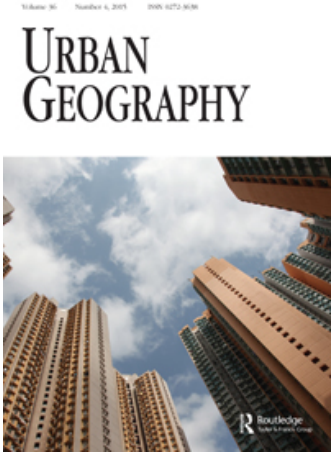

Urban Geography
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/rurb20

The distribution of capital forms between cities and suburbs and their impact on social justice in space

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Published online: 12 May 2015.

Urban Geography, 2015
Vol. 36, No. 4, 578–607, http://dx.doi.org/10.1080/02723638.2014.982484

The distribution of capital forms between cities and suburbs and their impact on social justice in space

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(*Received 18 January 2011; accepted 19 October 2014*)

Questions of justice have been raised in recent years when contending with the social costs of urban sprawl. But this field of inquiry suffers from the difficulty of translating the abstract notion of justice into measurable spatial indices. The aim of this paper is to empirically measure the liberal notion of justice in the metropolitan region of Tel Aviv by adopting Pierre Bourdieu's theory of three forms of capital. Under this theory, the formation of economic, cultural, and social capital in the individual's living environment determines the person's exposure to different sets of life-chances (i.e., capabilities), thus influencing equality of opportunity (i.e., social justice) in space. The analysis reveals that suburban inhabitants benefit from a larger accumulation of the three forms of capital than do urban inhabitants. Accumulation of these capitals has a positive effect on exposure to life-chances, thus enhancing spatial segregation between cities and suburbs.

Keywords: social justice; capital accumulation; capabilities; city versus suburbs

Introduction

Justice has always fed fundamental societal deliberations. The very meaning of the term, justice, has been deliberated vigorously in the course of human history (Sandel, 2009). However, the question of how to translate this concept into measurable indices reflecting the complexities of inequality among social classes remains unresolved. In the spatial sciences, the discourse on justice has appeared occasionally, notably from the mid-twentieth century with respect to the social consequences of suburbanization trends (e.g., Marsh, Parnell, & Joyner, 2010; Williamson, 2010). In spite of the developing discourse, research in this field is somewhat lacking. The literature has focused on measuring economic and environmental costs but has neglected social aspects in the wake of unrestricted suburbanization processes. Therefore, aspects of life-chances, of equal opportunities, and of social reproduction have been ignored in most of this body of literature.

This paper aims at helping to fill these theoretical and empirical lacunae by suggesting a new epistemological framework in which the liberal, abstract notion of justice can be spatially tested and measured. The study employs the class structure of modern capitalist societies as conceptualized by the French sociologist Pierre Bourdieu (1986b). His concept is based on the production, accumulation, and transmission of three forms of capital: economic, cultural, and social. These three forms enable both individuals and

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social groups to achieve social goods in a variety of fields of life that later translate into capabilities (or opportunities and life-chances) benefiting the social subject.

Although Bourdieu did not directly refer to spatial assessments, a growing body of literature in recent years has related to social–spatial phenomena through Bourdieu's theoretical conception (see, e.g., Açikalin, 2011; Painter, 2000). These studies show that his theorization is relevant to spatial disciplines, since it may reveal different life circumstances that might hamper or alleviate a person's exposure to life-chances.

The social stratification analysis proposed by Bourdieu serves in the current paper as a means of depicting class structure. The spatio-political arrangements affected by this stratification formulate and shape life-chances and, thus, equality of opportunity (i.e., social justice). Moreover, social processes within built environments influence the patterns in which social goods are distributed (Hillier, 2008). It is assumed that impairing the capability to produce and accumulate Bourdieu capital forms, as the process of suburbanization is suspected of doing, by deepening social segregation constitutes an explicit sign of social injustice in space.

This paper places the social discussion on capital forms and the way to measure their distribution in space in the context of Amartya Sen's theory of justice. As most social phenomena are complex and linked to multiple bodies of knowledge, this paper focuses on a multidisciplinary approach whose aim is to provide a comprehensive understanding of the relationship between (in)justice and spatiality. The study offers a new perspective to the reciprocal interactions between central cities and suburbs. An empirical examination of these interactions took place in the main metropolitan region of Israel.

Theoretical background

Suburbanization, urban sprawl, and social justice

Questions of justice and social well-being have for many centuries posed a major topic of deliberation in political philosophy. Recently, these issues have been raised within the spatial discourse, with an attempt to understand, measure, and manage the outcomes of suburbanization and urban sprawl on the life-chances of individuals and social groups. In particular, the issue has become central because of the growing need to achieve sustainable and fair urban development (Roberts, 2003).

The discussions of justice in the past referred to different sets of objects and principles of allocation (Rawls, 1971; Sandel, 2009). John Rawls' (1971) liberal theory of justice gave the philosophical discourse on the subject its most significant encouragement. According to his theory, "primary goods" should be distributed among the society's members (2001, pp. 58–61). However, Rawls's approach for measuring justice is not sufficiently complex and flexible for the purpose of empirical research (Young, 2006). It was the Bengali economist Amartya Sen (1992) who defined life-chances as a major metric of justice. According to his approach, life-chances (or "capabilities") will be equal only when all individuals have the same opportunity to function well in different social fields. This opportunity stems from the ability to convert services and goods (i.e., education, money, health, and social relations) into real functioning (Nussbaum, 2006; Sen, 1992). The two terms, capabilities and functionings, might help in the attempt to measure justice. They signify the opportunities (or life-chances) that enable people to choose the kind of lifestyle they wish to pursue and to function effectively in fields of life that they value (Robeyns & Brighouse, 2010). Justice, according to Sen's theory, is not only the achieving of functionings, but also being able to achieve them in accordance with

one's consciousness of the value of one's own capabilities (Fainstein, 2010; Robeyns & Brighouse, 2010).

Capabilities and functionings are highly affected by the background conditions against which any action takes place. A person's capabilities pack is a joint product of personal characteristics and the social and physical environments.[1] The social dimension refers to institutions, social norms, traditions, and the behavior of others in society: stereotyping, prejudiced behavior, racism, and homophobic behavior. Physical environment refers to the physical attributes of the place or district where a person lives, but it is also influenced by internal and external personal endowments, such as one's mental and physical attributes (Robeyns, 2005).

In the context of justice, suburbanization and urban sprawl have been accused of imposing a significant cost on spatial equity (Jargowsky, 2001; Ledwith & Clark, 2007; Marsh et al., 2010; Rusk, 1998). The main social argument is that the migration of affluent populations from the core city to the suburban fringes resulted in extreme distributive inequality, manifested in social segregation, squandering of public resources, and urban decline (Brinegar & Leonard, 2008; Freilich & Peshoff, 1997; Galster & Cutsinger, 2007; Jargowsky, 2001). In Sen's terminology, this migration implies that the deep social cleavage between cities and suburbs might have been concealing deep inequality in human capabilities to flourish and prosper.

However, the individual's freedom to choose the ideal community in which to live may negatively affect the liberty of other individuals who are not part of this community, thereby casting doubt on its morality (Williamson, 2010). In that context, sprawl and the social deprivation it allegedly causes negatively affect the ability of large sectors in a given metropolitan region to materialize their positive liberties. These are the capabilities as Sen defines the term (Sen, 1987, p. 36)[2]—the ability to be free to realize legitimate aspirations and, therefore, to benefit from this spatial process.

Nevertheless, the relationship between sprawl and diminishing personal liberties is not surprising, as it laid the ground for discouraging trust and social interaction between different communities within metropolitan areas (Freeman, 2001; Leyden, 2003; Rahn, Yoon, Garet, Lipson, & Loflin, 2009). It is speculated that big and ethnically diverse cities reduce social solidarity and, therefore, social capital (Putnam, 2007). In contrast, the creation of elite and distinctive entities at the metropolitan fringes seems to produce the opposite effect: enhancement of social interaction within suburban communities and strengthening of their inner trust relationships (Brueckner & Largey, 2008). Recently, these elite entities were associated with civic disengagement, avoidance of political conflicts, and constant withdrawal of suburbanites to personal spheres of life (Baumgartner, 1988; Putnam, 2000). The undermining of such practices of citizenship is assumed to affect the health and vibrancy of any democratic polity (Putnam, 2000). Williamson's (2010) findings support this allegation, as he found that suburban communities tended to foster political conservatism, reflecting homophobic and xenophobic attitudes toward many typical urban communities. In such a political climate, it seems that the implementation of principles of fairness and equality is an almost unattainable goal, as social solidarity diminishes and the political willingness to support such actions becomes unpopular.

Thus, the study of suburbanization and urban decline seems to have created a large body of literature focusing on the measurement of the costs and benefits of these phenomena. However, most of these studies have not contributed to the normative discourse of social justice. Across the geography discipline and beyond, many have engaged with "justice" in different ways, raising debates about what is just and what is

unjust (Davis, 2011). Although the current paper engages with a generally liberal approach to justice, liberal thinkers such as Sen and Rawls did not refer to space directly. This is mostly true also of other philosophical streams of thought that reflect on justice, thus posing a serious impediment to potential attempts to translate justice into an empirical measurement (Campbell & Marshall, 2006; Young, 1990).

