Coping with blackouts: A practice theory approach to household preparedness

Abstract: This article focuses on how rural households cope with blackouts caused by winter storms. We approach the concept of household preparedness using a practice theory perspective, and argue that household preparedness is mundanely preformed as part of already existing everyday practices. Thus, this is a retrospective study of *how* household preparedness was performed in actual crises. The data material consists of at home interviews with 14 households and 26 interviewees from Norway and Sweden. The results demonstrate that households cope with blackouts by activating and mobilising competences, meanings and materials belonging to different practices, and that they do so in an interwoven ongoing process that ensures continuation of everyday life during disruption. The article concludes by arguing for the need to bring forward studies on *informal preparedness activities*, in a research field where household preparedness tends to be framed using a top-down and formalized perspective on crisis preparedness and management.

Introduction

A dominating trend in crisis management regimes worldwide is to consider individuals and households as important actors in the crisis management system (Levac, Toal-Sullivan, & O'Sullivan, 2012). In the Nordic countries, both policy documents on crisis preparedness and risk communication initiatives increasingly address individual citizens and households (Throne-Holst, Slettemås, Kvarnlöf, & Tomasson, 2015). The concept of *household preparedness* has been launched in both local and global crisis management systems to emphasize household responsibility and capability of reducing risks and carry out coping strategies when they are threatened by a crisis or disaster. However, a large part of the research on household preparedness does not consider the everyday life practices in which these households operate. Instead, pre-established policy definitions of preparedness have formed the starting point for studies of households' abilities to prepare for and manage crises and disasters (e.g. Basolo et al., 2008; Kapucu, 2008; Levac et al., 2012; Siegrist & Gutscher, 2008; Terpstra & Lindell, 2013; Thieken, Petrow, Kreibich, & Merz, 2006). Consequently, these types of studies often conclude that households lack relevant material resources, as well as formal

knowledge of crisis preparedness. This top-down approach to household preparedness is heavily biased towards official and policy oriented definitions, and often fails to recognize the performativity of household preparedness.

In order to recognize *informal preparedness activities,* we draw attention to what households actually do when they cope with disruption, particularly emphasizing the often taken for granted activities. Thus, this is a study of the manifestations of household preparedness: a study of *how* preparedness was performed.

The article aims to understand how rural households in Norway and Sweden cope with electricity infrastructure breakdowns at home. We understand electricity infrastructure as interwoven networks that form the backdrop of modern living, facilitating the movement of electricity between technologies (Larkin, 2013, p. 328). Even though it requires work from a range of actors to function (Silvast, 2013), very few people actively engage in infrastructure in everyday life (Bowker & Star, 2000; Star, 1999). Electricity is however a prerequisite for the workings of many daily practices such as cooking, cleaning, heating and lighting. It is through these practices that infrastructure can be studied; not as electricity per se, but as an enabler of practices (Pink & Mackley, 2012; Shove & Walker, 2014).

Although society's reliance on electricity infrastructure dates back to the early 20th century (Nye, 2010), the increasing complexity of the infrastructure and interdependencies with other infrastructures such as Information and Communication Technology (ICT) (Höst, Nieminen Kristoffersson, Petersen, & Tehler, 2010; Kjølle, Utne, & Gjerde, 2012) makes it more vulnerable (Boin & McConnell, 2007; Byrd & Matthewman, 2014; Perrow, 2011). Even though blackouts have been rare, they might occur more often and for longer periods of time in the future as a result of terrorism or natural disasters caused by climate change (IPCC, 2012). The more interwoven and complex these enabling infrastructures become, the more difficult it will be to prepare for blackouts. Accordingly, providing knowledge on how different actors understand and manage them will be important in future preparedness work (Howe et al., 2016).

Employing qualitative walk along interviews, we suggest turning focus away from what we understand as a 'traditional preparedness regime', towards an 'everyday life perspective' acknowledging the importance of social, human and material resources intertwined in the daily activities of households. We use social practice theory to illuminate the ways in which preparedness is part of the many practices households perform daily. By separately exploring

the elements that constitute a practice; meanings (our engagements and beliefs), materials (products, technologies) and competences (embodied skills, knowledge), we identify important but often unspoken aspects of how households cope with extensive blackouts. By further exploring the interplay between these elements, we gain a deeper understanding of their type and level of preparedness; to what degree households are able to absorb disruption while still carrying on with their daily lives (Trentmann, 2009). Here, households are understood not as mere recipients of support during blackouts, but as active agents that work through an event by activating and mobilising competences and materials, and construct and reconstruct meanings about blackouts.

