBHD-RELATED STRESS (block)	-0.019	0.050	.703
CRIME REPORTED TO POLICE	-0.020	0.058	.733
Block/Neighborhood Level			
RCI * SES OF BLOCK	-0.285	0.096	.006
RCI * SOCIAL CAPITAL	0.367	0.153	.021
RCI * CRIME REPORTED TO POLICE	0.246	0.105	.023

Notes: The model had 30 parameters and approximate df = 39:244 (RCI random effect df = 46). There was no significant change in model fit between the Comprehensive Model and this Full Model, X^2 (7) = 5.03, NS. The model explains a significant amount of variance in the outcome, X^2 (27) = 123.25, p<.000; with approximately >36% of Level 1 variance and >80% of Level 2 variance explained.

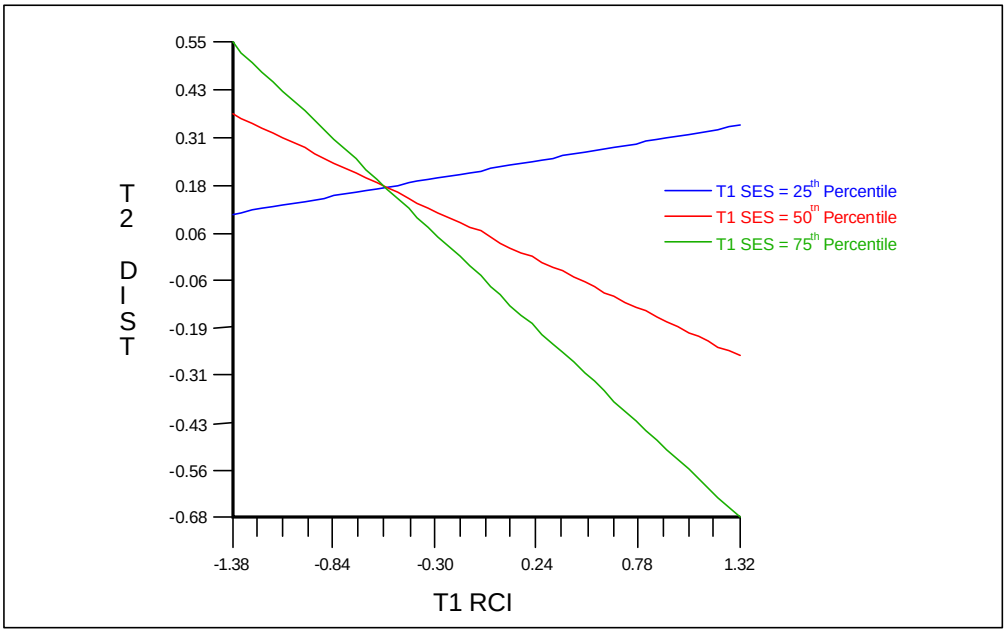

Figure 5: HLM Cross-level Interaction: Time 1 Individual-Level Residential Community Identification and Time 1 Block-Level SES Predicting Time 2 Psychological Distress.

Notes: The level of Time 1 Residential Community Identification is standardized; –2 and +2 SDs of Time 1 RCI is used for computation.

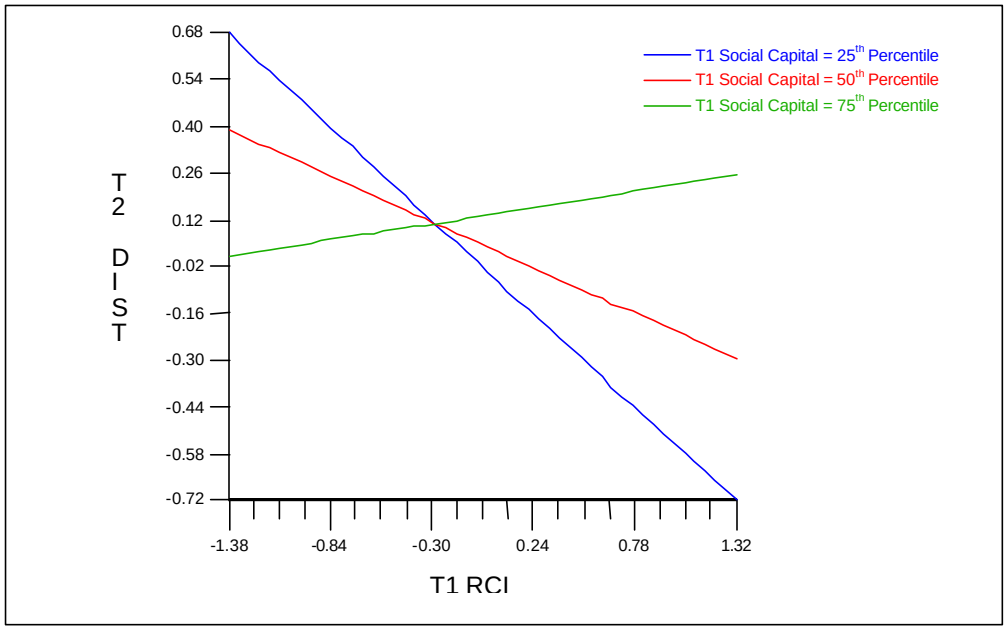

Figure 6: HLM Cross-level Interaction: Time 1 Individual-Level Residential Community Identification and Time 1 Block-Level Social Capital Predicting Time 2 Psychological Distress.

Notes: The level of Time 1 Residential Community Identification is standardized; –2 and +2 SDs of Time 1 RCI is used for computation.

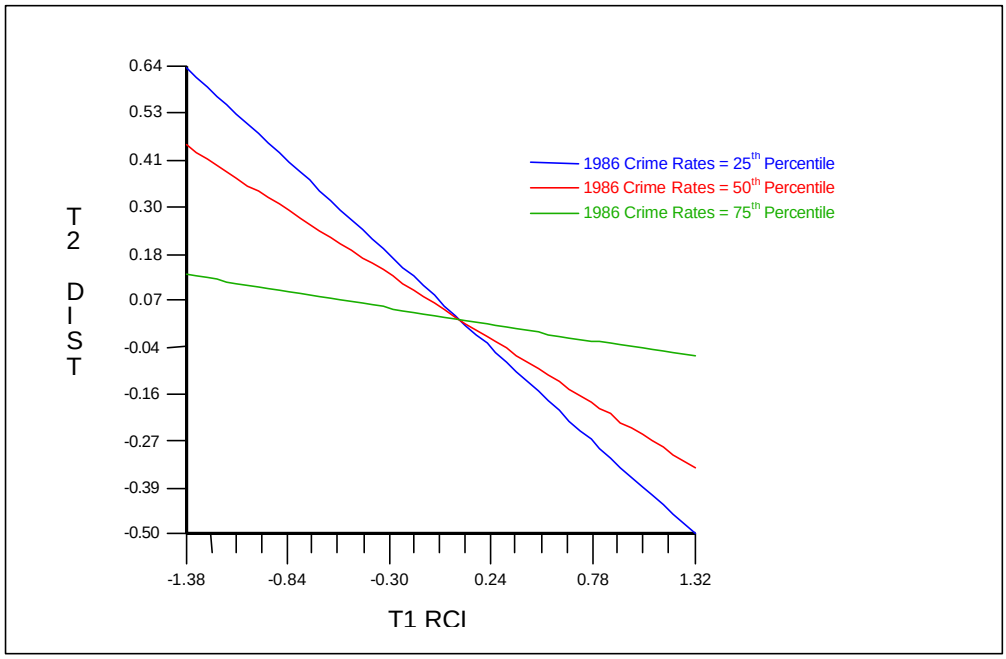

Figure 7: HLM Cross-level Interaction: Time 1 Individual-Level Residential Community Identification and Neighborhood-Level Crime Rate (Reported to Police) for Calendar Year 1986 Predicting Time 2 Psychological Distress.

Notes: The level of Time 1 Residential Community Identification is standardized; –2 and +2 SDs of Time 1 RCI is used for computation.

Change Predicting Change

The hypothesis is not supported with the change predicting change models. Residualized change in residential community identification (RCI) did not reliably predict residualized change in psychological distress (PD) or well-being (WB), either as a main effect or as a contextually moderated one. These results are described briefly here; change-predicting-change HLM Comprehensive, Full, and Trimmed model tables can be found in Appendixes I to N.

Predicting change in well-being

Effects of residualized change in RCI on residualized WB change are unstable and unreliable. For example, four moderating effects with residualized change in RCI are significant at $p<.05$ (and three more at $p<.10$) in the comprehensive model (Appendix L), and six are significant at $p<.05$ in the full model

(Appendix M), yet *none* are significant in the trimmed model (Appendix N). Main effects for residualized change in WB models, however, are stable and in expected directions across models (including the nonsignificant main effect of residualized change in RCI). Specifically, higher Time 1 block-level home ownership and increasing block-level neighborhood-related stress predicts decreasing WB, and more children on the block and higher block-level SES (both measured at Time 1) predict increasing WB. Also, females and those with increasing personal stress show decreasing WB, while those at higher relative nonwhite status at Time 1 and increasing social support show increasing WB. The other demographic controls (Time 1 SES and parent status, as well as residualized change in marital status), however, were not significant predictors of residualized change in WB.

Predicting change in psychological distress

Residualized change in RCI, although stable, is a nonsignificant predictor of residualized change in psychological distress (PD) in all three models (comprehensive, full, and trimmed; Appendixes I to K), and none of the contextual moderating effects with residualized change in RCI is significant. In addition, the demographic controls sex, parent, and residualized change in marital status are all nonsignificant predictors of residualized change in PD. However, increasing PD is significantly predicted by higher Time 1 block-level defensible space and increasing block-level neighborhood-related stress. Higher block-level Time 1 SES predicts decreasing PD. Additionally, increasing personal stress predicts increasing PD, while increasing social support and higher Time 1 relative nonwhite status predicts decreasing PD; that is, nonwhites on mostly white street blocks report decreasing PD while whites on mostly nonwhite blocks report increasing PD. All of these effects remain significant throughout the trimming process. Furthermore, higher individual-level Time 1 SES predicts decreasing PD ($p=.05$) after nonsignificant moderating terms are trimmed (Appendixes J and K).

Results Summary

The hypothesis was supported in multilevel models predicting one-year lagged well-being (WB). Residential community identification (RCI) significantly predicted WB one year later both as a main effect and as moderated by four contextual variables. More children on the block, higher block SES, strong

collective sense of community, and lower block proportion homeowners enhanced the positive effect of RCI on WB. These moderating effects are intuitive apart from that with block proportion homeowners, which may be a suppression effect. Regardless, these cross-level moderating effects with RCI were stable and reliable throughout the trimming process. Their existence suggests RCI's impact on WB is, to a certain extent, contextually dependent.

The hypothesis was also supported in lagged distress models in which RCI significantly predicted psychological distress (PD) one year later by itself and as moderated by three contextual variables. The distress buffering benefits of higher RCI are enhanced by higher block SES as well as lower neighborhood crime and lower block social capital. The moderating effects with block-level SES and neighborhood crime are intuitive, while the interaction with social capital (if not a statistical anomaly) is counterintuitive. Discussion of these issues is taken up in the Discussion.

The hypothesis was not supported, however, in change-predicting-change models: One-year residualized RCI change did not significantly predict residualized one-year change in distress or well-being. Moreover, there were no consistent or stable cross-level interaction effects with residualized RCI change for either of the residualized change outcomes. Although there were several significant moderating effects in comprehensive and full models with residualized change in distress and well-being, the trimming process triggered marked changes in these effects. Such changes may have been due to colinearity among a few of the predictors producing, alternately, effect suppressions and exaggerations. Regardless, by the end of the trimming process, none of the previously significant moderating effects remained so, and yet final trimmed models never differed in fit from their comprehensive or full model counterparts. This suggests that *even when several significant cross-level interactions were present, they added insubstantial explanatory power to the change-predicting-change model.* Because of the unreliability of cross-level moderating effects with residualized RCI change, no conclusions may be drawn with any degree of confidence.

The six controls used in analyses are all measured at the individual level: Sex, marital status, parent status, SES, and nonwhite status relative to those on the block. *Of these controls, relative nonwhite ethnic/racial status is most consistently and significantly related to outcomes,* reaching statistical significance in all 12 HLM models (3 models per outcome). Minorities (nonwhites) living on mostly white

blocks reported higher and increasing well-being, and lower and decreasing distress, compared to whites living on mostly nonwhite blocks, who reported lower and decreasing well-being as well as higher and increasing distress. *Sex and SES are the only other controls to reach statistical significance in HLM models,* each doing so just half the time (i.e., 6 of 12 models). Being female predicted lower and decreasing well-being, whereas higher SES predicted elevated well-being and decreasing distress. *Marital status, marital status change, and parent status never significantly predicted outcomes,* although these role identity proxies were retained in HLM models as controls.