Over the years, some basic principles were set in order to define spatial–social justice (Hay, 1995; Smith, 1994). David Harvey (1973), for example, in defining the notion of "territorial social justice" emphasizes issues of production as a structural dynamic that characterizes capitalist societies and leads to an unjust distribution of resources in space. Leaving production to the workings of the free market (as Rawls did in his theory) eventually results in uneven geographical development—an intrinsic feature of the capitalist mode of production and, in consequence, indifferent forms of oppression. Oppression and discrimination in this regard manifest eminent expressions of injustice (Harvey, 1996, 1992).

Harvey's Marxian stance was further developed by critical geographers, who emphasized the issue of injustice in the contemporary capitalist urban world (Dikec, 2001; Mitchell, 2003). The notion of spatial justice as discussed recently by Ed Soja (2010a) offers a noticeable example of this approach. Soja critically explores systematic articulations of human suffering, defined in terms of modes of subordination, exploitation, and segregation among individuals and groups, and generally manifesting the asymmetry of power relations along lines of cultural, gender, race, and class cleavages (Lefebvre, 1991; Soja, 2010a).[3]

Moreover, under the paradigm of spatial justice, the very process of creating space that exhibits unfortunate outcomes of human suffering is itself a subject of critical inquiry (Marcuse, 2010; Soja, 2010b). Focusing on processes and outcomes, spatial justice attempts to diverge from just discerning whether a particular event is just or unjust. Rather, it aims to explore "... dynamic processes of social, spatial, economic, and political formations in order to see if they operate in such a way to produce and reproduce dominant and oppressive permanences which would be considered as being unjust" (Dikec, 2001, p. 1793). This normative, epistemological stance, however, might be highly problematic in gaining an understanding of justice and its potential metrics.

To start with, take the question of the unjust that is raised by Dikec, Soja, and others. What should we look for in trying to define the term? Asymmetry in power relations? If so, how should power be defined in relation to justice and processes of creating space? How do we know that a person or a group of people are dominated by power spatial relationships? What is the meaning of domination or exploitation here, and how can one assess it without raising a normative doubt that is rooted in biased judgments?

We do not really know how to answer such questions if we take literally the theoretical issues posed by critical geographers. Within this context, spatial justice theorization does not lead to an effective mode of translating the normative notion of justice as analyzed in political philosophy into a potentially measurable metric. In the field of Critical Geography, justice is usually referred to merely as a buzzword. Critical spatial writings seem to start their analyses from widely shared intuitions of injustice, thus overlooking and missing strong conceptions that define justice (Barnett, 2011; Olson & Sayer, 2009). Critical analyses of space, such as Soja's or even Harvey's (1973) Marxist variant of urban social justice, approached the concept of justice as a vehicle to set research agendas. These critiques seem to be directed at catalyzing "more participatory forms of social activism and a spatially attuned democratic politics" (Soja, 2010a, p. 1).

Furthermore, utopian approaches to urban planning, represented by such theorists as Peter Marcuse (2009) and Susan Fainstein (2010), reflect additional attempts to understand justice in its urban meaning. However, the call for what they perceive as the "Just City," did not define a metric in which justice could be measured within diverse spatial contexts. Fainstein, for example, suggested three indicators by which a Just City could be identified: democracy, equity, and diversity. But as Fainstein herself admits, integrating these three concepts might constitute a complex task to preserve, since they could contradict one another. This would be the case, for example, with the concept of diversity, an important measure of quality of life that usually favors the city (Jacobs, 1961; Sandercock, 2003). Making cities more diverse might contradict the concept of equity (Florida, 2002). It might also come up against the concept of democracy by pushing social diversity so that the result is to encourage communal exclusionary tendencies while reducing social solidarity (Harvey, 1997; Putnam, 2007). Beyond its conceptual–moral intricacy, Fainstein's theory is like the other critical theories mentioned in the sense that they do not totally clarify the meaning of their concepts for an individual's actual life-chances.

Moreover, since most of the authors who discussed the spatial meaning of justice favored qualitative methods—as did Fainstein, Harvey, and Soja—it was especially difficult to generalize their empirical results. Under a critical-utopian perspective, it apparently becomes more complicated to set a metric of justice in space that can easily be measured and analyzed at the individual level. Is an individual confined insofar as possibilities, life-chances, mental feelings, happiness, or self-confidence? The answer emanating from socio-spatial theories of justice would probably be intuitively positive. But intuition might not be enough, as other normative outlooks may argue. For example, what might constitute an unjust exploitation for one person could be conceived as proper arrangement by another person if it falls within the category of liberties guaranteed in democratic societies (as echoed in Robert Nozick's (1974) entitlement theory or in neoliberal economic theories).

The search for a measurable term of justice, as was done recently by the philosophers Brighouse and Robeyns (2010), is neglected by urban utopian and critical geographers. This is not surprising, since the social sciences differ fundamentally from the normative argument of inequality that philosophers of justice contemplate. It certainly differs from political–academic exertions that are targeted to promote social–political agendas and challenge social injustices (Sayer, 2011). Eventually, the difficulty in translating the meaning of justice into spatial measurement led many scholars to use economic indices in their measurement of spatial–social gaps and costs (e.g., Foster-Bey et al., 2002; Jargowsky, 2001; Persky & Wiewel, 2000).

Notion of capital resources and their spatial meaning

The present study uses principles of justice based on equality of liberties (i.e., capabilities or life-chances) to measure justice in space.[4] In order to determine a comprehensive framework of understanding one's set of capabilities, it is necessary to explore personal, social, and environmental background conditions that influence their creation (Robeyns, 2005). Using Bourdieu's capital forms theory might be beneficial in this context. The integration of the two theoretical concepts (i.e., Sen's and Bourdieu's) enlarges the traditional economic-monolithic indices or variables used in most of the studies that explored the social costs of urban sprawl.

Bourdieu's epistemological idea depicts the class structure of modern capitalist societies in accordance with the production, accumulation, and transmission of three forms of capital: *Economic capital* comprises wages and other forms of monetary assets, such as stocks or property (Becker & Woessmann, 2009). *Cultural capital* comprises not only educational qualifications and achievements, but also tastes, preferences, and general "know-how" and knowledge; it affects cognitive skills and the knowledge of normative codes through socialization processes (Bourdieu, 1986b, pp. 243–248). In this context, *social capital* is defined as the total extent and quality of social networks and connections that one uses to promote personal interests (Bourdieu, 1986b). Bourdieu suggests that the accumulation of the three forms of capital determines a social space that defines class-related inequalities in a variety of spheres of life (Bourdieu, 1989, 1985). In this social space, the different forms of capital enable an individual and his/her respective social peer groups to achieve a variety of social goods in diverse fields of life (Bourdieu & Wacquant, 1992). These social goods might later be translated into capabilities or life-chances for the social subject (Bowman, 2010). Thus, the social stratification analysis that Bourdieu proposed defines distributional patterns that might erode social justice and, therefore, gnaw away at equal opportunities.

Within their dependency and reciprocal substitution, the three forms of capital show multidimensional functions, in which each can serve as an input for the creation of another form or as an output obtained from it. Their function (as input or output) differs in different persons. For example, economic capital for an adult person could be used as an input for creating cultural capital for his/her children. Nonetheless, each of the different capital resources is distinct in terms of diffuseness and reciprocal conversion (Savage, Warde, & Devine, 2005). The multidimensional relationships of these forms of capital provide an explanation for the complexity of social stratification in Western capitalist societies. The ability to operationalize the three forms in different social fields determines the class structure of those societies. Concomitantly, reflecting a complex social topography can be connected to different living environments, in which income levels and other indicators of material and cultural characteristics vary according to geographical setting (Buzzelli, 2007). Recent years have revealed a growing geographical interest in Bourdieu's sociological theory, relating to spatial process and practices of distinction and segregation, especially in relation to housing and education on the urban scale (Bridge, 2001, 2006; Butler & Robson, 2001), as well as on the metropolitan scale (Butler & Robson, 2003; Webber, 2007). The formation of capital forms is perceived to be dependent on high-standard amenities and creative social–cultural environments (Carpiano, 2006; Podmore, 1998; Wynne & O'Connor, 1998). Therefore, capital forms and their mutual conversions into power relationships design spatial political arrangements that reflect ideological differences, stigmas, segregation, and other forces that shape people's lives (Carpiano, 2006; Marom, 2014; Painter, 2000).

Not surprisingly, Bourdieu's theory was utilized to express moral criticism in reference to exploitation and the denial of an adequate material standard of living to many marginalized groups (Fraser, 1997). It seems, then, that this theory has the potential to provide satisfactory, critical, and yet empirical insights into the ways in which social groups mobilize power and increase their exposure to life-chances (capabilities, in Sen's terminology) as the philosophy of justice implies (e.g., Barry, 2006).[5] Bonding sociology to the normative discussion of justice in relation to the spatial phenomenon of sprawl could illuminate the social mechanisms that produce it and, in particular, the symbolic meanings attached to the human practices involved in the creation of distinct suburbs.

