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MULTI-LOCAL LIVING – THE APPROACHES OF RATIONAL CHOICE THEORY, SOCIOLOGY OF EVERYDAY LIFE AND ACTOR-NETWORK THEORY

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ABSTRACT

There is no ‘supra-theory’, which might synthesise potential theoretical approaches for the study of multi-local living. Three selected theoretical perspectives are discussed: according to rational choice theory (RCT), multiple localisations represent just one of a number of choices, selected on the basis of individual preferences and given restrictions. Sociology of everyday life (SEL) addresses the reproduction of social life by focusing on practices of actors within the various social frameworks of multi-local everyday life. Actor-network theory (ANT) provides a ‘toolkit’ to ‘de-scribe’ the hybrid enactment of multi-local households. Materiality, processes, and multiplicity are emphasised. Each perspective reflects partial realities of the multiplicity of multi-local living. It is argued that the modelling of residential multi-locality pursued by the three approaches is highly productive if their results are compared with one another and interpreted as versions of reality differently shaped, which are partly congruent, partly incongruent due to incommensurable ontological and theoretical positions.

Key words: Residential multi-locality, rational choice theory, sociology of everyday life, actor-network theory, theory comparison

DIFFERENT APPROACHES – MULTIPLE OBJECTS

Even though multi-local living is not a new phenomenon in most European countries, the multiplicity of practices of this organisation of life has gained a new dimension. Embedded in postmodern societies, multi-locality is mostly induced by processes such as individualisation, flexibilisation, acceleration, and mobilisation. Residential multi-locality may be explored against the background of diverse theory and by employing a variety of methods (see Weichhart 2015). In this contribution we aim to scru-

tinise the fruitfulness of three approaches: rational choice theory (RCT), sociology of everyday life (SEL), and actor-network theory (ANT) in order to gain greater insight into various aspects of the phenomenon of multi-local living. This selection, being one of many, should underpin current projects and narrow down specific research questions.

These approaches have in common that they conceive multi-local living as a practice and a process. That is why they investigate how the practices evolve, how they can be maintained over longer periods, and how they are modified over time. The actors of multi-local living

arrangements combine mobility and settledness or immobility in diverse ways. As a result, sequences emerge in which either mobility or immobility is dominant, in which multi-locality is replaced by unilocality. In their course, specific decisions, practical routines, incidents, and coincidences interlock as bifurcations. 'Thus repetition is not an anachronism in a world of constant flux, but an essential element of the experience of modernity' (Felski 2000, p. 85). This repetition serves as means of relief and harmonisation to the actors performing residential multi-locality.

On the other hand, these three approaches differ in that their objects are not congruent since they are shaped by the underlying theoretical assumptions, their methodologies, and the methods typically used by each approach. These objects include: the processes of organising everyday life in households (SEL), decision-making processes of individuals and household members (RCT), and the enactment of multi-local living as a 'work-net' of heterogeneous entities (ANT). We suggest using multi-paradigmatic approaches, which requires sound methodological bases for complementary analysis: anthropological sociology (SEL), methodological individualism (RCT), post-structuralism (ANT). The methods employed to explore these objects differ as well. Under these conditions, multi-local living represents a 'multiple object' (Mol 2002; see also Law 2004). Empirical analyses employing these theoretical approaches allow for distinguishing diverse aspects of multi-local living that may partially overlap. Our contribution focuses on the multiplicity of the objects from a methodological perspective by first introducing the three approaches, followed by a synopsis that scrutinises their potentials as well as their limitations and incommensurabilities, and conclude with the proposal to adopt a multi-paradigmatic view on multi-local living due to the specific ways in which the discussed approaches are shaping the objects.

RATIONAL CHOICE THEORY (RCT) AND JOB-INDUCED MOBILITY

The starting point of our considerations is the question about the conditions of an individual's decision on multi-local living. In the following discussion, this process of decision-

making is termed 'multi-localisation' (see Petzold 2013). For this purpose, modelling based on rational choice theory (RCT) seems promising. Generally speaking, RCT seeks to explain how an actor selects one action among several options (e.g. Opp 1999; Voss & Abraham 2000). Applied to our question, this means that the theory needs to state the reasons why an actor selects multi-localisation instead of daily commuting or migration.

RCT is based on three simple assumptions:

1. actors have preferences (wishes, motives), which are the sum of the expectations and evaluations of a specific action option (*motivation hypothesis*);
2. further underlying conditions include positive (chances) and negative restrictions (constraints) of action (*hypothesis of action constraints*), which may derive from external (e.g. finances) and internal sources (e.g. norms); and
3. the actors select that action which, among the given constraints, is most promising for implementing their preferences (*hypothesis of utility maximation*). Potential decision rules are manifold, as described for instance, by subjective expected utility (SEU) theory (Savage 1954), prospect theory (Kahneman & Tversky 1979), and bounded rationality (Simon 1979).

According to the prominent SEU theory (Savage 1954), actors select that option from the available set of options which seems best suited to achieve their goals, considering the probability of occurrence under the given situational constraints. The actors combine and compare the expected action effects with their assessment. As, on principle, actions have diverse effects, not all the potential preferences can be put into practice. Rationality in this sense is regarded subjectively. The actor maximises only that net benefit to be expected from their action from their subjective point of view (e.g. Lindenberg 1990; Esser 1993).

