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INFORMAL LEARNING AND FOOD SENSE IN HOME COOKING

Introduction

In recent years, there has been a growing interest within food studies in how learning about food takes place across contexts (e.g., Sumner, 2016; Swan and Flowers, 2015). Notably, though learning and pedagogy are at the heart of education as a scientific discipline, education researchers have, until now, neglected to explore this area. This absence of educational perspectives and theorisations has left unexplored a variety of issues regarding food-related learning and has created a gulf between how food and eating are addressed by schools and other educational institutions and how people interact with and around food in their daily lives. For example, while cooking is an exemplary and fundamental working method in home economics in secondary schools (Grandberg, Olsson, and Mattson Synder, 2017; Grandberg, Brante, Olsson, and Mattson Synder, 2017), there has been scant research about how learning connected with cooking takes place in homes. This understanding is crucial in order to be able to design food education approaches in schools - as well as other food-related interventions - that are both relevant and effective from an everyday life perspective.

Against this background, this article focuses on the process of home cooking, its connections to informal learning, and the development of the concept of *food sense* as the outcome of the learning process in this context. Food sense has been developed by the authors and their colleagues to grasp more fully the situational, experiential, and dynamic nature of food and eating. The concept was previously developed to be continuous with its neighbouring terms: namely, food literacy, health literacy, and health sense. In comparison to the other terms, food sense is defined as the ability of people to make sense of their everyday routines and habits that are part of their food practises (*Author 1 and 3 et al.*, 2015, 2016). Additionally, food sense underlines the importance of recognising the broader consequences of one's choices and different factors that influence them. Thus, the concept simultaneously emphasises the social (i.e., not merely the individual) dimension of food-related activities and their cultural and societal dimensions (e.g., the variety of food cultures; individual food choices as a part of the wider food system). Finally, food sense, as a scientific concept, emphasises the ability to evaluate and apply food-related knowledge and skills in changing contexts and circumstances (*Ibid.*). In Finland, the concept has been identified as an important aim for food education in the context of school meals (National Nutrition Council, 2017). However, until now, the concept of food sense has been developed only from a literature review. Consequently, it is crucial to test and refine its definition through empirical analyses and through a more in-depth theoretical examination.

Accordingly, in this article, we draw from John Dewey's pragmatist philosophy and learning theory (1916; 1929; 1938; 1958), which we see as one potential theoretical background that is compatible with the described definition of food sense. This choice connects this article to a large group of learning researchers who have been inspired by Dewey's work (e.g., Elkjaer, 2008; Björkman, 2010; Mansikka, 2015; Miettinen, 2000;

Salenius, 2015; Smeds, 2017). However, we apply the framework to a research area that remains largely understudied by researchers of education: namely, informal food-related learning in the home, and food sense as the outcome of this learning process.

Informal learning and home cooking

In this article, home cooking is used as an empirical case against which the process of informal learning and the outcome of the process, food sense, are approached and analysed. The concept of informal learning is understood to include situations that might not initially (or perhaps ever) be defined as learning by the learners themselves (Davies and Enyon, 2013). Nonetheless, it is precisely the active, self-initiated, practice-based tenets of informal learning that make it relevant also for formal schooling.

Home cooking is understood as the process of transforming food items into socially and culturally acceptable end products: that is, meals or parts of a meal (Bildtgård, 2010; Fjellström, 2004; *Author 3*, 2002). Thus, we knowingly take a different (though complementary) approach than those previous studies of family food practises, which examine the process of buying food at the supermarket (Kümpel Nørgaard et al., 2007) or the interaction among family members at the dinner table (Ochs et al., 1996; Ochs and Merav, 2006). According to our definition, cooking is connected with any materials and food items that are intertwined with the aforementioned process. This rather broad and open-ended understanding of cooking is supported by previous studies (e.g., Wolfson et al., 2015), which have claimed that it does not make sense to develop a unified and universal definition of what cooking is or how it should take place in daily life (*Ibid.*). A restrained definition like this simply would not encourage people to cook, it would not accurately describe the multiplicity and variety of home cooking practises in families, and it would not provide solutions that would make sense or be applicable in every home.