Study framework

Research goals and hypotheses

In order to deal with the complex issues discussed in the previous sections, two basic questions must be asked: Under the liberal theory of justice, can the phenomenon of suburbanization be seen as a fair process? And are democratic and liberal societies able to determine that suburbanization does not cause avoidable suffering to various social groups, even though this process stands as a cornerstone of liberal, laissez-faire approaches that honor individualism and the maximization of private utility? Accordingly, the aim of the current paper is to add a spatial dimension to the analytical inquiry into social justice. More specifically, we will refer to liberties or opportunities in order to conduct a measurable examination of what can be seen as spatial justice. To do so, the current study translates Bourdieu's and Sen's theories into measurable indices that can be used to estimate the spatial differences between cities and suburbs. We speculated that by identifying spatial gaps in capital accumulation between these two entities, we would be able to understand different accesses to life-chances (i.e., capabilities) and, hence, manifestations of spatial–social injustice.

The main hypothesis of the present work is that a positive linkage exists between the accumulation of capital (economic, social, and cultural) at the individual level and one's living environment, on the one hand, and the individual's exposure to life-chances, on the other. Suburbanization processes, under this hypothesis, act as an accelerator of social segregation, reinforcing capital gaps and inequality in a region. In consequence, capital accumulation and the exposure to life-chances are influenced by the spatial organization of settlements (cities vs. suburbs). The extent to which a social subject is exposed to life-chances affects equal opportunities and, therefore, social justice in space.

Capital resources are constituted at two distinct levels, influencing at each an individual's own wealth in a variety of fields of life. First, there is the personal level, generated mainly by the individual's family and close social circle, which acts to foster and nourish capital generation. Second, there is the local-municipal level, which is manifested in the municipality's investment policy toward local services and directed at cultural and social augmentation. Without being equipped with sufficient accumulation of capital resources, individuals will find it difficult to realize what can be seen as a positive liberty or what Bourdieu (1986b) perceived as the ability to attain respected positions on the social ladder. Capital accumulation influences personal life-chances and, thus, one's personal capabilities, the aim of which is to improve desirable functioning that will lead to achievements facilitating the obtaining of social positions.

The suggested theoretical scrutiny facilitates concretization of a potential metric of human well-being that in addition expresses the social and spatial mechanisms that determine what could be conceived as justice in space. Understanding human capabilities through its observation under a spatial lens promotes our comprehension of a person's mental feelings, such as happiness or self-confidence, in regard to what he or she could be or do. This understanding definitely goes beyond regular intuition of injustice, as it depicts the spatiality of justice or injustice in a concrete and normative manner.

Specifically, the effect of suburbanization processes on the ability of suburbanites to accumulate capital derives from the creation of distinct affluent communities. These social groups negatively affect the capabilities of those who are left behind (Jargowsky, 2001), therefore impairing the remaining social groups' freedom to function in different social fields and to live the kind of life they value. Accordingly, the hypothesis is that suburbanites are the beneficiaries of more ample and diverse capital resources than many of

their urban counterparts enjoy. What makes the spatial layout of a settlement unjust or just, according to this hypothesis, is not its formation per se, but the way the forms of capital are distributed among the different types of settlements in the region. It is assumed that suburban social homogeneity facilitates the creation, accumulation, and the transfer of capital forms, whereas urban heterogeneity hampers them.

The three forms of capital enable individuals to achieve a variety of social goods in diverse fields of life as Bourdieu and Wacquant (1992) claim. Under these circumstances, we expect that suburbanites would be exposed to more life-chances and would raise their position in the social hierarchy. As a consequence, and according to Sen's theory of capabilities, this situation may well lead to regional inequality and social injustice in space.

Data sources

The study's empirical analysis focused on the central region of Israel, specifically the area that is included within the boundaries of the Tel Aviv metropolis. It is a large area covering 1,518 km^2 comprising 7% of the territory of Israel. A total of 3.2 million people, constituting 43.5% of the total Israeli population, resided in the region in 2008, in 59 municipalities (including cities, local councils, and regional councils[6]). The Tel Aviv metropolis is characterized by a high level of specialization in finance and business activities (more than double the national average rate). It serves as the financial and administrative center at the national level. The region's economy has exhibited accelerated growth, especially in the first half of the 1990s, which was expressed by increases in labor, in the rate of employment, and in gross domestic product. As a result, this metropolitan region experienced intense suburbanization trends, the costs of which for the metropolitan society are under polemic debate (Razin & Shachar, 2007). Many small towns and rural communities within regional councils grew in population to become classic residential suburbs surrounding major cities in the region (see Figure 1). This rapid population growth characterized the metropolitan region's outer rings, as well. The trend reflected the emigration of large portions of affluent social groups from the core to the fringes of the metropolitan region. The alleged result was the creation of spatial segregation between cities and suburbs (Gonen, 1995; Marom, 2014). In this respect, the suburbanization trends that characterized the Tel Aviv metropolitan region followed the same path of urban sprawl detected in other parts of the developed world (Razin, Dijst, & Vazques, 2007).[7]

The 59 independent municipalities composing the Tel Aviv metropolitan region served as the research unit for the empirical examination.[8] Data were collected from available institutional data sets, including local authorities' data sets, the Social Survey and Labor Force Survey of the Israeli Central Bureau of Statistics, and reports of the Israeli Ministry of the Interior. Using this variety of sources to probe the research questions obviated the use of the preferable census-tract data to detect fine-grained observations in each municipality. Rather, it enabled dividing the 59 municipalities into two groups of urban forms: cities and suburbs.[9] Owing to the absence of a formal distinction between these two spatial entities, the present study employed several criteria taken from the literature to distinguish between cities and their suburbs. These indicators included population growth rate, immigration balance, population density, proportion of the residential area of the total built-up area, commuting rate, and transit mode to work (Warner & Hefetz, 2003, p. 5; Williamson, 2010, pp. 57–84). The typology obtained presented 25 cities and 34 suburbs, as well as a distinction between typical agrarian regional councils and regional councils

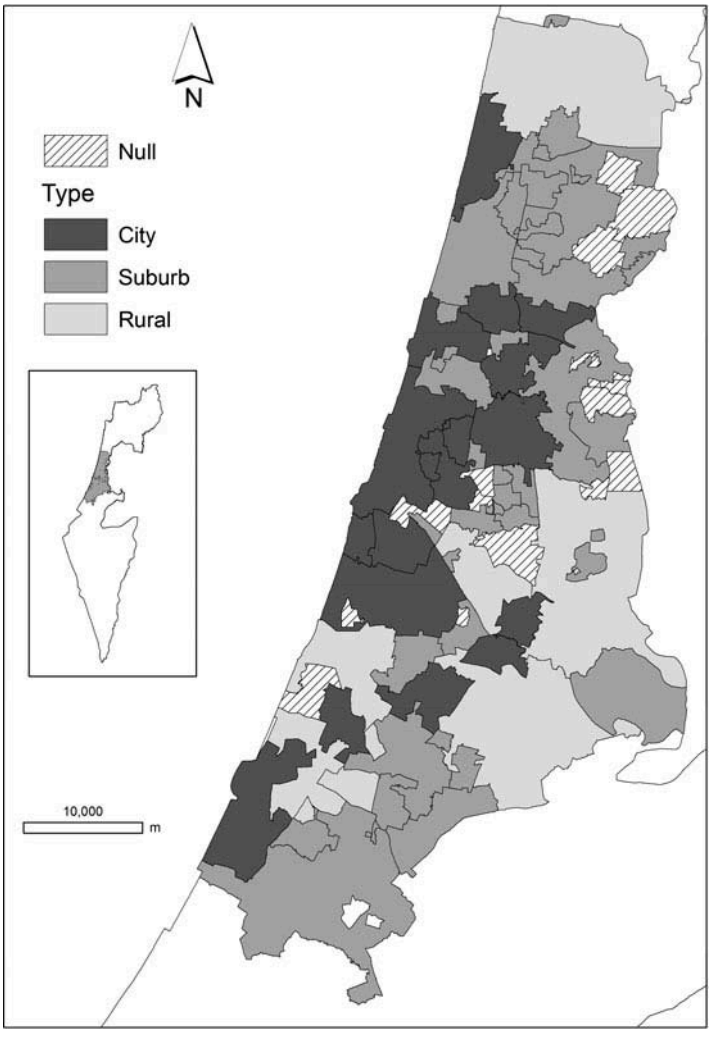

Figure 1. Tel Aviv metropolitan region—settlements types.

Source: Authors' analysis of Israel Bureau of Statistics data and other sources as described in the text.

that experienced significant suburbanization trends over the past few decades; the latter were converted into semi-urban entities (Sofer & Applebaum, 2006).