If we transfer these considerations to the research problem at hand, we may distinguish between several action options, among them multi-localisation (*ml*) versus remaining at the present place of residence (*stay*). In consequence, the utility of multi-localisation results from location attributes that, in pursuance of

subjective goals (G_1, \dots, G_n), increase the utility (U_i) of individual benefit generation as well as the subjectively perceived probability of occurrence (p_i). The decision on multi-localisation may be expressed as:

$$U_{ml} = \sum_{i=1}^n p_i * U_i$$

Hence, the probability of multi-localisation (U_{ml}) generally results from combining all elements of place utility that, considering the costs arising from multi-localisation (C_{ml}) and those from staying (C_{stay}), have to exceed current local place utility (U_{stay}):

$$U_{ml} - C_{ml} > U_{stay} - C_{stay}$$

This was the way how migration decisions were modelled in older studies (Speare 1971; Chermers *et al.* 1978). But these analytical basic assumptions need to be extended separately for each research problem by including systematic additional assumptions relating to: utility arguments, changes in preference (or their stability), and subjective probabilities (Lindenberg 1989).

Multi-localisation as individual decision – A simple model of multi-localisation involves a number of problems since a lot of people do not necessarily take into account multi-localisation as an action option to migration or daily commuting. Moreover, we cannot assume that benefits (U_i) remain stable since goals (G_i) may change in the course of life. Furthermore, the costs of multi-localisation (C_{ml}) are assessed differently. Last but not least, the simple model cannot predict when, considering the place utility given (U_i), migration, or multi-localisation, or daily commuting will occur. Hence, the basic model is far too unspecific and, therefore, further differentiations are needed.

First of all, it is necessary to analyse the overall place utility (U_{loc}) as different local attributes may acquire different subjective importance. On principle, we may assume a local utility that serves the personal economic growth (e.g. income, family, housing market) and an extended utility (e.g. climate, local atmosphere, cultural offerings and consumer-related offers, location). If the place facilitates the pursuit of economic growth-related goals (G_i), the utility

of individual economic growth will increase (U_i). The extended utility (U_e) plays only a minor role for the generation of individual economic growth; yet it may become a decisive factor in case of narrow mobility decisions. In accordance with the SEU model, these locational gains, too, are related to a subjective probability of occurrence (p_i, p_e). Both the benefits for economic growth and the extended utility have different life stage-specific, subjective relevancies that result, for instance, from starting a family, starting a career, or job-related changes, and that may be expressed as weights (w_i, w_e):

$$U_{loc} = \sum_{i=1}^n w_i * p_i * U_i + \sum_{e=1}^n w_e * p_e * U_e$$

Hence, the utility of multi-localisation (U_{ml}) is the result of the perceived net benefits of the places (U_{loc1}, U_{loc2}), each of them consisting of the utility for welfare production (U_{iloc1}, U_{iloc2}) and the extended utility (U_{eloc1}, U_{eloc2}), depending on the life stage-specific assessment ($w_{iloc1}, w_{iloc2}, w_{eloc1}, w_{eloc2}$) and the subjectively perceived probability of occurrence ($p_{iloc1}, p_{iloc2}, p_{eloc1}, p_{eloc2}$).

$$U_{ml} = U_{loc1} + U_{loc2}$$

Migration research generally assumes a monotonously increasing function between the housing benefits at one place and the perceived difference from those at another place. The probability of migration rises with the increasing difference in benefits assigned to the specific places. If we apply this consideration to a decision on multi-localisation, the probability of multi-localisation rises with the increasing similarity of the respective benefits. If the location advantages of both places are high (e.g. place of work, place of the children's education), the probability of multi-localisation is high as well. A growing difference in utility between the places reduces the probability of multi-localisation and enhances the probability of migration.

$$U_{ml} = f(-\Delta U_{loc})$$

The sequence model of decision-making on multi-localisation, described below, can

provide a deeper analysis (cf. Kalter 1998; Kley 2011), since it is divided into three analytical stages: considering multi-localisation, planning multi-localisation, and implementing multi-localisation. The sequence of the steps may comprise very long, but also very short periods of time and each step includes a cost structure of its own.

The transition from status quo to multi-localisation considerations makes multi-localisation part of the set of potential action options. At that stage, a serious intention need not exist yet. Costs of multi-localisation considerations (C_{ml}) include only the costs for another residence and estimated transition costs. The probability of occurrence of the gains from multi-localisation (p_{ml}) is perceived differently, depending on the psychosocial disposition (r) and on the 'progress of decision-making'.

$$p_{ml} \times r \times U_{ml} > C_{ml}$$

The multi-localisation plan will be developed if multi-localisation represents the action option rated best. This step will only be taken if the gains expected from multi-localisation are reasonably justified; expected implementation costs as well as planning costs (C_p) are included in the considerations. The more specific the probability of gains arising from multi-localisation (p_{ml}) has become in the planning process, the more likely is multi-localisation. This step may also be called 'crossing the Rubicon', since a revision of the decision would hardly make sense due to the accrued costs. Biographical incidents (e.g. a child's birth, a job offer) may turn considerations for multi-localisation into a multi-localisation plan.

$$p_{ml} \times r \times U_{ml} > C_{ml} + C_p$$

Multi-localisation implementation does not automatically follow the plan as it is considerably determined by supports or constraints. This means that in spite of a plan, multi-localisation may be dismissed or another place may be selected. In consequence, not only costs of multi-localisation and planning have to be taken into account, but also additional external costs (C_E).

$$p_{ml} \times r \times U_{ml} > C_{ml} + C_p + C_E$$

Generally speaking, both the model of individual multi-localisation decisions and the sequence of decision-making stages are applicable to job-induced as well as to leisure-related forms of multi-localisation.

