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Defining the Meso-Level as Geosocial Embeddedness: A New Avenue for Life Course Research

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Abstract

The agency (micro-level) within structure (macro-level) paradigm has dominated life course research for many years as the primary conversation between life course sociology and lifespan psychology and, more recently, biology (notably, within epidemiology). However, whether the meso-level, i.e., research questions related to the question of linked lives or, as proposed here, questions of geographical and social embeddedness, appear to be of the utmost importance in life course research. In this work, I define the meso-level, relying on previous works in social psychology and geography, as the geosocial embeddedness of individual trajectories, distinguishing three perspectives: network, categorical and territorial. I also demonstrate the fruitfulness of geosocial embeddedness for illustrating via research examples of how intersecting social networks, social categories and territorial embeddedness enable the integration and organization of past research and open new research questions. This paper also argues for the integration of subjective and more objective perspectives of geosocial embeddedness. Moreover, it thereby invites life course scholars to integrate more systematic advances in social psychology and social geography or urban studies within life course theory.

Title

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In memory of Willem Doise (1935-2023)

There has been a continuous call within life course research to take the meso-level more seriously (Levy, 2002; Settersten & Gannon, 2005; Vacchiano & Spini, 2021) as the meso-level is the context in which actions, decisions, and interactions concretely take place. However, defining the meso-level context of the life course is not an easy task. One of the main reasons for this is that life course research has somewhat neglected this level compared to the individual and structural levels, highlighting the agency within structure paradigm and neglecting the space between (Settersten Jr & Gannon, 2005). Moreover the complexity of the meso-level is hard to address and needs a more precise and a more complex integrated approach; we propose here one avenue to adress this complexity in integrating advances in social psychology and social geography with the notion of geosocial embeddednes, composed of territorial (accessible and experienced material, social, and natural infrastructures), social networks (interpersonal relations and experiences) and social categories (intergroup relations and experiences) embeddednes.

One main difficulty in past definitions of the meso-level is that it is usually defined as a medium-scale spatial context — (the household, the building, the street, the neighborhood, the city, the region, the country)—, or as a medium-scale collective entity (the couple, the family, the kinship, the group, the organization). In both cases the delimitation of which entities are belonging to the meso-level appears difficult to do as the boundaries of the meso-level, between the micro- ad the macro-level, are impossible to define with precision.

Philosophers have depicted this impossibility as the paradox of the heap or sorites paradox. This paradox is as follows: take a heap of sand and repeatedly remove a single grain. When does the heap become a nonheap? If one takes this route, the limit notably between the meso-level and macro-level is impossible to draw because of a lack of clarity in the definitions thereof. When we are faced to this kind of paradox, philosophy tells us that we are ill defining the concepts we use. In this regard, I have felt the need to open a discussion on how to define differently the meso-level.

Specifically, I define here the meso-level as social (social networks and social categories) and territorial experienced or accessible contexts. This exploration will therefore hopefully allow more precisely defining the meso-level and, consequently, the micro-level and the macro-level, which also need (and will need) further refinement. A main argument here is that these different levels should

refer to different levels of theoretical and empirical questions, and not to a linear spatial or social scale. Accordingly, I propose a definition of three complementary perspectives for questioning and analyzing the meso-level: territorial, network, and categorical embeddedness. Finally, I present some illustrations of the intersections of these three perspectives of embeddedness to show that the geosocial framework offers new theoretical and empirical questions to the life course community. On the other hand, hopefully, this essay will enable us to share a common definition on the multilevel life course principle, complementing the two other life course principles of multidimensionality and multidirectionality (Bernardi et al., 2019; Diewald & Mayer, 2008; Spini et al., 2017; Spini & Widmer, 2023).

Defining the levels of analysis of the life course

To define the meso-level, we need to position it between the micro- and the macro-level, the two levels that received most attention so far by lifespan psychology and life course sociology, which are the main roots of the life course paradigm (Diewald & Mayer, 2008; Settersten, 2009). The latter have reached a certain consensus in proposing that individual life trajectories are the result of individual agency within structural constraints and opportunities (Settersten Jr & Gannon, 2005). In this line of thought, Heckhausen and Buchmann (2019) propose two distinct types of path dependencies in the life course: developmental canalization and institutional or social structure-based canalization. Developmental canalization is defined as the "path dependency that comprises psychological chances to come about through an individual's linked behavioral choices along a lifespan trajectory" (p.6). Institutional canalization "comprises changes in the societal action field of a given individual, comprised by opportunities and constraints that result from selecting or being allocated to a particular sequence of transitions and paths that are regulated by education, vocational and other societal institutions" (p. 6). These authors illustrate their views by relying on the epigenetic landscape depicted by Waddington (1957), which displays single marbles (illustrating individuals) rolling down a landscape with different (life) path trajectories due to crevices and valleys (social structure and institutions).

This vision is powerful; however, it lacks an essential feature of the life course that Elder (1995) has

coined the linked lives principle. That is, from our birth to death, we live in connection to others. Life trajectories are not only due to individual agency or institutions/social structures but also heavily rely on the concrete experiences people do in connection to other people and their environment. We never walk alone. Antonucci and colleagues (Antonucci et al., 2014; Kahn & Antonucci, 1980), for example, have shown how social long-term relationships or social convoys are essential components of our life trajectories. Here, we must assume that we need to add embeddedness at a meso-level to understand life trajectories. Otherwise, we may miss the concrete transactions (Lazarus & Folkman, 1984) or interactions, and social influences that help explaining why some similar individuals in similar environments may follow different life trajectories. As claimed by Teas, Marceau & Friedman (2023) "A life course perspective on social relationships highlights the importance of specific relationships at specific times in life, but analyses that account for life course trajectories in social relationships are rare". Being more specific about concrete social relationships and environments people experience during their life course is a needed development that the geosocial embeddedness perspective also calls for.

I also argue here that psychology and sociology may not be enough and that a more diverse interdisciplinary view of the life course needs such as social psychology, spatial life course epidemiology, urban studies, and social geography. Furthermore, these disciplines may be further enriched by the inclusion of the life course perspective, for example, social psychology, my basic discipline has developed theories using mainly experimental methods and student samples (notably doing a bachelor in psychology), thereby neglecting the temporal dimension of the focal phenomena (Spini et al., 2008).

Defining the micro-level, meso-level, and macro-level for studying human behavior is a difficult task, and most life course approaches are incomplete, relying on the agency within structure paradigm. A first difficulty is related to the definition of these different levels in different disciplines. For example, in biology, the micro-level can be a cell, whereas in sociology, it is usually related to individuals and interindividual relationships. Definitions of levels by discipline can also be useful in specifying the multiple causes of human behavior (Cacioppo et al., 2000), but these may not refer to clear levels of analysis or explanation.

Another example is the life course cube (Bernardi et al., 2019). Concerning this integrative tool for analyzing life trajectories, three consensual principles of life course analysis (see Mayer, 2009; Spini et al., 2017) are presented as a cube tool. Specifically, the life course cube proposes three interdependent dimensions: (1) multidimensional (life domains, i.e., family, work, health); (2) multilevel (inner-individual, individual, and supra-individual contexts), and temporal dimensions. Here, I focus on the multilevel principle, however, it is difficult to define the meso-level without having some idea of how it differentiates itself from the more micro- and macro-level(s).

In the life course cube, the inner-individual level "comprises states variables like genetic, biological, physiological, and psychological attributes (e.g., dispositions, values, attitudes, subjective well-being). One could characterize them as the inner-individual conditions, resources and, in a dynamic perspective, outcomes of individual behavior in different domains over the life course". The individual level comprises biographical state variables assigning overt behavioral outcomes of the individual's action over the life courses, which occurs in different life domains. These are the sociocultural achievements and characteristics (e.g., education, social status, living arrangements, place of living), as well as the types and amounts of resources an individual can invest (inputs) and special legal rights or social privileges he or she has to act (e.g., citizenship, gender). Finally, the supra-individual level "includes attributes of the sociocultural environments in which the individual's behavior in life domain *d* takes place and which potentially affect individual behavior". These sociocultural environments extend across a variety of sublevels, ranging from the immediate environment" (social networks, organizations, and associations) "to larger social institutions (e.g., made up of legal, cultural, and economic frames and collective actors)" (p.2).

Even if authors leave space for sublevels at the supra-individual level, there may be some need to clarify what the bases thereof to define the different sublevels and distinguish the meso-level as a qualitatively distinct level between the micro-level and macro-level more clearly. For example, the "cube" multilevel principle distinguishes the inner-individual and individual levels on different bases. At first sight, it seems that the definitions of these levels are based on the objects of analyses (covert biological, psychological, emotional, and physiological states versus overt behaviors, for example) and that some disciplines are more concerned about a given level than others. For example, biology and

psychology are cited at the inner-individual level, while other disciplines, such as sociology or demography, may be more relevant to the individual and supra-individual levels.