Methodology

A multivariable database representing personal capabilities and the three Bourdieuian capital forms was created from the official governmental data sets. The variables, which were defined in accordance with the data collected, represent individual or overall local (i.e., municipal) capital wealth and life-chances. The list of variables, their expected impact on capital accumulation, and general data are given in Appendix 1. In that table, variables 1–12 present economic capital, variables 13–24 cultural capital, variables 25–33

social capital, and variables 34–42 the items representing life-chances and personal capabilities.

In order to measure the gap between cities and suburbs in inhabitants' capital accumulation and life-chances, three types of statistical models were used in the analysis: factor analysis, difference-of-means *t*-test, and multiple regression models.

Factor analysis was employed as a data-reduction procedure on the sets of variables in order to test the theoretical definitions presented in the literature. This method enabled a grouping of the variables in each capital form and in selected life-chances into major factors[10] (see Galster et al., 2001). Each factor comprises a linear combination of all measures in each relevant field of knowledge and contributes to the total explanation of the variance (Kim & Mueller, 1978). The dominant variables in each factor enabled a categorization and labeling of the unique "identity" of the factor.[11] Labeling is an important step, since it allows a common terminology when examining the consistency of the outcome by means of the theoretical definitions of the three Bourdieuian capital forms and life-chances discussed earlier. These major factors actually manifest the ability to measure life-chances and capital accumulation empirically, thus justifying their use in estimating distributive inequality in space.

The next step involved building of local capital profiles, using the component scores obtained by the factor analysis for each factor. The scores were used to calculate a weighted index according to the percentage of the variance explained by each of the factors obtained in each relevant field. The weighted indices represent the total level of local capital presented by each of the three capital assets and life-chances. *t*-tests were applied to find the difference in weighted indices between urban and suburban entities.

Finally, multiple linear regression models were employed in order to examine the spatial impact of different capital resources on local life-chances. The major factors produced from the component scores of each form of capital served as explanatory variables, thereby representing their contribution to the weighted index of the local life-chances (the dependent variable). In the regression models, different combinations of factors belonging to the three forms of capital were used to avoid multicollinearity.

The specification of the proposed models is given in Equation (1):

$$WLLC_i = \beta_0 + \sum_{j=1}^{q} \beta_j ECF_{ij} + \sum_{h=1}^{r} \beta_{h+q} CCF_{ih} + \sum_{m=1}^{t} \beta_{m+r} SCF_{im} + \beta_{j+t} CS_i + \varepsilon_i \qquad (1)$$

where:

$WLLC_i$ is the weighted index of local life-chances (i.e., capabilities) in municipality i;

ECF_{ij} is the component score of the economic capital factor j (j = 1, …, q) in municipality i;

CCF_{ij} is the component score of the cultural capital factor h (h = 1, …, r) in municipality i;

SCF_{im} is the component score of the social capital factor m (m = 1, …, t) in municipality i;

CS_i presents either a dummy variable that distinguishes between cities (CS = 0) and suburbs (CS = 1) or, alternatively, the ln population size of municipality i;

β are the parameters to be estimated, and ε_i is the error term so that $E(\varepsilon) = 0$.

Results

Measuring capital forms and life-chances

The factor loadings derived from the principal component analysis procedures employed on the list of variables in each of the three capital forms and life-chances are presented in Tables 1–4. The analysis produced 3–4 main factors in each form of capital and in its related life-chances, with a total explained variance of more than 60%. At the overall level, the data set shows good sampling adequacy (Kaiser-Meyer-Olkin (KMO) measure: 0.623–0.712). The results also match the previously defined continuums presented in Appendix 1.

Economic capital

The first factor, "Material Inputs—Potential and Allocation," explained 24% of the total variance; this factor represents the investment (potential and actual) in acquiring and elaborating all sorts of capital goods (Table 1). It comprises, for example, variables that represent private motorization rates and local authorities' income. In many developed countries, the latter express a municipality's potential to invest economic inputs, which might assist in enhancing its inhabitants' welfare and living amenities (Fennell, 2001). The present study pointed to the rate of BA students studying in private academic colleges with high tuition as an indicator of economic capital, since for the most part only economically well-established families can afford such institutions. The second economic capital factor, "Human Capital," explained 18.3% of the total variance. The main contributor to this factor is the percentage of upper white-collar professions (Table 1);

Table 1. Factor analysis of economic capital: major factors[a] and factor loading (KMO = 0.712).

	Component (groups of factors)[b]			
Variables	1	2	3	4
% of BA students (20–29-year-olds) studying in private academic colleges	**0.851**	0.113	0.338	0.086
The 45–65 age population of the total population	**0.792**	0.115	−0.100	−0.056
Private motorization rate	**0.684**	0.322	0.089	−0.053
% of local authority self-income of its total incomes	**0.579**	−0.017	−0.105	−0.481
% of scientists, academics, and other professions of the total number of employed individuals	0.013	**0.925**	0.105	0.151
% of workers in producer services, technology, and R&D of the total number of employed individuals	0.287	**0.855**	−0.049	−0.132
Average income among employed women	0.492	**0.566**	0.403	0.187
% of households owning an additional house	0.014	−0.044	**0.814**	−0.073
% entitled to income support of total number of employed individuals	−0.192	−0.333	**−0.742**	−0.145
% of parents who economically support their offspring	−0.561	0.040	**0.612**	0.294
% having a big chance to find an alternative job with the same level of income if they lose their current job	−0.111	0.157	−0.089	**0.863**
% capable of covering household expenses	0.093	−0.156	0.474	**0.646**

Notes: [a]Major factors were defined by eigenvalues >1.
[b]Dominant measures were defined as those with an absolute value of the component coefficient greater than 0.5. In order to facilitate labeling the factors, the dominant items are marked in bold.
Source: Authors' analysis of Israel Bureau of Statistics data and other sources as described in the text.

however, another contributor is the average income of employed women. The latter is important, since the average income of women in Israel (as in many other countries) is generally lower than men's income. Human capital, therefore, is considered an essential factor in contributing to economic growth (Becker & Woessmann, 2009).[12]

The third factor, "Inter-Generational Stability and Economic Support," explained 17.3% of the total variance; it comprises variables that manifest intergenerational stability, such as owning an additional house or the rate of inhabitants entitled to income support from the state. The factor allows detecting local authorities that have attracted social groups with the ability to preserve and enhance all sorts of capital forms in order to better execute functionings in a variety of fields of life. The last factor, "Welfare Standards," articulates an index of perceived economic welfare; although it contributes the lowest share of the explained variance (13.3%), this factor indicates the level of economic welfare characterizing local inhabitants.

Cultural capital

The first factor, explaining 24% of the variance, represents "Institutionalized Cultural Capital" (Table 2). It is composed of university degrees, matriculation attainments, and dropout rates, which act as antecedent roots in explaining institutionalized credentials (both academic and nonacademic). For example, dropout rates are negatively related to

Table 2. Factor analysis of cultural capital: major factors[a] and factor loading (KMO = 0.684).

	Component (groups of factors)[b]			
Variables	1	2	3	4
% entitled to matriculation and meeting universities' minimum requirements (out of the total number of 12th grade pupils)	**0.870**	0.119	0.196	−0.009
% of BA students in universities (of the 20–29 age inhabitants)	**0.846**	0.335	0.059	0.044
% of 15+-year-olds with an MA or PhD	**0.786**	0.191	0.249	−0.246
% dropping out of school (of total number of pupils)	**−0.667**	0.026	0.307	−0.140
% of local authority additional investment in education	−0.019	**0.868**	−0.169	−0.140
Per-capita payment by the local authority for cultural expenditures (thousand New Israeli Shekel (NIS))	0.283	**0.847**	0.202	0.102
% of workers employed in humanities and creative occupations of the total number of employed individuals	0.315	**0.684**	0.301	0.024
% knowing very well how to write in English (of the total population)	−0.027	0.266	**0.735**	−0.018
% participating in enrichment classes in the past 12 months (of the total population)	0.382	−0.002	**0.728**	0.191
% using a computer for their studies (of the total population)	−0.054	−0.140	**0.708**	0.543
% area (km^2) dedicated to culture and recreation facilities (per 1,000 inhabitants)	0.157	−0.046	−0.035	**0.894**
% of students studying at the Hebrew University and at the Technion (of the total number of university students)	−0.159	0.052	0.265	**0.598**

Notes: [a]Major factors were defined by eigenvalues >1.
[b]Dominant measures were defined as those with an absolute value of the component coefficient greater than 0.5. In order to facilitate labeling the factors, the dominant items are marked in bold.
Source: Authors' analysis of Israel Bureau of Statistics data and other sources as described in the text.

university students in the locality and to high academic attainments. The factor facilitates the detection of municipalities where local inhabitants might benefit from the ability to convert cultural capital into economic dividends and from the intergenerational cultivation of cultural capital inputs that preserve cultural-economic patterns of distinction in space (De Graaf, De Graaf, & Kraaykamp, 2000; Roscigno, Tomaskovic-Devey, & Martha, 2006). Indeed, the second factor, "Fostering Inputs," which explained 18.3% of the total variance, represents the relationship between the individual and one's family, on the one hand, and the local authority, on the other hand, in their respective abilities to invest all sorts of fostering inputs. These inputs are aimed at nurturing and enhancing elements of cultural assets. For example, the cultural factor is related to professional and academic credentials and to occupations perceived to have ample cultural capital, such as education, arts, the humanities, and administration (Bourdieu, 1977; De Graaf & Kalmijn, 2001).