Multi-localisation as a bargaining problem – Conceiving multi-localisation as individual decision-making process neglects the fact that decisions of significant others are included in the individual's considerations. Various authors have pointed out that mobilisation decisions are highly complex and result from bargaining with other persons (Bielby & Bielby 1992; Jürges 1998; Kalter 1998).

In this approach the decisions of couple households are the result of a bargaining process in an exchange relationship (Ott 1992). The bargaining partners are aware of a pending conflict that may be caused by a mobilisation decision and include it in their strategic positioning. When the conflict appears to be too serious, migration will be cancelled (Kalter 1998; Abraham *et al.* 2010; Abraham & Nisic 2012). Thus, the actors' behaviour reveals that they take the relative bargaining power of significant others into account. An actor's bargaining power is based on the external options that either raise or lower the interest in mutual cooperation. Increasing external options, such as a good job opportunity, boost a partner's independence and, thus, bargaining power. This may bring forth the constellation that a mobilisation decision is oriented towards the higher-wage earner but may turn into a strategic bargaining problem: the working partner needs to convince the other one to move as well. From this perspective, couples, therefore, usually betray less willingness to move than singles as the distribution of the bargaining power is asymmetric.

Under the terms of game theory, this bargaining situation may also be described as the 'Battle of the Sexes' (e.g. Osborne & Rubinstein 1997): two actors can benefit from an exchange relationship although, due to its indivisibility, the gain is asymmetrically distributed. Transferring this situation to a potential decision on moving, we may assume

that an external job opportunity is a gain for one household member, whereas it is a loss for the other because of lack of job opportunities and fewer social contacts (Abraham & Nisic 2012). Possible action options for the ego are: refusing the job opportunity; becoming multi-localised; or moving (van Ommeren *et al.* 1997); the partner can react to each of them. The situation has no definite solution as two conditions may be considered beneficial: the overall utility of both migration and multi-localisation would be level for the household.

In order to illustrate this, let us take a (fictitious) couple household as an example. In the case of one partner's external job opportunity, both partners (e.g. man and woman) are interested in increasing or keeping the current household income. Refusing the offer would be less advantageous than splitting up or maintaining separate households. If, however, both migrate, the partner without a job will bear the major burden of costs: he/she will have to give up the present neighbourhood and it will be difficult to establish social contacts at the partner's place of work. If, on the other hand, the partner accepts the job and decides to commute, it is he/she who bears the main costs.

There are various possibilities to solve this decisional conflict. First of all, mutual trust probably plays a major role. The more stable a relationship is, the more willing a partner will be to accept higher household-related costs. Hence, one of them will commute. Moreover, additional incentives may be worked out to solve the dilemma. The partners may offer each other compensation, such as the household chores being done by the non-commuting partner. Furthermore, ideas of justice may provide a solution for the decision problem: should the multi-localisation costs be conceived as unfairly high, migration will grow more likely (e.g. if the commuting partner falls ill). Last but not least, we must not forget gender-specific role expectations that may emerge if the male partner is the breadwinner. This would explain why most studies reveal a higher rate of men among the people living multi-locally.

Viewed from the perspective of RCT, the multi-localisation of households is the result

of a strategic bargaining problem that is characterised by asymmetrically distributed utility and inequality of bargaining power and that is solved through additional incentives, trust, and normative ideas. Yet, its scope of description and explanation is limited to routinised sequences of daily life, as elucidated in the following considerations on sociology of everyday life.

SOCIOLOGY OF EVERYDAY LIFE (SEL) – AN ANTHROPOLOGICAL PERSPECTIVE

For conducting multi-locality studies, philosophical anthropology (see Fischer 2009) provides a suitable theoretical framework that may be connected with positions of pragmatism, practice theory, and cultural anthropology. Multi-locality means *vita activa* at several places (Rolshoven 2006, p. 181). With the implicit reference to Arendt (1992), 'active life' is designated as *conditio humana*. A crucial role is assigned to being active and acting as the modes of self-production of the communal and social human being. They link men with their organic constitution, with having a body and being a body² that have been civilised and are being continuously civilised. In order to satisfy their needs, human beings enter into active, dynamic, and contradictory relationships with their world; in their neediness they achieve their current historical expression. This anthropological line of argumentation is deepened by the practices of housing as an area of activities that distinctly rely on the embodiment and situatedness of action and perception (Jung 2011). This includes practices and artefacts that, for the time being, may bring the body into a more comfortable situation. According to Selle (1993), the house should be conceived as extension of the body, as third skin over our clothes. The residence, viewed by Spiegel (1994) as the material substrate of housing, responds to the neediness of the social human being and makes him/her perfect through an additional, an artificial nature. Dreher (2008, p. 1149) argues that artificiality, seen in this light, is men's strategy to create balance between themselves and the world. Residential multi-locality is an

