

Coherence of social practices: the case of meat consumption¹

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Abstract

Social practices are routine behaviour like going to work, cooking and showering which integrates different kinds of elements, such as bodily activities, material artefacts, skills and associated meaning. Understanding social practices is vital to address routine, collective and conventional consumption and the environmental effects associated with our daily lives. This article provides a contribution to a better understanding of social practices. It is hypothesised that practices that spread and persist in a considerable part of a society must be coherent: the elements involved are complementary in a way that a) implies cognitive consistency and that b) the individual has appropriate skills and knowledge to perform the respective behaviour. A literature review and a case-study on meat consumption practices provide confirmation of the hypothesis. The concept of coherence constitutes a promising starting point for future research on the emergence, spread and persistence of social practices.

Keywords: social practices; practice; coherence; components; meat consumption

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1 Introduction

Behavioural change towards less and different consumption is required to achieve a sustainable level of resource use and to respond to global environmental crises such as climate change (Tukker et al., 2010).

In recent years social practice theories (SPT) have received growing attention as a promising approach to study routine, collective and conventional consumption (Halkier et al., 2011; Røpke, 2009; Warde, 2005).

SPT depart from mundane practices – going to work, cooking, showering – which are meaningful to people as part of their everyday life activities. Consumption comes in as part of these practices as performing the respective activities requires the usage of material artefacts as well as resources such as energy and water.

Practices are routine behaviour that integrates different kinds of elements, such as bodily and mental activities, material artefacts, knowledge, meaning, skills, and so on (Reckwitz, 2002). Practices are social as they are similar for different people at different points of time and locations (Reckwitz, 2002). Social practices hence refer to regularities– patterns how certain mundane practices are typically and habitually performed in (a considerable part of) a society. They constitute patterns of interconnected elements that are recognizable across time and space while the practice is reproduced by individuals and new individuals are recruited to the practice (cf. Røpke, 2009).

Up to now, it has not been investigated and hence remains an open research question which characteristics of constellations of interdependent element make some them successful in the sense of constituting a temporally stable and socially shared practice, and what makes the involved elements seemingly “glue together” (Røpke, 2009) while the practice is reproduced and spread. In other words, it remains open why certain constellations of elements diffuse and are maintained by a considerable part of society, while others are not adopted or abandoned. To answer this question, in this article the notion of

“coherent” practices is introduced, operationalized and tested in an empirical case-study on meat consumption.

Coherence denotes that the elements involved in the practice are complementary and fit in such a way that routine behaviour goes smooth and the individual does not feel the urge to change her or his behaviour.

The further specification of the concept which is developed in section 3 builds on the components approach by Shove and Pantzar (2005) as recapitulated by Røpke (2009), which is presented in section 2.

Based on this approach a coherent practice is specified as one whose constellation of elements implies cognitive consistency and that the individual has appropriate skills and knowledge to perform the respective behaviour. Only if these conditions are met routine behaviour goes smooth and the practice can be successful.

To test the validity of these considerations the concept of coherence has been applied to the case of meat consumption practices. Different behaviours of meat consumption exist with regards to the amount and frequency of consumed meat (e.g. vegetarian or everyday meat consumption). Based on the concept of coherence it is hypothesised that in such a case not only the behaviours differ, but other elements of the respective practices such as the meaning, skills and knowledge also differ, and that the constellation of these elements must follow certain principles to form the empirically observed successful practices. A literature review and a case study in the shared Cafeteria of the University of Osnabrück and the University of Applied Sciences of Osnabrück have been undertaken to test this hypothesis. The case-study comprised the distribution of standardized questionnaires to students and employees going to the Cafeteria, and a subsequent correlation analysis.

In the next section SPT and the components approach are introduced. In section 3 the concept of coherence is developed. In section 4 the case of meat consumption practices is presented and in the final sections the approach and results are discussed and conclusions are drawn.

2 Social practice theories and the components approach

Social practice theories (SPT) originate from middle-range theories of scholars such as Bourdieu and Giddens. SPT take practices as central starting point for understanding social systems. This emanates from a desire to move beyond dualisms such as the structure-actor opposition. Giddens' theory of structuration (Giddens, 1984) introduces practices as mediating between actors and structure and puts them centre stage: „The basic domain of study of the social sciences, according to the theory of structuration, is neither the experience of the individual actor, nor the existence of any form of societal totality, but social practices ordered across space and time” (Giddens 1984, p.2).