Previous research

Household preparedness

The research literature in this field addresses preparedness in a very broad sense, and is concerned with all types of emergencies and disasters: from domestic fires and hurricanes to terrorist attacks and natural disasters (Kapucu, 2008; Levac et al., 2012). Even though Perry and Lindell (2003) argue that emergency and crisis preparedness (at any level) should be understood as a dynamic rather than a static process depending on the social and cultural context, a large part of the literature still uses formal definitions of household preparedness (Baker, 2011; Basolo et al., 2008; Kapucu, 2008; Lemyre, Lee, Turner, & Krewski, 2007; Levac et al., 2012; Sutton & Tierney, 2006; Terpstra & Lindell, 2013), that are both normative and top-down oriented. Although pre-established definitions are needed to constitute and carry out crisis management plans at a policy level, they also lead to studies merely emphasizing the need for emergency management actors to train, educate and inform households in formalized preparedness actions (Baker, 2011; Kapucu, 2008). In Kohn et al. (2012), disaster preparedness knowledge is defined as the degree to which families have an 'emergency plan', and if they own the contents of a 'preparedness kit'.

A trend in studies on household preparedness is to apply formal definitions of preparedness in questionnaires addressed to individuals, in order to examine the amount of emergency supplies at hand, where subsequently the results are described as levels of household preparedness. However, and as other studies have pointed out (e.g. Paek, Hilyard, Freimuth, Barge, & Mindlin, 2010; Perry & Lindell, 2003), household preparedness cannot be determined exclusively by the amount of emergency supplies at home. Such studies are unable to grasp

whether households have acquired these items purposely for managing emergencies, or for other reasons, or if in fact the items listed in these questionnaires are the most important preparedness products for a family, or if they are actually used during an emergency. Contrary to the field of consumer research that focuses on the *usage* of products and services in households, household preparedness studies seldom take into account the implementation of preparedness.

In later years, research has begun analysing the complexity of household preparedness, particularly by assessing the significance of social capital for community resilience. Networks, family, neighbourhood and local community has been identified as an important resources in strengthening household preparedness (Brunie, 2010; Diekman, Kearney, O'Neil, & Mack, 2007; Kim & Kang, 2010; Paton & Johnston, 2001; Rooney & White, 2007). Although this research has increased massively during the last ten years, *how* households prepare for and manage crises has not been sufficiently elaborated theoretically or empirically (Donahue, Eckel, & Wilson, 2014; Rademacher, 2013). According to Diekman et al. (2007, p. 495), the field lacks an understanding of the role of individual households, and how these households themselves recognize and experience preparedness (see also Hawkes & Rowe, 2008; Henwood, Pidgeon, Parkhill, & Simmons, 2011).

Households' role during blackouts

There are a few studies dedicated to understanding how a society copes without electricity, most of them conducted in North America, addressing the 2003 blackout in New York (e.g. Beatty, Phelps, Rohner, & Weisfuse, 2006; Bennett, 2005; Goodman, 2005; Nye, 2010; Scanlon, 2003). In his book *Disrupted Cities*, Graham (2010, p. 3) emphasizes the importance of studying blackouts:

> Studying moments when infrastructures cease to work as they normally do is perhaps the most powerful way of really penetrating and problematizing those very normalities of flow and circulation to an extent where they can be subjected to critical scrutiny.

Similarly, Nye (2010) argues that these ruptures enable an alternative viewpoint of the social construction of modern society, highly dependent on a web of infrastructures to work . Rinkinen (2013) makes use of these insights to examine whether Finnish households' heating habits have the potential to change in a more sustainable direction after a blackout. Her study finds that

heating practices were rearranged, but sustained during the outage. While Rinkinen uses blackouts to examine whether practices can become more sustainable after experiencing everyday life without electricity, we aim at using blackouts to explore in what ways everyday practices such as heating, food storing, cooking, and lighting can be part of household preparedness.

Blackouts have seldom been addressed within the household preparedness and crisis management literature, with a few exceptions. Palm (2009) points to the unclear role and responsibility of households during outages. While both the government and electricity companies expect households to be prepared, households do not believe themselves to be responsible. In his study of the storm Gudrun in Sweden, Guldåker (2009) finds that households actually accounted for large parts of the crisis management, but they represented different resources than the professional managers (see also Helsloot & Beerens, 2009). This indicates that preparedness must be understood based on how it is perceived by different actors.