enhanced artificiality that serves to expand the world and extend everyday life across several physical places. SEL can also rely on a 'pragmatic/pragmatistic anthropology' (Jung 2011, p. 48) in order to observe the practice of localisations that may be constituted anew in multiple sequences in the course of accelerated social change. The more recent contributions applying a practice theoretical approach are theory-based empirical projects relating, for example, to studies on families, gender, households, regional planning, housing, or on organisation. The following concise report on an empirical study on multi-local households (Weiske *et al.* 2008, 2009) can add some substantial insights and findings to the explanatory power of SEL: the trigger for systematic research often is embedded in the context of everyday practices. In our case the impetus resulted from participatory observation conducted after 1989, the year of German reunification: In the course of the transformation of German society/societies, the unidirectional, unbalanced in- and out-migration between Eastern and Western Germany increased; yet on the other hand, we could note people's temporary stays here and there that were linked to diverse kinds of housing, work, traffic practices, and social relations. Based on the assessment of residential relocations, migration sociology has provided evidence of general spatial population movements. The practice of multi-local living arrangements, however, involves spatial population movements without residential relocations. The number of residences increases, although not the number of households. The everyday lives of some household members extend over several places where they alternately live and work. Systematically following sociology of everyday life, we decided on the household as unit of observation as it is a social community that, as a community sharing living arrangements and economic interests, is essentially self-organising. Its goal is reproduction, meaning the self-generation of life in its organic and cultural dimensions. Everyday life represents the starting point and endpoint of any human activity (Joas 1981) and it is marked by specific structures of meaning that distinguish the 'private' from

the 'public' (Elias 1978) and that mark the 'limits of the community' (Plessner 1981) with their transitions to society.

People's everyday lives are extremely complex and heterogeneous, which needs to result in appropriate methodological decisions. The mobile individual is observed in their affiliation with the other community members. According to Elias, each individual requires another individual, which is opposed to an analytical perspective that reduces the individual to the single action (Elias 1989).

Targeting the research question on multi-local arrangements related to gainful employment reduces the complexity of the phenomenon. On the other hand, this focus is governed by systematic considerations since participation in socially shared work is indispensable for acquiring the means of self-support and household income. A multi-local conduct of everyday life aiming to gain access to the employment system is one of the efforts of adaptation that need to be made in the privacy of the household in order to participate in socially shared work.

Seen from the sociological perspective, the household is characterised by a multiple structure, being both a community of primary bonds (*Liebesgemeinschaft*) and a community of shared concerns (*Sachgemeinschaft*; Plessner 1981. see Bond 2013). This dual structure enables the household's adaptive changes in diverse historical contexts (Richarz 1998). The basic functions of the household serve the reproduction of the members' social and organic lives. They practice their common everyday life by organising its internal and external relations. Most people, except those living in institutions (e.g. care homes) or centres (e.g. prisons), are real members of one private household, sometimes of several households. The concept that a household is identified with one residence, with only one flat, generally needs to be called into question. Though still widely used, the conventional attribution of a household to a single (primary) address within a national territory is disbanding.

As communities of primary bonds, households exist in form of immediate personal relationships that are characterised by

genuineness and unreservedness and that will perish if these qualities fail. Self-care directs the community's everyday life towards the well-being of the community as a whole and, within this framework, towards the well-being of particular individual members (e.g. children, disabled members). The activities necessary to achieve this relate to its members' culturally delimited needs, among which sharing meals and their preparation assume a prominent role. Actually, sharing meals and the table are nearly archaic practices of social nearness and intimacy which maintain the body and require bodily presence and which they have in common with the affection towards and care for the needy and with sexual practices. Face-to-face relationships may be put on hold and maintained via modern means of communication, but they cannot be completely substituted. Not all primary-bond relationships are sexually connoted, but sexuality, impregnation, birth, and raising children are key concerns in the daily practices of many households. The connection between everyday life and reproduction is also emphasised by Heller (1981, p. 24), who argues that 'no society can exist without individual reproduction, and no individual can exist without their reproduction'.

The pragmatistic aspect of everyday life is also supported by Weber (1978, p. 87) when he states that 'the continual utilization and procurement of goods, whether through production or exchange, by an economic unit for purposes of its own consumption or to procure other goods for consumption' will be called 'household'. For its own consumption, the community needs to employ subsistence-oriented strategies as well as market-oriented ones, which are achieved by harmonising the tensions between these two logics (Steinmüller 1998, p. 170). The relationship of primary bonds grants assistance for dependant members whose contributions cannot cover their needs. However, the more performance-based justice rules over the neediness of the internal relationship, the more the character of the household is pronounced as a community of shared concerns.