I argue here that *objects of analyses* or *disciplines* cannot be taken as the basis of the multilevel principle. Concerning disciplines, they cannot be reduced to one specific level. For example, social psychology has defined four levels of explanation (intraindividual, interindividual, positional, societal) (Doise, 1982, 1986); similarly, in affective sciences (or psychology of emotions), four different levels have been proposed (individual, dyadic, group, culture) (Keltner & Haidt, 1999; Lindquist & MacCormack, 2014). Objects of analyses, emotions, for example, cannot be considered only an object of the inner-individual level as suggested. In the psychological analysis of human behavior, Cacioppo et al. (2000), for example, recognize that human behavior (the object of psychology) can be analyzed within the psychological sciences with neural substrates and production mechanisms in biopsychology to depict multivariate systems and situational influences in social psychology (Cacioppo et al., 2000, p. 830). Thus, analytical scientific objects such as cognition or emotion in psychology are not related to a specific level. Some concepts, such as shared cognition or social representation, show that many of our thoughts and emotions are related to interactions with others and communication processes (Moscovici, 1988; Thompson & Fine, 1999). The nature of life course analytical objects (work careers, linked lives, development of personality, etc.) and the oversimplified vision of disciplines focusing on one level are thus no solid grounds for defining levels of analyses or levels of explanation; moreover, an overly individualistic perspective separating an individual navigating social structures is not sufficiently distinct to account for the multilevel complexity of the life course.

Another main difficulty in defining levels is the absence of clear boundaries regarding the *masses* (Grossetti, 2006) to which one level is related or clear sublevel definitions at the supra-individual level. Masses, in sociology, comprise the number of elementary units (individuals, groups, organizations, etc.) used in an analysis. In geography, these are related to different scales of analyses. Geography classically defines four levels of analyses: global (entire world), regional (e.g., continents or groups of countries), national (cross-national differences) and local (subnational level, e.g., regions, cities, neighborhoods). If one generally agrees that more important masses (i.e., countries) may be related to the macro-level, the exact threshold of masses and their nature (social or geographical) are

difficult to legitimate. In this regard, a different approach is needed.

Accordingly, the solution I propose is somewhat conservative and is inspired by Bronfenbrenner's well-known ecological system theory (1979, 1994) which includes five levels (individual, micro-level, meso-level, exolevel, and macro-level completed by the chronosystem related to environmental changes occurring over the life course). This complete and complex model remains a major reference for understanding the ecological, multilevel complexity of human development and has inspired the simplified version I propose with only three main levels, basically merging Bronfenbrenner's micro-level and meso-level on the one hand with the exolevel and macro-level on the other, as they refer to similar research questions.

I thus assume that we basically need three levels for the multilevel analysis of the life course: the (intra-)individual level, the meso-level of geosocial embeddedness(meso-level), and the macro-level, which also focuses on collective social realities but does not involve concrete relationships as a unit of analysis. That is, I suggest that three qualitatively different types of questions distinguish the levels of explanations: how is the life course explained within (a) the individual context (micro-level); (b) within experienced or accessible interdependencies (meso-level), and (3) within abstract social entities (macro-level)?

Such a definition may therefore clarify the relationship between a given variable and the employed level of analysis. For example, the variable social status can be used to analyze individual trajectories of mobility. But social status is not related to a specific level of analysis per se. It depends on the research question. For example, if one wants to analyze interindividual differences in socioeconomic trajectories within a cohort, this research question would be located at the micro-level). If for example a research question is about how frequently individuals create relationships with individuals with the same socioeconomic status during their life course concerns social status within the meso-level and concrete experiences related to social status. Finally, the question of how much social inequalities have been increasing or decreasing in the last ten years in Switzerland is related to the macro-level and to social status as an abstract entity. Across all these questions, social status is used as the analytical object, but the questions are clearly not located at the same level of analysis. It is this multilevel approach translated into different research questions, that we propose as the main delimitation between

the micro-, meso- and macro-level of analysis of the life course.

As stated above, the life course has often been reduced to the agency (micro-level) within social structure (macro-level) paradigm, neglecting the meso-level and Elder's "linked-lives principle" (see Vacchiano & Spini, 2021). We now want to focus this neglected level to define it for life course interdisciplinary approach integrating the social psychological and social geographical approaches.

Defining the meso-level of the life course

Sociological definitions of the meso-level already exist within the life course paradigm. Levy, for example, defines the meso-level in reverse qualifying itas "all phenomena whose scope is larger than micro-social (face-to-face relations, small groups) and narrower than macro-social, the latter being assimilated, "as current sociological language habits do implicitly, to the level of global society organized as a nation state, or to social systems of an even larger scope" (Levy, 2002, p. 4). This definition does not define clear qualitative distinctions between the levels. However, for sociology a structural sociological definition of these levels for analyzing the life course is of course legitimate and helpful (see Levy & Bühlmann, 2016), but limited for interdisciplinarity. The same could be said to levels of explanations in psychology where reductionist biological or cognitive explanations are often preferred over social, multilevel, or integrated ones (see MacKinnon, 2022).

In the following sections, two main changes to the usual definitions of levels will be proposed. The first is an attempt to clarify the micro/meso/macro divide (Faist, 2010); the second defines the multilevel principle at the crossroads of different disciplines with a focus on the definition of the thus far neglected meso-level within the life course tradition.

Concerning the micro-level, it seems reasonable to maintain the idea that *the individual is the context of the micro-level and the basic unit of analysis of the life course*. As indicated by the life course cube, overt and covert states can be observed at the individual level. When time is considered, individuals' trajectories can be observed across different scales and from different disciplinary perspectives, from cells to personality traits and from attitudes to sociodemographic statuses. Interdisciplinary perspectives of the individual are also important to develop, as stressed by various authors (Bernardi et al., 2019; Cacioppo et al., 2000), as well as relevant biopsychosocial perspectives, as stressed by

embodiment theory (Lux et al., 2021) and epigenetics (Landecker & Panofsky, 2013), to mention only two important and recent interdisciplinary fields. Thus, individual-level analyses usually refer to individuals' behavior and biopsychosocial resources or reserves that can be attributed to specific individuals.

Hence, I propose that *experienced and accessible contexts of interdependencies define the meso-level*. These interdependencies cover all types of concrete social relationships among individuals and the interactions individuals have with their experienced social, natural, and constructed (created by humans) environments. Social relationships can be observed on various scales, from the dyad to intergroup systems to neighborhoods or organizations (see Vacchiano et al., 2022). Social interdependencies can be negative or positive and of different kinds. The classical typology of Wish, Deutsch, and Kaplan (Deutsch, 2011; Wish et al., 1976) distinguishes four types of interdependencies among humans: cooperative and friendly versus competitive and hostile relationships; equal versus unequal relationships; intense versus superficial relationships; and socioemotional and informal versus task-oriented and formal relationships.

Finally, the macro-level is concerned with more abstract collective entities. I propose that the *macro, or collective, level* may be defined as structures of relationships or representations that *transcend concrete interactions among individuals (or groups) and between individuals and their direct environment*. Thus, analysis at this level usually uses abstract notions, such as "regimes", "countries", "cultures", "institutions", "norms and values" or "social structure" in the field of the life course. Heckhausen and Buchmann (2019) describe the macro level in relation to *historical contexts* (economic situation, the cultural climate, or political settings), *social institutions* (normative structure consisting of interlocking/interrelated and institutionalized sequences of positions and roles in various life domains), and *social inequalities* (the structure of opportunities and barriers arranging access to desirable status transitions, resources, power, respect and esteem). A main assumption here, then, is that macro-level questions are analyzed with collective abstract concepts, which are not reducible (which does not mean that are independent) to the analysis of individual or concrete interdependencies.

Toward an integrated model of the meso-level: The geosocial embeddedness model

The lifecourse concept of time and place (Elder Jr, 1995) places much emphasis on the geographical and historical contexts in which the life course unfolds. Concerning location, Mayer (2009; 2015) propose that geographical units are useful in the analysis of trajectories and connections. In the life course tradition, nations or local scale units are typically compared. In the future, with climate and migration issues coming to the fore, regional or global analyses may appear more frequently; however, comparative data from a global cross-cultural perspective are still lacking.

Geographical units, even if they may be considered proxies for social or societal variables (levels of wealth, diversity of population, etc.), are not fully reducible to social variables. Every territory has a meaning per se and social relationships take place within territorial and built contexts.