More recently, Schatzki (2002) and Reckwitz (2002) have taken up and elaborated these considerations. An often cited definition of “practice” in the contemporary literature on social practices is provided by Reckwitz (2002, p. 49-50):

" a 'practice' ... is a routinized type of behaviour which consists of several elements, interconnected to one other: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge. A practice – a way of cooking, of consuming, of working, of investigating, of taking care of oneself or of others, etc. – forms so to speak a 'block' whose existence necessarily depends on the existence and specific interconnectedness of these elements, and which cannot be reduced to any one of these single elements."

Individuals are seen as the “carriers of practices” and they do not freely choose between practices based on utility or similar individualistic concepts but are “recruited” to practices according to their background and history (Reckwitz 2002). The individual's involvement in some practice for a certain amount of time leaves traces in the individual, such as acquired knowledge and skills and the accumulation of material artefacts. These “sediments” make it easier and more likely to become involved in some practices but not in others, i.e. the involvement in practices is path-dependent (Røpke, 2009).

In the literature of social practice theories, there is no generally accepted or dominant list or categorization of elements involved in a practice. Gram-Hanssen (2010) gives an overview of different conceptualisations by Schatzki, Reckwitz, Shove-Pantzar and Warde. In the remainder of this article, the conceptualisation of Shove and colleagues as recapitulated by Røpke (2009) is used. In their account a practice is a configuration of three components: material, meaning and competence (Shove and Pantzar 2005, Røpke 2009). These components should be understood as broad categories which each encompasses several elements and do not have clear boundaries to each other, and which are partly embodied in the practitioner. The following introduces these three components and illustrates them with the example of going to work:

- *Material* covers all physical aspects of the performance of a practice, including the human body. It is a sequence of bodily activities involving the usage of material artefacts, such as technological artefacts or everyday commodities. For example, one may go to work by car individually, by car-pooling, by bike or by bus. Material then covers all kind of activities such as going to the bus stop, buying a ticket, taking a seat, signalling the bus driver to stop, etc.
- *Meaning* incorporates the issues which are considered to be relevant with respect to that material, i.e. the understandings, beliefs and emotions. The issues considered and the respective understandings, beliefs and emotions are socially shared and may be discussed and negotiated in communication of individuals. Issues of relevance associated with the travel mode of going to work are for example: price, environmental effect, social status and flexibility. Someone going by bus regularly may associate it with being cheap, having time for reading, or enjoying the company of others.
- *Competence* incorporates skills and knowledge which are required to perform the practice. Competences are embodied in the individual and can neither (easily) be directly observed nor (easily) exchanged between individuals. Still they are social in the sense that they are shared by

many individuals and may be reflected also in the wider social structure, e.g. in driving schools. Examples are driving skills, cycling skills, and knowledge about public transport routes. For example, the bus user knows where the bus stop is, which ticket is cheapest, which bus number to take, and where to get off the bus.

The elements are linked within but also across these components to form a 'block' of interconnected elements – the practice. In their study on Nordic Walking Shove and Pantzar (2005) have shown that the specific elements involved in a practice may thereby vary between practitioners. For example in the meaning component elements of Nordic Walking may be “health and fitness”, “fun”, or “being in nature” and not all of these need to be endorsed by all practitioners. Similarly, someone may go by bus because it is cheap while another one may go by bus because it is environmentally friendly. Still, it is the conviction of the author that elements cannot be arbitrarily combined, but that successful practices follow certain principles. This will be the topic of the next section.

3 Coherence

A social practice is a relatively enduring, wide-spread and thus observable pattern that integrates different elements. The elements of this pattern seemingly “glue together” what maintains the identity of the practice while it is reproduced and individuals are recruited to the practice. In the following the concept of “coherence” is introduced as (partial) explanation for this “gluing together”.

Practices are routine behaviour and therefore, by definition, a successful practice must encompass elements whose specific constellation facilitates such routine behaviour. A “working” routine implies that the individual does not experience any (strong) inconvenience when performing the respective behaviour. Coherence is an umbrella for the respective required complementarities of the involved elements. In the following it is argued that (at least) two conditions have to be met.