Across its external limits, the household as a community of shared concerns connects

to social systems and structures for the purpose of participation. In order to achieve this goal, the social unit 'household' needs to switch between the mode of the community of primary bonds, granting intimacy, privacy, and informality, and the mode of the community of shared concerns, dominated by formality, determination of aims, and the public sphere. It has to adapt, for instance, to the social systems of gainful employment, education, health, social insurance, political interest aggregation, and public administration. With its multi-local arrangements, the household operates as collective actor on its external limits to multiply and optimise the potential connections to the social systems. For that reason, the community's internal relations need to be reorganised over and over again. This continuous process of restructuring with its dimensions of communal and associative relationships was at the centre of our research interests.

Let us briefly sum up our key research findings:

- From an anthropological perspective, the household is a social community that practices everyday life. The household's collective guiding principle is determined by the daily reproduction of social life, which comprises the maintenance of human life and, should the occasion arise, human reproduction and which governs the private household's logic of organisation.
- The analysis of the households' regimes of limits elucidates the individual members' diverse practices of communal relationships (*Vergemeinschaftung*) and associative relationships (*Vergesellschaftung*; see Bond 2013) in their situatedness and embodiment.
- The practice of multi-local living enhances the opportunities of households as economic communities and partnerships to participate in socially organised systems and resources. The extension of the potential activity space in the exterior goes hand in hand with the innovation of the communities' internal relationships, which affect, for instance, division of responsibilities, gender roles, generational relations, and all the individual opportunities in life.

- Multi-local conducts of life require recursive loops of reflections and result in increased reflexivity (Nowotny *et al.* 2001). Stress and overload experienced by the individual members in the practice of multi-local living endanger the reproductivity of the communities. Inflictions need to be reduced to a bearable level, which means that provisions of the private sector for social participation should be limited through both self-care and public support.
- The households' everyday practices reveal systematic differences contributed to by the competencies and 'psychic forces' of the individual members to combine diverse places into spatial units (Simmel 1992[1903]). Observation based on the dynamics of everyday life allows for a structured typological knowledge of the shaping and being shaped in late-modern societies.
- This knowledge is compatible with the bodies of knowledge of actors within the social/societal context of households as well as, for example, within the context of municipal policy and administration, law-making, and organisation of the economy.

At the same time, the available findings refer to the gains and goals of a field of research that is based on the concepts of SEL. The perspective of ANT may help answer some of the open questions in greater detail.

ACTOR-NETWORK THEORY (ANT) AND THE MATERIALITY OF MULTI-LOCAL LIVING

Studies based on actor-network theory (Callon 1991; Akrich & Latour 1992; Latour 2005, 2008) differ from the approaches introduced above in several underlying theoretical assumptions: in the assumption of a 'flat' ontology; in the performative understanding of reality as the enactment of multiple realities, which are historically, culturally and materially located; in the concept of actor and agency; and in the role of non-humans as potential mediators in hybrid socio-material processes. Their material semiotic understanding of relatedness (Law 2007; Mol 2011) has been employed in geography for about 15

years (Murdoch 1997; Whatmore 1999; Zierhofer 1999; Jöns 2006; Bærenholdt 2007, 2012), especially in non-representational theory (Thrift 2008), assemblage geographies (Robbins & Marks 2010), and within the framework of urban studies (Farías & Bender 2010; McFarlane 2011). The notion of spatio-temporal flows of action, in turn, is compatible with theories of practice (Everts *et al.* 2011). Mobilities studies also attach great importance to the material constitution of mobilities, as indicated by the concept of network capital (Larsen & Urry 2008) and emphasise the inseparable relational connection between mobility and housing (Urry 2000; Elliott & Urry 2010).

Unlike sociology of everyday life and rational choice theory, actor-network theory as a post-humanist or more-than-human approach in geography (Whatmore 1999) does not restrict agency to people but conceptualises it as distributed to the materials assembled in a 'work-net' (Latour 2005, p. 132) – here: in the course of living multi-locally together. Only and only then does agency result from the interaction of the heterogeneous entities of such a 'work-net', including technical devices and other non-human entities. Actors in such a network are enacted by what is around them (Mol 2011). Complex configurations are built up and held together by the interrelated processes of 'networking', leading to the theoretical conclusion that agency and structure should not be separated, as it is conceived, for example, in rational choice theory.

Processes of configuring multi-local living – Paraphrasing Law's (1994) definition of the social, multi-local living may be characterised, in very general terms, as follows: it is the recursive, yet incomplete and fragile performance of an unknowable number of orderings, which enable living in different places. In doing so, a variety of heterogeneous materials are assembled and 'translated', enacting relatively stable 'work-nets' of multi-local living. This definition includes two characteristic praxeological features:

First, multi-local living is recursive because it follows up on the modes of ordering of former practices of living and mobility and adapts

them in the further process. Second, multi-local living is enacted by all human and non-human actants involved and it changes in the course of the actants' interactions. Specific logics of ordering and chains of translations between the heterogeneous entities involved enable stable forms of living together in different places, configure them in specific ways, maintain and renew them over a longer period until 'crises' in this networking practice result in the abandonment of the multi-local living arrangement. In the course of such translations, technical devices can take the role of mediators (Latour 1994), since they change not only the form but also the matter of an expression, thus bringing about 'actorial', spatial, and temporal shifts.