The other six individual-level covariates evaluated are age, homeowner status, working status, social support, personal stress, and neighborhood related stress. Of these, all but age and homeowner status were evaluated as residualized change scores in change-predicting-change analyses. Not surprisingly, *social support and personal stress (and their residualized change forms) were the strongest covariates in HLM models*; the two consistently had the largest effect sizes and, with relative nonwhite status, are the only predictors to show significant effects in all 12 models. More social support and lower personal stress predicted elevated well-being and lower distress, and increasing support and decreasing personal stress predicted increasing well-being and decreasing distress. *Neighborhood related stress and age showed significant effects with just the models predicting lagged well-being:* Being older and having greater neighborhood related stress predicted lower well-being one year later. *Homeowner and working statuses showed no significant relations in analyses.*

Of the ten block-level covariates tested, SES is the only one showing significant main effects with all four outcomes (lagged and residualized change in WB and PD). Higher and increasing well-being, and lower and decreasing distress, were associated with living on higher aggregate SES blocks (measured at Time 1). *Number of children living on the block, residualized change in block neighborhood related stress, and defensible space are each significant with two outcomes.* Blocks with higher Time 1 defensible space are associated with greater lagged and increasing distress, while blocks with more Time 1 children are associated with higher lagged and increasing well-being. Increasing block-level neighborhood related stress is predictably associated with increasing distress and decreasing well-being. *Block homeownership, block proportion nonwhite, and block average age are each significant main*

effects with just one (unique) outcome,[64] *while collective sense of community and neighborhood crime rates do not show significant main effects with any outcome.* More stable blocks (i.e., those with higher proportion homeowners) are associated with increasing well-being, and higher proportion nonwhite blocks are linked to greater well-being one year later. Blocks with older residents are related to lower distress in lagged analyses.

[64] Social capital, as noted above, is a significant main effects predictor in just one of twelve models, showing a positive relation with lagged distress in just the trimmed model. Because this effect is not found in any of the counterpart models with lagged distress (comprehensive and full models), it is deemed unreliable.

CHAPTER IV

DISCUSSION AND CONCLUSIONS

As hypothesized, residential community identification (RCI) significantly and independently predicted successful self-functioning as measured by survey responses assessing psychological distress and well-being. This claim gains further credibility knowing it was tested using an ecological framework (Lawrence, 2002; Stokols, 1992a, 1992b, 2003; Winkel, 1987), which recognizes the interdependence of environment and behavior (a la Lewin, 1936, 1939, 1964). For example, RCI significantly predicted distress and well-being one year later even when controlling for respondent nesting within physical and social milieus, as well as controlling for both individual and environmental predictors most empirically tied to outcomes such as social support, personal and domain specific stressors, neighborhood crime, and human territorial functioning (defensible space). Furthermore, interesting and enlightening contextual moderating effects with RCI were shown for the first time. These new findings and the methods used to obtain them provide examples of how to help (1) environmental and social psychology apply more optimal ecological analytical perspectives and methods, (2) inform new directions for identity theory taking place-based processes into account, and (3) clinical, community, and environmental practitioners and policy-makers take stock of and make more informed decisions about the interactive effects of person-place-community processes.

Key Findings Considered

The hypothesis was supported with one-year lagged effects analyses. It was not supported, however, in change-predicting-change analyses in which one-year residualized change in RCI was used to predict one-year residualized change in distress or well-being. Lack of effects does not appear to be due to any statistical anomalies specific to the residualized change scores themselves. For example, there appeared to be ample variability in change scores for RCI and outcomes, and residualized change in other individual- and block-level variables were effective in predicting in outcomes changes as theory and research might anticipate. Decreasing social support, for example, predicted increasing distress, and

increasing block SES predicted increasing well-being. Yet residualized change in RCI was consistently non-significant as a main effect and inconsistent (and ultimately non-significant after model trimming) as a contextually moderated predictor. It is possible that, as a predictor of residualized change in distress and well-being, the influence of residualized RCI change can only be observed at finer and/or multiple time intervals. Such homeostatic mechanisms could explain the lack of hypothesized one-year change-predicting-change effects, while tracking these variables more frequently over time could reveal the hypothesized effect. Ultimately, however, attempting to explain non-effects is a precarious endeavor. It is perhaps best to simply state that level of RCI predicts levels of distress and well-being, but that one-year residualized RCI changes – in this analytical context, at least – do not reliably predict one-year residualized changes in distress or well-being.

Explained variance in outcomes

Psychological distress and well-being are determined by numerous observable factors such as those assessed here, but also, significantly, by endogenous factors (as yet) difficult to measure such as genetic or developmental propensities to psychopathology. Hence, explaining even a small portion of variance in these outcomes can assist researchers and practitioners in understanding the nature of such phenomena in select populations. This is certainly one of the major successes of this empirical work. *The lagged effects models explained 38% of the variance in distress and 33% of the variance in well-being.*[65]

Obtaining such high proportions of total explained variances is likely due to the fact that the chief known covariates of outcomes are used in analyses, such as personal and neighborhood-related stress, functional social support, and all major sociodemographics including those that serve as proxies for other forms of self-identification (social roles or categorizations, e.g., gender, parent, spouse, ethnicity). That is to say, other studies of wellness typically maximize chances of finding significant relations of interest by using few covariates and rarely controlling for contextual factors. Despite the extremely statistically

[65] About 29.6% of this explained variance in well-being was accounted for at the individual level and about 3.4% was accounted for at the block level of analysis; for distress, roughly 0.7% of the explained variance was at the block level and the rest (37.3%) was explained at the individual level of analysis. Although these proportions of explained block variance seem low by comparison, most of all the *available* block level variance was in fact accounted for by these models (>99% for well-being and 80% for distress).

conservative nature of this design, tests of the hypothesis nonetheless show significant results with respect to the lagged relation between residential community identification and distress and well-being, both as main effects and as moderated by several key residential social and physical features.

Self-identity dimensions

Results do not support that role identities have similar impacts on distress and well-being as residential community identification, at least not as role identities were measured here. The role identity proxy variables parent, marital, and working statuses were tested with each outcome (with marital and parent statuses kept in every model as controls). In none of the 12 models was any role identity shown to explain significant variance in lagged or residualized change in distress or well-being. This may be because the particular role identities tested are considered by some to be obligatory rather than voluntary (Thoits, 2003).

Of the other sociodemographic variables evaluated, nonwhite ethnic/racial status relative to those living on the same block was most empirically influential, significantly predicting lagged and residualized change outcomes in every model. Whites living on predominantly black blocks showed the highest (and increasing) distress and lowest (and decreasing) well-being while nonwhites living on mostly white blocks demonstrated the opposite effects (or the greatest psychological wellness increase). Sex and SES statuses were each significant in six of the twelve models with higher SES and male status predicting lower distress and greater well-being. The last two sociodemographics, age and homeowner status, were essentially empirically inconsequential.

It is especially interesting to note that, *of these five sociodemographics, the ones of greatest predictive utility for psychological wellness are also the ones most group oriented.* For example, minority (in this case, nonwhite race/ethnicity) status has very little relevance outside a social context where "we-ness" becomes very important in defining self. Of course, the degree of "we-ness" of sex, socioeconomic status, age, and homeowner status, will depend on the situational salience of the attribute. It seems reasonable to assert, however, that race/ethnicity, sex/gender, and SES produce self-differentiations more often than do age and homeowner status. The implication is that – when relevant to self-identity – age and homeowner status function as personal (or role) identifications more often than collective

identifications; minority (nonwhite) status functions as a group identification; and sex/gender and SES probably function alternatively as personal (or role) or collective identifications depending on the person and the context (e.g., egalitarian/chauvinist or socialite/minimalist; class reunion/pool party or family game night). Again, *the more group oriented the characteristic, by this definition, the more significant to self-functioning (distress and well-being) in these findings.*

Other personal and psychological influences

It comes as no surprise that social support and personal stress predicted distress and well-being. Indeed, these personal and psychological influences on outcomes have been well documented in previous empirical work, and they accounted for the better part of the overall variance in outcomes here. Only relative nonwhite race/ethnicity, by showing significant impact in all 12 analyses, rivaled social support and personal stress for predicting distress and well-being, although the effect sizes of support and personal stress consistently exceeded all others (including residential community identification). Furthermore, the directions of effects were always in the expected direction: Higher (and increasing) social support and lower (and decreasing) personal stress predicted higher (and increasing) well-being and lower (and decreasing) distress.

The more targeted stress variable, neighborhood related stress, did not show as robust a relation to outcomes as the more general personal stress predictor. Like the effect for age, neighborhood related stress was a significant predictor with just one outcome, lagged well-being. Being older and having higher neighborhood related stress predicted lower well-being one year later. Neighborhood related stress was a composite variable consisting of respondents' direct and indirect crime victimizations, unpleasant neighboring experiences, and worry for neighborhood safety. Its relation to well-being is thus expected. Perhaps more surprising is that it was not reliably predictive across all outcomes. Personal and neighborhood related stress had significant shared variance, however, which may have suppressed the influence of neighborhood related stress in other analyses.

The effect of age is a bit more surprising. One might expect older individuals to be more settled in their careers, less likely to have children living at home, invested in the property and community via home ownership and participatory community action, and the like, all of which one might associate with

higher well-being. Yet *being older predicted lower lagged well-being.* There are, of course, reasonable explanations for the observed effect. For example, health is a robust predictor of well-being and age is one of the best predictors of health status. Although it cannot be verified with these data, older respondents may have experienced more negative health events during or before the study period. Also, the mid-1980s was a time of recession in America, which may have contributed to lower well-being of older respondents' due to economic concerns.

These personal and psychological effects – for functional social support and personal stress in particular – are not especially beneficial of themselves to the empirical body of knowledge. However, considering that these robust effects were obtained even when empirically juxtaposing support and stressors and when using a rigorous ecological framework does add to the wealth of empirical work, if anything, by lending more weight to these expected relations. Likewise, *having included these unerring and powerful predictors to the models gives the hypothesized (and observed) effects of residential community identification yet more credibility.*

Contextual influences

Mirroring the social and place dimensions of residential community identification, the ecological perspective considers both place and social characteristics relevant to any behavioral outcome studied (Lawrence, 2002). There were a few contextual main effects of note. Similar to its individual-level counterpart, higher block-level SES consistently predicted higher and increasing resident well-being as well as lower and decreasing distress. Contextual affluence – or greater block aggregated personal and economic capital – helped residents' own wellness above and beyond personal resources.

Blocks exhibiting greater defensible space (or observable cues of human territorial functioning) predicted higher and increasing distress of residents. Rather than affording residents feelings of safety and security, which should reduce distress and promote well-being, more territoriality by residents (manifested in the physical structures of the properties) produced higher distress levels. If the effect were just one level predicting another level, it might be explained by nesting alone. Because greater block defensible space also predicts *increasing* distress over time, however, argues for real psychological impact. One interpretation of these findings is that observing human territorial functioning in the built

environment cues residents to suppose, "These structures exist because people living here (myself included) need to protect themselves." Belief that one is in jeopardy, whether real or perceived, should indeed promote distress.

Akin to emotional contagion, *increasing block-level neighborhood related stress*[66] *predicted increasing distress and decreasing well-being.* One might expect such a predictor to have profound influence at the individual level of analysis; however, this effect demonstrates – in a real world setting – the power of negative group emotion and experience in generating personal distress.

Although blocks with child residents may present more opportunities for problems (e.g., accidents), their increased presence in fact predicted higher and increasing well-being of adult residents. This is particularly noteworthy in that respondents' individual parent and marital statuses showed no impact on outcomes. Hence, irrespective of parent and marital statuses, living on a block with more child residents predicted higher and increasing well-being. Although these main effects were significant with both lagged and residualized change in well-being, the former were qualified by a significant cross-level interaction with individual residential community identification. Namely, more children living on the block enhanced RCI's positive influence on well-being one year later. These effects may be explained variously. More children likely produces opportunities for socializing for adult residents, with both children and their parents, which might increase perceptions of social networks if not support (hence, psychological sense of community). More children may also provide adults mentoring opportunities that, although not always pleasant, might afford improved well-being via "generativity" or the ability to pass along hard-won knowledge (E. H. Erikson, 1950; E. H. Erikson, Erikson, & Kivnick, 1986). Hence, residents showing the highest well-being identified keenly with the residential community and lived on blocks with many children, which presumably presented countless opportunities for socializing. However, failing or refusing to identify with the residential community (i.e., "this is not *me*") yet having difficulty insulating or isolating oneself from other residents predicted lower well-being one year later.

Blocks with older residents promoted lower distress one year later. This effect may also be related to residential stability because older residents are less likely to move. Consistency and stability of

[66] This is a block aggregated predictor from the individual level construct of the same name, which derived from respondents' reports of direct and indirect crime victimizations, unpleasant neighboring experiences, and worry for neighborhood safety.

environment seem to become more important with age. Reducing opportunities for experiencing the unexpected, especially those things that run counter to community norms, is therefore likely to minimize distress and support well-being regardless of the individual respondent's age. It is interesting to note, however, that this contextual effect runs counter to the individual effect with well-being; that is, *residents of "older blocks" reported lower distress, while older residents reported lower well-being, one year later.* These differences are almost certainly due to levels of analysis, a fundamental disparity between the outcomes (i.e., that well-being is not just the absence of distress`; Diener, Lucas, & Oishi, 2002; Seligman, 2003; Seligman & Csikszentmihalyi, 2000), or both. There are vital differences between these two predictors, level of analysis being the most important. The respondents' age certainly contributes to the average age of residents on the block but, when the individual and aggregate counterparts were tested simultaneously, variance was never shared. Such analytical independence ensures that noted effects are unique and uncontaminated. There is thus ample conceptual and analytical independence to assure the reliability of effects. The only way to be certain of their generalizability, however, is for future empirical work to replicate these effects, preferably with distress and well-being tested separately as was the case here.

Residents of predominantly nonwhite blocks reported higher well-being one year later. Elevated community cohesiveness from shared minority (black/nonwhite) identity[67] (perhaps as a shared burden and/or increased group pride) may have contributed to resident well-being via processes similar to those noted above – better communicated norms (implicitly or explicitly), which helped to facilitate self-continuity and stability. This effect, however, runs counter to most research, which would suggest – as a general effect – minority race/ethnicity should predict lower psychological wellness. Indeed, Time 1 cross-sectional bivariate correlations for individual nonwhite status as well as higher block proportion nonwhite (Appendixes A and B) do suggest these predictors are negatively related to wellness. However, individual and block proportion nonwhite is fairly consistently positively related to unexpected increases in wellness as well as overall wellness levels measured one year later (Appendixes C-G). Whereas the latter findings are simple bivariate relations, the HLM main effects control for all manner of individual and higher-level context (e.g., SES, sex, neighborhood related stress, defensible space). This consistency

[67] Although operationalized as nonwhite, tapped here is essentially black identity because, other than black and white, there was just one Asian respondent, and two others did not report their race.

suggests the general finding is not a statistical artifact, but it may point to something uniquely historical with respect to the black[68] community between these two data collection time points.