From a pedagogical standpoint, Swan and Flowers (2015) argue that it is critical for food education researchers to pay more attention to the concrete processes through which people transform the ways in which they interact with food (e.g., cooking). This implies a need to examine food-related learning, as well as learning outcomes, with approaches that do not define learning as merely cognitive development and take broader aims than solely transferring information or ideological influence (*Ibid.*). As it is argued in this article, Dewey's pragmatic philosophy and learning theory provides one possible framework for such an approach. In terms of learning through cooking, this theoretical position is supported also by the notion that cooking was actively used as a teaching method in Dewey's own laboratory schools (Belliveau, 2007). Consequently, and inspired by Dewey's ideas, this article explores the process of informal learning and home cooking from a context-bound and situated starting point, and with the core aim to further develop the concept of food sense as a practice-based and flexible evaluation tool for food education implementation.

Though Dewey himself did not, to our knowledge, use the exact terms *formal* and *informal learning*, he did strongly advocate for the practical relevance of formal schooling, and is sometimes identified as a fundamental source and the theoretical base of the present definition of informal learning (e.g., Conlon, 2003). In particular, Dewey's definition of learning is founded upon an understanding of learning as experiential, reflexive, and continuous. Thus, it has pedagogical applications, for

example, as varying forms of experiential and place-based education (*Ibid.*). However, it is noteworthy that Dewey's work is not limited either to the realm of informal learning or that of formal schooling in the institutional context. He can be characterised as an advocate of lifelong learning and democracy through education, referring to education in its broadest sense as the process of communicating meaningfully with others (1958). Education, according to this definition, can take many forms, and each has an important place in complex modern societies (*Ibid.*). Next, we look closer at how these notions of learning contributed to building the framework for the analysis, against which the concept of food sense as the outcome of a learning process was developed in this article.

Building the analytical framework using Dewey's theory

The fundamental idea of Dewey's pragmatism is that reflection is needed to move from crises in established habits to new ways of acting. In literature citing Dewey's work, this form of integration of reflection and action is referred to as reflexive thought and action (e.g., Miettinen et al., 2012; Miettinen, 2000) or thoughtful practice (Boisvert & Heldke, 2016; Heldke, 1992). For Dewey (1938; 1958), to reflect means to extract meaning from what has been done. Reflection is also the material that people use to deal intelligently with their future experiences, and it is only through reflective inquiry that people can ever arrive at meaning. According to Elkjaer (2008), learning in Dewey's interpretation occurs when habitual action and thinking are disturbed and when inquiry is needed to make sense of this rupture. The aim of reflective experiences and of experiential inquiry as a practical method for expanding experience and learning can be seen as the necessary condition to solve problems in habitual ways of action (i.e., learning by doing) (Miettinen, 2000).

Drawing from these theoretical starting points, we define both food sense and informal learning as requiring at least some level of reflexive thought, thus separating these concepts from mere reaction to stimulus (see Dewey, 1916; 1958). The difference between informal learning and food sense is in their differing emphases: Learning can be defined as the practice-based process of change, and as something that any form of education (e.g. formal or informal) seeks to support. Food sense, on the other hand, is the situated outcome of a learning process that connects particularly to food-related activities. A detailed understanding of both the nature of the process of food related learning, as well as the outcomes of the process, is essential from an education perspective. Importantly, cooking as an empirical case in this article is one – but not the only – example of a practice-based activity during which informal, food-related learning can take place, and which can result with the emergence and application of food sense. It is also important to note that not every experience can be called 'learning' and that learning cannot be straightforwardly equated with transformation or change in conduct, since it can result in more sophisticated understandings that cannot be observed as changes in activity (Elkjaer, 2008). Nevertheless, the practical application of a learning outcome requires the experience to be reflected upon, communicated (with one's self and/or with others), and later used in an anticipatory way (*Ibid.*). To summarise the discussion in this section thus far, the ability to understand on the one hand, and to apply on the other hand, emerge as two noteworthy perspectives for refining and enriching the existing definition of food sense for the purposes of empirical research.