In ANT the 'differences in the ways an object ... is enacted at different moments and sites ... (are) not to be understood epistemologically as different perspectives on the object, but ontologically, acknowledging that different realities are being enacted here and there, now and then' (Fariás 2010, p. 13; see also Law 2004; Escobar 2007). That's why 'second generation ANT' (Bærenholdt 2012, p. 112) emphasises the multiplicity of the object of study; it goes beyond the positions of perspectivalism and constructivism (Mol 2002) and focuses on the co-existence of different, sometimes overlapping versions of reality as well as on the negotiations or controversies triggered by these versions of reality (Law 2004; Mol 2011). As a result, attention is drawn to the political implications of the diverse ways of shaping realities – in other words: their 'ontological politics' (Mol 2002). Studies applying this approach are characterised by sensitivity towards controversies, which may arise, for instance, in the course of urban and infrastructure developments (Fariás and Bender 2010; McFarlane 2011).

Conceptual approaches – Unlike, for instance, migration theories, ANT does not establish theories on specific objects. It rather proposes an heuristics for the empirical analysis that may be applied to manifold objects of study, such as: designing buildings and atmospheres (Rees 2011; Steinmetz 2012; Yaneva 2012); specific projects of urban development and planning

and the scientific, political, or social controversies related to them (Fariás & Bender 2010); a community's ability to cope with distance when people live in peripheral areas (Bærenholdt 2007). In ANT-based studies on multi-local living, several empirical approaches can be chosen.

First, an analysis can include the diverse scripts underlying the translations between the entities successively involved in an arrangement of multi-local living and their transformation in the process of establishing and strengthening the arrangement under study. Akrich and Latour (1992) distinguish the following scripts: conscription (building of a setting), prescription (of affordances and allowances), subscription (e.g. conscious interpretation and affective consequences of the prescriptions), pre-inscription (e.g. competences and experiences of former practices), and circumscription (the delimitation of the concrete setting) of multi-local living. The analysis of subscription, for instance, may serve to explore the evolution of those corporeal practices in specific residential settings that are based on affect and sensation – 'the body's apprehension of the world' (Thrift 2008, p. 187).

Second, regarding multi-local living from an organisational point of view, we can reconstruct the modes of ordering ensuring the stability or explaining the failure of such an arrangement. Law (1994) distinguishes between three modes of ordering: (i) material stability: the materials, for instance, used for multi-local living and combined with other human and non-human actants contribute to the stability of the conduct of life in several places. Communication tools enable, for example, the micro-coordination between the mobile household members (Larsen *et al.* 2008); the transport of goods and keepsakes establish affective relations between people and places (Gerrard 2008; Seidl 2009); the residences are 'platforms' for meeting friends and relatives. (ii) Strategic stability: strategies established in other spheres of life can be adapted for the organisation of multi-local living together. (iii) Strategies through discourses for which, according to Law and Moser (1999), multiple logics of discourse, concurrently used, are employed. Everts *et al.*

(2011) propose to explore the learning processes of 'communities of practice' when they learn a new practice or improve one.

Third, focus is put not only on the presence enacted in the particular arrangements of multi-local living but also on the traces of the absence concurrently actualised (Law 2004; Bærenholdt 2012). Manifest absence is relevant to people living multi-locally in the ongoing performances as with these living arrangements there is always the task to manage both presence and absence, which also involves dealing with the absence of persons, with memories and imaginations. Moreover, enactment of a specific form of multi-local living also creates 'otherness', which makes other forms of life and experience impossible for people involved in the multi-local living arrangement. Furthermore, the areas and materials embedded in multi-local living arrangements are not available for manifold other utilisations, which has more or less severe political implications when, for example, multi-local living in second homes are considered. Such enactments of the emergence and disappearance of activities and other materialisations are one reason why followers of ANT 'like to tell stories and trace histories rather than tending to take synchronic snapshots' of the present (Law 1994, p. 100).

Specific features of the approach – It is a characteristic feature of ANT to regard multi-local living process-like as a flow of action of interconnected heterogeneous materials. Hence, focus is put on the emergence and the changes of this living practice across time and space, showing that something new – as presence and absence – is evolving. The action potential of non-human actants is not ignored but rather included in terms of a heuristic principle of a symmetrical analysis, thereby showing ways how to implement this in empirical studies, namely as a description of a work-net at a specific spatio-temporal site. The 'methodological situationalism' (Knorr-Cetina 1988), dynamised with ANT, allows us to explore a wide range of situated processes of multi-local living: processes of perception related to housing, the development of atmospheres of buildings, or the enactment of the households' lives at several places. By integrat-

ing considerations of the theories of practice, non-representational theory, and the geographies of affect (Krafl & Adey 2008; Woodward & Lea 2010), the range of objects can even be expanded by: the corporeality of housing, the mobility between the places, and emotions as expression of affects related to the specific practices of multi-local living. Gad and Jensen (2010, p. 74) have characterised the current state of ANT as a 'postplural attitude' and as a 'nonhumanist disposition' towards research; according to Mol (2011, p. 261), it 'takes the form of a repertoire'. This modest attitude, refraining from propositions of social theory of wide scope, is balanced in second generation ANT and in assemblage thinking (McFarlane 2011) with the sensitivity towards the ontological dimensions of the object and the political implications of the co-existence of different versions of this object (Mol 2002). Reflections of the methodology are of crucial importance when the multiplicity of the explored objects is assumed and their empirical observation can only be pursued through a 'method assemblage' (Law 2004) of observer, the observed, and methods and materials of observation. Therefore, empirical studies need to examine the manifold, overlapping realities of multi-local living. They will also need to critically reflect on the political consequences of the propositions on multi-local living thus obtained.

