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Neighbourhood Effects: Lost in Transition?*

Abstract: The study of neighbourhood effects has become a major domain in urban research since the publication of Wilson's book *The Truly Disadvantaged* in 1987. It is estimated that more than 1,800 articles have been published (van Ham et al. 2012). One of the problems well-known from multilevel analysis is that of specifying the context effects linking levels, e.g., conditions on the aggregate level to outcomes at the next lower level, individuals in most cases. Two problems seem insufficiently solved. First, many different context effects have been suggested, such as contagion, role models or discrimination; but it is questionable whether they are all relevant. Second, how exactly can the transition from the macro (e.g., neighbourhood) to the micro (e.g., individual) level be specified? The article addresses both problems by examining the assumptions underlying the effects. Differentiating between causes and outcomes, the diversity of effects is reduced to five types of effects. Mechanisms are defined as specifications of context effects, and for each type a mechanism is specified and the causes are related to the outcomes. Drawing on the results of the analyses, a detailed set of suggestions for future studies of neighbourhood effects that really capture the mechanisms is presented.

1. Introduction

In the last twenty years we observe a cumulative increase in the scholarly literature on neighbourhood or more generally, context effects, both from urban sociology (Wilson 1987), and the methodological literature, the most important contribution presumably being Coleman's work on the macro-micro level model (Coleman 1986; 1990), and concurrent advanced techniques of statistical analyses of such multi-level models, namely hierarchical linear models (HLM; e.g. Hox 2010; Snijders/Bosker 2011). However the transition from the macro (or meso) level to the individual level is not clear. The aim of the paper is to suggest how the mechanisms linking the levels can be specified. In particular it addresses the prominent role model and socialisation effects.

In the literature on neighbourhood or context effects the impact of an aggregate structure on the attitudes and behaviour of the individuals constituting that aggregate is examined. This macro-micro model, enlarged by a meso level, is depicted in *figure 1.*

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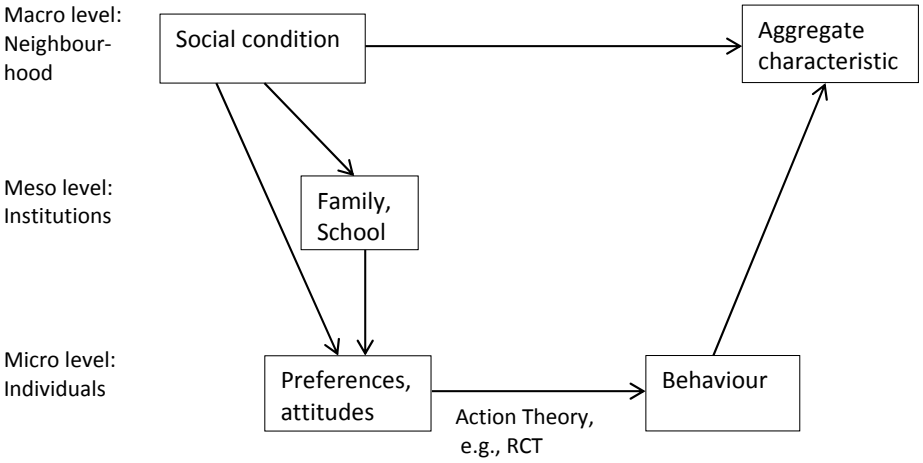


Figure 1: A Macro-Micro-Model

One of the main problems is to specify the context effect. How does it occur? Since the first systematic analysis by Erbring and Young (1979) several authors have suggested such effects (Dietz 2002; Durlauf 2004; Ellen/Turner 1997; Friedrichs 1998; Galster 2003; 2008; 2012; Jencks/Mayer 1990; Small/Feldman 2012). The discussion was broadened by the concept of "social mechanisms" (Hedstrom 2005; Hedström/Swedberg 1998), referring to both context and aggregation effects. However, the concept requires specification, as several authors have argued (Kalter/Kroneberg 2014; Opp 2004; 2013). For the purpose of this paper I will use the term "social mechanism" in the definition on which most authors would agree (cf. the discussion by Gross 2009): *it is a causal relationship linking a condition X to an outcome Y.* In the case of neighbourhoods, X is a neighbourhood characteristic, like per cent poor, and Y is an individual outcome, such as deviant behaviour or self-reported health. The relationship itself is specified by one or a set (of interrelated) hypotheses (cf. Opp 2013). *An effect, in contrast, is a more vague term denoting that a condition X has an impact on one or some outcome Y, without specifying the underlying mechanism.*

The study of context effects is complicated by two problems: first, the diversity of effects suggested in the scholarly literature (e.g., Dietz 2002; Galster 2003; 2012; Small/Feldman 2012), second, the specification of how the effect occurs. I will first address the problem of effects, and then turn to the question of specifying a causal link between the macro and the micro level, and extend the learning theory approach to problems of persons moving from poor to less poor areas. The concluding section offers a brief summary and suggestions for further research and research methods.

