

Please Note: The following working paper was presented at the workshop "Demanding ideas: where theories of practice might go next" held 18-20 June 2014 in Windermere, UK. The purpose of the event was to identify issues and topics that constitute 'unfinished business' for people interested in social theories of practice and in the relevance of such ideas for the DEMAND Research Centre. This working paper should not be quoted without first asking the author's permission.

DemANdING ideas

**Working Paper 9: Mikko Jalas, *Temporal unfolding of demand* (mikko.jalas@aalto.fi)
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One of the areas in which theories of social practices have been found useful and made contributions to policy is the field on energy demand. Practices, it is claimed, demand energy carriers and services, and their performance in masses constitute aggregate demand. Thus, research in and management of energy demand is an area in which practice theory is put into use with interesting opportunities for theoretical development as well. This mini-manifesto aims to critique some salient assumptions in the way practice theory has been used in research on energy demand and to point some blind spots that call for clarification and theorization. More broadly, I suggest that collective rhythms continue to be important topics to theorize and that new views on materiality, duration of effects and accumulation of stocks help in developing further the studies of rhythmicity.

Do theories of social practice 'predict' the fluctuation of demand and the congestion of infrastructures?

Rhythmicity implies that performances tend occur at pre-given intervals. When a rhythms is collective and social this furthermore implies that performances both fluctuate and coagulate as they are squeezed in time and place and as congestion occurs. Electricity demand is one area where theory, empirical evidence and practical use of theories of social practice have been suggested and trialed. Fluctuation of overall demand is taken to be a result of human engagement in practices, and it seems viable that the fluctuation of demand and patterning of social life can be taken as empirical evidence of practice theory. Isolated individuals with cognitive capabilities to choose rationally would not, it appears to me, end up repeatedly in predicted moments of congestion be it in road traffic or electricity demand. Even if individuals reason the need to arrive at work at 8 o'clock and thus queue in traffic, the willingness to tolerate inconvenience and pay premiums for prime time consumption signals a social patterning. In addition to social power that forces some people to queue, fluctuation of and peaks in demand reflect the effects of positive line up and networks. My appetite for playing floorball calls for others to join in and synchronize with me. Moreover, the 'positive' congestion around team-sports, team-work or spectator events create 'negative' forced congestion around them. Overall, fluctuation of demand and the persistent rhythms in society seem to imply a host of conventions and mechanisms that operate upon individuals. If put to test and pushed to derive predictions, congestion in coordinated and materially constituted social life seems as an obvious contribution by practice theory.

Practice theory is put into another form of managerial test in the field of electricity demand. The roll out of smart grid technology is connected with questions of demand management: Will time-of-use-tariffs level off consumption peaks of electricity demand? What is the nature and force of the social mechanisms that produce fluctuation of demand and the underlying rhythmicity of practical performances in mass? In order to better understand key practice-theoretical phenomenon such as

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collective nature of demand and to prove useful for practical end, I suggest that temporality and rhythmicity continue to be central for advancement of practice theory.

Activities, activity spaces and infrastructures

Despite vivid representations of fluctuating demand and the parallel claim that this is a question of mass behavior, the notion that 'practices consume energy' needs to be further qualified. It can be argued that the links between energy demand and activity patterns are less direct and rather mediated by technology. For example, as a key element of energy demand, 'buildings consume energy' regardless whether they are occupied as they prepare for and maintain opportunities of engagement for humans. That is, the energy consumption by buildings has effects that endure over time. I suggest that in addition to thinking practices as activities (or verbs), we need to consider the materials of an activity, and that the notions of activity space and infrastructure prove helpful.

If we accept the notions that buildings or cities consume energy, we change from an activity-based register to a spatial register. It is no longer, or not only, practices that consume energy, but the maintenance of buildings and other material conditions of human action as *activity spaces*. Yet, spaces are not attended constantly; they can be on idle or in operation with different effects that depend strongly on the type of spaces. A motored space such as a car, for example, consumes little when not operated and commanded by humans. The distinction between idling and operating city is more difficult to establish. Activity spaces differ at least in terms of how dedicated they are and how strong and instant the influence of an occupant, user or operator is in the space.

Most spaces can host many activities and assemble and bundle them. Majority of the built environment exist in order to support and enable a particular set of activities, and includes designer induced-scripts for human engagement. However, the solidness of the link between space and action varies. Scripts can be multiple and uses of spaces are not confined to scripts. I suggest to use the term *infrastructure* for materially constituted spaces that satisfy both the two criteria: 1) such spaces enable many different activities and thus constitute open-ended activity spaces and 2) are characterized by a loose coupling of between the resources needed to maintain and operate them on the one hand and the level of human engagement on the other hand. Cities and more confined parts of the build environment, for me, appear to function as such infrastructure of practical performances.