Indeed, during this 12-month stretch, Baltimore saw its first black mayor, Kurt Schmoke, elected to office ("Baltimore mayor", 1987), and Frank Robinson was chosen to become the Baltimore Orioles' first black manager. These and other factors[69] may have assisted Baltimore blacks in enhancing black pride between the times of the two survey administrations. Other racially charged events between the two time points may also have reinforced or enhanced black solidarity. For example, comments made by George Steinbrenner in the wake of Frank Robinson's appointment fueled anger over racism in major league baseball ("Steinbrenner stokes furor over racism", 1987).

It is interesting to compare this block-level main effect with the individual-level relative nonwhite effect. Perusing wellness outcomes means for whites and nonwhites shows that whites' distress and well-being remained fairly flat over time while nonwhites' distress dropped and well-being increased, which is consistent with the effect for block proportion nonwhite noted above. Well-being for nonwhites rose to the level of whites, while nonwhites' distress did not quite drop to the level of whites. Moreover, nonwhites living on mostly white blocks showed statistically equivalent wellness to their white neighbors at Time 1 but significantly higher well-being and lower distress at Time 2. The reverse effect also held for whites living on mostly nonwhite blocks, particularly with well-being. It thus seems the effect for block proportion nonwhite status was driven by historical factors, while the effect for relative nonwhite status was perhaps influenced by the overall nonwhite trend as well as factors specific to the block niche. These multilevel nonwhite effects are thus plausible and very interesting given the current state of the wellness literature as it relates to race/ethnicity. However, because the historical trend may have contributed to both block and individual effects, generalizability across place and time becomes an empirical question to be addressed in other studies.

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[68] Although nonwhite was the operational definition, all but three of these respondents were indeed black.

[69] Baltimore, of course, is situated very close to the nation's capital and, as a result, news local to Washington D.C., which may also be pertinent to national affairs, may have impacted Baltimore black awareness and solidarity. For example, president George H. W. Bush was nominating blacks to federal posts, which blacks had not before held; Colin Powell, for example, was named head of the National Security Council (Trescott, 1988). The NFL Super Bowl had its first black quarterback in Washington Redskins' Doug Williams, who shined in the game (Lancaster, 1988). The U.S.'s first black ambassador to South Africa, Edward J. Perkins, was in the news for his vocal criticisms of Apartheid (Claiborne, 1987). And, nationally, membership in traditionally black organizations (e.g., Association of Black Social Workers, the Black United Fund, Urban League) was on the rise (Krebs, 1988).

Residents living on blocks with higher proportion homeowners showed decreasing well-being over time. This and the other significant effect with block proportion homeowners – a moderating effect with RCI – are two of the more surprising effects shown in these analyses. RCI predicted higher WB one year later, which was enhanced for residents of blocks with *lower* proportion home owners (i.e., higher proportion renters). Community identification in general should be associated with residential ownership more than renting because of the level of self- and resource investments required. Moreover, blocks with more homeowners should be more stable, which should allow for greater intimacy than might be afforded with more transient populations. Home ownership, or significant economic investment, should also promote place identity investment, which may manifest in such things as property upgrades and personalizations, neighborhood beautification, and greater efforts to uphold social norms. These block proportion home ownership effects predicting lower and decreasing WB in multilevel, multivariate models are thus counterintuitive.

Probing further shows that the bivariate relation between WB and home ownership, at both levels of analysis, is indeed positive albeit nonsignificant when examining levels (rather than change; see Appendixes A-E, G-H). The negative moderating effect of block proportion home owners thus appears to be a statistical artifact. Indeed, collective sense of community, which is the block aggregate of RCI, shows very high positive correlations with block proportion homeowners (.65 to .71) in cross-sectional correlations. Modeling RCI in interaction with block proportion homeowners thus produced interaction effects that are likely erroneous due to colinearity.[70] Correlations with residualized change in WB (Appendix E-F), however, corroborate the multilevel main effect; whether bivariate or in multivariate, multilevel models, higher proportion home owners predicts decreasing WB. Exactly why living on blocks with higher proportion home owners should lead to decreasing WB is unclear. It may be due to an historical effect like the one for nonwhite ethnicity, but these data cannot support or refute such a conclusion.

Above were the only stable contextual main effects shown. It is also interesting to note, however, the expected but *not* shown contextual main effects. Specifically, from the wealth of community

[70] This notion was verified in regression analyses in which block proportion homeowners and CSOC positively predicted block aggregate WB when tested separately, but when entered as simultaneous predictors, the coefficient for block homeowners became negative.

psychology, sociology, criminology, and community health literatures, one might have expected neighborhood crime, collective sense of community, and social capital to be some of the most robust contextual predictors of distress and well-being. The foremost proposition of the ecological perspective, however, is the principle that behavioral outcomes are largely the result of the *interactivity* of individual and environment. That is to say, the sometimes astonishingly prognostic effects of crime, collective sense of community, and social capital shown at the neighborhood and higher levels may have come from analytic methods that "stacked the deck" in favor of revealing effects of interest. Only within the rigorous strictures of an ecological framework, however, can one come to appreciate the *relative* impact of such factors, or the subtleties of how the social and physical environment interacts with personal qualities to predict human behavior or, in this instance, wellness. *Indeed, it should come neither as a surprise nor as an indictment of their predictive utility to note that neighborhood crime, collective sense of community, and social capital* were *predictive of outcomes, but only in interaction with respondents' residential community identification.*

Contextual moderating effects

There were no consistent or stable contextual moderating effects for residualized change in residential community identification (RCI) with either of the residualized change outcomes. To be precise, although there were several significant moderating effects in comprehensive and full models in change-predicting-change analyses, the trimming process triggered marked changes in these effects (perhaps due to colinearity among predictors or greater instability of the covariance matrixes for change-predicting-change models). By the end of the trimming process, none of the previously significant moderating effects remained so. Yet final models never differed in fit from their comprehensive or full model counterparts. This suggests that *even when several significant moderating effects were present, they added insubstantial explanatory power to the change-predicting-change model.* Because of the unreliability of these moderating effects with residualized RCI change, no conclusions may be drawn with any degree of confidence and therefore are not considered further.

Unlike residualized RCI change, contextual moderating effects with RCI in lagged analyses were consistent, stable, and significant – three predicting distress and four predicting well-being one year later.

The cross-level interactions with block proportion home owners and numbers of children living on the block as moderators of RCI in predicting lagged WB were discussed above. The others are considered next.

Street Block SES as Moderator. Block aggregate SES was the only contextual predictor to show significant interactive relations with both distress and well-being in lagged analyses. Furthermore, by inversing one outcome or the other and overlaying the two charted effects (see Figures 2 and 5), one sees that the effects are essentially the same. That is to say, *RCI and block SES interact to predict distress and well-being in a manner indistinguishable one from another, suggesting – in this instance, at least – distress and well-being are two sides of the same (psychological wellness) coin.* Higher RCI predicts lower distress and higher well-being one year later and these effects are enhanced for residents of higher SES blocks. Observing just the positive main effects for contextual SES and individual SES as well as RCI fails to expose the complex nature of these ecological relations. Only from these contextual moderating effects can one observe that, in essence, *greater block-level SES augments the beneficial impact to psychological wellness of identification with the street block as social group and physical place.*

Neighborhood Crime as Moderator. Lower crime neighborhoods enhance the distress reducing benefits of higher RCI (see Figure 7); alternatively, higher RCI predicts elevated distress for those living in high crime neighborhoods (see interaction term coefficient, Table 6). To a certain extent, both of these interpretations appear valid. Residents of neighborhoods with lower levels of crime (reported to police) demonstrated the predicted effect – higher RCI predicted lower distress one year later. However, the reverse is apparently true for residents of high crime neighborhoods – identifying with the street block place and community yet being exposed to crime there (via direct or indirect victimization, or media coverage of reported crime`; Perkins & Taylor, 1996) produced higher distress one year later. The distress reducing effects of high RCI (apparent in Figure 7) in the context of lower crime is as expected. The distress enhancement effect of high RCI in the context of high crime (apparent in Table 6) is also consistent with basic self-identification processes. Namely, through processes akin to self-stigmatization, one's "home and community" is stigmatized by high crime, which is more distressing than living in a high crime neighborhood that holds no special identity relevance.

Social Capital as Moderator. Like neighborhood crime as moderator, the moderating effect of social capital on RCI in predicting lagged distress, if taken at face value, may take on two different meanings. Lower social capital blocks enhance the distress reducing benefits of higher RCI (see Figure 6); alternatively, elevated RCI predicts higher distress for those living on high social capital blocks (see Table 6). In either case, social capital and RCI do not appear to work in unison to prevent or avoid distress. One would expect both social capital and RCI to be negatively related to distress. Indeed, much empirical work across a number of different disciplines shows the wellness benefits of social capital (Berkman & Glass, 2000; Coleman, 1988; Kawachi & Berkman, 2000; Kawachi, Kennedy, & Glass, 1999; Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997; Perkins & Long, 2002; Sampson, Raudenbush, & Earls, 1997). Bivariate correlations between social capital and distress suggested a positive relation should be expected, but partial correlations consistently showed just the opposite (see Appendixes B and D). The latter effect is what won the day in multilevel regression analyses, suggesting perhaps that previous social capital studies predicting psychological wellness may not have adequately controlled for the myriad individual and environmental factors impacting mental health (i.e., those effects may not be truly ecological). A more parsimonious explanation, however, is that colinearity among predictors may have produced this rather odd finding. Indeed, correlations between social capital and collective sense of community (the block aggregate of RCI) showed high *positive* bivariate relations (.62 to .65) in cross-sectional and lagged analyses. Modeling RCI and social capital in cross-level interaction therefore produced, in all likelihood, erroneous effects.[71]

Collective Sense of Community as Moderator. Apparently, both psychological sense of community (as part of RCI) and collective sense of community (CSOC) work together to produce elevated well-being. That is to say, the ability for RCI to predict well-being one year later is augmented by higher CSOC of the block. Although theory and research with multilevel SOC would indeed predict that both PSOC and CSOC contribute to resident well-being (Brodsky, O' Campo, & Aronson, 1999; Perkins & Long, 2002), the contribution of this work is that they interact to produce peak well-being.

[71] As with block proportion homeowner, this premise was confirmed in regression analyses in which social capital and CSOC positively predicted block aggregate WB when tested separately, but when entered as simultaneous predictors, the coefficient for social capital became negative.

Limitations

Despite the strong empirical case made by these findings, limitations do exist. Generalizability of findings outside Baltimore circa 1987-88 is unclear. Although much of the place-based psychological and environmental phenomena studied are somewhat timeless, the rather unique metropolitan, ethnic, and regional characteristics of Baltimore – even when considering that sampling drew from its many and varied residential neighborhoods – make wide generalization by place difficult to justify. That is to say, psychological wellness is a relatively timeless phenomenon apart from waxing and waning perceptions of what are appropriate feelings to endorse or express (even, perhaps, in anonymous surveys). Endorsing feelings of depression or anxiety may be more socially accepted today than 17 years ago in part because of the popularity and efficacy of newer pharmaceutical therapies, and media and prominent people's (e.g., Tipper Gore) efforts to de-stigmatize these phenomena.[72] Most of the predictors (e.g., residential community identification, demographics, social support, stress, collective sense of community), however, are likely to be acknowledged by survey respondents as much today as 17 years ago. More historical, regional and societal patterns tapped to some extent in this study, on the other hand, may be significantly different today, such as perceptions of economic viability, black pride, and the pervasiveness and threat of crime,[73] but these make up a small portion of the empirical models overall. Ultimately, this 17-year old data set was chosen because of its unique strengths with respect to ecological validity. Specifically, it provided multilevel longitudinal data representative of the metropolitan niche and addressing all aspects of the ecological framework: the individual, agent, physical and social environment, and available resources of the individuals and groups.

Well-being was measured here using items that tapped how respondents' general health, spirits and energy level had been of late. The energy level and spirits items, in particular, cross-over with other depression/distress research. Although there is certainly shared variance between distress and well-being measures used here, the decision to divide these outcomes derived also from empirical evidence for construct differentiation. Whereas depression and anxiety scales correlated in the .66 to .70 range

[72] If anything, however, reluctance to endorse negative emotion outcomes would make it more difficult to observe predicted effects in these data.

[73] There was a recession on in 1987-88 while the economy is strong if not a bit uncertain today. Crime was at historically high levels 17 years ago while today it is significantly lower and apparently declining further.

(and were thus combined into a single measure of distress), this well-being scale consistently correlated with anxiety and depression as well as the composite distress variable at substantially lower levels (-.44 to -.54) suggesting enough differentiation to proceed with separate outcomes. Future research endeavoring to differentiate distress and well-being, however, should be more careful to choose a measure of well-being that is more conceptually and empirically distinct.