3.1 Cognitive consistency

First, coherence relates to the phenomenon of cognitive consistency around which a family of social-psychological theories has been developed some fifty years ago (Read and Simon, 2012). The most prominent among these is cognitive dissonance theory (Cooper, 2007; Festinger and Carlsmith, 1959). Cognitive dissonance arises if people believe that some of their “cognitions” - that is, opinions, beliefs, knowledge of the environment, and knowledge of one's own actions and feelings - do not fit; i.e. it indicates that what you do is inconsistent with what you think (you should do), or how you perceive the world is inconsistent with what you think it is. It is an experience of unpleasant psychological tension that creates pressure to reduce the dissonance and to re-establish cognitive consistency. In order to achieve this, the individual may try to change one or more of the beliefs, opinions, or behaviours involved, to acquire new information or to reduce the importance of those cognitions that are in a dissonant relationship.

A routinely performed social practice with neither change in behaviour nor reflection of behaviour implies that the individual does not experience (strong) cognitive dissonance. The hypothesis derived from these considerations then is that a set of complementary elements that forms a coherent and successful practice must not contain elements whose combination provokes cognitive dissonance. In terms of the components approach introduced in section 2 this means that material and meaning must fit.

The daily lives of people constantly induce cognitions which then may become dissonant with other cognitions if these latter are contradictory to the individuals' perceptions of reality. This perception of reality thereby encompasses direct actions and experiences as well as information with which the individual is (repeatedly) confronted through others and the media. Consequently, practices that involve cognitions which are in stark contrast to the experiences made by individuals in their daily lives and to the discourses they are involved in are likely prone to be unstable. For example, for a medical doctor it may be difficult to maintain a practice which combines the behaviour of “watching TV” with the meaning of

“good for health”; or for an environmental researcher to maintain a behaviour of “flying frequently” and associate it with the meaning “good for the environment”. Surely, there is a grey area where individuals may be exposed to or even seek certain information and avoid others and therefore maintain different sets of cognitions, even when living within the same society. A famous example is the one of smoking where people need to downplay evidence on negative health effects or emphasize counter examples (e.g. a smoking uncle who became 95 years old) to avoid cognitive dissonance. Similarly, if one does not want to abandon one’s car scientific evidence on climate change may be denounced to be inconclusive or practical reasons that make an own car necessary may be emphasized. Such differences in information exposure as well as information seeking and avoidance strategies can lead to the fact that different people may well held different believes about certain issues, such as whether regularly eating meat is good or bad for health (see section 4), but still each individual maintains cognitive consistency, as long as there are some sources of information that back the own belief.

3.2 Appropriate skills and knowledge

Second, only if the individual has the appropriate skills and knowledge the activities can be performed and the material artefacts handled without difficulties, and the routine behaviour is not disrupted but can be accomplished without major conscious involvement of the practitioner. In most situations of daily life people do not act based on well-deliberated conscious decisions but based on habits, i.e. behaviour which is efficiently, effortlessly, and unconsciously repeated or transferred from similar situations to the current situation (Aarts et al., 1998). With regards to habits the situation in which the individual finds itself and its goals function as a stimulus which directly trigger a specific behavioural response, without reflection of alternative possible behaviours and respective evaluation and choice of the best behaviour (Aarts et al., 1998). The situation-goal-response connection is reinforced if the outcome of the automatic behaviour is satisfactory for the individual.

Habit formation requires the acquisition of (cognitive) skills which allow performing the respective behaviours without major cognitive effort (Anderson, 1982). For example, it requires a high level of cycling skills to ride a bike while simultaneously thinking about doing the groceries, which must be learned in numerous hours of riding a bicycle. Similarly to these cognitive and physical skills, actors are able to routinely negotiate many situations of social life based on typified schemes of social conduct (Giddens 1984). The common baseline is that routine behaviour implies the absence of conscious deliberation and that acting without major cognitive effort is only possible if the individual has acquired the appropriate skills and knowledge through experience. Once developed, a routine is maintained as long as consequences of the automatic behaviour are satisfactory.