Silvast (2017) has studied how Finnish households understand blackouts in a crisis context, and finds that they are framed as normal events that are manageable as long as they do not cause everyday life to stop. Ghanem, Mander, and Gough (2016) follow this line of inquiry, seeking to understand the resilience of UK households for blackouts. The authors show how resilience can be achieved through modifying everyday electricity-related practices. In risk and crisis literature (e.g. Ainuddin & Routray, 2012; Benadusi, 2014; Ferdinand, O'Brien, O'Keefe, & Jayawickrama, 2012; Joerin, Shaw, Takeuchi, & Krishnamurthy, 2012), resilience is often used to refer to the abilities or features where individuals, households or communities are being described as either being or not being resilient in terms of *recovering from*, rather than coping with, a crisis or disaster (for a critical discussion on the concept of resilience see for example Bergström (2016) and Olofsson, Giritli Nygren, and Öhman (2016)). More so, as resilience has its origin in policy documents on crisis management, making it part of the top-down notion of crisis management, we find it hard to apply the concept when approaching crisis preparedness from a household perspective. Instead of understanding preparedness through resilience, we apply a bottom-up approach trying to grasp how households themselves perform preparedness.

A practice theoretical lens

In order to go beyond the traditional top-down preparedness approach, and to emphasize the work households do during a blackout, we draw on the theoretical concept of practice

(Bourdieu, 1977; Giddens, 1984). Practice theory is not one unified theory, rather it is a range of efforts to bring out the taken for granted doings of ordinary people in everyday life. Schatzki (1996, p. 89) phrase it as 'a temporally unfolding and spatially dispersed nexus of doing and sayings'. Practice theories thus differ from sociological approaches focusing on normative structures, as well as from economic theories focusing on single actions by rational individuals (Reckwitz, 2002). It gained increasing relevance as a counterweight to the extensive focus on identity construction and symbolic consumption among specific groups in the 1990's, by instead emphasizing the habits and routinized actions of the majority. As a cultural theory focusing on symbolic knowledge structures, practice theory has its analytical starting point in the practice, defined by Reckwitz (2002, p. 249):

> A 'practice' (Praktik) is a routinized type of behavior 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.

Here, practice is understood as a package of the mundane activities inscribed in our bodies (e.g. heating the home), the materials that are connected to these (e.g. wood stoves, panel ovens, kerosene burners), motivations of individuals in these activities (e.g. sustainability, economy, comfort), and formal and informal knowledge (instructions, manuals, and how to light a fire) (Shove, Pantzar, & Watson, 2012). In line with Shove et al. (2012, pp. 22-23), we understand practice as an entity of three elements. *Competences* are culturally shared understandings of skills to perform a practice that include practical consciousness, know-how, bodily skills, and background knowledge. *Meanings* are the social and symbolic significance of participating in a practice, and includes our mental capacities, emotions, motivations, beliefs, and engagements. *Materials* are things that belong to a practice such as objects, infrastructures, technologies, tools, products, and the body.

This toolbox allows us to focus on social and material aspects of everyday life. Practice theory shifts focus from individuals to packages of doings and sayings that exists beyond the individual. Individuals are seen as practitioners that are performing the practices, and they are also able to change or redefine them (Shove et al., 2012). A practice is never a unit separated from other practices, it is always intertwined and its elements are included in many different practices that are part of a larger context in which they are performed (the skill of lighting a fire on a stove at home is also used for a camp fire) (Warde, 2005). Our aim here is therefore not to

define units of practice, e.g. what a 'preparedness practice' could be, rather it is to say that preparedness is interwoven in many of the practices that households perform, and that they are reorganised when households face blackouts. This means that instead of counting emergency supplies at home, we argue that *household preparedness is something that is mundanely performed as part of already existing practices.*

When a blackout occurs, everyday life is interrupted, but it does not stop. Trentmann (2009) argues that there is a built-in elasticity of everyday life that absorbs these disruptions, and that by looking at this elasticity of how practices change or stay the same, it is possible to identify the vulnerability or robustness of households. Blackouts might be utilized for getting information on what a household requires to function, and what it can do without (Wallenborn & Wilhite, 2014); a 'moment of reflexivity', both for household preparedness research and for households themselves. The practice theory approach recognizes tiny pieces of work done by households, and sheds light on two aspects of household preparedness: (1) the ordinary activities and resources of families in everyday life that are implicitly a part of their preparedness for blackouts, and (2) how these activities and resources come into play when families need to cope with a blackout.