Because of the model trimming process employed in these multilevel analyses, it was necessary to establish very specific guidelines for statistical significance of multilevel and interaction effects. These statistical significance thresholds were rigidly applied in the trimming process and were, therefore, used also when interpreting final models' effects. Because statistical significance is widely considered pliable,[74] however, a cautionary note is warranted with more "marginally significant" effects such as those that just met the $p<.05$ threshold.[75]

There are some indications that colinearity among predictors may have presented difficulties, including instability of some predictor coefficients during model trimming, and the inverse direction of social capital effects. These concerns are mitigated to some extent knowing that (1) models never triggered HLM's multi-colinearity failsafe mechanism, (2) most models showed predictor coefficient stability during the trimming process, and (3) coefficients for social capital in lagged analyses (whether statistically significant or not) showed a consistent effect direction in which higher social capital predicted lower well-being and higher distress, even after removing many of the potentially problematic predictors via trimming.

Finally, Bryk and Raudenbush (1992) do not recommend the "shotgun" approach to HLM modeling used here (i.e., beginning by entering all predictors of interest at once). Instead, they suggest building the model slowly, beginning with the lower level of analysis and proceeding to the higher level, trimming non-significant predictors along the way. Because statistical power is often stretched thin, they suggest a minimum ratio of 10-to-1 respondents-to-predictors as well as checking for significant random variation in the level-1 predictor before modeling cross-level moderation effects. All these analytical

[74] For example, more generous alpha levels are sometimes used with higher level analyses (Florin, Giamartino, Kenny, & Wandersman, 1990), while more restrictive alpha levels are often called for when multiple analyses are performed in order to account for the increased likelihood of reaching statistical significance in any one model.
[75] Although multiple models were created per outcome (removing just one term before testing the next model), because the outcome and (most) predictors remained unchanged, more stringent alpha levels seem unwarranted.

points were in fact taken into consideration. There is precedent – even in the context of testing for the effects of self-identity on psychological wellness – for entering all predictors at once, including moderators of hypothesized import (Yip & Fulgni, 2002). Furthermore, the roughly 5-to-1 ratio of respondents-to-predictors in the comprehensive model is not without its supporters (e.g., Tabachnick & Fidell, 2000), yet such a low ratio would likely not have been employed were HLM unable to estimate effects with robust standard errors. Finally, the trimming process employed here finished with statistical power often in the recommended 10-to-1 range of respondents-to-predictors, even while retaining several controls.

The decision to begin multilevel modeling with comprehensive predictor sets, although perhaps viewed by some methodologists as a limitation, is in fact one of the strengths of this study. Namely, an ecological framework drove the design and analysis rather than the reverse. In other words, *provided satisfactory statistical power is ensured, testing for complex, multivariate and multilevel relations between person-place-community processes is the only way to be confident that the truly contextual nature of relations is appropriately elucidated.* Furthermore, only by statistically juxtaposing residential community identification with the principal predictors of distress and well-being can one be confident in the robustness of its true influence on distress and well-being outcomes.

Implications

Methodological implications

It was argued on both theoretical and methodological grounds that an ecological approach to testing for the impact of residential community identification on psychological wellness is most appropriate. Although employing a quantitative method, rather than the richly descriptive qualitative spectrum, this study was indeed true to the ecological framework (Lawrence, 2002) and can be regarded as ecologically valid (Winkel, 1987) because: (1) the ecological niche investigated is a behavior setting; (2) aspects of the interrelations of individual, physical and social environment, and available resources were given due consideration; (3) an appropriate multilevel, multivariate approach to analysis was employed; and (4) analysis spanned two time points.

Although certainly more resource intensive, the potential for scientific gains from using an ecological framework is greatly enhanced. Social psychologists – and indeed social scientists of all kinds – acknowledge the power of context in predicting human behavior yet often fail to give it more than cursory scientific attention. Causal relations suggested in laboratory work that need corroboration in the field, for example, should be tested using ecological methods when possible to ensure the highest reliability and generalizability, and to better understand the relative predictive utility of hypothesized relations when important contextual determinants are modeled concurrently if not interactively.

Theoretical implications

Psychological wellness is a term often used as an umbrella term encompassing such things as depression, anxiety, and well-being. Some scholars, however, do not consider these components interchangeable. Although well-being is often assumed to be the inverse of distress, the more recent positive psychology movement suggests well-being is fundamentally different from the mere inverse of negative emotion (see e.g., Diener, Lucas, & Oishi, 2002; Seligman, 2003; Seligman & Csikszentmihalyi, 2000). Well-being was therefore studied as an outcome independent of distress to see if in fact there was enough differentiation to test empirically this theoretical distinction.

Cross-sectional bivariate and partial correlations between measures of well-being and distress were predictably high ($r = -.48$ to $-.53$), but with enough disparity to imagine some empirical differentiation. The best argument for differentiation of (negative) well-being and distress is in comparing the predictors, other than sociodemographics, that impacted one outcome but not the other or did so in an unexpected direction. Whether perusing multilevel model main effects, or cross-sectional and lagged bivariate and partial correlations, all were similar for the outcomes with two exceptions, block defensible space and neighborhood related stress, which were inconsistently related to outcomes. Cross-level moderating effects, however, did manifest some differences: Social capital and neighborhood crime impacted distress but not well-being, and collective sense of community influenced well-being but not distress. Overall, though, well-being and distress operated mostly as two facets of the same construct, with the best argument for this position coming from contextual moderating effects with block SES and residential community identification, which (when one is inverted) are nearly identical for outcomes.

These results certainly cannot resolve the positive psychology debate over disparities between well-being and distress. Most findings suggest they are more similar (when one is inverted) than different, while positive psychologists might use some of these findings to argue for their distinctiveness. The debate will certainly continue, but scholars who accept that it is ultimately an empirical question should also employ ecological methods for fair and comprehensive evaluation.

Identity dimensions

This dissertation suggests both conceptually and empirically that place identity is compatible with models of collective identity.

> [As] a symbolic resource, constructions of place are oriented to the performance of a range of social actions including blaming, justifying, derogating, excusing, and excluding. In "putting ourselves in place," people are often claiming territorial entitlements or affirming sociospatial ideals or revealing inner dynamics of self-categorization and differentiation. (Dixon & Durrheim, 2000, pp. 32-33)

> Place is seen as a center of felt value, incarnating the experience and aspirations of people. Thus it is not only an arena for everyday life…[it also] provides *meaning* to that life. To be attached to a place is seen as a fundamental human need and, particularly as home, as the foundation of our selves and our identities. Places are thus conceived as profound centers of human existence. As such, they can provide not only a sense of well-being but also one of entrapment and drudgery. To be tied to one place may well enmesh a person in the familiar and routine. (Eyles, 1989, p. 109)

The empirical results reported here cannot, of course, lend insight into differentiating the roles of place identification and group identification in predicting psychological wellness. They do, however, make a strong argument for the predictive utility of amalgamated self-identifications. For example, the residential street block as physical space and social group is an ideal target for studies of self-in-place or place-based group identifications. Moreover, accepting that RCI is one of the more important elements of self-identity as it relates to wellness, future research should examine what factors lead to high RCI.

Fried (1963) remains the only one to empirically differentiate the impact of place and collective identifications on psychological wellness. He found that the strength of each form of identification to the residential place and community prior to involuntary dislocation explained unique and significant variance in distress post-dislocation. Fried, however, did not study qualitative differences in impact on distress for place and community group identifications, merely showing that each explained significant variance in outcomes with similar effect sizes. This fact argues indirectly for the approach taken by self-in-place theorists and researchers (Bonaiuto, Breakwell, & Cano, 1996; Pretty, 2002; Pretty, Chipuer, & Bramston,

2003; Twigger-Ross & Uzzell, 1996) who merge the two concepts, but it certainly does not preclude future researchers from looking into their empirical distinctiveness. Applying the lesson learned from Fried, one might surmise that combining group and place identifications in predicting distress and well-being made for more robust findings here.

The measure of residential community identification (RCI) applied here was adequate in assessing respondents' group and place identifications with the residential street block, but its items were not created expressly for that purpose. An important contribution for future research will be in creating a reliable, valid, and sensitive measure of RCI, which is comprised of distinguishable group identity and place identity dimensions and which can be easily adapted for other ecological niches such as workplace, church/synagogue/mosque, or school dormitory.

Finally, these findings further emphasize the need to bring place and place processes back from the "null status" afforded them of late by the social sciences (Steele, 2002) and instead reinvigorate the study of environmental causes of social behavior that was so intimately part of Lewin's (1936, 1939) theories of *life space* and *psychological fields,* which were fundamental in establishing social psychology's place in the social sciences. Although avenues for expanding lines of social psychological research to include place processes are numerous, this dissertation points specifically to the compatibility and predictive utility of expanding theories of collective identity to include identifications with valued places.

Implications for intervention

For practicing clinicians, previous work in this area focused only on the mental health consequences of disruptions to valued places (Fullilove, 1996) and not on the potential benefits of positively attaching/identifying with places and the communities residing there. A unique and valuable aspect of this research for clinicians is in appreciating the influence of residential community identification processes on psychological wellness absent major place-based trauma (e.g., involuntary dislocation, destruction of valued place). Namely, higher well-being and lower distress are predicted by greater identification with residential place and the social group that co-resides there. It thus appears that recommendations for restoring psychological wellness in the wake of place-based trauma (B. B. Brown &

Perkins, 1992; Fullilove, 1996) may also apply to promoting well-being and reducing distress in more benign situations. Namely, *those experiencing no immediate trauma but who are distressed or report low well-being may be able to reverse such trends by (re)investing self in the place and social group that surrounds their residence provided such efforts help to reinforce place-self-community continuity and stability* (e.g., organizing neighborhood watch or beautification projects, renovating the home or home-front, tearing down barriers to community-building).

The contextual moderating effects provide some clues about when such investments may pay off and when it may be necessary to first take on other (more fundamental) problems. For example, encouraging self- and resource investments in property and community (e.g., commitment, personalizing, renovating) may have rather profound effects on wellness for those living on relatively affluent blocks, but may be more difficult for those living on poorer blocks: Higher SES blocks enhanced the positive wellness benefits of residential community identification, but poorer blocks may impede this process. Even more profound, such investments are likely to benefit those living in relatively safe neighborhoods, but may lead to greater distress for residents of high crime neighborhoods. Specifically, residents of high crime neighborhoods who were also identified with the place and community evinced more distress one year later than those not identified. Hence, *as a hierarchy of needs argument might suggest, making strides in identity development may first require taking care of material and safety needs* (E. H. Erikson, 1959; Maslow, 1954).

There is, however, precedence in the empirical literature for using residential community organizing to improve safety and/or economic quality of life that concurrently improves identification with the residential environment (Gotham, 1999). A parsimonious explanation for differences between Gotham's work and these findings is that community organizing likely improved notions of individual and collective efficacy in addressing community problems. High crime combined with residential community identification in the absence of efficacious organizing to combat systemic problems, however, leads to greater distress than simply disinvesting altogether. The lesson, perhaps, for community psychologists and urban planners or policy-makers is that investment of both self and community may be required to accomplish both goals simultaneously. Becoming active in community organizing requires an investment of self (commitment, time and resources), which is no different than what is required to reap the wellness

benefits from residential community identification. Note that this runs contrary to some community assistance efforts that endeavor to provide products and services to a passive community. Passive recipient group members are less likely to have common goals, methods (e.g., neighboring behaviors, self-policing or neighborhood watch, appropriate responses to breeches of social norms), or – perhaps most important of all – a like mindedness with respect to "who we are" (B. B. Brown & Perkins, 1992).

For clinical practice, an interesting albeit resource intensive avenue for future research is to empirically juxtapose two or more groups within the same ecological context who experience very different group-level events germane to psychological wellness. Fried's (1963) study, for example, compared aspects of identification pre-dislocation to distress reactions post-dislocation, but he had no comparison group. Using sampling methodology akin to that used here, which could capture groups being dislocated as well as groups within stable residential environs, and comparing residential community identification's impact on psychological wellness over the same time period could be extremely enlightening to clinicians. In so doing, the researcher would capture both ends of the outcomes spectrum – from identification's promotion of wellness to its link to the magnitude of dislocation distress – within the same metropolitan niche (economic, cultural, political trends). The longitudinal study design might also capture differences in groups' responses to disruption – from passive, disconnected recipients of government assistance (e.g., K. Erikson, 1976) to cohesive group efforts to rebuild (e.g., Bode, 1989; Oliver-Smith, 1986). A bold prediction is that the latter, although having shared in a recent tragedy, might evince greater well-being to the comparison group who experienced no such disruption/dislocation because of the psychological benefits of social support, shared history and values, and accomplishment of superordinate goals (Finkel & Jacobsen, 1977).