In comparison to reflexive thought and action, then, Dewey's notion of non-reflexive experiences is based on an understanding of habitual activities (or habits). Consequently, and in contrast to the definition of food sense as an active and reflexive outcome of a learning process, routines are defined here as the at least partly un-reflexive and un-articulated end-products of learning (Dewey, 1916). Accordingly, any habit can be said to initially develop in the process of reflective thought and action, and, through repetition, become a routinised end product of learning. In other words, routinised activity represents something that has already been learned, and which functions in practice, but which because of its un-reflexive nature resist further change (Dewey, 1958). To overcome this resistance, perceptual awareness (in some form or another) is needed (*Ibid.*). In practice, this reflection is initiated by a disturbance or uncertainty in action (i.e. habit not working); a process that can be seen as a prerequisite for routinized behavior to become re-defined and/or changed. This is a third important perspective emerging from the theoretical literature that can potentially help to enrich the definition of food sense and structure its empirical analysis for the purposes of this article.

Finally, a key element of Dewey's theory is that experiences are not only private, but always interpreted in socially and culturally mediated contexts. When paired with the notion of experience as a reciprocal, dynamic, ever-changing, and eternally-ongoing interaction between people and their social and material surroundings, reflection becomes something that not only takes place in a person's mind. By nature, it is not only cognitive; it can never, in any meaningful way, be separated from the ongoing flow of activities (Dewey, 1916). Drawing from this, the context-bound nature of food sense as the outcome of a learning process means that also its' content is context-relative. As an example, a particular element of cooking can be an important learning aim for someone who has not yet routinised the flexible ability. However, for a person who already knows the matter and is skilful in application, the activity does not require reflexive thought in action. Nevertheless, even a skilled cook may have to reflect whenever s/he tries to implement, for example, new ingredients, tools or cooking methods in home-cooking – to find new solutions that function in practice, are acceptable also for other family members, and are emotionally engaging for the person responsible for the cooking. This exemplifies food sense as a relative, situated, constantly-evolving, and experience-bound concept; and lays a foundation for the interpretation of the empirical analyses in this study.

Three levels of food sense

Leaning on the literature presented above, the previous definition of food sense is complemented here as a form of reflexive thought and action, and as an active and flexible end product of a food related learning process. The empirical conceptualisation of food sense is summarised as a situation-bound ability to make sense of, act upon, and potentially re-define the everyday routines and habits that are part of food practises. In order for this definition to function appropriately as an aid for analysis of empirical data, it was further divided into the following three levels: Understanding, Applying and Re-defining (see Figure 1). The proposed division can be seen as building on and complementing previous developments and illustrations of reflexive thought and action (e.g., Miettinen et al., 2012; Miettinen, 2000) or thoughtful practice (or cooking as

inquiry; see Boisvert & Heldke, 2016; Heldke, 1992), as it summarises and re-conceptualises the different and progressive stages of active interchange with the surrounding reality into a novel outline for the purposes of evaluating learning outcomes.

Figure 1. Three levels of food sense

(Single column fitting image)

In sum, Figure 1 suggests that all forms of food sense as an outcome of food related learning are not equal in depth, complexity or of temporal span. From a food education perspective, a more nuanced understanding of the different forms of learning outcomes is crucial in order to be able to evaluate and support students' learning in an effective manner. Importantly, this classification does not imply that routines would not be valuable in the process of cooking; or that a change in habits would at all situations be needed. Nevertheless, leaning on theoretical inspiration from Dewey, an integration of reflection and action is recognised as necessary in order to renew habitual activities intelligently and to bring about constructive change in human action (Elkajer, 2008; Miettinen, 2000). In the following sections, we move towards a more detailed operationalisation of the proposed three levels of food sense, and continue by testing and enriching the classification through empirical analyses.

Research questions

This article has two main research questions: 1) 'How can Dewey's notions of reflexive thought and action be used as an aid in researching food sense through empirical data?' and 2) 'Based on the chosen theory and empirical case, how can the definition of the concept of food sense be complemented and developed in a more structured way?' The research questions are addressed through abductive analysis (Hatch, 2002), that is, constantly moving between theory and empirical data. In particular, research question 1 will be addressed in the 'Analysis' section, in which the entry point to data and the unit of analysis will be defined with the help of Dewey's theory, and the stages of data processing will be described in detail. Answering research question 2 will include the testing and enriching of the above constructed classification of food sense (Understanding, Applying, Redefining) with the help of empirical data. Finally, the

functionality and application value of the complemented definition and classification of the concept of food sense will be critically evaluated in the discussion section of this article.