The third factor, which explained 16.6% of the total variance, represents "Embodied Cultural Capital," which relates to both consciously acquired and passively inherited properties of one's self through socialization processes over time (Bourdieu, 1986b). This sort of capital might be embedded in social groups, which convert accumulated cultural capital into other forms of capital. In this way, they benefit from material dividends in the market, while enhancing their opportunities in it through, for example, participating in enrichment classes and knowing foreign languages (Bourdieu & Passeron, 1990, p. 114). Lingual wealth reduces negative images related to social class or ethnic origins (De Graaf et al., 2000). The last factor, associated with "Symbolic-Objectified Capital" at both the personal and the local level, explained 13.3% of the total variance. This factor relates, for example, to the ability to be accepted by prestigious universities and to the local authority's allocation of land dedicated to cultural and recreational facilities, symbolic values that might enhance individual dividends in a variety of fields of life.

Social capital

The first factor manifests local "Individual Social Bonding," indicating the level at which social cohesion exists in the municipality (Carpiano, 2006; Putnam, 2000) (Table 3). This factor, which explained 29.2% of the variance, marks the existence of highly developed social networks, manifested in the perceived sense of security among community members. This factor includes variables representing the locality's common moral identity, which might enhance social networking, a factor that in itself could pay high economic and cultural dividends in the future (e.g., military service in the Israeli army). In addition, the factor includes variables of satisfaction in regard to social relationships in the locus. High rates of trust and moral similarity are considered important features that might lead to the successful management of local resources and a reduction in the high costs of supervision and policing (Ostrom, 1990).

And indeed, the second social factor, which contributes 21.9% of the variance, is composed of items that describe local "Social Control and Support Networking" (Carpiano, 2006). This factor combines variables that indicate volunteering characteristics in the community (Dipasquale & Glaeser, 1999), in contrast to juvenile delinquency levels and the rate of single-parent households in the locality. The negative sign borne by the component scores of the last two variables reveals their negative role in producing and accumulating social capital. For example, single-parent households tend to manifest less stable lifestyles, greater social distortion, and reduced school achievements (Demo & Cox, 2000).

Table 3. Factor analysis of social capital: major factors[a] and factor loading (KMO = 0.623).

Variables	Component (groups of factors)[b]		
	1	2	3
% highly satisfied with their relationships with neighbors (of total population)	**0.831**	0.300	0.106
% serving in the IDF (of the total population)	**0.816**	0.008	−0.179
% highly satisfied with their friendship bonds (of the total population)	**0.758**	−0.184	0.086
% reporting very secure living environment (of the total population)	**0.638**	0.464	−0.151
% who volunteered in the past 3 months (of the total population)	−0.202	**0.769**	0.180
% of juveniles being treated by probation officer (rate per 1,000 inhabitants)	−0.182	**−0.733**	0.391
% of single-parent households	−0.402	**−0.665**	−0.350
Municipal expenditures on security (of total local expenditures)	0.187	0.119	**−0.654**
% of municipal expenditures on immigration absorption (relative to total expenses)	0.154	0.190	**0.606**

Notes: [a]Major factors were defined by eigenvalues >1.
[b]Dominant measures were defined as those with an absolute value of the component coefficient greater than 0.5. In order to facilitate labeling the factors, the dominant items are marked in bold.
Source: Authors' analysis of Israel Bureau of Statistics data and other sources as described in the text.

The last factor, "Municipal Input of Social Bonding," combining two budgetary expenses of the local authority in regard to social bonding, immigration absorption and security transactions, contributed 13.1% of the variance. The ethnic composition of the locality represents communal sentiments and social bridging ligatures (Forrest & Kearns, 2001, p. 2131). The analysis implies that municipalities characterized by high rates of immigration suffer from reduced social cohesion, a characteristic that might signify social turmoil, or be a predictor of it (Putnam, 2007). Therefore, municipal investment in immigration absorption reflects efforts to reduce social instability and to strengthen social capital bridging among the municipality's inhabitants. This kind of social capital facilitates the building of connections among heterogeneous groups, thus fostering social inclusion (Schuller, Baron, & Field, 2000). The opposite outcome is reflected in a municipality's investments in social control and security measures. The factor indicates that the weaker the social bonding in a locality, the larger the investment that is needed to prevent crime and delinquency. Phrased in other terms, the higher the social capital, the lower is the need to enforce law and order by means of the police and other security measures (Sampson, 2001).

Local "Life-Chances and Personal Capabilities" were represented by nine variables listed in Table 4.

The first factor, manifesting "'Social-Economic Stability," explains 24.8% of the variance. It consists of commuting, home ownership,[13] and number of available cars. Households with 3–4 children reflect relatively stable and protective nuclear families, which enable children and young people to develop a healthy lifestyle (Demo & Cox, 2000; Peres & Kats, 1981). Commuting and the availability of cars represent the capability to be mobile, accessible, and affiliated to preferred job opportunities in space, thus securing economic stability and a platform from which to realize personal aspirations. The factor signifies, among others, a stable and caring family, as well as a capability to be affiliated with various social organizations and institutions (as their workplace through

Table 4. Factor analysis of life-chances: major factors[a] and factor loading (KMO = 0.656).

Variables	Component (groups of factors)[b]		
	1	2	3
% of households holding 2+ cars	**0.779**	−0.047	0.407
% of 15+-year-olds working outside their locality	**0.725**	0.220	0.066
% of households owning their own home	**0.723**	−0.433	−0.405
% of households with 3–4 children	**0.565**	0.355	0.248
% believing that their life will be even better in the future	0.147	**0.864**	−0.161
% highly satisfied with life	−0.054	**0.834**	0.216
% highly satisfied with their housing location	0.371	**0.627**	0.533
% highly satisfied with the open spaces at their locality	−0.031	0.090	**0.898**
% reporting high correlation between their occupation and field of study	0.314	0.028	**0.661**

Notes: [a]Major factors were defined by eigenvalues >1.
[b]Dominant measures were defined as those with an absolute value of the component coefficient greater than 0.5. In order to facilitate labeling the factors, the dominant items are marked in bold.
Source: Authors' analysis of Israel Bureau of Statistics data and other sources as described in the text.

which they integrate into the organizational–institutional layout of their peer society); this taking part in various social interactions constitutes the social conditions that advance self-dignity (Nussbaum, 2006, p.76).

The second factor, "The Ability to Feel Control over the Individual's Own Life," explains about 24.5% of the variance. This capability is manifested in individuals' stated beliefs regarding perceived satisfaction with their current status in different fields of life. The optimism or pessimism that emanates from this belief reflects the individual's competence in converting decisions about his/her life into economic-social utilities.[14] In that sense, it is consistent with Nussbaum's (2006, p. 77) argument regarding the ability to participate effectively in political choices that govern one's life, to possess property, and to benefit from the freedom of unwarranted search and seizure of preferred positions in the labor market.

Finally, the third factor represents an index of "Equal Access" to preferred work opportunities (e.g., employment in a field that one studied) and other amenities (e.g., open spaces), thus determining the personal set of opportunities in space. This last life-chance factor, which accounts for about 22% of the 72% of the total explained variance, shows that educated people employed in their field of study tend to enjoy a better environmental quality of life.

The low level of correlation coefficients ($r < 0.5$) obtained in the study among most of the different factors composing the three forms of capital indicates that these variables are complementary and do not substitute for one another. Table 5 presents the results of the statistical analysis (t-test) conducted to compare cities and suburbs located in the Tel Aviv metropolitan region. These results show significant differences in integrated indices of life-chances and capital forms between cities and suburbs. Suburbs benefit on average from a higher capital z-score than do cities. For example, a suburban sector's average z-score in cultural capital is 1.73 times that of a city's, and this difference is statistically significant at the 95% level. These gaps support the hypothesis that suburbanites benefit from ample and diverse capital resources more than do many of their urban counterparts. At the same time, the results support the hypothesis that inhabitants of the suburbs also

Table 5. Differences in capital resources accumulation and life-chances between cities and suburbs (*t*-test).

	N	Mean component score	SD	*t*	Sig.
Economic capital					
1. Cities	25	−0.171	0.516	−2.296	0.025
2. Suburbs	34	0.126	0.474		
Cultural capital					
1. Cities	25	−0.162	0.507	−2.148	0.036
2. Suburbs	34	0.119	0.488		
Social capital					
1. Cities	25	−0.274	0.863	−3.096	0.003
2. Suburbs	34	0.202	1.096		
Life-chances					
1. Cities	25	−0.356	0.641	−4.366	0.000
2. Suburbs	34	0.262	0.348		

Source: Authors' analysis of Israel Bureau of Statistics data and other sources as described in the text.

benefit from better exposure to life-chances (Z_i = 0.262) than do their city counterparts (Z_i = −0.356). This difference is statistically significant at the 95% level (α = 0.002).