APPENDIXES

APPENDIX A

Level 1 Bivariate (below diagonal) and Partial Correlations; All Variables Measured at Time 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1. Well-Being		**-.49**	**-.42**	**-.45**									-	-	**.21**	.11	**.20**	**-.33**	**-.31**	**-.30**	-.14	**-.18**	-.09	**-.15**	-.03	**-.15**	**-.14**
2. Distress	**-.48**		-	-									-	-	**-.20**	-.01	**-.37**	**.55**	**.44**	**.34**	**.48**	**.25**	**.18**	**.27**	.08	.13	**.15**
3. Depression	**-.41**	-		**.60**									-	-	**-.13**	-.04	**-.30**	**.48**	**.41**	**.26**	**.40**	**.15**	.10	**.23**	.02	.06	.09
4. Anxiety	**-.47**	-	**.66**										-	-	**-.24**	.03	**-.36**	**.51**	**.37**	**.35**	**.46**	**.30**	**.23**	**.26**	.12	**.17**	**.17**
5. Female	**-.11**	**.11**	**.12**	.07																							
6. Married	**.16**	**-.12**	**-.15**	-.06	**-.15**																						
7. Working	**.17**	-.03	-.04	.01	**-.13**	.08																					
8. Nonwhite	-.01	.06	.08	.03	**.13**	**-.12**	-.00																				
9. Age	**-.16**	**-.18**	**-.12**	**-.21**	.00	-.05	**-.39**	-.04																			
10. Homeown	.07	**-.21**	**-.19**	**-.18**	-.01	**.31**	.01	**-.29**	.11																		
11. Children	-.02	**.14**	.08	**.17**	.08	**.12**	.00	**.14**	**-.33**	-.07																	
12. SES	**.32**	**-.16**	**-.19**	-.10	**-.15**	**.32**	**.46**	**-.18**	**-.32**	**.26**	-.10																
13. Income	**.29**	**-.19**	**-.21**	**-.12**	**-.19**	**.39**	**.41**	**-.20**	**-.21**	**.35**	-.09	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
14. Education	**.26**	-.02	**-.16**	.03	-.02	.06	**.33**	**-.10**	**-.37**	.04	-.05	-	**.51**		-	-	-	-	-	-	-	-	-	-	-	-	-
15. Comm. Id.	**.24**	**-.33**	**-.27**	**-.35**	.01	**.21**	-.01	**-.20**	**.20**	**.36**	-.02	**.16**	**.25**	-.03		.00	**.17**	-.08	-.01	-.07	-.14	**-.20**	**-.25**	**-.15**	.07	**-.33**	-.08
16. Def. Space	**.18**	**-.18**	**-.20**	**-.12**	-.04	**.29**	**.16**	**-.16**	.03	**.37**	.07	**.36**	**.37**	**.23**	**.21**		-.07	-.08	-.07	-.13	.00	-.08	-.07	-.10	-.01	.00	-.08
17. Soc. Supp.	**.24**	**-.38**	**-.35**	**-.34**	.06	**.30**	.08	**-.12**	.03	**.21**	.00	**.23**	**.25**	.07	**.30**	**.13**		-.08	-.01	-.05	**-.14**	-.01	**-.15**	.06	.03	.03	.01
18. Prs. Stress	**-.26**	**.59**	**.51**	**.56**	.05	-.05	**.19**	.07	**-.37**	**-.13**	**.19**	**.12**	.07	**.19**	**-.24**	**-.14**	**-.18**		-	-	-	**.40**	**.27**	**.34**	**.24**	.11	**.30**
19. Ng. Life Evt.	**-.25**	**.46**	**.42**	**.41**	.06	-.04	**.11**	.05	**-.23**	**-.10**	**.15**	.05	.00	**.12**	**-.14**	**-.12**	-.09	-		**.46**	**.31**	**.33**	**.18**	**.26**	**.25**	.09	**.24**
20. Daily Hassl.	**-.24**	**.42**	**.34**	**.44**	.05	-.04	**.21**	.01	**-.35**	-.07	**.18**	**.15**	.08	**.23**	**-.20**	-.11	**-.15**	-	**.50**		**.33**	**.32**	**.27**	**.34**	**.17**	.04	**.21**
21. Ng. Int. Exp.	**-.13**	**.55**	**.47**	**.53**	-.00	-.04	**.16**	**.11**	**-.32**	**-.14**	**.13**	**.13**	**.10**	**.15**	**-.27**	-.11	**-.20**	-	**.42**	**.50**		**.26**	**.19**	**.20**	.10	.13	**.23**
22. Nhd. Stress	**-.24**	**.36**	**.27**	**.39**	.00	-.01	.06	.05	**-.19**	-.08	**.18**	.01	-.03	**.11**	**-.29**	-.11	-.08	**.52**	**.41**	**.41**	**.44**		**-**	**-**	-	-	-
23. Pcvd. Crime	**-.22**	**.32**	**.25**	**.34**	-.02	**-.16**	-.06	.09	-.09	**-.16**	**.13**	**-.12**	**-.16**	.01	**-.40**	**-.19**	**-.21**	**.39**	**.29**	**.31**	**.36**	**-**		**.24**	**.44**	**.34**	**.24**
24. Victimiz.	**-.19**	**.28**	**.22**	**.29**	-.00	.05	**.11**	.05	**-.15**	-.04	**.13**	.03	.01	.07	**-.21**	-.06	-.07	**.42**	**.35**	**.36**	**.29**	**-**	**.37**		**.14**	.13	**.25**
25. Indir. Vict.	-.08	**.14**	.09	**.17**	-.01	.04	.04	-.01	**-.15**	-.03	**.12**	.07	.02	**.12**	-.02	-.02	.02	**.29**	**.23**	**.25**	**.22**	-	**.41**	**.22**		**.19**	**.27**
26. Worry	**-.23**	**.29**	**.22**	**.31**	.08	-.05	**-.10**	**.15**	.02	-.09	.02	**-.15**	**-.17**	-.03	**-.30**	**-.15**	-.08	**.24**	**.19**	**.17**	**.24**	-	**.43**	**.20**	**.21**		.12
27. Bad Nbg Exp	-.08	**.16**	**.11**	**.18**	-.03	.05	**.13**	-.09	**-.18**	.04	**.13**	**.15**	**.14**	**.15**	-.09	.00	.02	**.32**	**.25**	**.23**	**.31**	-	**.23**	**.25**	**.20**	**.11**	

Notes: Bold-faced *r*s, p ≤ .05. Missing data: Household Defensible Space (129), Age (109), Number of Kids (86), and Income (42) had the most missing data; missing data among the other variables was negligible. Bivariate correlations (below diagonal) df from 210 (for Age X Household Def. Space) to 412. Partial correlation (controlling for demographics in gray; above diagonal) df = 177. Bold-faced variables will be used in HLM models; those appearing in normal type are components of the variable immediately preceding them.

APPENDIX B

Level 2 Bivariate (below diagonal) and Partial Correlations; All Variables Measured at Time 1

		DVs				DEMOGRAPHICS					LEVEL 2 IVs					
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
DVs	**1. Agg. Well-being**		**-.60**	**-.53**	**-.59**						-	-	-.05	-.22	.06	-.08
	2. Agg. Distress Composite	**-.63**		-	-						-	-	-.08	.08	-.24	-.17
	3. Agg. Depression	**-.62**	-		**.76**						-	-	-.16	.08	-.12	-.18
	4. Agg. Anxiety	**-.56**	-	**.80**							-	-	.00	.07	**-.32**	-.15
DEMO	**5. Nonwhite (block percent)**	-.11	.14	.18	.09											
	6. Agg. Age	-.07	**-.33**	**-.23**	**-.39**	.07										
	7. Homeowner (blk percent)	.16	**-.31**	**-.33**	**-.26**	**-.40**	.16									
	8. Block Number of Children	**-.26**	**.26**	**.27**	.21	**.29**	.09	.04								
	9. Agg. SES Composite	**.57**	**-.36**	**-.46**	**-.24**	**-.39**	**-.23**	**.46**	**-.39**							
	10. Agg. Income	**.47**	**-.34**	**-.42**	**-.23**	**-.41**	-.14	**.58**	**-.28**	-		-	-	-	-	-
	11. Agg. Education	**.60**	**-.33**	**-.43**	-.20	**-.24**	**-.28**	.16	**-.45**	-	**.65**		-	-	-	-
LEV-2	**12. Block Defensible Space**	**.25**	**-.28**	**-.37**	-.16	-.16	-.01	**.53**	.04	**.54**	**.55**	**.40**		.16	-.21	-.03
IVs	**13. Social Capital**	.17	-.22	**-.27**	-.15	**-.42**	-.04	**.76**	-.00	**.60**	**.66**	**.35**	**.58**		.08	.21
	14. Collective Sense of Community	**.29**	**-.50**	**-.46**	**-.49**	**-.39**	**.31**	**.71**	-.07	**.53**	**.61**	**.28**	**.36**	**.62**		.02
	15. Nbhd. Crime Rate (1986)	.04	-.22	-.22	-.19	-.06	-.02	-.08	**-.33**	.13	.07	.16	-.05	.07	.00	

Notes: Bold-faced coefficients, $p \leq .10$. Partial correlations (above diagonal): df = 43. Bivariate correlations (below diagonal): df = 50. Depression & Anxiety were used to create the Distress Composite; Income & Education were used to create the SES composite. "Agg." = aggregate (i.e., mean per street block).

APPENDIX C

Level 1 Bivariate and Partial Correlations; All Variables Measured at Time 2 (except Household Defensible Space, Female, Nonwhite, Age, Homeowner, Number of Children, SES, Income, Education, which were only at Time 1)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1. Well-Being		**-.49**	**-.43**	**-.47**									-	-	**.23**	.09	**.30**	**-.35**	**-.19**	**-.38**	**-.32**	**-.33**	**-.24**	**-.26**	**-.16**	-.14	**-.22**
2. Distress	**-.53**		-	-									-	-	-.14	**.16**	**-.42**	**.51**	**.37**	**.37**	**.49**	**.27**	**.24**	**.22**	.02	**.18**	**.23**
3. Depression	**-.44**	-		**.67**									-	-	**-.16**	.14	**-.43**	**.46**	**.33**	**.33**	**.44**	**.19**	**.20**	**.17**	-.03	.08	**.19**
4. Anxiety	**-.54**	-	**.70**										-	-	-.09	**.15**	**-.34**	**.48**	**.35**	**.35**	**.45**	**.32**	**.24**	**.22**	.07	**.25**	**.23**
5. Female	**-.16**	**.16**	**.14**	**.17**																							
6. Married	**.13**	**-.14**	**-.16**	-.10	-.07																						
7. Working	**.15**	.01	-.01	.02	-.06	**.34**																					
8. Nonwhite	**.13**	-.00	.05	-.05	-	**-.13**	.04																				
9. Age	**-.13**	**-.13**	-.09	**-.15**	-	**-.12**	**-.48**	-																			
10. Homeown	.03	**-.14**	**-.14**	**-.12**	-	**.29**	**.12**	-	-																		
11. Children	.03	.07	.06	.07	-	**.15**	.08	-	-	-																	
12. SES	**.26**	**-.16**	**-.15**	**-.15**	-	**.30**	**.34**	-	-	-	-																
13. Income	**.23**	**-.17**	**-.15**	**-.16**	-	**.36**	**.34**	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
14. Education	**.22**	-.08	-.09	-.05	-	.09	**.22**	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-
15. Comm. Id.	**.21**	**-.23**	**-.23**	**-.20**	-.03	**.21**	-.05	**-.11**	**.15**	**.31**	.04	**.18**	**.23**	.03		-.04	**.17**	-.05	.02	-.07	-.09	**-.21**	**-.29**	-.12	-.07	-.05	**-.17**
16. Def. Space	**.13**	-.00	-.02	.02	-	**.29**	**.20**	-	-	-	-	-	-	-	**.16**		-.09	-.03	-.03	-.05	-.00	-.03	-.09	-.08	.03	-.06	.08
17. Soc. Supp.	**.27**	**-.39**	**-.39**	**-.33**	-.05	**.33**	.10	-.04	-.02	**.17**	.04	**.17**	**.19**	.06	**.24**	.11		**-.31**	**-.20**	**-.29**	**-.29**	**-.18**	**-.17**	**-.27**	-.07	.08	-.11
18. Pers. Stress	**-.32**	**.51**	**.43**	**.50**	.06	-.02	**.18**	.00	**-.30**	-.06	**.16**	**.12**	.09	**.14**	**-.13**	-.02	**-.25**		-	-	-	**.40**	**.34**	**.33**	**.15**	**.21**	**.25**
19. Neg. Life Evt.	**-.19**	**.34**	**.30**	**.33**	.08	-.00	.03	.04	**-.15**	-.03	**.17**	.06	.04	.10	-.04	-.01	**-.15**	-		**.51**	**.39**	**.43**	**.36**	**.34**	**.21**	**.24**	**.21**
20. Daily Hassles	**-.36**	**.40**	**.32**	**.42**	.09	.00	**.21**	-.09	**-.32**	-.04	**.12**	**.12**	.08	**.14**	**-.12**	-.02	**-.21**	-	**.46**		**.40**	**.28**	**.24**	**.22**	.09	**.17**	**.20**
21. Neg. Intp. Exp.	**-.24**	**.47**	**.41**	**.45**	-.03	-.05	**.24**	.04	**-.27**	-.08	.05	**.12**	**.12**	**.11**	**-.16**	-.03	**-.25**	-	**.32**	**.43**		**.19**	**.18**	**.18**	.00	.05	**.19**
22. Nhd. Stress	**-.28**	**.25**	**.19**	**.28**	.02	-.02	.10	-.04	**-.18**	-.07	.04	.07	.03	**.14**	**-.26**	-.07	**-.13**	**.48**	**.45**	**.37**	**.26**		**-**	**-**	-	-	-
23. Pcvd. Crime	**-.21**	**.25**	**.22**	**.24**	.02	-.07	.05	.05	**-.16**	**-.19**	.09	-.07	**-.11**	.02	**-.39**	**-.16**	**-.15**	**.38**	**.34**	**.33**	**.20**	**-**		**.33**	**.40**	**.44**	**.24**
24. Victimization	**-.20**	**.14**	**.12**	**.14**	-.01	-.06	.06	-.08	**-.13**	-.04	.10	-.01	-.02	.05	**-.14**	**-.13**	**-.17**	**.33**	**.35**	**.21**	**.17**	**-**	**.29**		**.26**	**.17**	.11
25. Indir. Victim.	**-.13**	.03	-.02	**.08**	-.04	.05	.03	-.07	-.05	-.03	-.06	**.17**	**.15**	**.18**	-.07	.02	-.03	**.24**	**.27**	**.19**	.06	-	**.39**	**.32**		**.29**	.12
26. Worry	**-.20**	**.25**	**.16**	**.30**	.10	-.04	.02	**.13**	-.07	-.04	.07	-.03	-.07	.02	**-.14**	-.07	.03	**.28**	**.25**	**.22**	**.15**	-	**.43**	**.15**	**.29**		.13
27. Bad Nbrg. Exp.	**-.16**	**.19**	**.16**	**.18**	-.02	.04	**.14**	-.09	**-.18**	.02	-.05	.12	.09	**.14**	**-.18**	.09	-.09	**.33**	**.25**	**.26**	**.27**	-	**.26**	**.25**	**.22**	**.15**	

Notes: Bold-faced coefficients, $p \leq .05$. Missing data: Household Defensible Space (129) and Age (109) again had the highest rates of missing data; All DVs (107) and Stressor variables (107-110). Bivariate *r*s (below diagonal) df ranged from 210 (for Age X Household Def. Space) to 305 (for correlations using substantive Time 2 variables). Partial *r*s (above diagonal) df = 180.