2. Disentangling Neighbourhood Effects

To further examine the problem of effects, I first discuss the different neighbourhood effects. Building on Galster (2012), the numerous suggestions of neighbourhood effects can be summarized in the following list:

1. Socialisation
2. Contagion
3. Collective socialisation
4. Role models
5. Social networks
6. Social capital, social cohesion, social control
7. Competition for scarce resources in the neighbourhood
8. Relative deprivation among residents
9. Exposure to violence, fear of crime
10. Physical characteristics, such as dilapidation, disorder
11. Environmental quality, e.g., air pollution
12. Stigmatisation of the neighbourhood
13. Resources in the neighbourhood, e.g., kindergarten, schools, public transport

If we separate characteristics of the neighbourhood from effects, we arrive at a more precise typology, presented in *table 1.* For methodological precision, I differentiate by aggregate level, and apply a typology suggested by Lazarsfeld and Menzel (1961). They distinguish between *absolute* characteristics of an individual, such as gender; characteristics based upon distributions, like position of a person in a hierarchy (a comparative characteristic); and *analytical* (frequencies and means), based on mathematical operations of absolute characteristics. This differentiation is important, since many multilevel studies use analytical variables, and it is questionable whether the implicit correlation with individual data biases the aggregate level coefficients. Absolute characteristics of the neighbourhood would be the amount of CO_2 emissions or the existence of a hospital.

Closer inspection of this list under methodological criteria reveals a deficit: that causes and outcomes are confounded. Separating them yields a different typology presented in *table 1.* I will then give a short description of the five types by examples from the literature.

Type 1

Here, context variables are constructed as percentages from individual variables, such as unemployed or single-headed households. The effect is assumed to be due to residents' lacking positive role models. A good example is Crane's (1991) study on the spread of teenage pregnancy and school dropouts in neighbourhoods. The mechanism for this type will be elaborated in *section 3.*

Type	Neighbourhood Characteristics	Consequences	Effect
1	Share poor, share rich	Missing role models	Socialisation, contagion
2	Collective efficacy, social capital	Out-moves, crime	Collective socialisation
3	Image	Rejection of job application	Discrimination
4	Lack of infrastructure	Less leisure activities	Reduction, compensation or waiving of activities
5	Dilapidation	Depression, overweight	Stress

Table 1: Types of context effects. Source: modified from Friedrichs 2014, 291.

Type 2

Again, context characteristics are constructed from individual characteristics, but in this case by aggregating attitudinal or perception data. Examples are 'perceived social control' or 'perceived disorder'. Further, we may subsume data on social networks or social capital.

A good example is the theoretical model underlying the research of Sampson et al. (Sampson 2012; Sampson/Groves 1989; Sampson/Raudenbush/Earls 1997) displayed in figure 2. The aggregate level characteristics in A are all analytical variables, the variables in B are in a strict sense individual variables, but they are aggregated as perceived condition of trust and social control in the neighbourhood; variables in C, aggregate level outcome, are aggregated individual variables. The decisive link is perceived condition (B) to deviant behaviour (C), which is extensively discussed and supported by empirical evidence in Sampson (2012), and was also validated in German studies (Friedrichs/Blasius 2003; Oberwittler 2007). The mechanism here could be: perceived collective efficacy leads to individual's conviction of common social norms, this to individual legitimation to exert social control, which in turn results in lower deviant behaviour. However, this has to be tested empirically.