Results of the linear multiple regression models

In the last stage of the study, we employed multiple regression models in order to examine the effect of different accumulations of capital on life-chances, while controlling for the formation of urban entities (city vs. suburb). The weighted index of life-chances (dependent variable) was then regressed on the independent variables (economic, cultural, and social forms of capital), which are closely intertwined in these models (Table 6). The R^2 range between 62% and 77% reveals that the four models performed well in explaining life-chances in space.

As expected, different capital resources have for the most part a positive and significant association with the life-chances weighted index. The results indicate that social groups within the Israeli central region that benefit from high values of economic, social, and cultural capital resources also enjoy greater opportunities and capabilities to improve their quality of life. However, the factor of "Municipal Input of Social Bonding" in models C and D suggests an opposite relationship. That is, the higher the municipality's performance in this regard in a given locality, the lower is the expectation that its inhabitants will be exposed to capabilities and life-chances. This negative linkage is not surprising, though, given its role in producing or depressing social capital as was discussed previously in the section on measuring capital forms and life-chances. The results here coincide with Putnam's (2007) observation that immigration and ethnic diversity tend to reduce social solidarity and social capital. Therefore, in the case of the Tel Aviv metropolitan region, social diversity does not relate to equity, thus confirming Susan Fainstein's (2010) concern that these two concepts of her "Just City" model might contradict each other.[15]

Furthermore, of the four models tested, models A and D are stronger, since the effect of the independent variables is statistically highly significant at the 95% or 99% level,

Table 6. Multiple regression results of the determinants of life-chances.

	Variables	Model A	Model B	Model C	Model D
	Intercept	−0.551 (0.148)***	−0.472 (0.149)**	−0.620 (0.166)***	0.591 (0.127)***
Economic capital	Human capital	0.107 (0.042)**			0.099 (0.039)**
	Welfare standards		0.089 (0.048)*	0.127 (0.050)**	
	Intergenerational satiability and economic support		0.169 (0.047)**		0.101 (0.042)**
Cultural capital	Symbolic-objectified culture capital	0.242 (0.043)***	0.137 (.047)**	0.264 (0.052)***	0.123 (0.048)**
	Embodied cultural capital	0.164 (0.043)***			
Social capital	Individual inputs of social bonding	0.204 (0.049)***	0.202 (0.054)***		0.192 (0.046)***
	Social control and support networking			0.147 (0.050)**	
	Municipal inputs of social bonding			−0.100 (0.051)*	−0.075 (0.041)**
Cities versus Suburb	Dummy variable (City = 0, Suburb = 1)	0.350 (0.091)***	0.299 (0.091)**	0.394 (0.101)***	
	Population size (ln)				−0.189 (0.039)***
Number of observations		59	59	59	59
Adjusted R^2		0.74	0.71	0.62	0.77
F		33.97	29.60	19.50	34.74

Notes: Figures in parentheses are standard errors.* $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.
Dependent variable in all models—life-chances weighted index.
Source: Authors' analysis of Israel Bureau of Statistics data and other sources as described in the text.

while the effect of some of the independent variables in the other two models, B and C, is statistically significant at a more moderate level—90%.

Controlling for the factors entered into the models allowed an examination of the net effect of an inhabitant's location (a city or a suburb) on the prediction of the life-chances weighted index. We can see, for example, that the dummy variable in models A, B, and C, which differentiates between cities (defined as 0) and suburban local authorities (defined as 1), has a significant and positive influence on life-chances. That is, the more suburban the entity, the more its inhabitants will benefit from meaningful capabilities to be socially mobilized. In model D, the ln form of the population size was used instead of the dummy variable. This continuous variable shows a negative relationship between the population size of a municipality and life-chances. These results, too, confirm the hypothesis that suburban inhabitants benefit from more ample and diverse capital resources than do many of their urban counterparts.

The contribution of the variables to a model's general level of explanation is demonstrated in Table 7, in which a stepwise method was employed. We can see that the factor of "Social Bonding" in models A and B contributes the most to the explanation of the variance. In model C, the major contribution is ascribed to the dummy variable, "Cities vs. Suburbs," while the "Population Size (ln)" factor contributes the largest explanatory proportion in model D. The results arising from models A and B are consistent with recent studies from the United States, for example, that indicated that social cohesion was

Table 7. Stepwise regression results.

Independent variables	Adjusted R^2	The added contribution to explanation
Model A		
Individual inputs of social bonding	0.493	0.493
Symbolic-objectified culture capital	0.582	0.088
Cities versus Suburbs	0.646	0.064
Embodied cultural capital	0.713	0.066
Human capital	0.740	0.026
Model B		
Individual inputs of social bonding	0.493	0.493
Intergenerational satiability and economic support	0.603	0.109
Dummy variable (City = 0, Suburb = 1)	0.661	0.058
Symbolic-objectified culture capital	0.698	0.037
Model C		
Dummy variable (City = 0, Suburb = 1)	0.271	0.271
Symbolic-objectified culture capital	0.475	0.203
Social control and support networking	0.546	0.071
Welfare standards	0.594	0.047
Model D		
Population size (ln)	0.592	0.592
Individual inputs of social bonding	0.678	0.088
Intergenerational satiability and economic support	0.730	0.051
Human capital	0.753	0.023
Symbolic-objectified culture capital	0.767	0.013

Note: $N = 59$.
Source: Authors' analysis of Israel Bureau of Statistics data and other sources as described in the text.

expected to be stronger in less dense settlements (i.e., suburbs) than in agglomerated urban entities (see, e.g., Brueckner & Largey, 2008; Williamson, 2010).

It is interesting to note that even after controlling for the other variables, the economic forms of capital make relatively less of a contribution to the prediction of life-chances. This finding supports the theoretical argument underlying the current study, that probing only economic variables might conceal other capital forms explaining the existence of equality of opportunity in space. Therefore, the regression results seem to indicate that equal opportunity is not only about money and material assets but also about more abstract forms of social and cultural resources. Still, it seems from the regressions applied that even the cultural capital factors that were entered into the models made a relatively less meaningful contribution to life-chances, than the other capital factors.

Conclusions

The current research regarding the social costs of intense suburbanization processes admittedly suffers from a lack of empirical evidence that could directly support or reject the arguments raised in discussions of this phenomenon. The literature on this inquiry has tended to overlook the philosophical notion of the meaning of justice. Instead, simplistic measures are proposed that capture an overall or aggregate construct of resources, mainly economic in nature. Such an approach, as this paper has argued, neglects the intricacies concealed in different resources that facilitate the achievement of different goals.

The current study presents an initial endeavor to convert the abstract notion of justice, as conceived in the liberal stream of thought, into an entity subject to empirical examination, one in which the social disparities engendered by suburbanization and sprawl could be better measured and understood. Unfortunately, the theory of justice does not supply a metric scale or a numerical cutoff point below which, for example, the situation would be considered unjust and above which it would be considered just. Using measurements of capital assets as suggested in this study may contribute to producing a metric-like scale of justice. Different variables have been employed in several other studies in the past in order to measure spatial differences in capital accumulation (see, e.g., Gatrell, Popay, & Thomas, 2004). However, the added value of the present study emanates from an exploration of the extent and variance to which people are exposed to a set of life-chances across space as a function of capital accumulation. Taking this approach, the present work hopes to shed some light on the circumstances that can be depicted as either just or inequitable.

The empirical results revealed that fundamental spatial gaps in the measured value of the three Bourdieuian forms of capital exist between cities and suburbs in the Tel Aviv metropolitan region. These results imply that suburban inhabitants benefit from a larger accumulation of economic, cultural, and social capital assets than do urban inhabitants. In addition, the results indicate that suburban inhabitants benefit from larger capabilities (represented by the life-chances weighted index developed in the study) than do city inhabitants to advance up the social ladder. The extent of these accumulations, which are expressed in the variables put forth to measure capital assets, seems to differ significantly between cities and suburbs. This finding confirms our research hypothesis regarding the city–suburb cleavage. Surprisingly, economic capital was found to be a relatively weak predictor of life-chances compared, for example, to social capital. Now the question is, does this unequal distribution of resources and opportunities in space create spatial injustice?

The study examined suburbanization, not necessarily as the primary driver of fundamental social inequalities, but as an important vehicle by which inequalities might be

extended over time and as an important product of fundamental social inequalities. Since equality of opportunity (or capabilities) is one of the indicators of social justice (Rawls, 1971; Sen, 1992), the gaps identified probably lead to spatial segregation and deprivation and, therefore, to social injustice in the Tel Aviv metropolitan region.

Regression models were employed to confirm this contention. These models revealed direct relationships between capital accumulations and capabilities. The dependency of life-chances on the extent of accrued economic, cultural, and social capital was proven by the existence of a significant statistical association between capital and life-chances indices. The unequal accumulation of capital resources between suburban and city inhabitants probably influences the capabilities of the former to lead or more freely choose one form of life or another. Without these capabilities, they would not be able to execute their freedom to achieve different functionings (Robeyns & Brighouse, 2010), a situation that could hurt the distribution of real equal opportunities in space. In accordance with this theoretical construct, the current spatial distribution of goods would seem to be unjust in the region studied, because it depicts unequal opportunity conditions among different forms of settlements. That said, it should be borne in mind that this relationship is an evolutionary process that may further deepen and perpetuate injustice. The explanation for this eventuality follows.