In terms of the components approach this means that for undisrupted routine behaviour material and competence must fit. A conclusion is that practices spread easier if they build on existing skills and knowledge that can readily be integrated in the performance of the practice without major learning efforts of the individual.

The coherence of a practice measures the level to which its three components fit and therefore indicates how smooth the respective routine behaviour goes. Attributing coherence to the practice and not to individuals implies that the (experienced) “fit” of component constellations and the entailed effects on routine behaviour are similar for all individuals in the analysed system. Whether certain constellations of components induce cognitive dissonance and whether skills and knowledge are appropriate for the respective behaviour is hence assumed to be rooted in fundamental traits of the human body or in deeply ingrained aspects of the respective culture, and not to be particularly dependent on individual characteristics.

4 The case of meat consumption

A case study on meat consumption was conducted to test the hypothesis that successful social practices imply a coherence of the components meaning, material and competences. The introduction of a “vegetarian Thursday” in the Cafeteria of the University and the University of Applied Sciences of Osnabrück were used to question students and employees about their meat consumption behaviour. The Cafeteria offers several dishes at least one of which is vegetarian and at least one contains meat. Going to the Cafeteria can be considered a routine behaviour which implies a routine with regards to the choice of meals and meat consumption. From common knowledge it can be observed that different behaviours exist from eating no meat to eating meat regularly. Based on the reasoning in the previous sections it is hypothesized that these different routine behaviours (material) go along with different attitudes towards meat consumption (meaning) as well as different tastes (competences, see below). If the hypothesis holds it is therefore to be expected to find correlations of indicators for the different components among guests of the Cafeteria.

4.1 Findings from the literature

The literature on vegetarianism provides some support for the hypothesis and also inspired the design of the questionnaires used in the case study. In a review of the literature on vegetarianism Ruby (2012) finds that *“there is a sizeable body of evidence that omnivores and vegetarians think of meat in very different terms. Whereas omnivores have positive explicit and implicit attitudes toward meat, associating it primarily with luxury, status, taste, and good health, vegetarians tend to link meat with cruelty, killing, disgust, and poor health.”* (p. 145). And *“there were telescoping differences between omnivores, partial vegetarians, vegetarians, and vegans in moral opposition to the eating of animals, concern for animal suffering, concerns about the practices of the meat industry, and the belief that a meatless diet is healthier than a diet including meat, such that omnivores occupied one end of the spectrum and vegans the other, with partial vegetarians and vegetarians occupying the attitudinal middle ground.”* (p. 146).

This provides good evidence that with regards to meat consumption indeed for most people the meaning and material components are coherent.

Going to the Cafeteria and choosing a meal at first glance does not involve any particular skills or knowledge. However, the choice of a meal involves that the bodies need for certain nutrients is (unconsciously) translated into appetite or desire for specific dishes. The competences involved hence cover the learned taste for different kinds of food (in our context especially meat). Eating behaviours are strongly influenced during the first years of life (Savage et al., 2007). The young omnivores learn to accept food made available to them by the prevailing cultures and cuisines into which they are born. The first five years of life are the time when eating behaviours that can serve as a foundation for future eating patterns develop (Savage et al., 2007). These patterns are not fixed for a life-time, as especially the case of vegetarians show. Most vegetarians were not raised as such but change their food patterns at a later stage of life (Ruby, 2012). But Devine, Connors et al. (1998) found for fruit and vegetable intake that “... *consumption trajectories were relatively stable over long periods of most people's lives. Most people went through a few major transitions (about two to four) ...*” (p.363). Assuming that this is similar with regards to meat consumption it can be expected that most people have stable meat consumption patterns and an appetite or desire for meat that reflects their learned taste for different kinds of food, i.e. their competences with regards to satiating their bodies need for nutrients.

4.2 Data collection, operationalization and analysis of components

Data for the case study was collected using a standardized questionnaire which was distributed among guests when they left the Cafeteria. The questionnaires were filled by the respondents themselves for which tables and pens were provided. In total 290 questionnaires were filled. Some of these were incomplete on some questions. In the following for each indicator all questionnaires were used to analyse

the various sup-topics which were complete on all relevant items.² IBM® SPSS® Statistics Version 20 was used for the analysis.