APPENDIX D

Level 2 Bivariate and Partial Correlations; All Variables Measured at Time 2 (except Block Defensible Space, Nonwhite, Age, Homeowner, Block Number of Children, SES, Income, Education, which were only at Time 1)

		DVs				DEMOGRAPHICS					LEVEL 2 IVs					
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
DVs	**1. Agg. Well-being**		**-.56**	**-.43**	**-.57**						-	-	-.04	-.12	.22	**-.33**
	2. Agg. Distress Composite	**-.55**		-	-						-	-	**.31**	.01	-.12	.09
	3. Agg. Depression	**-.43**	-		**.62**						-	-	.24	-.15	-.07	-.05
	4. Agg. Anxiety	**-.57**	-	**.69**							-	-	**.31**	.15	-.15	.10
DEMO	**5. Nonwhite (block percent)**	.15	.09	.18	-.01											
	6. Agg. Age	.01	**-.41**	**-.34**	**-.40**	-										
	7. Homeowner (blk percent)	.06	**-.24**	-.23	-.21	-	-									
	8. Block Number of Children	.02	.11	.22	.00	-	-	-								
	9. Agg. SES Composite	**.37**	**-.26**	**-.30**	-.19	-	-	-	-							
	10. Agg. Income	**.30**	**-.26**	**-.28**	-.19	-	-	-	-	-		-	-	-	-	-
	11. Agg. Education	**.52**	**-.26**	**-.30**	-.18	-	-	-	-	-	-		-	-	-	-
LEV-2	**12. Block Defensible Space**	.20	.01	-.02	.03	-	-	-	-	-	-	-		.06	-.17	-.11
IVs	**13. Social Capital**	.17	-.16	**-.26**	-.05	**-.42**	-.04	**.72**	-.02	**.53**	**.56**	**.36**	**.48**		**.42**	-.05
	14. Collective Sense of Community	**.26**	**-.36**	**-.29**	**-.36**	**-.25**	**.34**	**.65**	.18	**.35**	**.44**	.13	**.32**	**.65**		-.07
	15. Nbhd. Crime Rate (1987)	**-.27**	.04	-.03	.09	-.11	-.06	-.04	**-.37**	.15	.09	.18	-.10	.04	-.13	

Notes: Bold-faced coefficients, $p \leq .10$. Partial correlations (above diagonal): df = 43. Bivariate correlations (below diagonal): df = 50. Depression & Anxiety were used to create the Distress Composite; Income & Education were used to create the SES composite. "Agg." = aggregate (i.e., mean per street block). See Appendix B for intercorrelations among Time 1 demographics.

APPENDIX E

Level 1 Bivariate and Partial Correlations; All Variables are Residualized Time 1–Time 2 Change (except Household Defensible Space, Female, Nonwhite, Age, Homeowner, Number of Kids, SES, Income, Education, which were only at Time 1)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1. Well-Being		**-.36**	**-.31**	**-.31**									-	-	.06	.02	**.17**	**-.22**	**-.08**	**-.30**	**-.21**	**-.16**	-.08	-.07	-.05	-.08	**-.20**
2. Distress	**-.39**		-	-									-	-	-.03	**.19**	**-.28**	**.37**	**.25**	**.25**	**.34**	.10	.12	.05	-.09	.10	**.15**
3. Depression	**-.31**	-		**.52**									-	-	-.05	**.17**	**-.27**	**.30**	**.19**	**.21**	**.33**	.05	.09	.03	-.08	.02	**.16**
4. Anxiety	**-.38**	-	**.52**										-	-	.00	**.16**	**-.26**	**.37**	**.26**	**.24**	**.28**	.14	.12	.10	-.06	**.17**	.11
5. Female	**-.13**	**.12**	.09	**.14**																							
6. Married	.00	.04	.01	.03	.05																						
7. Working	**.14**	-.03	-.04	-.01	.02	**.39**																					
8. Nonwhite	**.17**	-.04	.02	-.08	-	-.07	.05																				
9. Age	-.03	-.03	-.04	-.02	-	**-.15**	**-.37**	-																			
10. Homeown	-.07	-.02	-.06	-.02	-	**.11**	**.14**	-	-																		
11. Children	.07	-.02	.03	-.05	-	**.13**	**.11**	-	-	-																	
12. SES	.05	-.06	-.06	-.08	-	**.12**	.08	-	-	-	-																
13. Income	.04	-.04	-.04	-.08	-	**.13**	**.11**	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
14. Education	.07	-.06	-.06	-.06	-	.06	.03	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-
15. Comm. Id.	.04	-.01	-.03	-.01	-.02	.10	-.04	.01	.00	**.14**	.10	.09	.09	.05		-.03	.03	-.07	-.02	-.11	-.04	-.05	**-.25**	-.05	-.00	-.03	.02
16. Def. Space	.00	.10	.07	.08	-	**.13**	**.13**	-	-	-	-	-	-	-	.06		-.05	.02	-.00	.02	.00	.03	-.07	-.06	.04	-.08	.12
17. Soc. Supp.	**.19**	**-.29**	**-.29**	**-.23**	-.03	**.15**	**.16**	-.01	-.04	.07	.06	.07	.08	.02	.09	.05		**-.24**	-.14	**-.21**	**-.23**	-.06	-.02	**-.21**	-.03	.06	-.02
18. Pers. Stress	**-.26**	**.39**	**.33**	**.36**	.04	.06	-.00	-.05	-.08	-.03	.06	.07	.07	.06	-.06	.04	**-.23**		-	-	-	**.20**	**.18**	.13	.01	**.21**	**.19**
19. Neg. Life Evt.	**-.12**	**.21**	**.18**	**.20**	.05	.02	-.07	.01	-.05	.01	**.12**	.04	.04	.06	-.01	.02	**-.14**	-		**.37**	**.16**	**.23**	**.21**	**.19**	.12	**.24**	.13
20. Daily Hassles	**-.31**	**.28**	**.24**	**.27**	.07	.09	.09	-.09	**-.16**	-.08	.05	.06	.05	.04	-.09	.02	**-.17**	-	**.29**		**.20**	.11	.13	.08	-.06	**.19**	**.17**
21. Neg. Intp. Exp.	**-.19**	**.35**	**.32**	**.30**	-.04	.06	.07	-.01	**-.12**	-.04	-.00	.09	.09	.08	-.04	.01	**-.21**	-	**.12**	**.23**		.03	.04	.06	-.06	-.04	.08
22. Nhd. Stress	**-.14**	.02	.02	.04	-.01	-.01	.04	-.05	-.08	-.05	-.10	.11	.08	**.12**	-.10	.01	-.05	**.21**	**.20**	**.16**	.08		**-**	**-**	-	-	-
23. Pcvd. Crime	-.09	.11	**.12**	.09	.01	.03	.06	.02	**-.12**	**-.12**	-.02	.03	-.00	.06	**-.22**	-.10	-.05	**.19**	**.16**	**.21**	.06	**-**		.11	**.17**	**.36**	.09
24. Victimization	-.08	.02	.03	.02	-.03	-.06	-.02	-.10	-.07	-.03	.04	-.02	-.04	.02	-.06	-.12	**-.15**	**.12**	**.19**	.06	.05	**-**	.08		.09	.14	.05
25. Indir. Victim.	-.05	-.10	-.09	-.08	-.05	.01	.04	-.07	-.00	-.02	-.10	**.17**	**.16**	**.16**	-.05	.04	.00	.10	**.14**	.07	-.00	-	**.22**	**.16**		**.16**	.04
26. Worry	-.09	.07	-.01	**.14**	.05	.02	.07	.05	-.10	.01	.07	.10	.05	.08	-.04	.01	.11	**.23**	**.22**	**.19**	.06	-	**.29**	**.16**	**.21**		.11
27. Bad Nbrg. Exp.	**-.14**	.05	.08	.02	-.01	.00	.08	-.06	**-.12**	-.01	-.11	.06	.04	.09	-.02	.09	-.04	**.14**	.11	**.13**	.10	-	**.15**	**.16**	**.16**	**.12**	

Notes: Bold-faced *r*s, p ≤ .05. Missing data: Household Defensible Space (129) and Age (109) again had the highest rates of missing data; DVs (109-110) and Stressor variables (107-120). Bivariate *r*s (below diagonal) df = ranged from 210 (for Age X Household Defensible Space) to 302 (with substantive Time 2 variables). Partial *r*s (above diagonal) df = 175.

APPENDIX F

Level 2 Bivariate and Partial Correlations; All Variables are Residualized Time 1–Time 2 Change (except Block Defensible Space, Nonwhite, Age, Homeowner, Block Number of Kids, SES Composite, Income, Education, which were only at Time 1)

		DVs				DEMOGRAPHICS					LEVEL 2 IVs					
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
DVs	**1. Agg. Well-Being**		**-.51**	**-.38**	**-.54**						-	-	-.01	.23	**.26**	.03
	2. Agg. Distress Composite	**-.48**		-	-						-	-	**.36**	**-.25**	-.19	-.15
	3. Agg. Depression	**-.31**	-		**.62**						-	-	**.30**	**-.30**	-.20	-.21
	4. Agg. Anxiety	**-.55**	-	**.62**							-	-	**.34**	-.15	-.16	-.06
DEMO	**5. Nonwhite (block percent)**	**.30**	.02	.12	-.07											
	6. Agg. Age	.07	**-.28**	**-.27**	-.22	-										
	7. Homeowner (blk percent)	-.06	-.10	-.11	-.09	-	-									
	8. Block Number of Children	**.26**	-.02	.12	-.13	-	-	-								
	9. Agg. SES Composite	-.01	-.09	-.13	-.07	-	-	-	-							
	10. Agg. Income	-.01	-.10	-.13	-.08	-	-	-	-	-		-	-	-	-	-
	11. Agg. Education	.17	-.10	-.14	-.08	-	-	-	-	-	-		-	-	-	-
LEV-2	**12. Block Defensible Space**	.05	.17	.14	.14	-	-	-	-	-	-	-		.06	-.03	-.21
IVs	**13. Social Capital**	.16	-.23	**-.29**	-.13	-.13	-.02	.18	-.03	.07	.05	.12	.03		**.57**	.01
	14. Collective Sense of Community	**.32**	-.20	-.15	-.22	.11	.15	.14	**.41**	-.14	-.09	-.16	.05	**.51**		-.11
	15. Nbhd. Crime Rate	-.06	.10	-.18	.01	-.14	-.10	.09	-.18	.06	.08	.08	-.14	.05	-.17	

Notes: Bold-faced coefficients, $p \leq .10$. Partial correlations (above diagonal): df = 43. Bivariate correlations (below diagonal): df = 50. Depression & Anxiety were used to create the Distress Composite; Income & Education were used to create the SES composite. "Agg." = aggregate (i.e., mean per street block). See Appendix B for intercorrelations among Time 1 demographics.

APPENDIX G

Level 1 Bivariate and Partial Correlations; Time 2 Dependent Variables and Time 1 Demographics and Independent Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1. Well-Being		**-.48**	**-.42**	**-.47**									-	-	.06	.02	**.17**	**-.29**	**-.23**	**-.21**	**-.21**	**-.25**	**-.17**	**-.22**	-.06	**-.18**	**-.16**
2. Distress	**-.53**		-	-									-	-	-.03	**.19**	**-.28**	**.34**	**.26**	**.20**	**.31**	**.21**	**.14**	.12	.05	**.25**	**.12**
3. Depression	**-.44**	-		**.67**									-	-	-.05	**.17**	**-.27**	**.29**	**.26**	**.16**	**.24**	**.16**	.09	.11	.01	**.19**	.10
4. Anxiety	**-.54**	-	**.70**										-	-	.00	**.16**	**-.26**	**.32**	**.22**	**.20**	**.34**	**.23**	**.17**	.11	.08	**.27**	**.12**
5. Female	**-.16**	**.16**	**.14**	**.17**																							
6. Married	**.15**	**-.18**	**-.20**	**-.14**	-																						
7. Working	.10	-.01	-.01	.00	-	-																					
8. Nonwhite	**.13**	-.00	.05	.05	-	-	-																				
9. Age	**-.13**	**-.13**	**-.09**	**-.15**	-	-	-	-																			
10. Homeown	.03	**-.14**	**-.14**	**-.12**	-	-	-	-	-																		
11. Children	.03	.07	.06	.07	-	-	-	-	-	-																	
12. SES	**.26**	**-.16**	**-.15**	**-.15**	-	-	-	-	-	-	-																
13. Income	**.23**	**-.17**	**-.15**	**-.16**	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-
14. Education	**.22**	-.08	-.09	-.05	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-
15. Comm. Id.	**.18**	**-.26**	**-.24**	**-.23**	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	**-**	-	-	-	-
16. Def. Space	.13	-.00	-.02	-.02	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-
17. Soc. Supp.	**.21**	**-.31**	**-.28**	**-.29**	-	-	-	-	-	-	-	-	-	-	-	-		**-**	-	**-**	**-**	-	-	**-**	-	-	-
18. Pers. Stress	**-.22**	**.36**	**.31**	**.35**	-	-	-	-	-	-	-	-	-	-	-	-	**-**		-	-	-	**-**	**-**	-	-	**-**	**-**
19. Neg. Life Evt.	**-.19**	**.29**	**.29**	**.25**	-	-	-	-	-	-	-	-	-	-	-	-	-	-		**-**	**-**	**-**	**-**	-	-	**-**	-
20. Daily Hassles	**-.17**	**.21**	**.16**	**.23**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**		**-**	-	-	-	-	**-**	**-**
21. Neg. Intp. Exp.	**-.15**	**.34**	**.27**	**.35**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**		-	-	-	-	-	-
22. Nhd. Stress	**-.22**	**.26**	**.21**	**.27**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		**-**	**-**	-	-	-
23. Pcvd. Crime	**-.19**	**.20**	**.15**	**.21**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**		-	**-**	**-**	-
24. Victimization	**-.14**	**.13**	**.12**	**.12**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-		-	-	-
25. Indir. Victim.	-.07	.09	.06	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**		**-**	-
26. Worry	**-.22**	**.29**	**.24**	**.30**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**		-
27. Bad Nbrg. Exp.	-.09	**.11**	.09	**.12**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**	**-**	**-**	

Notes: Bold-faced *r*s, p ≤ .05. Missing data: Household Defensible Space (129) and Age (109) again had the highest rates of missing data (measured at Time 1); All DVs had 107 missing cases. Bivariate *r*s (below diagonal) df = ranged from 210 (with Def. Space) to 305. Partial *r*s (above diagonal) df = 177. See Appendix A for intercorrelations among Time 1 demographics and IVs.