Concerning the spatiality of relationships (Hess, 2004; Luo & MacEachren, 2014) three main approaches to embeddedness have been distinguished: *societal embeddedness, network embeddedness and territory embeddedness*. Societal embeddedness refers to the "societal (i.e., cultural, political, etc.) background from which actors come, in which actions are influenced, and to which actors contribute. Adopting the concept of societal embeddedness may be difficult in our model of geosocial embeddedness, as societal embeddedness may be more relevant for macro-level embeddedness and does not distinguish between abstract social concepts and experienced meso-level contexts as we propose here. In this regard, I propose instead the use of the concept of categorical embeddedness hereafter, which is more directly to the meso-level of the life course. Network embeddedness refers to the importance of relational aspects (i.e., social relations, cultural relations) among social actors in shaping these actors' behaviors and for actors to change relations. Territorial embeddedness refers to the specific places in which actors behave, how these places influence actors' behaviors and attributes, how these actors' behaviors change their territory" (Luo & MacEachren, p. 29-30).

Aggregating the different theoretical elements described above, I propose a definition of the meso-level context of the life course as the subjective and objective categorical, social network, and territorial embeddedness based on Hess' (2004) work notably. The subjective versus objective (or objectified) distinction is integrated in this essay and transcends the three types of embeddedness, as illustrated already with the distinction between territory and place.

Embeddedness is a concept that has been formally developed in economic sociology by Polanyi (1944) and later by Granovetter (1985) as "the extent to which economic action is embedded in structures of social relations, in modern industrial society" (p. 481), notably to overcome the atomistic and reductionistic view of rational models. Later, Hess (2004) reconsiders embeddedness in his field of economic geography and focuses on the questions of "'who' is embedded in 'what', and what is so 'spatial' about it?" (p. 166). Somehow, he adds the question of spatiality to the "agency within social structure" life course perspective. I am building on this addition of spatiality of the context and take also into account the assumption that two separate meso- and macro-levels should be distinguished as they refer to qualitatively different levels of analysis. The essence of the multilevel principle is to analyze the life course at different nested levels, starting from the individual as context, which is nested in the accessible and experienced geosocial contexts, which are themselves nested in more abstract collective levels of explanation. Thus, embeddedness is a central concept of the multilevel perspective on life trajectories. Below, I thus describe each type of meso-level embeddedness: social network, categorical and territorial.

Table 1. Multilevel analyses of the life course, integrating the three meso-level perspectives of geosocial embeddedness

Levels of analyses		
Level	**Focus of research questions**	**Examples of concepts related to each level**
Micro-level	Individual	Overt and covert behaviors Individual resources and reserves
Meso-level	Experienced or accessible interdependencies	Social Network Embeddedness Categorical Embeddedness Territorial Embeddedness
Macro-level	Abstract collective entities	Historical contexts Social institutions Social inequality

Meso-level social network embeddedness

Networks and social connectedness are being increasingly recognized as key factors for understanding the available resources and stressors across the life course (Spini & Vacchiano,

2023; Vacchiano & Spini, 2021). The interest in social sciences and epidemiology has also grown concerning the relationships between, for example, social networks and health or well-being (Fowler & Christakis, 2008; Smith & Christakis, 2008). This research shows that people in a network influence each other and contribute to the spread of health-related practices, such as obesity or happiness. Evidence for the positive links between social connectedness and health using social capital (SC) as a key concept has also accumulated (Ehsan et al., 2019; Moore & Kawachi, 2017).

Social capital has been defined in various ways across studies. Two perspectives based on social networks or social cohesion seem predominant. The first considers SC as the level of trust, reciprocity (Coleman, 1990), and social cohesion or cooperation (Putnam, 2000; Carlson & Chamberlain, 2003), both horizontally among community members and vertically among individuals, groups and institutions. The second approach stems from Bourdieu's (1986) work, whereby SC is seen quantitatively as the size of one's social network and the sum of the different types of capital that members exchange within it. In similar terms, SC can be defined as the resources that are embedded within social networks (Lin 2002), which also accompany individuals, sometimes over long stretches of their life (Kahn & Antonucci, 1980). Contemporary SC and health research has gone beyond cohesion and network approaches and adopted three complementary lenses: dimensions, settings, and SC levels (Ehsan et al., 2019). Among the proposed dimensions of SC, there is a major distinction between, on the one hand, the cognitive-perceived aspects that “glue” people together within a community or group, such as trust, reciprocity and help, shared norms and values, which are called “cognitive SC”. On the other hand, there are more objective-quantitative forms of SC, structural SC, the quantity of relationships and membership in institutions that can bring individuals and groups together (McKenzie & Harpham, 2006). Moreover, different settings where SC is developed and practiced can be identified, such as families, workplaces, or community settings ranging from the household and neighborhood to larger geographic units (Moore & Kawachi, 2017).

This distinction between cognitive and structural social capital also highlights another important issue when defining the meso-level: the distinction between *subjective* and *objective* approaches or

inner/outer approaches. For example, one can count the number of ties an individual has in his or her social network or ask her or him if these relationships are (dis)satisfying or conflictual/supportive. This distinction may seem straightforward, but it usually relies on cognitive reports of ties (Brands, 2013), notably, ego-centered network methods. In this regard, it is probable that social desirability has an impact on the subjective measures of structural networks, with a probable bias of expansion (over/underreporting members of one's own network) (Feld & Carter, 2002).

This distinction between the subjective and more objectified measures of networks is important to consider. If the meso-level is defined as the level of social relationships, a major difficulty arises: are the perceptions of these relationships, individual assessments, whereby we should refer to the micro-level, or additional information concerning the meso-level? The distinction between the subjective and objective aspects of embeddedness must be integrated, as both are salient. For example, McLaughlin et al. (2010) study the differences in social capital between men and women and satisfaction based on different dimensions of health in later life (respondents are in their seventies). They show that men have smaller social networks than women. Men's networks also suffer more from their status as separated, divorced or single. Finally, poor mental health and sensory impairments are correlated with smaller social networks and lower satisfaction with support among both men and women, indicating that both the number of members in a network and more subjective cognitive social capital have their own importance. This is also demonstrated in studies on the relative importance of subjective and objective indicators of social determinants for health outcomes. For instance, the subjective, perceived aspects of one's belonging to a community, e.g., one's cognitive social cognitive capital, make a distinct contribution to one's health outcomes, beyond one's objective network (Ehsan et al., 2019).

Meso-level categorical embeddedness.

Individuals also live in a stratified society. While social network analysis is mostly concerned with interpersonal relationships and within-group relations, individuals are also bound to social groups and social categories that are constitutive parts of their environment and how they experience it. To

be a woman, a man, of African descent, Catholic or Taoist, rich or poor; all these categories heavily influence the daily life. They also have concrete long-term consequences on our health, well-being, and levels of stress.

This relationship between the categories (that individuals are ascribed to or with which they identify to) and chronic stresses is a major hypothesis in the sociological model of stress of Pearlin and colleagues (Pearlin & Skaff, 1996). They argue that stress is not only an individual phenomenon as social statuses are deeply related to one's different types and levels of stress across the life course. Such a perspective has also been detailed in social psychology, notably, in a chapter by Fiske (2010). In this chapter, she synthesizes many studies showing that social stratification and category shape interpersonal relationships. In other words, the intergroup situation in which individuals are embedded shapes interpersonal interactions. Thus, when individuals are in the street, at school, in a company or organization, our relatively advantaged or disadvantaged position will influence how they adapt to a given situation and interact with others and, subsequently, how the repetitions of these relationships have short-term and long-term consequences. Of course, subordinates more often experience unpleasant interactions. For example, everyday hassles and civil incivilities are frequent in both school and work environments, notably from men toward women (Cortina et al., 2001; Swim et al., 2001). Interestingly, Berdahl (2007) argues that "the primary motive underlying all harassment is a desire to protect one's social status when it seems threatened" (p.641), demonstrating that the hypothesis indicating this is mainly due to sexual desire is unfounded. Moreover, social status and gender do not constitute the only meso-level contexts of interpersonal relationships. Other categories, such as "race" or age, appear to follow similar logics (Fiske, 2010), whereby their intersections may also exacerbate systemic or interpersonal violence, as is the case for African American women and girls in the USA (Gill, 2018). However, are intergroup relationships important for the meso-level analysis of the life course? Concerning this point, most works only provide macro-level analyses of how social categories impact life trajectories. It is of primary interest to perform this same work at the experienced or accessible meso-level, as already suggested by the seminal works of Erving Goffmann (1963) and Jones and colleagues (Jones et al., 1984). While the results on self and identity vary within and across subordinated groups, those on

health indicate a clear health gradient (Marmot, 2003).

On a more subjective level, there are strong relationships among coping, perception of discrimination, and health. A meta-analysis by Pascoe and Smart Richman (2009) based on 134 samples shows that the perception of discrimination is clearly and positively associated with physical and mental health outcomes. Similar results indicate that perceived discrimination produces significantly heightened stress responses and is related to participation in unhealthy and nonparticipation in healthy behaviors. In two other meta-analyses (328 samples from cross-sectional/longitudinal studies and 54 independent experimental studies), different measures of well-being also reveal the importance of perceived discrimination (Schmitt et al., 2014). Different positive and negative measures of well-being have been adopted (e.g., self-esteem, depression, anxiety, psychological distress, life satisfaction); these results show a negative effect size of perceived discrimination on well-being. When using a random-effects model, the mean weighted effect size is significantly negative across different operationalizations of well-being but somewhat weaker for positive outcomes (e.g., self-esteem, positive affect) than for negative outcomes (e.g., depression, anxiety, negative affect), indicating harm. They are also larger for disadvantaged groups than advantaged groups, larger for children than adults, larger for perceptions of personal discrimination than group discrimination, and weaker for racism and sexism than other stigmas.