Case: Winter storms in rural Norway and Sweden

The study is based on fieldwork in Norwegian and Swedish rural areas, where households have experienced long-term breakdowns in the electricity infrastructure. We treat the data material as one case because of the similarities between the two countries' energy regimes (mainly electricity for household consumption, part of the same electricity market Nord Pool) (Statens Energimyndighet, 2013; Statistics Norway, 2014), geography (long and cold winter seasons during which winter storms that causes blackouts tend to occur), and crisis management and preparedness regimes (citizens are expected to be prepared) (Cornia, Dressel, & Pfeil, 2014; Throne-Holst et al., 2015).

In December 2011, the hurricane Dagmar hit the coast of Western Norway. It was a so-called 'thousand-year storm' that reached far into the country and caused massive tree falls over the power lines. 1,3 million citizens lost their electricity supply, 14.000 for more than 48 hours. The hurricane also took out 475 base stations. In January 2014, the inhabitants of a small village in Western Norway experienced another extensive blackout during a house fire that spread rapidly due to a winter storm and a dry winter season with little snow. 42 buildings burnt down,

including the base stations for electricity-, and ICT-supply. The fire damaged the main power line, causing a three-day power outage.

In December 2013, the hurricane Ivar caused a blackout for 60.000 citizens in in the north of Sweden due to extensive tree falls. While the majority of the affected households got their electricity back within 24 hours, over 1000 households were without electricity for more than 5 days. Similar to Dagmar in both strength and extent of damage, Ivar took out critical infrastructure including roads, trains, electricity and telecommunication. After the storm there were persistent problems with electricity, ICT, heating and drinking water supply.

Method: Walk-along interviews at home

Grasping the informal preparedness activities that took place during these blackouts, and that we argue is part of households' everyday practices, requires digging. Most of the households in this study were rather unengaged in infrastructure, energy consumption and blackouts. Rather, electricity is seen as an enabler of various tasks, something that is always supposed to be there, and if not someone else will take responsibility for fixing it. Thus, it was not obvious to them why researchers would be interested in how they heated their home without electricity. The second challenge in this study is that it is rarely possible to study a blackout as it takes place. Retrospective interviews consist of *re-enactments*, stories of how a blackout was handled, rather than enactments, the actual handling that took place and that can only be studied by observing a household during a blackout.

We meet these challenges by applying several methodological strategies. First, we are in line with Hitchings (2012) who argues that it is possible to study practices by using language-based methods if sufficient time is used to explain the type of knowledge relevant and why. *Practice based talk* means formulating questions of performativity (e.g. what did you do, what did you use, who were you with) that opens up and give space to these stories. The household interviews were unstructured in the way that it followed the storylines of the interviewees, and at the same time contained questions that were directed towards *how* a task was done (e.g. how were you able to light up a room without electricity?). However, language based methods has limitations. We are unable to observe the bodily performance of these practices, making it challenging to grasp the work that households did to cope with the blackout (e.g. whether or not a family found it difficult to light a fire, how often they actually opened the freezer, or how meals were prepared without electricity). These are important aspects of household

preparedness, hence we further employed two strategies for enabling households to articulate this work.

The walking and talking interview is a methodological strategy for demonstrating the performance of practices during an interview situation, so-called 'walk along' (Carpiano, 2009; Kusenbach, 2003; Pink, 2007). This means to walk together with the interviewees where the practice under study is performed connecting the articulation of the practice to the physical environment. For our study, this meant walking with them in their homes when they showed us what worked and not during the blackout (e.g. a radio), how they used which alternative technologies (e.g. generators, candles, wood stoves), how they employed social networks (e.g. walked over to neighbours, friends) how they used existing knowledge (e.g. using gas burners, knowing the local infrastructure), and how this changed their normal activities (e.g. longer time to heat, cook, spending time reading instead of watching TV or using the internet).

Photographs of materiality (such as heating technologies, food storage strategies, alternative lighting, radios, flashlights etc. and the placement of these) on the walking and talking tours served two purposes. First, the pictures are used as research material together with transcripts in the analysis as well as in the overall dissemination of the project. Second, and perhaps even more important, the photographing was significant in itself. Taking time to show objects, sites and explain movements slowed down the tour, and triggered storytelling rather than brief answers to predefined questions.