Type 3

The images of neighbourhoods vary from very positive to very negative; at the positive end we find neighbourhoods of high social status, at the other end of the continuum poor or deprived neighbourhoods. The image of the area is attached to the individual resident, such that job applicants from areas with a negative image may not get the job they are applying for, as Hastings (2009) has shown. The link here is the collective image city residents have of the city's neighbourhoods—at least the extreme bad and good ones. The resident is labelled by the (negative) image of his residential area, resulting in a likely discrimination, e.g., when applying for job or a home. The negative image of the neighbourhood and its transfer to the individual resident can also be explained by the social psychological concept of a (negative or 'horn') 'halo effect' (Nisbett/Wilson 1997; Murphy/Jako/Anhalt 1993). The effect is indirect,

depending how residents in other areas of the city perceive the given deprived neighbourhood.

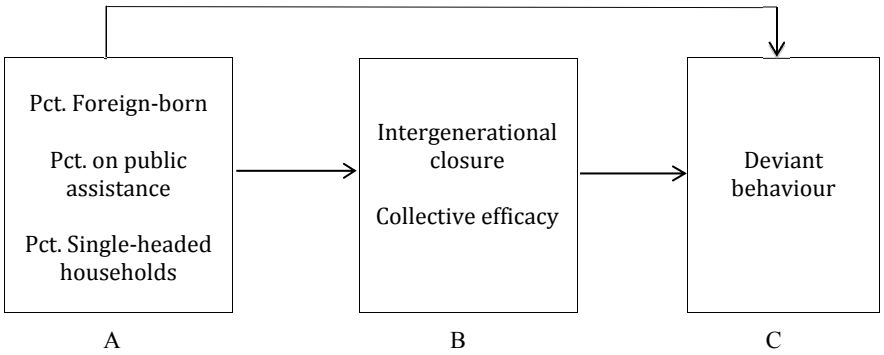
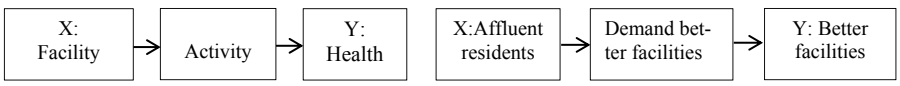


Figure 2: The Sampson et al. model of explaining neighbourhood deviant behaviour.

Type 4

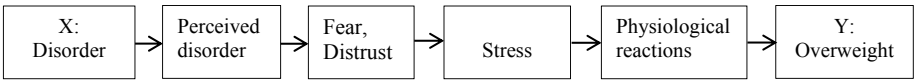
Infrastructural facilities such as kindergarten, medical doctors, banks, recreation parks are not equally distributed over urban neighbourhoods. Thus, the local opportunity structure restricts or enables local activities of residents. Access to local green spaces will allow residents to walk, and this in turn will reduce the mortality risk (Lachowycz/Jones 2014). Local health facilities will positively impact health status (e.g., Yip/Kephart/Veugelers 2002; Wen/Browning/Cagney 2003). Shopping patterns are negatively influenced by the poor offer of supermarkets in a low-income area (DeDoux/Vojnovic 2013; Maguire et al. 2015), unhealthy food consumption by the number of fast food outlets in neighbourhood (Lamichane et al. 2013). Facilities enable an activity which may lead to better health. Depending on the social mix of a neighbourhood, a further link relates the percentage of affluent residents to the outcome of better facilities. Both mechanisms can be formally stated:



The resources induce use by residents of all income groups, use will have positive health effects, this will reinforce use.

Type 5

The perception of disorder, garbage, drug dealing, or robbery in a neighbourhood results in anxiety and fear of crime among residents (e.g., Burdette/Hill 2008; Cornaz/Taffé/Santos-Eggiman 2009; Galea et al. 2005; Mezuk et al. 2013; Schulz et al. 2013). This, in turn may lead to stress, with long-lasting detrimental consequences for mental health, such as depression (Curtis et al. 2013; Giurgescu et al. 2015; Mair/Diez Roux/Galea 2008; Mair et al. 2015; Whitley/Prince 2005) and overweight (Maguire et al. 2015; O'Campo et el. 2015). The mechanism linking X → Y can be stated in the following sequence:



Again, the perceived state of the neighbourhood impacts the residents. They hold convictions about what is clean and acceptable (according to individual 'tipping points'). The behavioural relevance of these perceptions has been demonstrated by Skogan (1990), Ross, Mirowsky and Pribesh (2001), Sampson (2012), and field experiments by Keizer, Lindenberg and Steg (2008). The distinctive feature in this mechanism is the combination of social variables, such as fear and distrust, and physiological variables, such as the overproduction of cortisol, which will result in becoming overweight. From a sociological point of view, this combination shows that we have to integrate hypotheses from different disciplines to arrive at specifying a meaningful mechanism.