Perceived discrimination is not the only dimension of intergroup relationships. For example, subjective measures of social and economic status have long been studied separately from more objective measures (e.g., education, income, occupation), especially in health research (Demakakos et al., 2008; Singh-Manoux, Marmot & Adler, 2005). Longitudinal studies and meta-analytic reviews demonstrate that the psychosocial perceived aspect captured by subjective social status constitutes a unique contribution to health outcomes (Zell, Strickhouser & Krizan, 2018; Wang et al., 2022). In social psychology, multiple group identifications have also been associated with improved health and better coping in critical life course transitions (Jetten et al., 2017). Thus, in the focal definition of the meso-level, I propose to include both objective and subjective assessments of categorical embeddedness.

The above evidence on perceived discrimination also illustrates how individuals are embedded in

intergroup relationships within the meso-level and more generally in their daily life. This embeddedness is certainly less recognized by individuals (notably, privileged individuals) as a main structure of the life course. I thus suggest that it would enrich our comprehension of the life course if social psychology research, notably on intergroup relationships, will be more integrated in the future.

Meso-level territorial embeddedness

The spatial turn in social sciences has represented an active and promising field of inquiry since the seminal work of Soja (1989; Volvey et al., 2021). Some life course studies have therefore included space or the relationship with territory. For example, Patterson and colleagues (2017) show via a 25-year longitudinal cohort study that the duration of living in a rural area (accumulation of exposure) or residing there between 26 and 30 years of age (critical period model) entails a higher risk of obesity than in middle adulthood.

However, different issues need to be addressed to develop a fruitful territorial approach for life course research. As a starting point, I have selected the concept of territory, which needs to be clarified before other interdependent, but distinct, concepts such as space or place, which are also used in geography and urban studies. Following Duarte (2017), “it is generally accepted that space is the baseline of any other spatial concept”, whereby territory is not simply an object. Rather, it is “the outcome of actions conducted toward it or some previously supposedly neutral area”. Territory is itself a process, made and remade, shaped and shaping, active and reactive involving sensorial, cultural and social aspects. A portion of space is not a territory in itself but becomes a territory depending on how it is appropriated by individuals and groups and how the values impinged over this portion of space direct the way those who occupy it must behave. As we are interested here in the accessible or experienced space, the concept of territorial embeddedness appears to be most appropriate.

Territory has also to be distinguished from the concept of place. One difference that becomes clear

between the streams of literature on place and territory is that the former often focuses on affects and the latter on politics. Whereas there is an evident advocacy in the literature related to place, there is political criticism underpinning the literature on territory" (p. 2-3). As I defined it above, the meso-level is an experienced or accessible space (not just an existing space); thus, the concept of territory defined here appears to be most relevant for life course research. However, if the focus is on the subjective experience of space (identification, affects, etc.), then one could also consider the concept of place very useful (for a discussion of the use of these concepts in the francophone and anglophone traditions, see Del Biaggio, 2016).

Territory, where all contexts can be experienced as a space of opportunities or constraints, as positive or negative for oneself, can be divided into three types of infrastructures: hard/material, social and natural. The distinction between social and material infrastructures as built environments have been developed by Klinenberg (2018), whereas I added the natural environment as a third type of territory that was also considered in the scientific literature. Material infrastructures, also called critical infrastructures by many policymakers, are "large-scale systems for transit, electricity, gas, oil, food, finance, sewage, water, heat, communications, and storm protection (ibid. p19). They are the structures that are usually discovered when they break down. In addition, when this is the case, we usually discover that it is the softer social infrastructures that sustain our lives.

Exploring the lethal effects of a heat wave in Chicago in 1995, Klinenberg (2002) has questioned why so many people died at home alone. He has thus investigated why some neighborhoods experienced greater mortality than others and how the city's government responded to this crisis. He concludes that the social isolation of seniors, the institutional abandonment of impoverished neighborhoods, and the retrenchment of public assistance programs contributed to these high fatality rates. More recently, he has defended the idea that a key element of community resilience comprises the social infrastructures used by inhabitants, notably, in their neighborhood. Social infrastructures are defined as "the physical places and organizations that shape the way people interact" (ibid p.9) and are public institutions, such as libraries, schools, parks, athletic fields, or swimming pools; they also include sidewalks, courtyards, and community gardens (ibid., p.20).

Many studies show that specific infrastructure criteria, such as the quality of schools (Owens, 2010) and the proximity of fast-food restaurants may have an impact on educational or health trajectories, respectively (Zenk et al., 2011).

Natural stressors (climate change; weather, quality of air, soil fertility, etc.) and facilities (leisure opportunities, beauty, tranquility, etc.) can be added to Klinenberg's distinction, considered under the label of natural context and which concerns information such as distance to green or water natural areas, noise, pollution, etc... Natural contexts can also be built, but not necessarily, or completely.

Alcock et al. (2014), for example, show that moving to a greener area has globally positive effects on health. This study is also interesting because it reveals the advantages of a longitudinal study, whereby the inverse relationship (healthier people go to greener areas) could be discarded. Recent research has also shown that being close to nature (green or blue) has positive effects on mental health (MacKerron & Mourato, 2013). The COVID-19 crisis is another salient example that has dramatically impacted the life course of many, revealing how much interactions with others and contact with nature are needed (Davies & Sanesi, 2022; Settersten et al., 2020). One must note that it is not easy to define a social infrastructure; many spaces (parks, associations, sport facilities, bars and cafés, bookstores, etc.) can help people adopt public spaces and interact with others. The same facility (bridge, metro or police station, libraries, shops, etc.) can also be designed to facilitate social encounters or limit them. On the other hand, people also adopt spaces that were not designed for them, e.g., improvised gardens or leisure places in industrial or empty wastelands. Thus, interestingly, beyond the lack of planning and knowledge concerning social infrastructures, these are spaces that are not only interesting when accessible; at stake in social infrastructures is thus primarily their utility for people and social activities.

A focus of research on territorial influences should consider resources and stressors located and created at the neighborhood level. A review on the importance of neighborhoods for the life course has been performed by Browning et al. (2016). Based on these authors' conclusions, neighborhoods may favor or be obstacles to the constitution and sustainability of social networks. The most robust

results are related to the associations among neighborhoods' physical disorders (litter on the streets, depredations, noise, etc.), social disorders (criminality, homelessness, drinking in public, etc.) and stress/health issues (mental health, sexually transmitted diseases, self-rated health, chronic conditions, etc.; Duncan & Kawachi, 2018).

Concerning daily routines, research on spatial mobility has demonstrated that usual context analyses, which assume that the location of individual households corresponds to neighborhood fixed context, is misleading. For example, Basta et al.'s (2010) study, based on observations of adolescents, who are typically anchored in their neighborhood, indicates that "half of the subjects spent "91.5% or more of their outside-the-home time in a census tract other than the census tract where their home was located" (2010, p. 1947). Time spent at work (with some jobs implying frequent displacements) also undermines the idea that individuals can be easily located within one territory. The development of GPS or accelerometer tracking methodologies used in spatial epidemiology has thus greatly improved our conceptions of how individuals from different groups use their territory as well as evaluations of spatial misspecification in classical conceptions of location and contexts (Chaix, 2018; Duncan et al., 2017).