Materials and methods

The data is drawn from an in-depth, video-stimulated interview session (Huan, 2014; Thorpe and Holt, 2008) conducted by two of the researchers (*Author 1* and *Author 2*). The videos, which stimulated discussion, were collected by *Author 2* as part of a larger auto-ethnographic study on cooking practises in the home (*Author 2 & 3 et al.*, 2018; Lahlou 2015; Pink, 2012). The empirical examples in the videos were based on the cooking processes of one Finnish family, which includes the mother (*Author 2*), the father, and two children (aged 6 and 10 at the time of filming).

The in-depth stimulated-recall (SR) discussion took place in *Author 2*'s working space. The discussion was data-driven and open-ended and included data from six auto-ethnographic videos that were preselected by *Author 2* based on reading the theoretical framework that was written by *Author 1*. Consequently, the data consist of the transcribed audio recording of the stimulated-recall interview session (1h53min6s of audio data; 35 pages of interview transcript, font Times New Roman, font size 12, line spacing 1; transcribed verbatim by *Author 1*).

During the interview, the six videos (i.e. cooking episodes), were carefully viewed and discussed by the researchers (*Author 1* and *Author 2*) with the emphasis being on *Author 2* explaining what was happening in the videos and *Author 1* asking clarifying questions. In addition to this detailed discussion, after each episode the researchers carefully discussed what could be said to represent food sense in the data, particularly in relation to the theoretical framework. In this way, the stimulated-recall session included the initial analysis, followed by a more-structured understanding about how food sense could be defined in the context of home cooking. Finally, a more detailed analysis was conducted independently by *Author 1* after the stimulated recall discussion.

After the preliminary analysis, the empirical material was reduced from six to three videos by *Author 1*. These three videos were chosen because they represented the highest level of variation and depth in relation to this study's particular interests and focus (see research questions 1 and 2). The following subsection describes in detail the unit of analysis and the process of data handling.

Analysis

As stated earlier, this article understands home cooking to be the process of transforming food items into socially and culturally acceptable products: that is, meals or parts of a meal. Empirically, this process's starting point was delineated using the pre-existing videos and limited to a detailed examination of three cooking episodes. Typically, the videos began with either the collection of the ingredients and utensils or the preparation of the raw food items (e.g., peeling vegetables, opening food packages, etc.). The videos ended when the meal was ready to be carried out to the table to be eaten by the family. The data did not show the family eating, and every video took place in the kitchen. An isolated video was defined as an episode, which illustrated the home

cooking process in its entirety as defined in this study. The analysis proceeded in three stages itemised in more detail below.

First, ruptures in the ongoing activities in the process of home cooking were detected, as these ruptures were theoretically interpreted to be the potential initiation points for learning (see above; and research question 1). Dewey's (1958, pp. 313–314) definition of perceptual awareness was used as an aid in pinpointing these ruptures:

...[W]herever perceptual awareness occurs, there is a “moment” of hesitation; there are scruples, reservations, in complete overt action.
... We have to “stop and think,” and we do not stop and think unless there is interference.

These moments of hesitation or disturbance were used as cues for pinpointing the events relevant for further analysis. In addition, the SR discussion material was used as complementary data to detect instances when reflexive thought in action took place, according to the interviewee (i.e., *Author 2* pinpointed moments during the interview when she paused while cooking to think or consider alternatives, etc.).

Second, the tracked ruptures and/or pauses in the flow of action were used to identify wider data trails of interest (i.e., the unit of analysis as a chain of events within the episode) (see Figure 2), which were used as a base for a more nuanced analysis of the concept of food sense (see research question 2).

Figure 2. Illustration of entry point to data and the unit of analysis

(Two-column fitting image)

As Figure 2 illustrates, the empirical emergence of food sense within the unit of analysis was conceptualised as the mediating ability to move from ruptures in the flow of action to contextually relevant decisions (Understanding); from a situated plan of action to a solution and end-result (Applying); and from the evaluation of practical relevance to the potential formation of new routines and habits (Re-defining). Accordingly, the established threefold classification of food sense was tested at this stage of the analyses as a tool for analysing the empirical episodes. The SR material provided complementary

explanations for the videos in terms of what was happening and how the events were interpreted by the practitioner (*Author 2*).