APPENDIX H

Level 2 Bivariate and Partial Correlations; Time 2 Dependent Variables and Time 1 Demographics and Independent Variables

		DVs				DEMOs					LEVEL 2 IVs					
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
DVs	**1. Agg. Well-being**		**-.56**	**-.43**	**-.57**						-	-	-.04	-.16	.04	**-.28**
	2. Agg. Distress Composite	**-.55**		-	-						-	-	**.31**	.17	-.04	.13
	3. Agg. Depression	**-.43**	-		**.62**						-	-	.24	.08	.10	.11
	4. Agg. Anxiety	**-.57**	-	**.69**							-	-	**.31**	.21	-.17	.11
DEMO	**5. Nonwhite (block percent)**	.15	.09	.18	-.01											
	6. Agg. Age	.01	**-.41**	**-.34**	**-.40**	-										
	7. Homeowner (blk percent)	.06	**-.24**	-.23	-.21	-	-									
	8. Block Number of Children	.02	.11	.22	.00	-	-	-								
	9. Agg. SES Composite	**.37**	**-.26**	**-.30**	-.18	-	-	-	-							
	10. Agg. Income	**.30**	**-.26**	**-.28**	-.19	-	-	-	-	-		-	-	-	-	-
	11. Agg. Education	**.52**	**-.26**	**-.30**	-.18	-	-	-	-	-	-		-	-	-	-
LEV-2	**12. Block Defensible Space**	.20	.01	-.02	.03	-	-	-	-	-	-	-		-	-	-
IVs	**13. Social Capital**	.07	-.12	-.16	-.06	-	-	-	-	-	-	-	-		-	-
	14. Collective Sense of Community	.18	**-.37**	**-.29**	**-.38**	-	-	-	-	-	-	-	-	-		-
	15. Nbhd. Crime Rate (1986)	-.20	.06	.01	-.08	-	-	-	-	-	-	-	-	-	-	

Notes: Bold-faced *r*s, p ≤ .10. Partial correlations (above diagonal): df = 43. Bivariate correlations (below diagonal): df = 50. Depression & Anxiety were used to create the Distress Composite; Income & Education were used to create the SES composite.
See Appendix B for intercorrelations among Time 1 demographics and IVs.

APPENDIX I

HLM Comprehensive Model Predicting Residualized Change In Psychological Distress Using Residualized Change Predictors Where Possible (Time 1 Predictors Otherwise)

FOR:	gamma	SE	p	Var(*U*)	p
Intercept	-0.056	0.028	.053	0.001	.396
Individual/Household Level					
RESID. COMM. ID. CHANGE (or RCI CHNG)	0.014	0.019	.469	0.002	.030
FEMALE	0.046	0.034	.170		
MARITAL STATUS CHANGE	0.019	0.029	.520		
PARENT	-0.025	0.027	.361		
NONWHITE STATUS (relative to block)	-0.146	0.056	.010		
SES	-0.016	0.010	.104		
AGE	0.000	0.001	.959		
HOMEOWNER	-0.038	0.055	.484		
WORKING STATUS CHANGE	0.023	0.023	.314		
SOCIAL SUPPORT CHANGE	-0.066	0.017	.000		
PERSONAL STRESS CHANGE	0.077	0.015	.000		
NBHD-RELATED STRESS CHANGE	0.008	0.022	.733		
Block/Neighborhood Level					
CHILDREN ON BLOCK	-0.035	0.034	.312		
NONWHITE (block proportion)	0.044	0.029	.139		
SES OF BLOCK	-0.047	0.011	.000		
AGE OF BLOCK RESIDENTS	-0.002	0.001	.225		
HOMEOWNER (block proportion)	0.065	0.052	.218		
DEFENSIBLE SPACE	0.056	0.016	.002		
SOCIAL CAPITAL CHANGE	-0.011	0.014	.450		
COLLECTIVE SENSE OF COMM. CHANGE	-0.003	0.016	.849		
NBHD-RELATED STRESS CHANGE (block)	0.035	0.018	.054		
CRIME REPORTED TO POLICE CHANGE	-0.017	0.014	.235		
Cross-level Interactions					
RCI CHNG * CHILDREN ON BLOCK	0.025	0.044	.580		
RCI CHNG * NONWHITE (block proportion)	0.033	0.042	.429		
RCI CHNG * SES OF BLOCK	0.023	0.021	.284		
RCI CHNG * AGE OF BLOCK RESIDENTS	0.000	0.002	.835		
RCI CHNG * HOMEOWN (block proportion)	0.064	0.085	.454		
RCI CHNG * DEFENSIBLE SPACE	0.004	0.025	.876		
RCI CHNG * SOCIAL CAPITAL CHANGE	-0.004	0.021	.855		
RCI CHNG * SEN. OF COMM. CHANGE	0.038	0.025	.142		
RCI CHNG * NBHD STRESS CHNG (block)	-0.016	0.027	.557		
RCI CHNG * CRIME REP. POLICE CHANGE	0.019	0.027	.472		

Notes: The model had 37 parameters and approximate df = 39:237 (Residential Community Identification Change random effect df = 39). The model explains a significant amount of variance in the outcome, X^2 (34) = 91.79, p<.001; with approximately >25% of Level 1 variance and >99% of Level 2 variance explained.

APPENDIX J

HLM Full Model Predicting Residualized Change In Psychological Distress Using Residualized Change Predictors Where Possible (Time 1 Predictors Otherwise)

Level of Analysis FOR:	gamma	SE	p	Var(*U*)	p
Intercept	-0.057	0.027	.044	0.001	.381
Individual/Household Level					
RESIDENTIAL COMMUNITY ID. CHANGE	0.019	0.021	.385	0.005	.021
FEMALE	0.045	0.033	.171		
MARITAL STATUS CHANGE	0.023	0.029	.420		
PARENT	-0.025	0.028	.367		
NONWHITE STATUS (relative to block)	-0.136	0.054	.013		
SES	-0.019	0.010	.053		
AGE	-0.000	0.001	.984		
HOMEOWNER	-0.041	0.051	.424		
WORKING STATUS CHANGE	0.022	0.023	.340		
SOCIAL SUPPORT CHANGE	-0.068	0.016	.000		
PERSONAL STRESS CHANGE	0.074	0.015	.000		
NBHD-RELATED STRESS CHANGE	0.006	0.023	.812		
Block/Neighborhood Level					
CHILDREN ON BLOCK	-0.035	0.032	.280		
NONWHITE (block proportion)	0.040	0.028	.153		
SES OF BLOCK	-0.050	0.011	.000		
AGE OF BLOCK RESIDENTS	-0.002	0.001	.233		
HOMEOWNER (block proportion)	0.058	0.052	.276		
DEFENSIBLE SPACE	0.056	0.016	.001		
SOCIAL CAPITAL CHANGE	-0.009	0.014	.500		
COLLECTIVE SENSE OF COMM. CHANGE	-0.006	0.015	.692		
NBHD-RELATED STRESS CHANGE (block)	0.037	0.017	.034		
CRIME REPORTED TO POLICE CHANGE	-0.018	0.014	.191		

Notes: The model had 27 parameters and approximate df = 39:247 (Residential Community Identification Change random effect df = 49). There was no significant change in model fit between the Comprehensive Model and this Full Model, X^2 (10) = 7.78, NS. However, the model does explain a significant amount of variance in the outcome, X^2 (24) = 84.01, p<.001; with approximately >21% of Level 1 variance and >99% of Level 2 variance explained.

APPENDIX K

HLM Trimmed Model Predicting Residualized Change In Psychological Distress Using Residualized Change Predictors Where Possible (Time 1 Predictors Otherwise)

Level of Analysis FOR:	gamma	SE	p	Var(*U*)	p
Intercept	-0.045	0.025	.083	0.001	>.500
Individual/Household Level					
RESIDENT. COMM. IDENTIFICATION CHANGE	0.010	0.018	.596	0.003	.087
FEMALE	0.042	0.032	.192		
MARITAL STATUS CHANGE	0.026	0.027	.332		
PARENT	-0.007	0.030	.805		
NONWHITE STATUS (relative to block)	-0.128	0.053	.016		
SES	-0.015	0.008	.053		
SOCIAL SUPPORT CHANGE	-0.069	0.017	.000		
PERSONAL STRESS CHANGE	0.075	0.016	.000		
Block/Neighborhood Level					
SES OF BLOCK	-0.043	0.010	.000		
DEFENSIBLE SPACE	0.062	0.015	.000		
NBHD-RELATED STRESS CHANGE (block)	0.039	0.019	.044		

Notes: The model had 16 parameters and approximate df = 46:258; and df = 49 for the random effect for Residential Community Identification Change. There was no significant change in model fit between the Comprehensive Model and this Trimmed Model, X^2 (21) = 16.39, NS. However, the model does explain a significant amount of variance in the outcome, X^2 (13) = 75.40, p<.000; specifically, >19% of Level 1 and >99% of Level 2 variance is explained by these multilevel predictors.

APPENDIX L

HLM Comprehensive Model Predicting Residualized Change In Well-being Using Residualized Change Predictors Where Possible (Time 1 Predictors Otherwise)

Level of Analysis					
FOR:	gamma	SE	p	Var(*U*)	p
Intercept	0.097	0.062	.128	0.000	.427
Individual/Household Level					
RESID. COMM. ID. CHANGE (or RCI CHNG)	-0.020	0.026	.437	0.000	>.500
FEMALE	-0.150	0.070	.032		
MARITAL STATUS CHANGE	0.003	0.038	.942		
PARENT	0.042	0.071	.555		
NONWHITE STATUS (relative to block)	0.201	0.092	.028		
SES	0.007	0.021	.755		
AGE	-0.002	0.003	.382		
HOMEOWNER	-0.052	0.072	.471		
WORKING STATUS CHANGE	0.034	0.037	.362		
SOCIAL SUPPORT CHANGE	0.069	0.032	.032		
PERSONAL STRESS CHANGE	-0.092	0.033	.006		
NBHD-REL. STRESS CHANGE	-0.039	0.042	.355		
Block/Neighborhood Level					
CHILDREN ON BLOCK	0.113	0.052	.037		
NONWHITE (block proportion)	0.101	0.064	.121		
SES OF BLOCK	0.080	0.029	.008		
AGE OF BLOCK RESIDENTS	0.003	0.004	.501		
HOMEOWNER (block proportion)	-0.253	0.090	.008		
DEFENSIBLE SPACE	0.006	0.032	.844		
SOCIAL CAPITAL CHANGE	0.035	0.038	.368		
COLLECTIVE SENSE OF COMM. CHANGE	-0.022	0.041	.592		
NBHD-REL. STRESS CHANGE (block)	-0.132	0.034	.001		
CRIME REPORTED TO POLICE CHANGE	0.063	0.041	.125		
Cross-level Interactions					
RCI CHNG * CHILDREN ON BLOCK	-0.091	0.052	.092		
RCI CHNG * NONWHITE (block proportion)	0.152	0.061	.017		
RCI CHNG * SES OF BLOCK	-0.062	0.032	.058		
RCI CHNG * AGE OF BLOCK RESIDENTS	-0.010	0.005	.042		
RCI CHNG * HOMEOWN (block proportion)	0.301	0.130	.026		
RCI CHNG * DEFENSIBLE SPACE	-0.053	0.037	.152		
RCI CHNG * SOCIAL CAPITAL CHANGE	0.023	0.027	.412		
RCI CHNG * SEN. OF COMM. CHANGE	-0.063	0.034	.072		
RCI CHNG * NBHD STRESS CHNG (block)	-0.015	0.034	.661		
RCI CHNG * CRIME REP. POLICE CHANGE	-0.067	0.031	.034		

Notes: The model had 37 parameters and approximate df = 39:237 (Residential Community Identification Change random effect df = 39). The model explains a significant amount of variance in the outcome, X^2 (34) = 66.81, p<.001; with approximately >21% of Level 1 variance and >94% of Level 2 variance explained.