Of these five types an effect is only at work in types 1 and 2. Both are based on social learning; thus, social learning theory can serve as the basis for describing neighbourhood effects in a theoretical frame. Type 4 may be interpreted as cumulative causation. Types 3 and 5 give neighbourhood characteristics and outcomes, but X and Y are not mechanisms, as Gross (2009, 362) states; the mechanism(s) linking X to Y remains to be specified; they can be indirect (cf. Hedstrom 2005, 102).

The lesson to be learned from these studies is that it is not the share of poor residents in the neighbourhood that impacts the reactions of residents but to a much larger extent the perceived share. *Objective conditions are of lower importance for a person's actions than the perceptions of conditions.* Hence, when using statistical data (anlytical or absolute) we should include in our studies the perception of these conditions by the residents—if such data are available. This may be an important step towards opening the black box. Perhaps the successful application of scales such as 'collective efficacy' and 'intergenerational closure' (Sampson/Groves 1989; Sampson/Morenoff/Earls 1999; Sampson/Raudenbush/Earls 1997) which mediate between objective neighbourhood conditions and behavioural outcomes, is due to the fact that these scales measure residents' perceptions.

3. Specifying Context Effects by Social Leaning Theory

Social norms are at the core of neighbourhood effects. Residents have different norms, and they adhere to more or less common norms to a different extent. Many will not approve of teenage pregnancy or school dropouts, but some will neither agree nor act according to such norms. Thus, the major problem of a neighbourhood is the heterogeneity of norms to which residents subscribe.

For the discussion of mechanisms two aspects are relevant: the observed violation of norms (deviant behaviour) and the subjectively assumed adherence to norms among the residents. If residents are uncertain about which norms prevail in a given neighbourhood, they seek cues to reduce their uncertainty; this search for cues induces observations and interactions. The aim is to achieve a state of behavioural security. They observe a behaviour and watch if it has positive or negative consequences (sanctions). If a behaviour which an actor evaluates as deviant is not negatively sanctioned, or not prosecuted at all, the actor may conclude he is in a neighbourhood with little social control. If a resident perceives different adherence to norms he will face higher costs of exerting social control, since he has not the majority behind him to legitimise his sanctioning. The propensity to sanction, then, is a function of the assumed share of residents thinking similarly. Furthermore, if adherence is heterogeneous, the resident may resign and end up in a resigned tolerance. (Yet, we still have to explore which cues individuals use for estimating those shares.)

Social learning theory (Akers 1985; Bandura 1973; Bandura/Walters 1963; Burgess/Akers 1966), re-labelled in the 1980s into cognitive learning theory (Jonas/Brömer 2002; Omrod 2014), rests upon the assumptions that behaviour is learned from the behavioural context and that learning can occur both by observation and by interaction (Bandura/Walters 1963, 4). "People repeatedly observe the actions of others and the occasions on which they are rewarded, ignored, or punished. Observed outcomes influence behaviour in much the same way as directly experienced consequences." (Bandura 1973, 205) The adoption of (observed) behaviour is linked to the perceived approval of other persons. Thus, in their version of social learning theory, perceived behaviour and perceived approval, hence norms, are strongly related.

For further insight into how the process of adoption can be modelled, I turn to a classic contribution by Howard Becker *Becoming a Marihuana User* (1953). His premise is "that the presence of a given kind of behaviour is the result of a sequence of social experiences during which the person acquires a conception of the meaning of the behaviour, and perceptions and judgements of objects and situations, all of which make the activity possible and desirable. Thus, the motivation or disposition to engage in the activity is built up in the course of learning to engage in it and does not antecede this learning process." (Becker 1953, 235)

There are several important arguments in the text. First, we are analysing a *process*. Second, the process is based on a person's experiences: as Becker elaborates on the same page "a sequence of changes in attitudes and experiences". Thus, there is a *gradual* change with an *interplay of experience and attitude*. The

more similar experiences a person has, the more her or his attitude will change, e.g. towards a deviant behaviour. Third, the (new) activity is viewed as possible and desirable. Thus, the person must have made some cost-benefit calculation with a positive net value for the (new) activity. Fourth, and probably most important, these are social experiences, i.e. corresponding to behaviour in the environment or context.