The data material consists of 14 interviews as described in table 1, conducted between March – September 2015. In Sweden, the research team used their social network to recruit a primary contact who recruited household 10-14. In Norway, the research team was put in contact with a municipality employee that became a key informant. She directly recruited household 1-3, and through her and two other interviewees extended network, household 4-9 were recruited. All were affected by one or more of the winter storms. When referred to, interviewees are identified by household unit, gender (F/M) and age. The Norwegian Centre for Research Data (NSD) has approved the data collection, and all participants signed a written consent after the interview containing a separate section for consenting to use of photos. All interviews were fully transcribed.

HyperResearch was used as a tool to assemble the analysis. The interviews were coded in a three-step process. In step one, inductive codes were generated based on words and

concepts used by the interviewees. In step two, these codes were grouped according to the project's research questions, resulting in 23 categories including 'infrastructure', 'knowledge' and 'social networks'. In the final step, the three elements from practice theory was used to identify the aspects of informal household preparedness activities as presented in the analysis below.

Table 1: Data material

Identification	Household characteristics	Interview context
Household 1, Norway	**Woman (55)*,** Man (55), two adult sons (not living at home) living in a detached house.	At home interview including a walk along photo tour. 2 hrs, 15 min recording, 10 photos.
Household 2, Norway	**Woman (48), Man (52), Daughter (17), Son (25)** living in a detached house.	At home interview including a walk along photo tour. 1 hr, 41 min recording, 14 photos.
Household 3, Norway	**Woman (52), Man (52),** two teenage sons living in a detached house.	At home interview including a walk along photo tour. 2 hrs, 48 min recording, 25 photos.
Household 4, Norway	**Man (45), Woman (unknown age),** son (10), new-born daughter living on a farm.	At home interview including a walk along photo tour. 2 hrs, 5 min recording, 76 photos.
Household 5, Norway	**Man (69), Woman (66), son (30)** living in a detached house.	At home interview including a walk along photo tour. 1 hr, 13 min recording, 14 photos.
Household 6, Norway	**Man (84),** Woman (82) living in a detached house.	At home interview including a walk along photo tour. 1 hrs, 47min recording, 24 photos.
Household 7, Norway	**Man (72),** Woman (73) living in a detached house.	At home interview. 1 hr, 14 min recording.
Household 8, Norway	**Woman (17), Woman (17)** from household 2 who is her friend were interviewed together	Interview in the home of household 2. Second visit. 1 hr, 20 min recording.
Household 9, Norway	**Man (72),** Woman (70) living in a detached house.	At home interview including a walk along photo tour. 1 hr, 45 min recording, 23 photos.
Household 10, Sweden	**Woman (52), Man (49), Son (13)** living in a detached house	At home interview including a walk along photo tour. 1 hr, 16 min recording, 5 photos.
Household 11, Sweden	**Man (55), Woman (54),** Daughter (20), living in a detached house	At home interview including a walk along photo tour. 45 min recording, 5 photos
Household 12, Sweden	**Man (49), Woman (35),** Daughter (teenager), Son (teenager), living in a detached house. Woman and children lives part-time in the house.	At home interview. 45 min recording
Household 13, Sweden	**Man (55),** Woman (54), living in a detached house.	At home interview. 1 hr, 45 min recording.
Household 14, Sweden	**Woman (53),** living in a detached house.	At home interview including a walk along photo tour. 1 hr, 50 min recording, 7 photos.

*Interviewees in bold

Informal preparedness

In the following sections, we seek to illuminate the *informal preparedness activities* that households took part in during blackouts, and how these were shaped by households pre-existing preparedness, as well as how they shape future preparedness. Consistent with the aim of practice theory, we focus on the seemingly obvious and taken for granted parts of household preparedness, and attempt to argue why and how they matter. We directly apply the three elements from practice theory: competence, meaning and material, and their interconnectedness in order to bring out the essential substance of informal preparedness activities in households.

Embodied blackout competence

In their extensive review of the preparedness literature, Kohn et al. (2012, p. 228) find that previous experience is an important factor for a high level of preparedness. However, what experience consists of and how it takes effect in a new crisis has rarely been studied (Levac et al., 2012). We find that previous experience with blackouts is a tacit form of knowledge embodied in peoples' day-to-day lives that can be activated during disruption. An interviewee who talked about blackouts in his childhood phrased it as follows:

> From the old days, we lost the electricity a lot here. Because in the old days the power line stretched to Årdal [a near-by village] and it was often damaged by rockslides. When I was a kid here, it got dark all the time, one or two days and then the electricity returned. Then we had the oil lamps over here, and a primus for cooking. Two of the oil lamps are still here. We don't have oil on them now, but this is the kind of thing we are used to from when we were kids. (…) *So this is in fact an old thing, it lies within us from that time*. (H9, M72, Norway, emphasis added).