4.2.1 Meaning

The indicator for Meaning was calculated based on four items related to effects of meat consumption:

- Q₁₁: Eating meat (almost) every day is good for my health
- Q₁₂: Eating meat from intensive animal husbandry is ethically justifiable
- Q₁₃: Eating meat (almost) every day gives me strength
- Q₁₄: Meat from intensive animal husbandry is bad for the environment

Two items (Q₁₂, Q₁₄) refer to main reasons for people (especially vegetarians) to abstain from meat (Ruby 2012) and one (Q₁₁) is ambivalent in the sense that both meat eaters as well as vegetarians think their diet is healthier. Q₁₃ relates to a motivation for consuming meat, namely the connotation of “meat and masculinity”: meat is often viewed as an archetypal food for men (Sobal, 2005, as cited in Ruby and Heine, 2011) and the concept of the strong and hearty “meat and potatoes man” abounds (Adams, 1991, as cited in Ruby and Heine 2011).

The questions were answered on a five point scale from “completely disagree” to “completely agree”.

The answers were transformed into natural numbers in {-2,-1,0,1,2}. Table 1 shows the Spearman correlation coefficients.

Table 1: Spearman correlation coefficients of meaning items

	Q ₁₁ (health)	Q ₁₂ (ethics)	Q ₁₃ (strength)	Q ₁₄ (environment)
Q ₁₁ (health)		0.626**	0.777**	-0.343**
Q ₁₂ (ethics)	0.626**		0.532**	-0.440**
Q ₁₃ (strength)	0.777**	0.532**		-0.305**
Q ₁₄ (environment)	-0.343**	-0.440**	-0.305**	

**significant on 0.01 level

² For each indicator ≥ 273 questionnaires were complete on all relevant items and used for the analysis.

The answers to all four items are significantly correlated and can reliably³ be re-coded into a new indicator. They are therefore in the next step aggregated to a meaning indicator.

$$\text{meaning} = (Q_{11} + Q_{12} + Q_{13} - Q_{14}) / 4, \text{ with } Q_n \in \{-2, -1, 0, 1, 2\}$$

This indicator covers the meaning on a “anti-meat” to “pro-meat” attitude scale of [-1,1]. Note that Q_{14} is posed inversely and negatively correlated to the other items and therefore subtracted to calculate meaning.

4.2.2 Material

The material indicator is calculated from the behaviour in the last four weeks. We asked

- Q_{21} : “How often did you eat in the Cafeteria in the last 4 weeks (28 days)?”
- Q_{22} : ”How often did you eat meat in the Cafeteria in the last 4 weeks (28 days)?”

The material indicator is calculated as

$$\text{material} = (2 * Q_{22} - Q_{21}) / Q_{21}$$

This covers the meat eating behaviour on a scale of [-1,1]. $\text{Material}=1$ means that meat was eaten at every visit and $\text{material}=-1$ means that meat was never eaten.

4.2.3 Competences

We put three items into the questionnaire to survey the learned tastes with respect to meat:

- Q_{31} : I (usually) like the taste of meat
- Q_{32} : After a meal without meat I don't feel properly full
- Q_{33} : I have a desire for meat

³ Cronbach's alpha is 0.809 (with Q_{14} inversed).

All items were answered on a five point scale, the first two from “does not apply at all” to “applies exactly” and the last one from “never” to “very often”. The answers were transformed into natural numbers in {-2,-1,0,1,2}. Table 2 shows the Spearman correlation coefficients.

Table 2: Spearman correlation coefficients of competences items

	Q ₃₁ (taste)	Q ₃₂ (being full)	Q ₃₃ (desire)
Q ₃₁ (taste)		0.484**	0.721**
Q ₃₂ (being full)	0.484**		0.555**
Q ₃₃ (desire)	0.721**	0.555**	

**significant on 0.01 level

The answers to all three items are significantly correlated and can reliably⁴ be recoded into a new indicator. They are therefore in the next step aggregated in a competences indicator.

$$competences = (Q_{31} + Q_{32} + Q_{33}) / 3 / 2$$

This indicator covers the competences on a “unaccustomed to meat” to “accustomed to meat” scale of [-1,1].