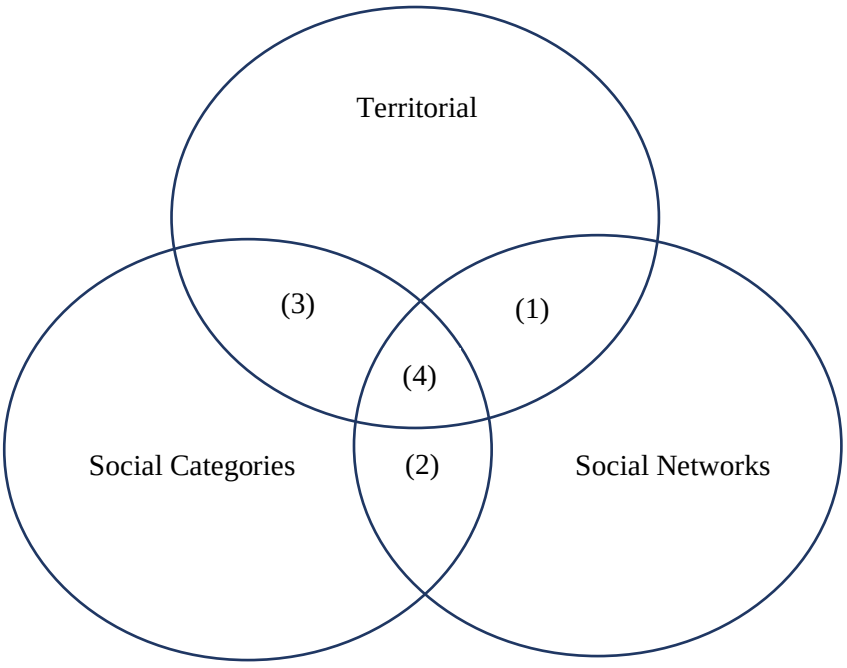
Overall, life course research has therefore neglected the important roles that territories, infrastructures and movements across areas may play in our lives; it must adopt more systematic methodological tools and measures of interactions between individuals and their territory or place. For example, a household or professional address is not sufficient to infer anything on the territorial embeddedness of an individual. Being a doctor in a given city, for example, may have very different territorial implications if the doctor is working at a hospital or visiting people in their homes, both in terms of the number of people met or periphery of action. The same is true for an international or a regional truck driver. However, this may also apply to children who inhabit two homes after a divorce, compared to sedentary children. Their lives and experiences of territory may be very different. Innovative methodological tools including a mix of qualitative and quantitative georeferenced information may represent more valid indicators of how individuals use and experience various infrastructures and services in their territory and how these usages may be

related to various life trajectories.

Intersections among territorial, categorical and social network embeddedness

One can represent the intersections of categorical, social network and territorial embeddedness using a Venn diagram (see Figure 1). These intersections are generally not well covered by life course research but could elicit novel questions and results, generating valuable developments for understanding the meso-level influences of the life course. Below, I thus detail and illustrate these, using empirical examples when possible.

Figure 1. Intersections within geosocial embeddedness



(1) The first intersection concerns territorial and social network embeddedness. This issue has been addressed in a literature review by Small and Adler (2019). In this review, they show how physical space affects the formation of social ties and synthesize advances in network analysis,

neighborhood research, social geography, organizational science, architecture and design, and urban planning. However, they also acknowledge that the role of territory or place in networks needs to be investigated, particularly from a longitudinal and life course perspective. However, the question of the intersection between territory and social networks does not only concern the influence of territory or place on social networks. It should also concern the effectiveness of social networks in specific territories. This latter question has been addressed, for example, by Vandecasteele & Fasang (2021) in their analysis of the UK Household Longitudinal Study Understanding Society. They have found an interaction between the level of neighborhood deprivation and social networks on the duration of unemployment. That is, they show that neighborhood employment deprivation prolongs unemployment, but only for those who have all their friends within their neighborhood; the inverse relationship is demonstrated in advantaged neighborhoods. In the latter, having all one's friends in one's neighborhood increases one's chances of being reemployed.

(2) The second intersection concerns social networks and social categories. Here, I focus on three main results in the literature concerning disadvantaged groups, gender and age. Social networks can and do provide much support to people in vulnerable conditions; however, sustained marginality or poverty is usually associated with isolation and limited social networks beyond relationships with those living in the same difficult situations (Lubbers et al., 2020). Concerning gender, Antonucci and Akiyama (1987), for example, show that women tend to have larger social networks and more social support within them. Men tend to rely more on their spouses than women. Concerning age, children indicate their close family is their social network and then their extended family. Subsequently, in adolescence, they add their peers as important members of their networks and as sources of support (Levitt et al., 1993). In adulthood, the size of one's network, following different authors, increases until late middle adulthood and then decreases in very advanced age, although satisfaction with one's existing relationships remains stable (Carstensen, 1995; Smith et al., 2015). Other studies show that the size and, to some extent, the composition of the family network tend to be quite stable (except

when births and deaths play a role) over the life course but that more distant social relationships (friends, acquaintances, neighbors) may vary (decrease or increase) as a function of the various changes in one's life circumstances (Antonucci et al., 2014). A recent analysis of longitudinal data has even revealed an increase in the size of their network within a European sample (SHARE) of people aged 65 or above, showing that women are more likely to report network growth via the addition of new social network members and lower family involvement (Schwartz & Litwin, 2018).

The size of a network or satisfaction with relationships are not the whole story, however, as network structure and composition should also be considered. Phenomena such as homophily (the tendency for people to have relationships with those who are like themselves) can only be understood if one jointly considers the categorical and network embeddedness influences. For example, Völker (2022) examines homophily in relation to age, education, and gender. These results show that gender and educational homogeneity in friendships increase as people age, but that age homogeneity remains unchanged. Clearly, this section cannot credit all the advances that research has made on the interactions between social capital and categorical embeddedness throughout the life course. Even if much work still needs to be done to understand their interactions and influences regarding the life course, this topic has received extensive attention in recent years, as illustrated by the examples in the Advances in Life Course journal, a special issue coedited by Hollstein et al. (in press) on networked lives.

(3) The relationship between territories and social category embeddedness has been rather well covered; research shows that the relations between inequality and territory can begin very early during socialization. For example, gender inequality also expresses itself in the way public spaces, notably, playgrounds are used by children (Karsten, 2003). Playgrounds are used by boys more than girls, and the latter play closer to home and in smaller groups. Furthermore, females occupy less space in their play activities than males (Thorne, 1993).

Differences in territorial infrastructure and segregation mirroring social inequality are also well documented (Ham et al., 2021; Lobao et al., 2007). Two examples crossing

neighborhoods and categorical embeddedness can be illustrated. The first concerns race (as used and defined by North American sociology) and neighborhoods in the USA. This relationship has been studied, notably, by Sharkey (2013). Using the Panel Study of Income Dynamic School, Sharkey shows that 2/3 of African American children born from 1985 to 2000 were raised in neighborhoods with at least 20% poverty, compared to 6% of "white" children (p.28). Moreover, this double categorical and territorial (dis)advantage reinforces a kind of inequality that deeply affects life outcomes (i.e., health trajectories, educational/professional careers, crime and violence). In another example, social epidemiology has investigated in depth the relationship between inequality within a territory and health outcomes. Wilkinson & Pickett (2006) thus argue that it is not only the level of wealth or income that is related to health or mortality but also the level of inequality within a geographical space. For example, Ben-Shlomo and colleagues (Ben-Shlomo et al., 1996), using the ward in England as a spatial scale and mortality as an outcome, indicate that the level of deprivation follows the usual mortality gradient, with higher levels of mortality in relatively deprived wards. They also show that the relationship between level of mortality and social inequality is higher amid intermediate levels of socioeconomic heterogeneity (the most deprived wards and the most privileged do not show these relationships). This interesting study indicates that specific characteristics of population and territory may interact with inequality regarding mortality, without clear explanation. However, studying inequality within and across territories or places represents an advance in the study of the complexity of the meso-level that has not received enough consideration from a life course perspective.

(4) Few studies have treated the three approaches of the meso-level together, and not from a life course perspective. Bidart et al. (2022) and the PhD thesis of Brändle (2018) are such examples. Using different databases and populations (notably adolescents and adults), they both demonstrate that most social relationships take place within countries at the local level (within regions or neighborhoods). Moreover, Brändle shows, on the basis of the Add

Health data, how the probability of being friends (or not) among adolescents is independently influenced by the three types of embeddedness. That is, two adolescents have a higher probability to become friends if they are territorially close (living at walking distance), if they both know the same third person (social network triad transitivity principle), and if they share a common identity or institution (being in the same classroom, being of the same social class or gender, etc.). These three dimensions also share some variance, i.e., they are intertwined; nevertheless, they also have independent and additive effects on the probability of becoming friends.

There are also many studies on the social networks of disadvantaged groups that account for these three dimensions. Survey-based studies have found, for example, that more impoverished people living in high-poverty neighborhoods have smaller nonkin networks and are more likely to be isolated than those living in low-poverty areas and that living in an impoverished area comprising all one's friends hinders obtaining a new job (for example, Small 2007; van Eijk 2010).

Overall, these studies reveal that there are empirical bases for focusing on territory, social networks, and social categories, the bases of the meso-level where life trajectories are concretely occuring. This does not mean, of course, that all social relationships are local. Nonetheless, these studies reveal that aggregating territory, network and structural factors form a heuristic for understanding the meso-level context, defined as the level of concrete interdependencies, and unveil novel inputs in life course research.