His past experiences induced knowledge and awareness of how the local infrastructure works; where the power line runs, that it at one time was vulnerable for rockslides, and how long a blackout would normally last. Furthermore, the competence generated by these experiences is linked to material resources; oil lamps and a primus that the family knew would be necessary for managing future blackouts. Living with the possibility of blackouts has resulted in an unconscious capacity to deal with them (see also Silvast & Virtanen, 2014 that compare households to electricity companies, arguing that tacit knowledge take exclusive priority for households' managing blackouts). The households activated and thus utilized their competence when a new event occurred, like this family explained:

We always do it like this when we lose electricity, because we have experienced that quite a few times over the past couple of years. Then, we always do this: Don't open the fridge, don't open the large freezer. We don't have to open that at all. And be careful with the fridge and the small freezer. Then the food might last. And close all doors, we usually do that right away. And *of course* light candles and battery candles. And the fireplace. (H3, F52, Norway, emphasis added).

Without electricity the family initiated their capability to deal with the blackout, they worked towards making daily life continue. There is an adaptation of the practices (storing food, eating, lighting, heating) that are usually performed with electricity infrastructure. Without it, they continue, although in a slightly different way through employing the competences from previous experiences and the materials acquired as a result of them as well as those at hand in the household.

Practices are always performed by practitioners belonging to a specific historical and geographical context (Shove et al., 2012). Both the above quotes indicate that the knowledge households employ during a blackout is a place specific 'localized practice'. This finding is observed in both Norwegian and Swedish rural areas, as this interviewee talked about:

I am from a small town way into the forest that often experienced electricity breakdowns. It is on the end of the power line, and that caused many breakdowns. So I don't worry when I lose my electricity supply. And if you see that the lights start blinking, you just fill the bathtub and buckets with water. We always do that when we suspect a blackout (H4, M55, Sweden).

Knowledge of the local infrastructural system, as well as the potential consequences for end users, played a significant role in households' handling of its disruptions, and is considered part of the material knowledge of place. However, knowing place also include social knowledge, as an interviewee exemplified:

It wasn't a problem. Everyone in this village is so helpful if something were to happen. They know you, right, so you can go home with groceries from the store and pay for it the next day. (…) It's not difficult, everyone knows everyone (H2, F48, Norway).

It seems to be a rather strong storyline in the rural households that they experience themselves as more able to cope by having a different sense of place both materially

(geographical knowledge, knowledge of infrastructure locations, roads, tunnels, meeting places etc.) and socially (knowing neighbours, where people live, whether other villagers are at home, who has many and few resources to cope etc.) than urban dwellers (Guldåker, 2009, p. 284; Silvast, 2013, p. 155 briefly touches upon these differences). These possible differences between rural and urban household preparedness will be addressed as a next step in the project.

Elements from leisure activities are used to deal with blackouts
A similar embodied blackout competence like that of previous experience and place can also be found in other practices that contain many of the elements that are used to manage blackouts. Cabin life and leisure activities were key practices from which households activated competences when they dealt with blackouts. The existing practices households take part in during outdoor activities (lighting a fire, using candles and flashlights, cooking with gas, sparse water use etc.) became significant in a new context when electricity dependent technology no longer worked. In Sweden and Norway, cabins have traditionally been basic cottages without electricity and water supply. Even though this has changed during the past two decades, many households had experienced basic cabin life:

> It's not a problem for us. We spend a lot of time in the woods and in nature and have a lot of stuff. We have a cabin in the middle of the forest, so we have a lot of resources. Even though we don't think about it, we have all that stuff. (H1, M49, Sweden)

> We used the camping stove [for cooking]. We are used to that, we spend a lot of time hunting and being outdoors. So we managed just fine. For a day or two. (H7, M72, Norway)

> During blackouts, households in both Sweden and Norway also used material resources from leisure activities. They had gas burners, camping stoves, flashlights and headlamps, and candles stored at home which they normally brought with them on camping, hiking or hunting trips or to their cabins. These resources were activated because households knew how to use them, how to cook with a gas burner and how to light a wood stove. Competences and materials from other practices that are performed at different times (vacation or leisure time, not everyday life) and in other places (cabin or outdoor, not in the home) were given significance in a new context when the electricity disappeared. Having experienced cabin life also contributed to normalizing blackouts.