APPENDIX M

HLM Full Model Predicting Residualized Change In Well-being Using Residualized Change Predictors Where Possible (Time 1 Predictors Otherwise)

Level of Analysis FOR:	gamma	SE	p	Var(*U*)	p
Intercept	0.097	0.063	.128	0.000	.438
Individual/Household Level					
RESID. COMM. ID. CHANGE (or RCI CHNG)	-0.024	0.026	.366	0.000	>.500
FEMALE	-0.147	0.072	.041		
MARITAL STATUS CHANGE	0.001	0.038	.976		
PARENT	0.033	0.072	.650		
NONWHITE STATUS (relative to block)	0.187	0.092	.042		
SES	0.006	0.021	.755		
AGE	-0.002	0.003	.353		
HOMEOWNER	-0.057	0.069	.402		
WORKING STATUS CHANGE	0.029	0.036	.423		
SOCIAL SUPPORT CHANGE	0.073	0.031	.018		
PERSONAL STRESS CHANGE	-0.090	0.035	.011		
NBHD-RELATED STRESS CHANGE	-0.034	0.042	.415		
Block/Neighborhood Level					
CHILDREN ON BLOCK	0.113	0.052	.038		
NONWHITE (block proportion)	0.101	0.064	.121		
SES OF BLOCK	0.080	0.029	.008		
AGE OF BLOCK RESIDENTS	0.002	0.004	.520		
HOMEOWNER (block proportion)	-0.253	0.091	.009		
DEFENSIBLE SPACE	0.007	0.032	.835		
SOCIAL CAPITAL CHANGE	0.034	0.038	.373		
COLLECTIVE SENSE OF COMM. CHANGE	-0.022	0.041	.593		
NBHD-RELATED STRESS CHANGE (block)	-0.132	0.034	.000		
CRIME REPORTED TO POLICE CHANGE	0.063	0.041	.128		
Cross-level Interactions					
RCI CHNG * CHILDREN ON BLOCK	-0.132	0.044	.005		
RCI CHNG * NONWHITE (block proportion)	0.148	0.070	.040		
RCI CHNG * SES OF BLOCK	-0.081	0.030	.010		
RCI CHNG * AGE OF BLK RESIDENTS	-0.013	0.005	.013		
RCI CHNG * HOMEOWN (block proportion)	0.260	0.120	.035		
RCI CHNG * CRIME REP. POLICE CHANGE	-0.064	0.030	.036		

Notes: The model had 33 parameters and approximate df = 39:241 (Residential Community Identification Change random effect df = 43). There was no significant change in model fit between the Comprehensive Model and this Full Model, X^2 (4) = 2.28, NS. However, the model does explain a significant amount of variance in the outcome, X^2 (30) = 64.53, p<.001; with approximately >20% of Level 1 variance and >94% of Level 2 variance explained.

APPENDIX N

HLM Trimmed Model Predicting Residualized Change In Well-being Using Residualized Change Predictors Where Possible (Time 1 Predictors Otherwise)

Level of Analysis FOR:	gamma	SE	p	Var(*U*)	p
Intercept	0.104	0.056	.071	0.000	>.500
Individual/Household Level					
RESIDENT. COMM. IDENTIF. CHANGE	-0.009	0.027	.735		
FEMALE	-0.132	0.063	.036		
MARITAL STATUS CHANGE	-0.011	0.037	.770		
PARENT	0.070	0.060	.243		
NONWHITE STATUS (relative to block)	0.277	0.098	.005		
SES	0.011	0.017	.512		
SOCIAL SUPPORT CHANGE	0.073	0.027	.006		
PERSONAL STRESS CHANGE	-0.100	0.033	.003		
Block/Neighborhood Level					
CHILDREN ON BLOCK	0.106	0.042	.016		
SES OF BLOCK	0.069	0.026	.013		
HOMEOWNER (block proportion)	-0.223	0.076	.006		
NBHD-RELATED STRESS CHANGE (block)	-0.110	0.036	.004		

Notes: The model had 15 parameters and approximate df = 45:257. The random effect for Residential Community Identification Change was eventually trimmed because there were no significant cross-level interactions and the random effect itself was NS; hence, only the intercept is random here. There was no significant change in model fit between the Comprehensive Model and this Trimmed Model, X^2 (22) = 19.04, NS. However, the model does explain a significant amount of variance in the outcome, X^2 (12) = 47.77, p<.000; specifically, >15% of Level 1 and >92% of Level 2 variance is explained by these multilevel predictors.

APPENDIX O

HLM Comprehensive Model Predicting Time 2 Well-being Using Time 1 Predictors

Level of Analysis					
FOR:	gamma	SE	p	Var(*U*)	p
Intercept	2.991	0.102	.000	0.001	.237
Individual/Household Level					
RESID. COMMUNITY IDENTIF. (or RCI)	0.151	0.077	.057	0.038	.024
FEMALE	-0.195	0.082	.017		
MARRIED	-0.066	0.080	.409		
PARENT	-0.061	0.079	.439		
NONWHITE STATUS (relative to block)	0.469	0.152	.003		
SES	0.061	0.032	.056		
AGE	-0.010	0.004	.007		
HOMEOWNER	-0.063	0.090	.489		
WORKING	-0.010	0.076	.896		
SOCIAL SUPPORT	0.148	0.047	.002		
PERSONAL STRESS	-0.225	0.074	.003		
NEIGHBORHOOD-RELATED STRESS	-0.180	0.085	.034		
Block/Neighborhood Level					
CHILDREN ON BLOCK	0.152	0.074	.047		
NONWHITE (block proportion)	0.171	0.081	.042		
SES OF BLOCK	0.190	0.043	.000		
AGE OF BLOCK RESIDENTS	0.003	0.005	.518		
HOMEOWNER (block proportion)	-0.199	0.151	.195		
DEFENSIBLE SPACE	-0.025	0.049	.616		
SOCIAL CAPITAL	-0.030	0.060	.626		
COLLECTIVE SENSE OF COMMUNITY	0.022	0.053	.673		
NBHD-RELATED STRESS (block)	0.029	0.037	.426		
CRIME REPORTED TO POLICE	-0.055	0.034	.114		
Cross-level Interactions					
RCI * CHILDREN ON BLOCK	0.343	0.127	.011		
RCI * NONWHITE (block proportion)	0.072	0.187	.702		
RCI * SES OF BLOCK	0.134	0.138	.336		
RCI * AGE OF BLK RESIDENTS	-0.005	0.012	.677		
RCI * HOMEOWN (block proportion)	-0.568	0.450	.215		
RCI * DEFENSIBLE SPACE	0.029	0.143	.843		
RCI * SOCIAL CAPITAL	-0.084	0.150	.579		
RCI * COLLECTIVE SENSE OF COMM.	0.301	0.147	.048		
RCI * NBHD-RELATED STRESS (block)	0.009	0.075	.903		
RCI * CRIME REPORTED TO POLICE	-0.041	0.094	.662		

Notes: The model had 37 parameters and approximate df = 39:237 (Residential Community Identification random effect df = 39). The model explains a significant amount of variance in the outcome, X^2 (34) = 68.51, p<.001; with approximately >30% of Level 1 variance and >99% of Level 2 variance explained.

APPENDIX P

HLM Full Model Predicting Time 2 Well-being Using Time 1 Predictors

Level of Analysis FOR:	gamma	SE	p	Var(*U*)	p
Intercept	2.994	0.103	.000	0.000	.238
Individual/Household Level					
RESID. COMMUNITY IDENTIF. (or RCI)	0.167	0.078	.037	0.044	.070
FEMALE	-0.195	0.079	.014		
MARRIED	-0.071	0.082	.391		
PARENT	-0.065	0.079	.412		
NONWHITE STATUS (relative to block)	0.467	0.149	.002		
SES	0.063	0.028	.025		
AGE	-0.010	0.004	.005		
HOMEOWNER	-0.059	0.089	.505		
WORKING	-0.011	0.075	.884		
SOCIAL SUPPORT	0.152	0.048	.002		
PERSONAL STRESS	-0.225	0.071	.002		
NEIGHBORHOOD-RELATED STRESS	-0.181	0.084	.032		
Block/Neighborhood Level					
CHILDREN ON BLOCK	0.152	0.074	.047		
NONWHITE (block proportion)	0.171	0.080	.038		
SES OF BLOCK	0.190	0.043	.000		
AGE OF BLOCK RESIDENTS	0.003	0.005	.529		
HOMEOWNER (block proportion)	-0.195	0.152	.205		
DEFENSIBLE SPACE	-0.024	0.050	.626		
SOCIAL CAPITAL	-0.031	0.060	.610		
COLLECTIVE SENSE OF COMMUNITY	0.022	0.053	.675		
NBHD-RELATED STRESS (block)	0.029	0.036	.423		
CRIME REPORTED TO POLICE	-0.055	0.034	.112		
Cross-level Interactions					
RCI * CHILDREN ON BLOCK	0.399	0.107	.001		
RCI * SES OF BLOCK	0.152	0.066	.026		
RCI * HOMEOWN (block proportion)	-0.706	0.309	.027		
RCI * COLLECTIVE SENSE OF COMM.	0.261	0.115	.028		

Notes: The model had 31 parameters and approximate df = 39:243 (Residential Community Identification random effect df = 45). There was no significant change in model fit between the Comprehensive Model and this Full Model, X^2 (6) = 1.01, NS. However, the model does explain a significant amount of variance in the outcome, X^2 (28) = 107.83, p<.000; with approximately >30% of Level 1 variance and >99% of Level 2 variance explained.

APPENDIX Q

HLM Comprehensive Model Predicting Time 2 Psychological Distress Using Time 1 Predictors

FOR:	gamma	SE	p	Var(*U*)	p
Intercept	0.117	0.140	.409	0.000	.341
Individual/Household Level					
RESID. COMMUNITY IDENTIF. (or RCI)	-0.245	0.085	.007	0.000	.351
FEMALE	0.120	0.115	.298		
MARRIED	-0.134	0.102	.190		
PARENT	0.128	0.151	.396		
NONWHITE STATUS (relative to block)	-0.591	0.279	.034		
SES	-0.066	0.042	.120		
AGE	0.002	0.005	.605		
HOMEOWNER	-0.065	0.165	.690		
WORKING	-0.097	0.108	.369		
SOCIAL SUPPORT	-0.357	0.084	.000		
PERSONAL STRESS	0.401	0.106	.000		
NEIGHBORHOOD-RELATED STRESS	0.171	0.126	.177		
Block/Neighborhood Level					
CHILDREN ON BLOCK	-0.067	0.106	.532		
NONWHITE (block proportion)	0.041	0.124	.741		
SES OF BLOCK	-0.163	0.061	.012		
AGE OF BLOCK RESIDENTS	-0.016	0.007	.023		
HOMEOWNER (block proportion)	-0.027	0.246	.915		
DEFENSIBLE SPACE	0.149	0.072	.045		
SOCIAL CAPITAL	0.100	0.071	.166		
COLLECTIVE SENSE OF COMMUNITY	-0.027	0.084	.748		
NBRD-RELATED STRESS (block)	-0.017	0.051	.742		
CRIME REPORTED TO POLICE	-0.019	0.058	.750		
Cross-level Interactions					
RCI * CHILDREN ON BLOCK	-0.098	0.196	.619		
RCI * NONWHITE (block proportion)	-0.295	0.236	.218		
RCI * SES OF BLOCK	-0.253	0.128	.056		
RCI * AGE OF BLOCK RESIDENTS	-0.004	0.011	.740		
RCI * HOMEOWN (block proportion)	0.385	0.563	.498		
RCI * DEFENSIBLE SPACE	-0.070	0.133	.601		
RCI * SOCIAL CAPITAL	0.403	0.177	.028		
RCI * COLLECTIVE SENSE OF COMM.	-0.263	0.138	.063		
RCI * NBHD-RELATED STRESS (block)	0.023	0.085	.790		
RCI * CRIME REPORTED TO POLICE	0.215	0.105	.047		

Notes: The model had 37 parameters and approximate df = 39:237 (Residential Community Identification random effect df = 39). The model explains a significant amount of variance in the outcome, X^2 (37) = 128.28, p<.000; with approximately >37% of Level 1 variance and >80% of Level 2 variance explained.

APPENDIX R

HLM Trimmed Model Predicting Time 2 Psychological Distress Using Time 1 Predictors

Level of Analysis FOR:	gamma	SE	p	Var(*U*)	p
Intercept	0.010	0.089	.908	0.006	>.500
Individual/Household Level					
RESIDENT. COMM. IDENTIF. (or RCI)	-0.323	0.080	.000	0.018	.278
FEMALE	0.143	0.102	.159		
MARRIED	-0.178	0.107	.098		
PARENT	0.154	0.114	.177		
NONWHITE STATUS (relative to block)	-0.657	0.266	.014		
SES	-0.073	0.033	.026		
SOCIAL SUPPORT	-0.339	0.090	.000		
PERSONAL STRESS	0.458	0.103	.000		
Block/Neighborhood Level					
SES OF BLOCK	-0.047	0.042	.274		
SOCIAL CAPITAL	0.161	0.051	.003		
Cross-Level Interactions					
RCI * SES OF BLOCK	-0.225	0.067	.002		
RCI * SOCIAL CAPITAL	0.283	0.121	.024		

Notes: The model had 17 parameters and approximate df = 47:257; and df = 47 for the random effect for Residential Community Identification. There was no significant change in model fit between the Comprehensive Model and this Trimmed Model, X^2 (20) = 15.80, NS. This model explains a significant amount of variance in the outcome, X^2 (14) = 112.48, p<.000; specifically, >33% of Level 1 and >76% of Level 2 variance is explained by these multilevel predictors.

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