Conclusion

The life course tradition has put forward the concept of linked lives (Settersten, 2015) and deemed the multilevel principle a main organizing principle of the life course with multidirectionality and multidimensionality (Bernardi et al., 2019). Here, I have aimed to define three qualitatively different levels of analysis of the life course from an interdisciplinary perspective: (1) the micro-level, concerned with individual resources and reserves; (2) the meso-level, focused on experienced

interdependencies; and (3) the macro-level, concerned with abstract social concepts. These three levels correspond to different levels of explanation and inquiry that need consensual definitions. It is important to stress that all levels are important in the explanation of life trajectories. The focus on the meso-level in this paper is a consequence of its relative neglect in life course research, not of its predominance. The multilevel principle of the study of the life course call for the articulation of different levels of explanation and somehow, even if analytical efforts cannot (and probably shouldn't) always take into consideration levels together, individual trajectories are always embedded in geo-social contexts, which are always embedded in more abstract societal structures. In some cases, effects (for example at the macro-level) can be explained at lower levels (and vice versa) as suggested in Coleman's (1990) boat/bathtub model or Coleman-Boudon model (see also Jepperson & Meyer, 2011). However, in some cases, explanations at different levels may be qualitatively independent or opposed in effects, which is a basic assumption of the life course multilevel principle. Moreover, a complete life course analyses should also consider the interdependences of the multilevel perspective with the temporal and multidimensional ones (Spini, Bernardi, & Oris, 2017; Bernardi, Huinink & Settersten, 2019).

Here, we developed ideas to define the complexity of the meso-level taken notably from social psychology (my discipline) and spatial approaches (to the extent I could represent it) The micro- and macro-level also need refinements. Within-individual interdisciplinarity has limits that can only be overcome by crossing expertise and with the collaboration of experts in different fields and approaches of the life course.

I have attempted to build upon the "agency within structure paradigm", defending the idea that the meso-level is a third crucial level of analysis in the life course. I have defined it as the geosocial embeddedness of the concrete experiences of interdependencies, which can be analyzed based on three types of interdependencies: (1) social networks, (2) social categories, and (3) territorial embeddedness. In presenting illustrations of possible developments regarding the intersections among these three types of embeddedness, I have concluded and proposed possible, empirical, and novel questions to be addressed by the life course community.

Specifically, I have proposed two new ideas for a better understanding of the relationship between

levels and research questions. The first concerns categorical embeddedness. That is, social structures and categories are usually more associated at the macro-level. However, in our conceptions of these levels, social categories or statuses are not related to a given level per se. If they are related in an analysis to concrete experiences of interdependencies, they are also essential principles of analysis at the meso-level.

A similar decision has been reached for subjective appraisals of social relationships. In most theoretical models, subjective measures are associated with the individual level. that as far as they concern accessible or experienced social relationships or territories or places, subjective measures can be related to the meso-level. This is in line with influential models. For example, Lazarus & Folkman (1984) distinguish between primary and secondary appraisals. Primary appraisals indicate that individuals evaluate the consequences of the transaction between him/herself and the environment, what we have located at the meso-level. Secondary appraisals are needed typically in stressful situations and necessitates a cognitive process through which long-term control and well-being can be recovered or increased (see also Heckhausen & Schulz, 1995). The interaction between these factors defines the coping actions enacted to "shape, manage, or resolve stressful events and situations (Dewe & Cooper, 2007) stressing again that we need usually more than a level of explanation for understanding the life course.

The list of objects of interest at the meso-level was not fully covered here. However, I have privileged here a qualitative distinction level instead of a quantitative one. Thus, if there are theoretically good reasons, one can always suggest that a given collective indicators can be associated with a meso-level or macro-level of analysis. Sometimes, defining the salient level is not easy, notably, because the statistical levels of analysis (used, for example, in multilevel analysis) may not correspond to the theoretical levels of analysis. For example, a subjective indicator of discrimination (if measured at the individual level) may be related to the individual statistical level but to a meso-level research question. If discrimination is measured using statistical indicators at the aggregated group level, then the statistical and theoretical levels match. Following the geosocial embeddedness framework presented here, I argue that these statistical and theoretical levels may not necessarily match.

There are also new questions that arise amid, for example, the digitalization of many relationships.

These pose new problems to the definition of social networks and categorical embeddedness, as the type of ties one can build on the internet can take various forms and comprise part of a social network or not. As underlined by Ang (2022), social connectedness is becoming more diverse and less geographically bound. For example, do people who play a game together but have never met, yet play every day together, have the same status as the typical ties in a social network? Is a definition of social capital including this new type of virtual relationship needed? The arrival of artificial intelligence and robots may also diversify even further the meso-level people are living in, with probably nonanticipated consequences for life trajectories (loss of jobs, more interactions with machines, etc.) amid the meso-level interactions and experiences that will be experienced in the future.

Analyzing the meso-level in depth will also require the adoption of various methodological strategies to understand the effects of geosocial embeddedness on the life course. One of the consequences of defining the meso-level as qualified by interdependency means that qualitative (diaries, interviews, life calendars, observations, etc.) and quantitative (GPS, big data on communication exchanges using numeric devices, number and content of exchanges with people, etc.), objective (air and noise environment, canopy, use of different social infrastructures, possibility to use sidewalks in the neighborhood, etc.) and subjective (perception of security or discrimination; satisfaction with relationships, with household quality, etc.) tools are needed that enable us to better understand how people experience their social, natural and material territory or place. This may also drive us to launch new panels that collect geocoded data on households, dwellings or individuals and sufficient information at smaller geographical scales, a challenge that spatial life course epidemiology is embracing in its agenda for health issues (Jia et al., 2019). Life course research should also envisage this kind of research for other life domains.

Sociology and psychology have thus far “danced this tango” quite alone (sometimes, together with biology). Taking the meso-level seriously, I argue that life course research requires theoretical integration of perspectives and concepts from disciplines such as social psychology or social geography. These disciplines may enrich our methodological approaches and enable theoretical advances in life course research, notably, concerning the geosocial embeddedness of life trajectories.

However, they are not sufficient. The biological perspective is lacking in this essay but is of the utmost importance for understanding human development (see Bernardi et al., 2019). This is clearly a deficiency that must be addressed. The only reason I have not done so is my lack of expertise; thus, I have preferred to follow the "where one cannot speak thereof, one must be silent" injunction.

In conclusion, I hope that I have convinced readers that the sorites paradox can be overcome in defining levels of analyses based on research questions concerning the individual, the interdependence relationships, and the more macro abstract concepts. Moreover, I have also proposed that social and territorial meso-level interdependencies channel life trajectories between agency and large collective structures and that this level of explanation is crucial for understanding the directions lives take, together with the more individual or macro-social perspectives. It is time to acknowledge that individuals never walk alone and that they are bound to specific territories and places, to others and to our social identities throughout the life course.

References

Ang, S. (2022). Internet use and cohort change in social connectedness among older adults. *Advances in Life Course Research, 54*, 100514. https://doi.org/10.1016/j.alcr.2022.100514

Antonucci, T. C., Ajrouch, K. J., & Birditt, K. S. (2014). The convoy model : Explaining social relations from a multidisciplinary perspective. *The Gerontologist, 54*(1), 82-92. https://doi.org/10.1093/geront/gnt118

Antonucci, T. C., & Akiyama, H. (1987). An examination of sex differences in social support among older men and women. *Sex Roles, 17*(11/12), 737-749.

Basta, L. A., Richmond, T. S., & Wiebe, D. J. (2010). Neighborhoods, daily activities, and measuring health risks experienced in urban environments. *Social Science & Medicine, 71*(11), 1943-1950. https://doi.org/10.1016/j.socscimed.2010.09.008

Ben-Shlomo, Y., White, I. R., & Marmot, M. (1996). Does the variation in the socioeconomic characteristics of an area affect mortality? *BMJ, 312*(7037), 1013-1014. https://doi.org/10.1136/bmj.312.7037.1013

Berdahl, J. L. (2007). Harassment based on sex: Protecting social status in the context of gender hierarchy. *Academy of Management Review, 32*(2), 641-658.

Bernardi, L., Huinink, J., & Settersten, R. A. (2019). The life course cube : A tool for studying lives. *Advances in Life Course Research, 41*, 100258. https://doi.org/10.1016/j.alcr.2018.11.004

Bidart, C., Maisonobe, M., & Viry, G. (2022). Analysing personal networks in geographical space beyond the question of distance. *Social Inclusion, 10*(3). https://doi.org/10.17645/si.v10i3.5381

Biggs, A., Brough, P., & Drummond, S. (2017). Lazarus and Folkman's psychological stress and coping theory. In C. L. Cooper & J. Campbell Quick (Eds.), *The Handbook of stress and health: A guide to research and practice* (pp. 349-364). Chichester: John Wiley & Sons.

Brändle, K. (2018). *A small world ? How social and geographical distance (still) structure social relationships.* Université de Lausanne.

Brands, R. A. (2013). Cognitive social structures in social network research : A review. *Journal of Organizational Behavior, 34*(S1), S82-S103. https://doi.org/10.1002/job.1890

Bronfenbrenner, U. (1979). *The ecology of human development : Experiments by nature and design.* Harvard University Press.

Bronfenbrenner, U. (1994). Ecological models of human developemnt. In M. Gauvain & M. Cole (Eds.), *International encyclopedia of education* (2nd éd., Vol. 3, pp. 37-43). Freeman.