In the third and final stage of the analysis, the definitions of the three levels of food sense (Figure 1) were revisited and enriched with the help of the empirical data (see research question 2). These complemented definitions are presented at the end of the results section (Figure 3).

Empirical examples of food sense

This section is structured according to the three episodes selected for detailed analyses, as described above. Each provide different kinds of examples of ruptures that emerged in action, as well as empirically-grounded, in-depth knowledge of how food sense can be conceptualised in the process of home cooking and how it was intertwined with the cooking practises of one Finnish family.

Episode 1 - Creative and unfolding decision-making

The episode begins with *Author 2* browsing among different food items in her fridge. She takes one food item into her hand, examines it from different angles, and returns a few ingredients to the fridge and sets the others on the kitchen counter. In the SR interview, *Author 2* explains to *Author 1* that she is searching for ingredients to use for cooking. The discussion continues as follows:

Author 2 [to Author 1 in the SC-discussion]: 'Yeah, so this is now, this is exactly what I mean.'

Author 1: 'Yes. So you evaluate usability?'

Author 2: 'Yes, what will be too old soon. But I also think about what should we prepare, what the time is...'

The video is replete with pauses—small ruptures in activity—as *Author 2* examines different foods. She says that, in the video, she is trying to decide what she should cook for dinner based on how much time she has and on her evaluation of the ingredients' freshness. These instances demonstrate the reflexive ability to define and analyse the elements of the situation in a contextually relevant way (Understanding). At this point, the activity illustrates also small-scale representations of the second level of food sense (Applying), as her unfolding decision-making enables the process to proceed without the activity coming to a total halt. However, small interruptions continue to emerge, as *Author 2*'s search for a more comprehensive plan of action continues. On the video, *Author 2*' pauses while holding a package of pasta. She says:

Author 2 [on the video]: 'I don't feel like it at all.'

Author 2 [repeats for Author 1 in the SR-discussion]: "I don't feel like it at all."
In other words, I don't feel like I would enjoy doing it.'

Author 1: 'The pasta?'

Author 2: 'Yeah.'

Author 1: 'Mm.'

Author 2's preferences and emotions about cooking pasta ruptures the ongoing flow of activities. She solves the dilemma by exploring other options, which again, demonstrates the ability to define and analyse the activity in a broader context (Understanding). On the video, *Author 2* walks to the hallway and calls upstairs to her daughter, asking if the daughter's friend will be joining them for dinner. The daughter answers that her friend will not be joining them today, and *Author 2* returns to the kitchen. In the SR-interview, she comments:

Author 2 [to Author 1 in the SR-discussion]: 'Now I heard that Sonja [her daughter's friend, original name changed] won't be staying with us today for dinner, so I have a wider variety of alternatives of what to cook.'

Author 1: 'Mm. Sonja is your daughter's...'

Author 2: 'My daughter's friend, yeah. And now I don't have to prepare the minced meat [as the main ingredient for sauce for the pasta]. Look!'

Author 2 [on the video]: 'Then I won't do this.'

Author 1 [repeats for Author 2 in the SR-discussion]: 'Then I won't do this.'

Author 2: 'Yeah. Then I will prepare a Caesar salad.'

Author 1: 'Yeah.'

Author 2: 'I know that Sonja would not have had it [the Caesar salad] in any case. It would have been too much for her.'

Author 1: 'Yeah, I see. Is she like more traditional?'

Author 2: 'Yes.'

[On the video, Author 2 returns to the fridge to browse among the ingredients and considers alternatives.]

Author 2: 'Yeah, okay, so look, look!' [On the video, Author 2 is looking at the different ingredients in the fridge]. 'Again, I'm thinking, what will be spoiled soon. I'll do the Caesar salad, because I knew that we have so much bread' [Author 2 begins preparing croutons from the loaf of bread].