SYNOPSIS

Table 1 shows the different approaches that are based on epistemological criteria (column 1) in order to estimate their scope, limitations, and gains.

The multiplicity of objects – The three approaches differ in their focus and thus in their objects. Among them, ANT pursues a highly comprehensive perspective on multi-local living arrangements and its heuristic function must be seen in this context. Actor-network thinking includes heterogeneous bodies of knowledge and develops a post-structuralist open field. Bodies of knowledge based on diverse sources can be relationally linked to one another. Their origin from diverse scientific disciplines such as theories

Table 1. *Synopsis of the three approaches.*

Criteria	Rational choice theory (RCT)	Sociology of everyday life (SEL)	Actor-network theory (ANT)
Phenomena	<ul style="list-style-type: none"> • Emergence, maintenance, and change of residential multi-locality 		
Multiple objects	<ul style="list-style-type: none"> • Decision-making between options for action under consideration of the situational conditions and individual characteristics 	<ul style="list-style-type: none"> • Organisation of households as communities of everyday life and economic activities 	<ul style="list-style-type: none"> • Emergence, maintenance, and change of assemblages (or of a 'work-net') of heterogeneous materials
Central arguments	<ul style="list-style-type: none"> • Social phenomena are the result of individual actions (methodological individualism). • Actors have preferences. • Actors act under positive and negative constraints. • Actors select that option which, among the given constraints, is best-suited for implementing the preferences. 	<ul style="list-style-type: none"> • Everyday life comprises practices of social and organic reproduction of man as social being and species. • Man's social world spans across the places of their practice. 	<ul style="list-style-type: none"> • Multi-local living is conceived as a recursive, fragile enactment with specific modes of ordering, enabling living in different places. • post-humanist notion of agency • flat ontology: multi-local arrangements as process of assembling (human an non-human) entities, enacted vice versa in site-specific translations and transformations
Limitations of the approaches	<ul style="list-style-type: none"> • Nomothetic approach: Search for patterns and regularities in the social world by using strong theoretical assumptions • Reduction of empirical complexity 	<ul style="list-style-type: none"> • Nomothetic and idiographic approach: Search for idiographic characters of social phenomena by using general assumptions • Systematisation of empirical complexity 	<ul style="list-style-type: none"> • Idiographic approach: non-foundational search for socio-material processes which shape the studied object(s) • Description of empirical complexity
Benefits of the approaches	<ul style="list-style-type: none"> • Individual decision on multi-localisation • Decision on multi-localisation of households • Explication of factors relevant to decision making • Explanation through observable external conditions 	<ul style="list-style-type: none"> • Explaining the regimes of limits between the internal organisation of communities and their links to social systems and structures (e.g. of: economy, education, politics, social policy, traffic) 	<ul style="list-style-type: none"> • Realistic descriptions of the emergence and stabilisation of socio-material practices at specific sites (affect, embodied movement, households and their homes, urban assemblages) • Heuristically taking into account the significance of non-humans (artefacts,

Table 1: *Continued*

Criteria	Rational choice theory (RCT)	Sociology of everyday life (SEL)	Actor-network theory (ANT)
Examples of current studies	<ul style="list-style-type: none"> • Explaining contra-intuitive decisions (on multi-locality although, objectively speaking, moving house would be a 'better' solution) • Explaining decisions under mutual dependencies 	<ul style="list-style-type: none"> • Describing specific forms of late modern social change in the tension between community and society 	<p>smart machines, animals, plants, natural resources) for social practices; sensitivity towards processes of technical mediation beyond technological determinism and materialism</p> <ul style="list-style-type: none"> • Sensitivity towards the multiplicity of objects, their topological co-existence and the political implication of such multiple objects • consideration of the present <i>and</i> absent parts of actualisations • Farias & Bender (2010) • Rees (2011) • Bærenholdt (2012)

of everyday life or from practical knowledge can be grasped in the formats of ANT (e.g. stories, traces). The assumed multiplicity of the objects and the sensitivity towards the performativity of theories and methods contribute to the complexity of research and its results. The concept of the temporality of multi-local arrangements as work in progress, for example, can be directly connected with the objectives of SEL. This approach frames a comparatively narrower object of research, namely the reproduction of multi-locally organised communities, and hence conducts situated and local analyses. As a result, typologically structured knowledge emerges that can claim situational and local (spatio-temporally defined) validity within the context of work in progress. The research logic of RCT also proves to be compatible if we consider its possibilities and limitations resulting from the modelling of its objects. In contrast to ANT and SEL, the conceptual reduction of the methodological individualism renders knowledge about an artificially rational and individualised decision-maker. It is this reduction that provides valuable insights that arise from the comparison with the knowledge gained about collective actors in bargaining situations (of the household, the community).