4.3 Coherence

Coherence is operationalized as positive correlation between the indicators for meaning, material and competences developed above. I.e. a person with an attitude “anti meat” who eats no meat and is unaccustomed to meat is considered as having a coherent practice with regards to meat consumption. Similarly a person being “pro meat” that eats regularly meat and is accustomed to meat is considered as having a coherent practice. If the values of the three indicators are unrelated the practice is incoherent. Figure 1 illustrates this. Table 3 shows the Spearman correlations for the three indicators for the components. The three indicators are strongly positively correlated and the correlations are all significant on a 0.01 level. Figure 2 shows the scatterplots and linear regression lines for each pair of components.

⁴ Cronbach’s alpha = 0.786

Meaning	anti meat	* # + \$	pro meat
Material	never meat	* \$ + #	always meat
Competences	unaccustomed	* # \$ +	accustomed

Coherent practices: *, + Incoherent practices: #,\$

Figure 1: Illustration of coherent and incoherent practices

Table 3: Spearman correlation coefficients of components

	Meaning	Material	Competences
Meaning		0.701**	0.689**
Material	0.701**		0.793**
Competences	0.689**	0.793**	

**significant on 0.01 level

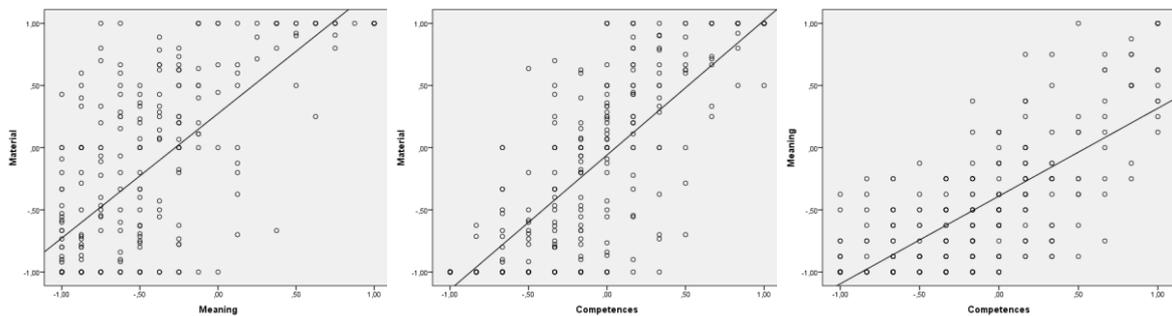


Figure 2: Scatterplots and linear regression lines: left meaning/material, middle: competences/material, right: competences/meaning

We calculated an indicator for coherence based on the three component indicators as follows:

$$coherence = 1 - 0.5 * \max(|meaning - material|, |material - competences|)$$

This results in a coherence value in [0,1] with $coherence=0$ if either meaning and material or material and competences are exactly opposite (e.g. $meaning=-1$ and $material=1$) and $coherence=1$ if all components are exactly similar. The indicator therefore captures cognitive consistency (similarity of meaning and

material) and the appropriateness of skills and knowledge of the individual (similarity of material and competences).

The expectation for the coherence of three uniformly randomly in $[-1,1]$ distributed numbers is ~ 0.542 . This can be considered a baseline value: only coherence values which are significantly above 0.542 indicate a coherent practice. The minimum coherence found in the empirical data is 0.13 and the maximum is 1.0. The average coherence is 0.719 with a standard deviation of 0.180; i.e. $\sim 83\%$ of the respondents show a coherence level above the random expectation. Hence, the empirical data shows coherence levels which are significantly above the baseline of random data.

4.4 Coherence, cognitive dissonance and non-routine behaviour

In order to test for potential non-routine behaviour and cognitive dissonance of guests we inserted two items in the questionnaire:

- Q₄₁: I eat more often meat than I want due to health / ethical / environmental reasons
- Q₄₂: When I see the offer of meals I ponder a while about whether I want to eat a meal with meat or a vegetarian meal

Both items are answered on a five point scale. Q₄₁ was answered in categories from “does not apply at all” to “applies exactly” and Q₄₂ was answered in categories “never” to “very often”.