In Bourdieu's theoretical rationale, being disadvantaged leads to an unconscious acceptance of domination, thus conceding larger ambitions or constraining mental capabilities from flourishing beyond a relative position. Sen describes this pattern of thinking as "capability failure" (Bowman, 2010); that is, it reinforces deprivation and social classification for many of the least advantaged in the cities, in contrast to the affluent, who reside in distinctive suburbs. A cruel cycle is produced, since the ability of individuals to accumulate capital, and thus determine their position in a given social space (i.e., class stratification), is adversely affected. For example, capability failure shapes the context in which the next generation of many of the worst-off communities in the cities is reared. Under this theorization, offspring inherit understandings of what it means to occupy a particular social space, thereby legitimizing the same divisions as their parents' capabilities and, hence, their own future functionings (Sayer, 2011; Skeggs, 1997).

Of course, the evolutionary depiction of power relationships in space might stimulate the question of cause and effect. That is, does possession of various forms of capital drive residential location? Or does location lead to the acquisition of these forms? We cannot answer the question at this time, but the speculation is that immigrating to the suburbs would be impossible without a sufficient amount of economic capital. Moreover, without sufficient cultural capital or even social capital, an individual or family would find it difficult to be absorbed and assimilated in communities that are highly distinctive in nature as many Israeli suburbs are.

One more important point implied by the results of the study is the fact that they seem to be opposed to concepts promoting the diversification of cities as a measure of justice (Fainstein, 2010; Sandercock, 1998). In contrast to recent urban-utopian theories, personal capabilities are negatively related to social heterogeneity. This finding complements the argument that diversity actually contradicts to some degree the concept of equity (Florida, 2002) or democracy (Harvey, 1997; Putnam, 2007). This outcome is being realized under deepening suburbanization, thus removing even further the possibility of obtaining social justice in space.

Beyond adding to theoretical meanings, the study enlarges the methodological scope of similar inquiries in the past. It allows us to think big, by measuring larger entities, while thinking small, by measuring the very mechanisms that influence a person's liberty. In this

regard, our approach departs from previous studies. To start with, it expands the geographical scale and scope usually applied in Bourdieu-inspired urban research, which focuses mainly on small and medium scales (see, e.g., Bridge, 2006; Podmore, 1998). The present study also goes beyond the usual quantification of segregation and housing distinctions, which use regular indices of dissimilarity along lines of race, ethnicity, religion, or class. The latter kind of analysis is predetermined by and large by more immediately observable spatial units, such as statistical areas or census tracts, and is limited to the set of variables that are collected there (Lee et al., 2008; Reardon et al., 2008; Wong, 2003). The current study disconnects this linkage, thus enabling a broadening of the epistemological and methodical possibilities for this type of study.

It seems, then, that the spatial methodology proposed here enables a measurement of complex social spaces. The use of different measurements not associated with one another (i.e., low correlation coefficients) reflects this complexity. That social space is complex is indicated by the fact that various municipalities in the region are ranked differently in the capital accumulation hierarchy for each form of capital examined. This implies that space in the Tel Aviv metropolitan region is fractured and heterogeneous, that residents in different forms of settlements are dispersed across a social space that warps the visible physical space. The complexity of Tel Aviv's social space described here coincides with Marom's (2014) recent study, which shows that this metropolitan area has been greatly influenced by spatial practices of segregation and differentiation, manifesting historical–cultural changes and the turbulence of political-economic systems in regard to ethno-national conflict.

These new insights of the current study have the potential, for example, to assist policy-makers in formulating local policies that advance sustainability. The economic, cultural, and social assets that people accumulate and reproduce act as human resources and are available to localities and regions. As such, they could be utilized to determine regional "Development Engines"—to develop economic, social, and political bases that could promote the interests of a growing number of social segments in the metropolitan space. Based on the indices developed in this study, local authorities could initiate sets of capital resources that would enable their inhabitants to improve their life-chances from the outset, thereby constituting an initial step toward the alleviation of spatial injustice.

However, it should be remembered that the interpretations attached to the current study need to be examined with the awareness of its limitations. To start with, the definitions of capital and capabilities depend upon the set of variables determined by the researchers. Therefore, the social space comprising the three forms of capital is structured by the variables selected (Gatrell et al., 2004). Future studies that will be based on the combinations of the variables suggested here may provide a more reasonable representation of the social space in the Tel Aviv metropolitan region, as well as in the metropolitan regions of other Western countries. In this context, one should bear in mind that the Tel Aviv metropolitan region experienced the same path of urban sprawl as many other Western metropolises, and is characterized by a similar path of disurbanization and functional decentralization (Frenkel, 2007; Razin et al., 2007). This is not surprising, though, if one considers the laissez-faire virtue that has adhered to Israel's spatial development over the past 25 years, and the country's general political climate, which embraces privatization and rejects overregulation. It seems, then, that the current inquiry could serve as a representative case study of many other metropolitan regions in the Western hemisphere. Nevertheless, it is still a case study, and therefore its findings need to be enlarged by other case studies in order to validate the theory proposed.

Furthermore, the municipal level explored here might be quite limited in itself. Large metropolitan data sets refer to the averages of very heterogeneous entities, such as cities (and even some suburbs), that reflect the data complexity of the Tel Aviv region. The methods used in this study are set within the context of the Bourdieuian perspective, which offers an appropriate basis from which such analyses might proceed. For example, future research could collect data on capital resources and personal capabilities at the level of individuals and their families, thus modifying the drawbacks associated with the metropolitan level.

Funding

This work was supported by the Israel Science Foundation under grant number [888/09].

Notes

1. Even though the capability approach can be understood to be individualistic, it does account for social relations and the constraints imposed on and opportunities offered to individuals by societal structures and institutions (Robeyns, 2005). Capabilities represent a concept of human well-being, reflecting social and environmental factors that influence the conversions of commodities into functionings and taking into account the influence of societal structures and constraints on a person's choices. Thus, economic exploitation, racism, oppression, and discrimination are already taken into account in the conversion of a capability set into real functionings (Drèze & Sen, 2002).
2. In contrast to formal liberty or negative liberty. The latter means the freedom of the social subject from any formal constraints. For further reading regarding the theoretical foundations of the two concepts of liberty, positive and negative, see Berlin (1970, pp. 118–172).
3. Spatial justice refers to institutions, policies, discourse, and practices involved in formulating the organization of space, thus shaping just and unjust human interactions across it (Soja, 2010a). Social practices (under this Neo-Lefebvrian theorization regarding the "Production of Space") eventually produce social arrangements that conceal the asymmetry of power relations in this space.
4. Measurement in the current study relies on the developing practice of operationalizing Sen's approach in a set of empirical studies (e.g., Anand, Hunter, & Smith, 2005; Krishnakumar & Ballon, 2008). Major international institutions, foremost among them the United Nations, developed the Human Development Index (HDI) (UNDP 1990–2008) to measure capabilities according to Sen's theorization. This is definitely one of the few instances in the social sciences of transforming a conceptual perception of justice to a measurable subject.
5. Bourdieu's tripartite understanding of capital has been heavily quantified during the past two decades, first and foremost by Bourdieu (1986a) himself in his seminal book *Distinction*, which ignited a vast literature that measured his theory empirically in different sociological contexts (see, e.g., Robson & Sanders, 2010). However, most of these studies did not measure his concept in the spatial perspective.
6. Regional councils in Israel are one of the three types of local government entities and Israeli-administered territories with the other two being cities and local councils. Regional council is usually responsible for governing a number of settlements spread across rural areas, and is usually scattered over a relatively large area within geographical vicinity of each other.
7. Besides fierce suburbanization, the last two decades witnessed a renewed convergence into the inner parts of the Tel Aviv metropolis (Frenkel, 2007). This counter sprawl reflects, inter alia, urban renewal processes (gentrification), which are evolving mainly in the metropolitan core, the city of Tel Aviv. Like many gentrified cities in the Western world (Smith, 1996), Tel Aviv's urban renewal expresses the evolution of new urban life styles of socially and spatially mobile young groups seeking to be distinct from the suburban middle class mainly by relocating to the historic heart of the city (Marom, 2014). This phenomenon, being beyond the subject of the current paper, calls for its own inquiry.
8. These 59 municipalities represent all the local authorities that exist in the region, except for seven Arab municipalities (constituting 3.5% of the total population of the metropolis in

2008). For the purpose of this study, the inclusion of these Arab local authorities was not relevant, since no Arab cities have developed similar suburbs as appears in the Jewish sector. No new Arab towns or localities have been established in Israel since its inception. (Only a small number of communities recognized later, not at the Tel Aviv metropolitan region.) As a result, the development of the Arab urban structure is different from the Jewish. The pattern of development in the Arab urban structure does not include the formation of cities and suburbs thus is not relevant for the discussion on the subject of social capital and inequality in the context of cities–suburb cleavages.