In the SR interview, *Author 2* describes how she is trying to decide what to cook based on which foods will spoil first, and in relation to the changed social context (i.e. Sonja will not stay for dinner). Drawing on her situation-bound understanding of the multiple and changing variables of the cooking process (here especially: the available time and ingredients; her own mood; and the preferences of the people eating the food), she reaches a decision and an action plan, and proceeds in the video to execution and application (Applying; second level of food sense) resulting with a finished dinner for her family. Notably, the reflexion that was intertwined with the activity was not always apparent in the video; *Author 2*'s SR interview and her explanations were necessary in order to fully grasp what was happening in the episode.

In sum, the exemplified cooking process can be evaluated to represent the second level of the above outlined definition food sense: *Author 2* is clearly a skilled cook, having the situated ability to interpret and analyse what is going on (Understanding), and to plan and execute a solution that functions in context (Applying). More precisely, her way of cooking appears to be connected with competence in creative and unfolding decision-making, the end results of which were evaluated and re-evaluated in a socially and culturally situated context (e.g., who will eat the food; what are the eaters' preferences; what are the material and time- and mood-related resources available to the cook; how are broader values, such as limiting the production of food waste, acknowledged; etc.). On the surface, this resourceful and flexible way of cooking can be identified as a part of *Author 2*'s routine way of

preparing food. It could be said that she has already learned the relevant skills and, thus, possesses food sense in her practice of cooking. However, the frequent emergence of small, situation-bound ruptures constantly changed the course of the process. Without reflexive thought in action—active and responsive interchange with the material and social elements of one’s surroundings—these ruptures might have interrupted the cooking process. Informal learning and food sense were needed to constantly evaluate alternatives, find solutions, and fulfil the overarching aim of feeding the family. However, this episode cannot be interpreted as representing active attempts to reformulate her routinised and habitual way of cooking, thus not representing elements of level 3 (Re-defining) of our definition of food sense.

Episode 2 – The situated nature of an acceptable meal

This episode begins with *Author 2* chopping a bunch of dill on a cutting board. As she chops, she sorts the dill stems into two piles. In the SR interview, *Author 1* asks *Author 2* about the pile that she is not chopping up. *Author 2* says that the second pile includes the dill’s yellow stems, specifying:

Author 2: ‘You couldn’t see it [that the second pile was yellow] from here [the computer screen], but it was yellow then, but you know, in a way, you might have been able to use it, as well.’

Author 1: ‘Barely?’

Author 2: ‘Yeah, but here, exactly in these kinds of situations I think about’ [Author 2 comments here on her tone of voice in the video]. ‘But, anyway, the thing is, that I knew as well, that I had to put them [the chopped dill] to a separate bowl. First of all, Mikko [the husband, original name changed] thinks that, that fresh dill is not people food...’

Author 1: ‘Okay.’

Author 2: ‘...I had to put them here in a separate bowl... Then I think about how I could get the gang [the family] to kind of realise how good the dill is, so I didn’t take even the slightest risk, that there would be some of the yellow.’

Author 1: ‘Ookay, okay. So acceptable for eating in a social context?’

Author 2: ‘Yes.’

Author 2 constantly acknowledges that the cooking process consists of something more expansive than her individual preferences or the food’s nutritional value. In the SR interview, she describes how she continuously re-evaluates the broader situation during the cooking process (e.g., if her family will eat the food; how to incorporate even the slightest bit of the dill to limit food waste). Here, again, is an empirical emergence of reflexive thought in action, and as in the first episode, a representation of food sense as the ability to define and analyse activity in context (Understanding), as well as to plan and execute the process accordingly (Applying). In the SR discussion, *Author 2* states that she likes dill but the others do not (excepting dill pesto and her mother, who will be joining them for dinner):

Author 1: ‘Do you like dill yourself?’

Author 2: ‘Yes, I do. And since our mother is, I knew that she will also come to eat.’

Author 1: ‘Yes, okay.’

[Author 2 sighs]

Author 2: ‘And then. And then the fact that this [the dill] was going bad. So this was also about...’

Author 1: 'Yes.'

Author 2: '...about me trying to stuff it somewhere.'

Author 1: 'Even a little?'

Author 2: 'Even a little ...'