It is difficult to imagine a better description and set of implicit hypotheses than the one given by Becker. An important aspect is that this process may for some time not be noticed by the person up to the moment until s/he is so addicted that s/he admits to herself and others having become a marihuana user—or, in our context, having adopted a particular behaviour. If this line of arguing is correct, then it becomes very difficult to 'retrieve' the mechanism or process explaining how a given neighbourhood characteristic impacted a resident. It definitely requires in-depth qualitative interviews, as suggested by Small and Feldman (2012), or panel studies.

In contrast to these social psychological and micro-sociological assumptions the great majority of neighbourhood effects studies—and of social mechanisms—are conducted with aggregate data, and restricted to the aggregate level. An input (aggregate characteristic) and an outcome (resident behaviour) are related, but there remains a black learning box linking them.

4. Mechanisms of Social Learning

If we concentrate the context effects debate on social learning, we have to examine the conditions under which this is likely to occur. Three ways can be distinguished: observation, interaction, and networks. Observation does not include interaction, although it may precede or follow from a face-to-face interaction. Networks imply interaction, whereas interaction may occur as well with someone a person has only met once and not included in her or his network.

Observation is often implicitly used when scholars refer to 'role models'. They have to assume that resident A observes a behaviour of resident B which s/he then adopts. But this simplistic assumption conceals a complicated process of at least six steps:

1. The resident must have some problems with her behaviour.
2. She directs her attention to the behaviour of other residents. (Which?)
3. She perceives the behaviour of resident B as being successful (for whichever reason), resulting in social approval.
4. She has to accept not only the behaviour of resident B, but also the legitimation for
5. that behaviour, i.e. the underlying norm.
6. She calculates a trade-off between keeping her vs. adopting B's behaviour.
7. She adopts or not.

Two elements in this process are of particular interest. First, we do not only examine behaviour, but the social norms legitimizing the behaviour as well. Second, it is questionable if this double adoption of behaviour and norm can

occur with *any* interaction between resident A and a type B resident. I follow the theory of differential association by Sutherland and Cressey (1970; cf. the discussion by Adams 1973). They posit that to learn a deviant behaviour, not only the behaviour—in their terms: the techniques—has to be learned, but also the moral justification for the specific (deviant) behaviour; and that occurs by interaction.[1]

Interaction. In order to adopt a behaviour via interaction there must be some places which have the potential for meeting and subsequent interaction; they are 'foci' in the sense of Feld (1981, 1016): "Foci may be many different things, including persons, places, social positions, activities, groups." In addition to such foci, I suggest more general locations and occasions where residents can meet: situations. I define them as time-spatial units. These are everyday settings at which persons regularly come together, such as elevators, stations, supermarkets, small parks; most of them are everyday situations and interactions (Goffman 1967; 1971). To study such foci and situations requires systematic participant observation, by which we can (re)construct the asymmetric process of adoption of a behaviour.

A variant is to assemble from explorative studies a set of behaviours over which the residents in a neighbourhood are split, such as taking drugs, dropping out of school, teenage pregnancy, seeking employment vs. staying on social assistance. We could present decision situations, preferably in a vignette design (cf. Jasso/Opp 1997), to the residents, ask them about their position and how they perceive the position(s) of other residents, and whether they have been talking (with whom?) about such cases and how the other residents judged it.

Networks. Networks are an evident source of transmission of behaviour and norms, for both mainstream and deviant behaviour. I restrict my discussion to the literature on bonding and bridging social capital, which has shown bonding capital to be useful for social support and help, but less so for seeking a job (Woolcock/Narayan 2002; cf. Putnam 2000). The impact of the neighbourhood is then conceived as influences from the local alteri in the network. It depends on the exposure, the time spent in the neighbourhood measured both by length of residence and by share of daily time spent in the neighbourhood (Galster et al. 2015; Sharkey/Faber 2014). Further, the alteri of the neighbourhood may differ in their behaviour and attitudes from the extra-local alteri like co-workers or friends who do not live in the neighbourhood. We have to assess these probably countervailing pressures; but this has not been studied.