9. In order to probe the normative social contentions against urban sprawl, we preferred a simple typology that differentiated between cities and suburbs, rather than a progressive division of the metropolitan space.
10. Main factors were defined by eigenvalues >1.
11. Dominant measures were defined as those with an absolute value of a component coefficient greater than 0.5. These measures were taken from the Rotated Component Matrix table produced from the Principal Components procedure by the Varimax method of rotation.
12. Human capital is conceived in this paper as an outcome of Bourdieuian capital resources, thus serving as a product of investment ensuing from these forms of capital. Human capital approaches suggest linear models, in which there is a direct linkage between the investment in acquiring education/professional knowledge and monetary income (Kalaitzidakis, Mamuneas, Savvides, & Stengos, 2001). Bourdieu capital resources, on the other hand, are much less linear. The linkage between capital forms and their returns is much more complex, diverse in its variables, and highly intangible (Bourdieu, 1986b, pp. 243–244).
13. Home ownership is believed to represent opportunity rather than economic capital, even though it can be seen as a material asset promoting economic welfare. The first home owned represents a chance to secure a fixed and stable accommodation, while ensuring an inheritance for offspring. Owning one's own housing is not an exceptional asset in Israel (Israel Central Bureau of Statistics (CBS)). Furthermore, many who own their own homes owe large mortgages to banks, thus gnawing away their disposable income. In this study, only the ownership of more than two houses was considered a meaningful economic capital (see Appendix 1). Multiple ownership of housing might signify additional or enhanced disposable income, thus broadening the accumulation of economic capital.
14. This logic is based on Galster and Killen's (1995) definitions of spatial opportunities, according to which opportunities are affected, among others, by the individual's perceptions and beliefs regarding his/her capability to make and convert decisions in different fields of life into economic–social utilities.
15. However, this might result from the effect of scale and measurement. Different geographic scales produce different outcomes in regard to social networks and a person's access to resources and opportunities. Analyzing social capital at different geographic scales (i.e., local, regional, and national) depicts different community and organizational relationships that enhance or decrease an individual's life-chances, depending on which social relationship the scale of measurement enables capturing (Bebbington, 1999). For example, measuring social capital at the local scale captures the extent to which a community is homogeneous or heterogeneous, whereas this characteristic is much more difficult to capture at large or aggregate geographic scales (e.g., metropolitan or regional). Thus, capturing the homogeneity of social groups along lines of class, race, gender, or other cultural identity enables researchers to analyze their access to different life-chances; such groups manifest a shared experience and strong intragroup communication, producing networks of trust and mutual accountability that might be absent in large, diverse urban entities (for further discussion, see Glover, Parry, and Shinew (2005), Ryan (2011), and Woolcock (1998)).

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Appendix 1. Capital forms and selected life-chances variables.

No.	Variable	Direction of impact on life-chances and capital accumulation	Metropolitan average	SD
Economic capital variables				
1.	Average income among employed women (NIS), 2006[d]	+	5,601	1,235.6
2.	% of BA students (20–29-year- olds) studying in private academic colleges, 2003/2004[f]	+	2.6	1.5
3.	Private motorization rate, 2006[d]	+	294	80
4.	% having a big chance to find an alternative job with the same level of income if they lose their current job, 2006[a]	+	62.3	10.3
5.	% of parents who economically support their offspring, 2006[a]	+	57	13.3
6.	% capable of covering household expenses, 2006[a]	+	13.2	4.6
7.	% of households owning an additional house, 2006[a]	+	14.3	6.4
8.	% entitled to income support of total number of employed individuals, 2006[a]	-	5	5.3
9.	% of scientists, academics, and other professions of the total number of employed individuals, 2004[b] (*)	+	10.3	4.7
10.	% of workers in producer services, technology, and R&D of the total number of employed individuals, 2004[b] (**)	+	18.8	9.7

(*Continued*)

Appendix 1. (*Continued*).

No.	Variable	Direction of impact on life-chances and capital accumulation	Metropolitan average	SD
11.	The 45–65 age population of the total population, 2006[d]	+	20.8	3.5
12.	% of local authority self-income of its total incomes, 2006[e]	+	56.5	10.7
Cultural capital variables				
13.	% of local authority additional investment in education, 2006[e]	+	54.5	32.7
14.	% of workers employed in humanities and creative occupations of the total number of employed individuals, 2004[b] (***)	+	9	5.8
15.	% knowing very well how to write in English (of the total population), 2006[a]	+	25.7	8.9
16.	% entitled to matriculation and meeting universities' minimum requirements (out of the total number of 12th grade pupils), 2005/2006[d]	+	62.1	12.7
17.	% dropping out of school (of total number of pupils), 2007–2008[g]	−	3.2	2.4
18.	% participating in enrichment classes in the past 12 months (of the total population), 2006[a]	+	29	10.3
19.	Per-capita payment by the local authority for cultural expenditures (thousand NIS), 2006[e]	+	331	294
20.	% using a computer for their studies (of the total population), 2006[a]	+	37.4	74
21.	% area (km^2) dedicated to culture and recreation facilities (per 1,000 inhabitants), 2002[h]	+	0.003	0.002
22.	% of BA students in universities (of the 20–29 age inhabitants), 2005/2006[i]	+	8.4	3.5
23.	% of 15+-year-olds with an MA or PhD, 2008[c]	+	11.2	5.4
24.	% of students studying at the Hebrew University and at the Technion (of the total number of university students), 2005/2006[i]	+	19.3	6.3
Social capital variables				
25.	% highly satisfied with their friendship bonds (of the total population), 2006[a]	+	44	8.3
26.	% highly satisfied with their relationships with neighbors (of total population), 2006[a]	+	31.2	7.6
27.	% who volunteered in the past 3 months (of the total population), 2006[a]	+	17.6	6.7
28.	% of municipal expenditures on immigration absorption (relative to total expenses), 2006[e]	−	0.2	0.6
29.	% of single-parent households, 2008[c]	−	7.5	2.3
30.	% serving in the IDF (of the total population), 2006[a]	+	70	11.9
31.	% of juveniles being treated by probation officer (rate per 1,000 inhabitants), 2005[g]	−	4.4	3.3
32.	% reporting very secure living environment (of the total population), 2006[a]	+	34	9.2
33.	Municipal expenditures on security (of total local expenditures), 2006[e]	−	2.3	1.2

(*Continued*)

Appendix 1. (*Continued*).

No.	Variable	Direction of impact on life-chances and capital accumulation	Metropolitan average	SD
Life-chances and personal capabilities variables				
34.	% highly satisfied with life, 2006[a]	+	31.8	9.6
35.	% highly satisfied with their housing location, 2006[a]	+	43.8	10.8
36.	% believing that their life will be even better in the future, 2006[a]	+	61.7	9.7
37.	% reporting high correlation between their occupation and field of study, 2006[a]	+	28.5	7
38.	% of households owning their own home, 2008[c]	+	67.9	14
39.	% of households with 3–4 children, 2008[c]	+	27.9	6.5
40.	% of households with 2+ cars, 2008[c]	+	38	18.5
41.	% of 15+-year-olds working outside their locality, 2008[c]	+	71.9	12
42.	% highly satisfied with the open spaces at their locality, 2006[a]	+	22.6	10.1

Notes: *In order to detect workers employed as scientists, academics, and in other professions, several occupations were merged from the Labor Force Survey of the Israeli Central Bureau of Statistics (2005): biologists, pharmacologists, and occupations having the same affinity. In addition, chemists, physicians, mathematicians, engineers and architects, medical doctors, veterinarians, and pharmacists were added, together with judges and lawyers, economists, physiologists, accountants, and other occupations having the same affinity.
**In order to detect workers employed in the Producer Services, Technology, and R&D economic branches, several occupations were merged from the Labor Force Survey of the Israeli Central Bureau of Statistics (2005): banking and insurance, real estate, computers, recruiting and employee placement, business activity, research and development departments of economic branches, and computers services.
***In order to detect workers employed in the Humanities and Creativity occupations, several occupations were merged from the Labor Force Survey of the Israeli Central Bureau of Statistics (2005): humanities occupations, lecturers in academic institutions, high school principals, journalists, artists, writers, art critics, guides, members of the Knesset, and general and senior managers.
[a]CBS—(Social Survey, 2006c).
[b]CBS—(Labor Force Survey, 2005a).
[c]CBS—(Census of Population and Housing, 2008).
[d]CBS—(Local Authorities in Israel, 2006b).
[e]Ministry of Interior—(Local Authorities Annual Audit Reports, 2006).
[f]CBS—Academic Colleges, 2003/2004, 2006a.
[g]The Israel National Council for the Child—(Children in Israel, 2008).
[h]CBS—Local Authorities in Israel, 2003
[i]CBS—Demographic Characteristics of Applicants for Studies, Students and Degree recipients, at Institutions of Higher Education, 2004/2005–2005/2006.