Browning, C. R., Cagney, K. A., & Boettner, B. (2016). Neighborhood, place, and the life course. In M. J. Shanahan, J. T. Mortimer, & M. Kirkpatrick Johnson (Eds.), *Handbook of the life course* (pp. 597-620). Springer International Publishing. https://doi.org/10.1007/978-3-319-20880-0_26

Cacioppo, J., T., Bernston, G. G., Sheridan, J. F., & McClintock, M. K. (2000). Multilevel integrative analyses of human behavior. *Social Neuroscience and the Complementing Nature of Social and Biological Approaches. Psychological Bulletin, 126*(6), 829-843.

Carstensen, L. L. (1995). Evidence for a life-span thoery of socioemotional selectivity. *Current Directions in Psychological Science, 4*, 151-156.

Chaix, B. (2018). Mobile sensing in environmental health and neighborhood research. *Annual Review of Public Health, 39*(1), 367-384. https://doi.org/10.1146/annurev-publhealth-040617-013731

Coleman, J. S. (1990). *Foundations of social theory*. Harvard University Press.

Cortina, L. M., Magley, V. J., Williams, J. H., & Langhout, R. D. (2001). Incivility in the workplace : Incidence and impact. *Journal of Occupational Health Psychology, 6*(1), 64-80. https://doi.org/10.1037/1076-8998.6.1.64

Davies, C., & Sanesi, G. (2022). COVID-19 and the importance of urban green spaces. *Urban Forestry & Urban Greening, 74*, 127654. https://doi.org/10.1016/j.ufug.2022.127654

Del Biaggio, C. (2016). Territory beyond the anglophone tradition. In J. A. Agnew, V. Mamadouh, A. Secor, & J. Sharp (Eds.), *The Wiley Blackwell companion to political geography* (pp. 35-47). Wiley Blackwell. http://eu.wiley.com/WileyCDA/WileyTitle/productCd-1118725883.html.

Deutsch, M. (2011). Interdependence and psychological orientation. In P. T. Coleman (Ed.), *Conflict, interdependence, and justice* (pp. 247-271). Springer, New York. https://doi.org/10.1007/978-1-4419-9994-8_11

Diewald, M., & Mayer, K. U. (2009). The sociology of the life course and life span psychology: Integrated paradigm or complementing pathways? *Advances in Life Couse Research, 14*(1-2), 5-14. https://doi.org/10.1016/j.alcr.2009.03.001

Doise, W. (1982). *L'explication en psychologie sociale*. Presses Universitaires de France.

Doise, W. (1986). *Levels of explanation in social psychology*. Cambridge University Press.

Duarte, F. (2017). *Space, place, and territory : A critical review on spatialities (First edition)*. Routledge.

Duncan, D. T., & Kawachi, I. (Éds.). (2018). *Neighborhoods and health (Second edition)*. Oxford University Press.

Duncan, D. T., Tamura, K., Regan, S. D., Athens, J., Elbel, B., Meline, J., Al-Ajlouni, Y. A., & Chaix, B. (2017). Quantifying spatial misclassification in exposure to noise complaints among low-income housing residents across New York City neighborhoods : A Global Positioning System (GPS) study. *Annals of Epidemiology, 27*(1), 67-75. https://doi.org/10.1016/j.annepidem.2016.09.017

Elder Jr, G. H. (1995). The life course paradigm : Social change and individual development. In G. H. Elder Jr & K. Lüscher (Eds.), *Examining lives in context: Perspectives on the ecology of human development* (pp. 101-136). American Psychological Association.

Faist, T. (2010). The crucial meso-level. In M. Martiniello & J. Rath (Eds.), *Selected studies in international migration and immigrant incorporation* (pp. 59-90). Amsterdam University Press.

Feld, S. L., & Carter, W. C. (2002). Detecting measurement bias in respondent reports of personal networks. *Social Networks, 24*(4), 365-383. https://doi.org/10.1016/S0378-8733(02)00013-8

Fiske, S. T. (2010). Interpersonal stratification : Status, power, and subordination. In S. T. Fiske, D. T. Gilbert & G. Lindzey (Eds.), *Handbook of social psychology* (5th ed., Vol. 2, pp. 941-982). John Wiley & Sons, Inc.

Gill, A. (2018). Survivor-centered research : Towards an intersectional gender-based violence

movement. *Journal of Family Violence, 33*(8), 559-562. https://doi.org/10.1007/s10896-018-9993-0
Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity*. Prentice-Hall.
Granovetter, M. (1985). Economic action and social structure : The problem of embeddedness. *American Journal of Sociology, 91*(3), 481-510.
Grossetti, M. (2006). Trois échelles d'action et d'analyse. *L'année sociologique, 56*(2), 285-307.
Ham, M. van, Tammaru, T., Ubareviécienҫe, R., & Janssen, H. (Éds.). (2021). *Urban socio-economic segregation and income inequality : A global perspective*. Springer.
Heckhausen, J., & Schulz, R. (1995). A life-span theory of control. *Psychological Review, 102*(2), 284–304. https://doi.org/10.1037/0033-295X.102.2.284
Heckhausen, J., & Buchmann, M. (2019). A multi-disciplinary model of life-course canalization and agency. *Advances in Life Couse Research, 41*, 100246. https://doi.org/10.1016/j.alcr.2018.09.002
Hess, M. (2004). 'Spatial' relationships? Towards a reconceptualization of embeddedness. *Progress in Human Geography, 28*(2), 165-186.
Hollstein, B., Settersten, R., Spini, D., & Vacchiano, M. (in press). Networked lives: Probing the influence of social networks on the life course. *Advances in Life Course Research*.
Jepperson, R., and Meyer, J. W. (2011). Multiple levels of analysis and the limitations of methodological individualisms. *Sociological Theory, 29*(1), 54-73.
Jetten, J., Haslam, S. A., Cruwys, T., Greenaway, K. H., Haslam, C., & Steffens, N. K. (2017). Advancing the social identity approach to health and well-being: Progressing the social cure research agenda. *European Journal of Social Psychology, 47*(7), 789-802. https://doi.org/10.1002/ejsp.2333
Jia, P., Lakerveld, J., Wu, J., Stein, A., Root, E. D., Sabel, C. E., Vermeulen, R., Remais, J. V., Chen, X., Brownson, R. C., Amer, S., Xiao, Q., Wang, L., Verschuren, W. M. M., Wu, T., Wang, Y., & James, P. (2019). Top 10 research priorities in spatial lifecourse epidemiology. *Environmental Health Perspectives, 127*(7), 074501. https://doi.org/10.1289/EHP4868
Jones, E. E., Farina, A., Hastorf, A., Markus, H., Miller, D. T., & Scott, R. A. (1984). *Social Stigma: The psychology of marked relationships*. Freeman.
Kahn, R. L., & Antonucci, T. C. (1980). Convoys over the life course : Attachment, roles, and social support. In P. B. Baltes & O. G. Brim (Eds.), *Life-span development and behavior* (Vol. 3, pp. 253-268). Academic Press.
Karsten, L. (2003). Children's use of public space : The gendered world of the playground. *Childhood, 10*(4), 457-473. https://doi.org/10.1177/0907568203104005
Keltner, D., & Haidt, J. (1999). Social functions of emotions at four levels of analyses. *Cognition and Emotion, 13*(5), 505-521.
Klinenberg, E. (2018). *Palaces for the people : How social infrastructure can help fight inequality, polarization, and the decline of civic life (First edition)*. New York: Crown.
Landecker, H., & Panofsky, A. (2013). From social structure to gene regulation, and back : A critical introduction to environmental epigenetics for sociology. *Annual Review of Sociology, 39*(1), 333-357. https://doi.org/10.1146/annurev-soc-071312-145707
Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
Levitt, M. J., Guacci-Franco, N., & Levitt, J. L. (1993). Convoys of social support in childhood and early adolescence : Structure and function. *Developmental Psychology, 29*(5), 811-818.
Levy, R. (2002). *Meso-social structures and stratification analysis - a missing link ?* https://serval.unil.ch/resource/serval:BIB_24306.P001/REF.pdf Retrieved on 5.6.2023.
Levy, R., & Bühlmann, F. (2016). Towards a socio-structural framework for life course analysis. *Advances in Life Course Research, 30*, 30-42.
Lindquist, K. A., & MacCormack, J. K. (2014). Comment : Constructionism is a multilevel framework for affective science. *Emotion Review, 6*(2), 134-135. https://doi.org/10.1177/1754073913512000
Lobao, L. M., Hooks, G., & Tickamyer, A. R. (Eds.). (2007). *The sociology of spatial inequality*. State University of New York Press.
Lubbers, M. J., Small, M. L., & García, H. V. (2020). Do networks help people to manage poverty? Perspectives from the field. *The Annals of the American Academy of Political and Social*