Extending the Learning Approach

Research on the neighbourhood effect on male residents' incomes has shown that the impact increases with the duration of exposure to the neighbourhood (Galster/Andersson/Musterd 2015; Musterd/Galster/Andersson 2012; Sharkey/Faber 2014, 570). If exposure is a crucial variable in neighbourhood effects,

[1] A different example for "rational imitation of behaviour" is given by Hedstrom 2005, 49: "Our beliefs about the beliefs of others are often conditioned by what others do, and often it is these beliefs about the beliefs of others, and not what they do, that explain why we do what we do."

learning theory can as well serve to account for some divergent observations in the Moving to Opportunity (MTO) studies. The expected positive effects for households moving from a very poor neighbourhood into one with a lower share of poor residents did not show up; at least, neither employment nor income increased, according to earlier studies (e.g., Burdick/Ludwig 2013; Burdick-Will et al. 2011; Ludwig 2012; Ludwig et al. 2008). One of the explanations is that the time the family spent in the new environment, i.e. the exposure, was too short (Clampet/Lundquist/Massey 2008; Galster/Andersson/Musterd 2015; Sharkey/Elwert 2011; Sharkey/Faber 2014). In a more recent study Chetty, Hendren and Katz (2015) correlated time span in the new neighbourhood with income tax data. 15 years after the program's start, they found that adults having moved as children to a new low-poverty neighbourhood had an income raise of 31 per cent if they moved before the age of 13, but for those moving later they found no effects.

This argument leads to an interesting question: how can a socialisation impact of the old neighbourhood be 'corrected' by the new neighbourhood? Does the pessimistic saying hold 'You can get a boxer out of the ghetto, but not the ghetto out of the boxer'? In terms of learning theory a process of extinction would have to serve as the basis for new learning experiences. After moving into the new neighbourhood, the family will experience normative cross pressures, if norms of the old neighbourhood conflict with those of the new one, which have to be solved. Yet, how long will it take to 'substitute' initial behaviour, and which conditions promote such a change? The micro-level study of such processes opens a new research field which could significantly contribute to exploring social mechanisms and neighbourhood effects in particular.

The core of social cognitive theory (Omrod 2014) is that in a neighbourhood

- a person
- observes a behaviour,
- and the consequences: (i) punishment or (ii) reinforcement or (iii) no reaction.

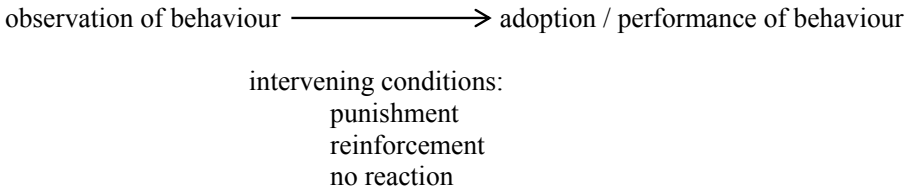
The reactions will differ among residents. Further, the person develops expectations based on these observations. The expectation of future reactions therefore *precedes* the decision to adopt the behaviour or not.

From recent studies of neighbourhood effects we know that neighbourhood characteristics impact social groups in a neighbourhood differently. Longitudinal studies have shown that in socially mixed neighbourhoods the impact on labour income is stronger for men than for women (Andersson et al. 2007). Similarly the share of co-ethnics in a neighbourhood impacts the income of an immigrant negatively, but this holds only for males (Andersson/Musterd/Galster 2015); and neighbourhood unemployment rate has—controlling for individual variables—different impacts on the later life employment status of homeowners, private and social renters (Manely/van Ham 2012).

Given moderate resident heterogeneity in a neighbourhood, the question then becomes: members of which social group are observed by a member of any other group? If resident P observes different groups, s/he will find different consequences. The more heterogeneous the residents in a given neighbourhood are,

the greater the variation in observed behaviour and consequences—which action will person P choose? One assumption is that in a heterogeneous neighbourhood each resident might have a reference group serving as a preferred behaviour model. From rational choice theory we would predict the person chooses the behaviour with the highest net utility.

If you can get away with deviant behaviour without negative consequences, this will reinforce (and instigate) deviant behaviour of other residents (cf. Omrod 2014, 124). Based on cognitive learning theory role model learning is subject to several conditions. Let us assume the sequence to be:



The behaviour of the other person is observed to (i) be punished, (ii) be reinforced or (iii) result in no reaction. In case of punishment, the behaviour will not be adopted; in case of reinforcement, it will, and if there is no reaction it is more likely to be adopted than declined. The latter reaction might in many neighbourhoods be the most important, since when residents disagree on specific norms of conduct *and* perceive these differences, then they will not react negatively, but abstain from overt reactions—which might (falsely) be interpreted as tolerance.