Normalizing blackouts

The embodiment of a localized 'blackout competence' contributes to normalizing future blackouts. Normalization is part of households' meanings about them, in practice theory defined as the emotions, motivations and symbolic significance for the practitioner of participating in a practice (e.g. the importance of feeling safe, independent, well-prepared) (Shove et al., 2012, p. 23). By being able to adapt everyday practices instead of breaking them, households did not consider blackouts as dangerous or risky: "(…) so then we lost the electricity, and that was no surprise. We were almost certain that it would disappear for a few hours when the weather was bad" (H7, M72, Norway). They have become part of a range of events that might occur, but that households are capable of handling within the normality of everyday living: "In our household, we *of course* lit a fire in the fireplace over there in the living room to keep us warm, and then there were *ordinary* candles that we used" (H6, M84, emphasis added). These competences and materials are totally taken for granted, as the wording 'of course' in many stories indicate, they are interwoven parts of everyday life.

Cosiness as a normalization strategy
Many of the households even framed blackouts as a cosy or pleasant experience. This might serve as a coping strategy for dealing with them, to make them less intimidating and dangerous. One interviewee said that:

> There was peace and quiet. It was completely quiet. And we had water. And we had a woodstove. So we kept the fire burning and it was really warm and cosy at home. And we played games in the evening. Lighted some candles and played cards. And went to bed a little earlier at night. It was a good couple of days. Even if we play games often, we did it more now. And you can read with a flashlight as well. And you could hear the clock. Tick-tack, tick-tack. It was nice. No sounds from the fan or from the fridge. It was all quiet. (H4, M56, Sweden)

The experience is made pleasant rather than intimidating, and in this work, they draw upon both material and social resources. Candles are used both in everyday life and during blackouts as a means for light and for cosiness, and is a part of how households adapt to and normalize loss of infrastructure. Like the majority of the interviews, the quotes above also have in common that the situation is shared with others, many times family. In some cases, the blackout made families come together, doing things that they not normally do as often,

activating social resources: "We played a lot of cards. We do it on other occasions as well but not as often as we did before" (H4, M56, Sweden). Everyday life rhythm changes and the blackout is considered an opportunity to engage in more time consuming practices, but the habits are adapted within the frame of normal everyday living.

However, the normalization of blackouts is dependent on households' ability to manage without electricity through their competence. Furthermore, their acceptance of blackouts is determined by *predictability;* knowing how long it might last and why it had occurred, *safety;* not being alone, or knowing the whereabouts and safety of family and friends, and *vulnerability;* not being responsible for disabled or elderly people, young children or farm animals. Even though many of the stories frame blackouts as unproblematic and even pointless to talk about, this meaning only occur when they are capable of managing the event. A blackout was thus considered acceptable if households were able to manage them, have information about their durance and feel safe (see also Silvast, 2017).

Mobilising materials

So far we have illustrated that an embodied and place specific blackout competence was used to cope with blackouts, and that this in turn contributed to normalizing them. We find that the materiality of preparedness is equally unspoken and taken for granted, and that even though households do not buy preparedness objects or create a family emergency plan, they might be rather well prepared anyway. The bits and pieces of material preparedness for blackouts were integrated in everyday practices (Rinkinen, 2013 calls them 'backup systems'). These are resources that households do not necessarily think of as 'preparedness items', or even think of at all, like when this household was asked about being prepared:

> Candles, yes. Flashlights, yes. Water as well. And we also have a first aid kit. No radio that runs on batteries and no alternative mobile charger. We have extra electricity and heat, we have that. And sleeping bags and warm clothes. For hygiene, we have wet wipes. And a camping stove. We have enough food to get by. We don't have a lot of cash, however. But none of these things have been acquired in case of an electricity breakdown (H2, M55, Sweden).

Some materials become visible when a blackout occur; when they are needed, they are given a new meaning and put into new practices to function in new ways. After having

experienced a blackout, these objects become visible as tools for managing without electricity, and becomes part of the household preparedness capacity. However, new links between materials and competence are not always created. The resources might in fact be inactive during a blackout, even though they are available (Rademacher, 2013), as this household realized:

> We thought that we couldn't use the barbeque because of the wind outside. But now, a few years later, I've thought that we could just have moved it inside and used it there. Of course. We did not think about that back then. It's just gas, and it creates heat as well (H3, F52, Norway).