SEL and RCT both have in common that they focus not only on the individual actor but also on the relationships with their social partners (family, community). However, within the framework of the RC approach, relationships are regarded as bargaining partnerships; therefore, and unlike SEL, altruistic attachment relationships like those between parents and children are not included in its rational line of argumentation. With its very different understanding of agency, post-humanist ANT does not narrow down the study of relationships to the human and social sphere by taking into account the potential mediating power of technical devices and smart machines.

A common trait is the consideration of social conflicts and dilemmas prior to and in the course of multi-local living arrangements even though there are differences in the depth and accuracy with which the courses and solutions of these conflicts are empirically revealed. However, RCT provides more schematic answers in

this respect, whereas the process-oriented approaches of ANT and SEL illustrate the development of these conflicts in greater detail, albeit some differences in their explication. Within an ANT approach, such conflicts can be regarded as a consequence of the co-existence of different modes of ordering, thus leading to controversies and requiring further negotiations (between humans) or – in a broader sense – further translations and transformations between the participating entities.

The methodological and conceptual differences between RCT and SEL, although incompatible in a direct way, may enhance insights by provoking different interpretations. Under RCT, quasi-laboratory arrangements are assumed, whereas SEL focuses on everyday life experiences shaped by the actors' lifeworld arrangements (and which, subsequently, may become a research topic). On the other hand, ANT is incommensurable with both SEL and RCT in several ways due to its flat ontology, its post-humanist approach, its scepticism about the reliance on (human) representation in both theories, and its understanding of agency, which leads to a lot of misunderstandings.

The multiplicity of knowledge – This refers to the complementarity of knowledge which, in its synopsis, enables us to gain greater insights. On the one hand, the fragmentation of knowledge corresponds to the multiplicity of the objects of knowledge. Synthesis, on the other hand, is performed as situated knowledge by the multi-local actors in the context of their everyday practices and as empirically saturated knowledge by the scientists in their research practices. With this, we follow the idea of the co-evolution of society and science (Nowotny *et al.* 2001). The comparison of the three approaches shows that orientation knowledge in terms of theories and models and empirically saturated knowledge refer to each other. The mutual consistency of positions constitutes a key value of scientific knowledge that is considered binding and desirable in the scientific community. What we are dealing with is the consistency between reflexive orientation knowledge and empirically saturated knowledge. Current inconsistencies, realised during research process, may be interpreted as correctives and indications of desiderata.

Let us outline the scope of focus of the three approaches: the heuristics of ANT attaches great importance to the material actants included in practices; in contrast, they play a minor role with RCT and SEL even though they are not completely disregarded. On the other hand, SEL provides specific insight into everyday action routines that are more likely to be neglected by RCT. Social phenomena are shaped through daily, more or less (un-)reflected patterns of action. Compared to RCT, such a focus is highly beneficial, especially in the case of emerging multi-local arrangements. Empirical findings have provided evidence that a multi-local situation may be based on a more conscious, calculated decision; yet it may also start as an interim arrangement and become an established one later on (Weiske *et al.* 2008). In this respect, RCT and SEL provide complementing focuses and produce complementary results.

All three approaches reflect the continuity of social processes (duration, *longue durée*, development paths, and chains of causation). However, the significance of continuity for the organisation of living together is rated differently. ANT centres upon an infinite chain of events and fragile temporary constellations (and hence, time is a crucial differentiating element). SEL, on the other hand, also brings the fractures into focus when exploring the changes of social relations and institutions. RCT interprets the continuity of relations and other elements of a particular situation as constraints in a decision-making process. In the terms of RCT, continuity builds confidence and stability and helps the actors arrive at strategic decisions under uncertainty.

Basically speaking, all three approaches refer to one another and can enact partial versions of reality that overlap at least in parts: RCT needs situational conditions for the explication of decisions, which, on the other hand, can be empirically specified by ANT and SEL. Conversely, RCT contributes to resolving specific bifurcations whereas ANT and SEL describe the processes of their genesis more adequately. Thus, the original formulation of the research question and the unit of analysis remain in the researcher's responsibility.

CONCLUSION

We would like to point out that the selection of the three theoretical and methodological research strategies presented in this paper was neither imperative nor complete. It resulted from surveying suitable research instruments and considering their potentials. Each of the approaches enhances the exploration of the issue of multi-local living by occupying different research positions. RCT and SEL are to be assigned to the paradigm of action theories, whereas ANT represents an extreme post-structuralist version of practice theories. Outlining a 'supra-theory', which might synthesise the approaches, does not seem to be possible, neither theoretically nor methodologically.

In our opinion, the modelling of residential multi-locality pursued by the three approaches is highly productive if their results are interpreted as differently shaped versions of reality, which are partly congruent or overlapping, partly incongruent due to incommensurable ontological and theoretical positions. The advantage of applying and comparing them with one another or further theoretical approaches can be seen in providing insights of diverse depth and accuracy.

Notes

1. All authors contributed equally to this work.
2. Philosophical anthropology distinguishes between having a body and being a body. According to Böhle & Wehrich (2012, p. 12), men have a body, but they are a body as well. They distinguish between the body as object and being a body as the body that sensuously perceives and is felt from within.

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