Both were tested for (Spearman) correlations with each other and with coherence. Table 4 shows that there are weak to medium correlations which are significant on a 0.01 level. The positive correlation of Q₄₁ and Q₄₂ indicates that cognitive dissonance (Q₄₁) may be a reason for non-routine behaviour (Q₄₂). The negative correlations of Q₄₂ with coherence give an indication that non-routine behaviour does not occur (so often) if coherence is high. The negative correlation of Q₄₁ with coherence confirms the relation that had to be expected with respect to the definition of coherence of not involving cognitive dissonance.

Table 4: Spearman correlation coefficients of coherence and indicators related to non-routine behaviour

	Coherence	Q ₄₁ (more meat)	Q ₄₂ (pondering)
Coherence		-0.364**	-0.271**
Q ₄₁ (more meat)	-0.364**		0.458**
Q ₄₂ (pondering)	-0.271**	0.458**	

**significant on 0.01 level

5 Discussion

The empirical data shows strong and significant correlations between the components meaning and material as well as material and competences and therefore provides a confirmation of the hypothesis that successful social practices are coherent, i.e. that they imply a complementarity of the involved elements in a way that implies cognitive consistency and appropriateness of skills and knowledge. The data furthermore provides confirmation for the appropriateness of the outlined concepts through the fact that coherence is inversely correlated with indicators for cognitive dissonance and non-routine behaviour.

These results encourage and suggest further empirical tests of the proposed concept.

If it is acknowledged that practices indeed have to be coherent to be (come) successful the notion of coherence also opens up routes for the investigation of processes that lead to the emergence and perpetuation of social practices. Two such processes follow logically from the operationalization of coherence using the components approach: reduction or avoidance of cognitive dissonance and learning (in a broad sense). First, in order to establish and maintain complementarity of material and meaning some processes need to be active that align these two components over time. Empirically, both can be observed: that material is adapted to meaning and vice versa (Steg and Tertoolen, 1999). It has for example been shown that environmental awareness decreased among car users after receiving information about the negative environmental effects of car use (Tertoolen et al., 1998). Secondly, in order to be able to develop a new routine after some innovation in material (e.g. some former car driver decides to use the bicycle or someone becomes a vegetarian) an adaptation of competences to the changes in material is

required. This comprises some kind of learning. It can be expected that the empirical counterparts to these briefly sketched kinds of processes may vary between empirical cases and may encompass several distinct empirical processes which have similar effects. The identification and comparison of processes through which coherent practices emerge constitutes an interesting field for future research.

These considerations are in line with research of Shove and colleagues (e.g. Shove and Pantzar, 2005) on the integration of new and well established elements in the innovation of practices and provide additional understanding of which element constellations are promising to constitute successful practices; namely those that imply cognitive consistency and build on existing competences to avoid major learning barriers. Furthermore, the concept provides a starting point to study the perpetuation of practices in a changing context and the disappearance (“killing”) of practices.

Surely, the internal coherence of practices is not the only influence that shapes the emergence and perpetuation of successful practices. For example, Røpke (2009) refers to concepts from the economics of technological innovation and makes the point of the importance of the selection environment - consisting of other practices, macro-social trends, infrastructure and institutions - for the stability and dynamics of social practices.

The methodical approach taken in this study is rather atypical for research of social practices, which most often conducts qualitative in-depth case-studies. Instead, the concept of coherence has been deduced from theoretical considerations and quantitative methods were used for empirical testing. It is the conviction of the author that exercises such as the one presented are useful to develop suitable glasses to structure the wealth of empirical material when conducting in-depth empirical case studies. The developed concepts help to organise the diversity of empirical material and to identify crucial aspects whose in-depth analysis may then contribute to a refinement of the conceptual base.

6 Conclusions

Social practices integrate different kinds of elements which can be categorized into the components meaning, material and competences. It has been proposed that successful practices that spread and persist in a considerable part of a society must be coherent. Coherence denotes conditions that facilitate routine behaviour, namely that the elements involved are complementary in a way that implies cognitive consistency and the appropriateness of skills and knowledge to accomplish the behaviour without major cognitive effort. Using the components approach this is operationalized as a fit of meaning and material and a fit of material and competences. A literature review and a case-study on meat consumption practices provide confirmation of the hypothesis that social practices imply a complementarity of the involved elements. The concept of coherence constitutes a promising starting point for future research on the processes involved in the emergence, spread and persistence of successful practices.

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