Science, *689*(1), 7-25. https://doi.org/10.1177/0002716220923959
Luo, W., & MacEachren, A. M. (2014). Geo-social visual analytics. *Journal of Spatial Information Science*, *8*, 27-66. doi:10.5311/JOSIS.2014.8.139
Lux, V., Non, A. L., Pexman, P. M., Stadler, W., Weber, L. A. E., & Krüger, M. (2021). A developmental framework for embodiment research : The next step toward integrating concepts and methods. *Frontiers in Systems Neuroscience*, *15*, 672740. https://doi.org/10.3389/fnsys.2021.672740.
MacKinnon, N. J. (2022). Reductionism: Friend or foe of an integrative social psychology. *Social Psychology Quarterly*, *85*(1), 6-22.
Marmot, M. G. (2003). Understanding social inequalities in health. *Perspectives in Biology and Medicine*, 46(S3), S9-S23. https://doi.org/10.1353/pbm.2003.0070
Mayer, K. U. (2009). New directions in life course research. *Annual Review of Sociology*, *35*, 413-433.
Mayer, K. U. (2015). An observatory for life courses : Populations, countries, institutions, and history. *Research in Human Development*, *12*(3-4), 196-201.
McLaughlin, D., Vagenas, D., Pachana, N. A., Begum, N., & Dobson, A. (2010). Gender differences in social network size and satisfaction in adults in their 70s. Journal of *Health Psychology*, *15*(5), 671-679. https://doi.org/10.1177/1359105310368177
Moscovici, S. (1988). Notes toward a description of social representations. *European Journal of Social Psychology*, *18*, 211-250.
Owens, A. (2010). Neighborhoods and schools as competing and reinforcing contexts for educational attainment. *Sociology of Education*, *83*(4), 287-311. https://doi.org/10.1177/0038040710383519
Pascoe, E. A., & Smart Richman, L. (2009). Perceived discrimination and health : A meta-analytic review. *Psychological Bulletin*, *135*(4), 531-554. https://doi.org/10.1037/a0016059
Patterson, K. A. E., Gall, S. L., Venn, A. J., Otahal, P., Blizzard, L., Dwyer, T., & Cleland, V. J. (2017). Accumulated exposure to rural areas of residence over the life course is associated with overweight and obesity in adulthood : A 25-year prospective cohort study. *Annals of Epidemiology*, *27*(3), 169-175.e2. https://doi.org/10.1016/j.annepidem.2017.01.007
Pearlin, L. I., & Skaff, M. M. (1996). Stress and the life course. *The Gerontologist*, *36*(2), 239-247.
Polanyi, K. (1944). *The great transformation. The political and economic origins of our time*. Boston: Beacon Press.
Schmitt, M. T., Branscombe, N. R., Postmes, T., & Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being : A meta-analytic review. *Psychological Bulletin*, *140*(4), 921-948. https://doi.org/10.1037/a0035754
Schwartz, E., & Litwin, H. (2018). Social network changes among older Europeans : The role of gender. *European Journal of Ageing*, *15*(4), 359-367. https://doi.org/10.1007/s10433-017-0454-z
Settersten Jr, R. A., & Gannon, L. (2005). Structure, agency, and the space between: On the challenges and contradictions of a blended view of the life course. In R. Levy, P. Ghisletta, J.-M. Le Goff, D. Spini, & E. Widmer (Eds.), *Towards an interdisciplinary perspective on the life course* (Vol. 10, pp. 35-55). Elsevier.
Settersten, R. A. (2009). It takes two to tango : The (un)easy dance between life-course sociology and life-span psychology. *Advances in Life Course Research*, *14*(1-2), 74-81.
Settersten, R. A. (2015). Relationships in time and the life course : The significance of linked lives. *Research in Human Development*, *12*(3-4), 217-223. https://doi.org/10.1080/15427609.2015.1071944
Settersten, R. A., Bernardi, L., Härkönen, J., Antonucci, T. C., Dykstra, P. A., Heckhausen, J., Kuh, D., Mayer, K. U., Moen, P., Mortimer, J. T., Mulder, C. H., Smeeding, T. M., Van Der Lippe, T., Hagestad, G. O., Kohli, M., Levy, R., Schoon, I., & Thomson, E. (2020). Understanding the effects of Covid-19 through a life course lens. *Advances in Life Course Research*, *45*, 100360. https://doi.org/10.1016/j.alcr.2020.100360
Sharkey, P. (2013). *Stuck in place : Urban neighborhoods and the end of progress toward racial equality*. Chicago: The University of Chicago Press.
Small, M. L., & Adler, L. (2019). The role of space in the formation of social ties. *Annual Review of Sociology*, *45*(1), 111-132. https://doi.org/10.1146/annurev-soc-073018-022707

Smith, E. J., Marcum, C. S., Boessen, A., Almquist, Z. W., Hipp, J. R., Nagle, N. N., & Butts, C. T. (2015). The Relationship of age to personal network size, relational multiplexity, and proximity to alters in the western United States. *The Journals of Gerontology: Series B, 70*(1), 91-99. https://doi.org/10.1093/geronb/gbu142

Soja, E. (1989). *Postmodern geographies : The reassertion of space in social theory*. Verso.

Spini, D., Bernardi, L., & Oris, M. (2017). Toward a life course framework of vulnerability. *Research in Human Development, 14*(1), 5-25.

Spini, D., Elcheroth, G., & Figini, D. (2008). Is there space for time in social spychology publications ? A content analysis across five journals. *Journal of Community and Applied Social Psychology, 19*, 165-181.

Spini, D., & Vacchiano, M. (2023). Synthesis : Vulnerability in context. In D. Spini & E. Widmer (Eds.), *Withstanding vulnerability throughout adult life* (pp. 205-213). Springer Nature Singapore. https://doi.org/10.1007/978-981-19-4567-0_13

Spini, D., & Widmer, E. (2023). Introduction: Inhabiting vulnerability throughout the life course. In D. Spini & E. Widmer (Eds.), *Withstanding vulnerability throughout adult life* (pp. 1-13). Palgrave Macmillan, Singapore. https://doi.org/10.1007/978-981-19-4567-0_1

Swim, J. K., Hyers, L. L., Cohen, L. L., & Ferguson, M. J. (2001). Everyday sexism : Evidence for its incidence, nature, and psychological impact from three daily diary studies. *Journal of Social Issues, 57*(1), 31-53. https://doi.org/10.1111/0022-4537.00200

Teas, E., Marceau, K,. & Friedman, E. (2023) Life-course social connectedness: Comparing data-driven and theoretical classifications as predictors of functional limitations in adulthood, *Advances in Life Course Research, 55,* 100529. https://doi.org/10.1016/j.alcr.2023.100529

Thompson, L., & Fine, G. A. (1999). Socially shared cognition, affect, and behavior : A review and integration. *Personality and Social Psychology Review, 3*(4), 278-302. https://doi.org/10.1207/s15327957pspr0304_1

Vacchiano, M., Lazega, E., & Spini, D. (2022). Multilevel networks and status attainment. *Advances in Life Course Research, 52,* 100479. https://doi.org/10.1016/j.alcr.2022.100479

Vacchiano, M., & Spini, D. (2021). Neworked lives. *Journal for the Theory of Social Behavior, 51*, 87-103. https://doi.org/10.1111/jtsb.12265

Vandecasteele, L., & Fasang, A. E. (2021). Neighbourhoods, networks and unemployment : The role of neighbourhood disadvantage and local networks in taking up work. *Urban Studies, 58*(4), 696-714. https://doi.org/10.1177/0042098020925374

Völker, B. (2022). 'Birds of a feather' - forever? Homogeneity in adult friendship networks through the life course. *Advances in Life Course Research, 53,* 100498. https://doi.org/10.1016/j.alcr.2022.100498

Volvey, A., Stock, M., & Calbérac, Y. (2021). Spatial turn, tournant spatial, tournant géographique. In *Mouvements de géographie. Une science sociale aux tournants* (pp. 21-38). Presses Universitaires de Rennes.

Waddington, C. H. (1957). *The strategy of the genes*. Allen & Unwin.

Wilkinson, R. G., & Pickett, K. E. (2006). Income inequality and population health : A review and explanation of the evidence. *Social Science & Medicine, 62*(7), 1768-1784. https://doi.org/10.1016/j.socscimed.2005.08.036

Wish, M., Deutsch, M., & Kaplan, S. J. (1976). Perceived dimensions of Interpersnal relations. *Journal of Personality & Social Psychology, 33*(4), 409-420.

Zenk, S. N., Schulz, A. J., Matthews, S. A., Odoms-Young, A., Wilbur, J., Wegrzyn, L., Gibbs, K., Braunschweig, C., & Stokes, C. (2011). Activity space environment and dietary and physical activity behaviors : A pilot study. *Health & Place, 17*(5), 1150-1161. https://doi.org/10.1016/j.healthplace.2011.05.001