To a degree it is arbitrary whether we prefer an material or action oriented ontology in practice theory. Yet, this choice appears important for analytical and practical purposes. In conducting empirical analysis of societal energy flows, I have for example been faced with the question whether domestic space-heating should be allocated to activities that take place at home. Answer might be simple: just observe whether occupancy rates of homes affect energy consumption of homes. However, one can also regard home as an infrastructure that is needed to engage in the full range of activities in one's life. If then 'infrastructures consume energy', we step one step further away from the ideal that practices consume energy in a straight-forward way, and introduce a hierarchy between them. 'Infrastructure' such as 'home' or 'eating' can probably be thought of as practices, but at the same time have enduring effects that last over time and detach infrastructures from the temporal coordinates of social life.

To spur further thoughts, I realize I have personally a normative stance towards not allocating all energy consumption to activities. To argue that energy is consumed to maintain and run activity-spaces and infrastructures such as homes and cities seems to grant some important freedoms for individual and slack in how global environmental management is brought to bear ever more details of individual lives. However, I realize that effective demand-management may call for more fine-grained analysis, and, as a concerned climate citizen, I sit uncomfortably on both of these chairs.

Duration and stocks of effects

Both of the previous pieces of thought of fluctuation of demand and spatiality of practices couple with question of duration of effects and stock that accumulate as outcome of practices. An activity-space that is constructed and maintained to enable particular set of activities is a stock of effects that endures in time. Such a stock may encompass entire infrastructures such as the road network that is on idle and serves its users at request for a long time. Stocks and rates of their consumption can, however, be more tightly coupled. At the other end, stock may be limited to the endurance of the acts of heating a fireplace and enjoying the warmth for couple of hours. Somewhere in between, the stock of firewood may last for two winters and stocks of heating oil or coal cover the need for half-a year. Energy intensive practices such as eating or personal hygiene also have effects endure in time. Hence, the maintenance of the conditions of practices include not only material spaces with suitable or comfortable conditions but also the body. Thought in this way, the body, properly nurtured, cleaned and clothed is an infrastructure of consumption, while it is, at the same time, an object of maintenance. More generally, can one distinguish between productive practices and consumptive practices based on whether stocks appear (locally) to accumulate and replenish or dilute and diminish?

Consumption at the end of supply chains

My struggles of deciding whether and how to allocate energy consumption to various activities relates to broader questions of supply chains. To say that practices consume energy is to construct chains of causal effects that guide a researcher to allocate the acts energetic conversion (combustion of fossil fuels, conducting electric currents etc.) to performances of practices and the acts of consumption. Yet, the lack of conceptual thinking around the links between and the nesting of different practices, and the resulting ad hoc allocation rules make social modelling of energy demand less applicable and appealing for policy-making. It seems necessary to try to distinguish between general purpose infrastructure and dedicated spaces that can indeed be analyzed as active operations that define these spaces.

Economists appear to have a clear yet a different way to distinguish between production and consumption. The notion of final consumption refers to the acts of private and public final consumption and to consumers who do not produce value, but consume it. Value is delivered to consumers via supply chains, and the acts of final consumption constitute a primary sphere that drives and mobilizes a large set of economic activities and exchanges. Economy and the different systems of production and distribution that are in place, in this ideal construction, resemble infrastructure. Is production the infrastructure of consumption?

Regardless of the validity of such one-way constitution of economic/private relationship, interesting thoughts are at reach. It is in these acts of final consumption that usefulness appears as exchange

values are converted to use values. Usefulness is thus a thing/concept/phenomenon located at the border of economic life and private life worlds of which economist have little to say. Things at this border become simultaneously priceless as they exit the economy and useful as they enter the realm of consumption.

Usefulness might come at hand in the struggles to account for activity spaces and infrastructure that endure in idle form and store and accumulate stocks in the form of being ready for human practitioners. Buildings, for example, must justify the energy claims that their maintenance poses and become or promise to be useful at future instances. In case of Finland, there is for example on increasing activity spaces such as summer cottages and second homes that command ever more resources and appear useful even they have low occupancy rates. Infrastructures, such as the military force, can be at the same time in an idle state and not produce any immediate service or host ongoing activities and yet be (regarded as) useful. If one would follow this thought, the spatial/material ontology I have suggested in this manifesto could include operational spaces, such as the motored car, activity spaces as such as the home, and backgrounded infrastructure that surfaces as useful only randomly. Being aware of and developing such spatio-temporal reaches of material settings seems for me to support the development and use of practice theory.