But the situation is even more complicated. Why should a person observe the behaviour of other residents at all? It may be not intentionally, by just passing by or looking out of the window on the street. If we exclude these cases we may ask: under which conditions will a person intentionally observe the behaviour of another resident in the neighbourhood? My suggestion is that the major condition is that the person has a motivation to reflect on her behaviour because she has a problem with her behaviour. To exemplify this: a person with a satisfying partnership will most probably not compare a third person with her or his present partner. Yet, if the partnership has problems, the person will intentionally look at or perceive other persons as potential (new) partner(s). What can be deduced from this example is that perceptions are guided, e.g., by stress or discomfort with a present condition.

5. Conclusions

This contribution has addressed two problems in neighbourhood effects research: the diversity of context effects and the specification of the effects or mechanisms.

According to the arguments set forth, we can restrict the number of effects to only a few: socialisation, contagion, and role models. Several can be specified by mechanisms based on social learning theory. This approach can be extended to account for changes in the behaviour of persons moving from deprived to les deprived neighbourhoods. However, there are three further deficits of the neighbourhood effects or, more generally, context effects research: level, awareness and social status.

Level. The models tested are macro-micro models. De facto, between the neighbourhood and the individual level we have intervening institutions located at the meso level, such as family, peer group, school, social networks. Certainly, the direct path from neighbourhood to the individual is mediated by such institutions (cf. *figure 1*). If we include the meso level the direct path may have no effect, because all effects run via the meso level institutions. Thus, we need more complicated models and respective three-level analyses. In effect, if we study country level effects on individuals, several intermediate levels have to be specified and included (cf. Friedrichs/Nonnenmacher 2012).

Awareness. Even if we agree social learning theory to be the relevant social mechanism relating the aggregate to the individual level, we have to examine in greater detail how it works. Let us image that such transmission processes are slow—as Becker assumes—and not (always) consciously registered by residents. Will the resident in a survey be able to report that s/he changed her or his behaviour due to influences from the neighbours or the neighbourhood? How then can a researcher access or probe into that process—by qualitative interviews or experiments? If these assumptions are valid, we would constantly underestimate neighbourhood effects.

Social status. Finally, we may have to re-assess the old question: what is the significance of a neighbourhood for its residents, or as Lees (2008, 2463) has phrased it "The neighbourhood needs to be re-evaluated". Already older studies have raised this question, mainly based on network research (Fischer 1982; Logan/Spitzer 1994; Wellman/Leighton 1979; Zelinsky/Lee 1998). Is Wellman's diagnosis of neighbourhood as a "community liberated" still correct (Wellman 1979; cf. the discussion by Sampson 2008)? The question becomes even more relevant in times of a wide range of options of social media such as Facebook, individual mobility by car ownership, and increased likelihood of people moving due to a new job.

More specifically, neighbourhood effects may vary by social status of the neighbourhood. Let us assume that with increasing SES of the neighbourhood their residents' networks exhibit (a) a larger number of alteri, (b) a small share of relatives, and (c) a small share of local alteri, as documented e.g., by Fischer (1982). Further, they spend less time in the neighbourhood, and are thus less exposed to neighbourhood characteristics. And we can assume social status to be strongly related to being employed. Thus, they spend less time in the neighbourhood and are less exposed to neighbourhood influences. *Is it only the lower class and deprived neighbourhoods for which neighbourhood effects hold?* This question problem has to be addressed in future research. Thus, in future

longitudinal studies we have to link social learning both to exposure and to thresholds.

To sum up: Given these problems—and others not mentioned—we may conclude that neighbourhood research is at the beginning of satisfactory explanations of how contexts impact individual behaviour. It is not just 'Further research is needed', but further modelling is a precondition for innovative research on neighbourhood and, more generally, context effects. This will require both qualitative and quantitative studies, as Feldman and Small (2012) have already argued. It is only when we can come up with specifying assumptions on the mechanisms that we are able to arrive at adequate operationalisations for studies with (participant) observation and (un)standardised questionnaires, on which subsequent quantitative studies can be based. And this is micro-level research.

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