Material preparedness is dependent on the householders' competence in order for them to be activated, and illustrates the importance of acknowledging the interconnectedness between the elements (competence, meaning and material) of informal preparedness activities. Being prepared thus also entails being able to use the material objects at hand. The quote also demonstrates that formal knowledge plays a significant part in household preparedness, as using gas burners indoors is potentially dangerous. Information about the use of available materials is thus needed to mobilise them correctly.

Previous experience with blackouts affects materials as well as competences. Changes in the material component of being prepared occurred as a consequence of feeling unable to cope during previous blackouts, when everyday activities became difficult to carry out. A Norwegian household discussed the importance of knowing where stuff is:

> F52: When we go down to the basement, we can just grab them and we have the headlamps there as well. We became conscious of if after Dagmar, that we need those headlamps available.

> M52: We have a fixed spot for camping lights on the top of the fuse box, and a fixed spot for the headlamps.

> F52: We have been very conscious about it, told it to the kids as well. And we have a radio with batteries. I have never thought about that as important before.

This is a way of mobilising materials for blackouts, to make them ready for another event. After the hurricane Dagmar, this household became alert to the importance of headlights and a battery radio, and activated them by giving them fixed places at home. It requires

competence and creativity to identify, utilize and acquire materials, and to incorporate them into everyday life, making materials prepared. Figure 1 shows a way of mobilising materials. The family used their hallway bureau as a preparedness central, keeping matches, headlights, flashlights etc. ready in case of an emergency.

Figure 1: mobilising materials. Photos taken by the authors.

Discussion and conclusion: The interconnectedness of household preparedness

In this article, we have argued that household preparedness tends to be framed using a top-down and formalized perspective on what preparedness is, and should be. We recognize the recent attention turned towards social capital as being an important asset for dealing with emergencies or crises, but suggests broadening the perspective and including not only social aspects such as community and networks, but also their interconnectedness with human and material aspects in an everyday life perspective. In order to understand what we characterize as *informal preparedness activities*, we have introduced a practice theory approach that has allowed us to empirically illustrate some of the taken for granted doings in rural households in Norway and Sweden during a blackout. The three core elements of a practice, competence, meaning and material, have been used to distinguish the practices in which preparedness is part, how their elements connect with other practices, and how they are performed during a blackout.

We found that previous experience with blackouts contributed to normalizing them, even making them enjoyable, if they were perceived as manageable. The blackout competence also produced an awareness of materials that could be activated and mobilised for future events. This 'moment of reflexivity' during and after a blackout made the performance of informal preparedness visible, which in turn has the potential of changing the practices that are part of household preparedness. Coping with blackouts may cause the elements interwoven in informal preparedness activities to shift, or to be rearranged in new ways to deal with future events. The ability to reorganize, stretch and change the rhythm of interconnected electricity dependent practices during disruption is an indicator of the level of preparedness (Trentmann, 2009).

Using practice theory to unravel the mechanisms at play during disruption has illuminated the implicitness of household preparedness. Practice theory implies the study of a practice. However, we find that preparedness is not a coherent practice; rather preparedness consists of elements (materials, competences and meanings) that are parts of other practices. Preparedness is as such not a static asset of a household, and we suggest understanding it as *an interwoven ongoing process within the performance of everyday practices.*

Whilst the findings of this study points to the significance of informal preparedness, there were some important limitations. The qualitative approach offers in-depth understandings of informal preparedness activities in these households during winter storms, but is based on a

small sample size. Hence, the findings cannot be generalized to the broader community from this study alone. The study is restricted to households in Norway and Sweden, and the preparedness activities discussed are influenced by the political, social and geographical climate in these countries. Furthermore, the study only consist of rural households. It is likely that urban households differ in their preparedness activities, and there is a need for further research to explore a larger variety of informal preparedness activities.

Even though this article paid attention to informal preparedness activities, we do not suggest abolishing formal preparedness actions. We would strongly argue for knowledge transfer between practitioners, policy-makers and researchers within the crisis management and preparedness field, as well as lay people in order to grasp the complexity of preparedness. There is a need to incorporate households as competent actors in managing blackouts through their everyday practices, and not merely address them as recipients of information and support. This entails recognizing lay knowledge as important in policy development at all levels, rejecting the distinction between objective and subjective knowledge, e.g. through deliberative processes (Klinke & Renn, 2002). Likewise, guidance, education and information from authorities and professionals is needed to advance household preparedness, not least for safety issues. It is, however, imperative that these actions are rooted in the embedded preparedness activities already at hand in households, and this study makes an important contribution to acknowledging the complexity of household preparedness as a dynamic process implicit in everyday life.

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