Author 2 is motivated to use the dill in the meal, despite the extra effort, because the dill will soon spoil and will have to be thrown out. At the same time, however, she is trying to minimise the risk of her family refusing to eat the dill altogether, which forces her to throw away every stem that is even slightly coloured yellow. Methodologically, it is crucial that this thought process was not apparent as audible reflexion or visible pauses in the activity. The SR interview data were needed to see that ruptures in the activity, followed by reflexive thought in action was, in fact, occurring.

Summarised from the perspective of food sense in home cooking, the empirical example demonstrates the importance being able to produce meals or parts of a meal that would be acceptable to eat by the other family members. An understanding of this broader social and cultural context represents food sense according to the first level of its definition (see above). However, from a practical perspective, preparing a separate meal for each person would require a lot of work. Acknowledging this, *Author 2* tries to find a compromise in order make food that will be eaten by as many as possible and as completely as possible. In the videos, *Author 2*'s ways of doing seemed to be already-learned skills—a routinised activity not visibly disrupting the flow of action. She could, in these respects, be described as a skilled practitioner, since the ability to solve dilemmas and make compromises in ongoing action were already embedded in her way of cooking. Notably, the constantly unfolding and reflexive element in the cooking process—albeit significantly intertwined with the activity and influencing the course of action—would have remained largely undetected without the supplementary SR discussion material. Finally, as in the case of episode 1, this empirical does not include an example of using reflexive thought in action to actively re-define prior (routinised and habitual) ways of action to enable new ways of doing in the cooking processes of this family.

Episode 3 - The tension between knowledge and action

This episode begins by the sink in *Author 2*'s kitchen. Her husband stands near her, and her mother is also in the room. *Author 2* hand-washes a new carbon steel frying pan. During the SR interview, she describes repeatedly how eager she was to use the pan; altogether, she has purchased three pans. *Author 2* also explains that she knew that the pans should have been pre-treated with an oil-burning method before use. She skillfully tells this to her husband on the video. However, as the episode unfolds, and as *Author 2* describes in the SR interview, her curiosity about the new pan overcomes her, and she uses it without putting it through the required pre-treatment. Therefore, on a broader level, a tension emerges between *Author 2*'s knowledge about the new tool (i.e. the frying pan) and her context-bound plan of action.

On the video, *Author 2* is preparing pieces of salmon, which sizzle in the oil. To her disappointment, however, the fish begins sticking to the pan. On the level of the situated cooking process, this represents a clear rupture in the flow of activities:

Author 2 [on the video]: 'Hmm' [with a suspicious tone in the voice].
They're sticking rather tightly.'

[On the video, Author 2's mother is sitting close to her. In the SR-interview, Author 2 explains that the previous comment was meant primarily for her mother. The video shows Author 2 trying to detach the salmon from the pan.]

Author 2 [on the video]: 'This is what I was a little bit afraid of' [with a disappointed tone in her voice]. 'Well. Because this [frying pan] does not yet have the surface [of oil, which would have been generated through the required pre-treatment].'

Author 2 comments:

Author 2 [in the SR-interview]: 'Hey, did you notice, do you notice there, hey, I'm sorry, so look, when I do like this, those there, so there, now I finally remember. So now I put, look, I brought that oven pan there...'

Author 1: 'Yeah, yeah.'

Author 2: 'So, when I noticed that they [the pieces of fish] start sticking...'

Author 1: 'Yeah, yeah. You'll put them [the pieces of fish] into the oven.'

Author 2: '... I realised that I would still put them in the oven. I fetched that [oven pan] after I noticed that they are sticking...'

Author 1: 'Yeah, yeah.'

Author 2: '... and I went and fetched that [oven pan], so that I could let them fry and get some colour first, and then I'd put them in the oven.'

Author 2 persists in using the pan, even though it does not work as she had wanted it. It is apparent, based on the data, that *Author 2* is committed and engaged to her decision to try out the pan, which is represented in the episode as persistent efforts to find a solution to the situationally emerging rupture within the cooking process. Accordingly, as she continues to cook, she creatively solves the rupture in the flow of action (i.e., the salmon begins to stick to the pan) by introducing a new tool (i.e., the oven pan) and a new cooking method (i.e., braising in the oven). On the level of the chosen plan of action, this represents both an understanding of what is going on in the cooking process (Understanding), as well as competence to flexibly apply one's understanding in a way that is appropriate within the course of the activity (Applying). Consequently, reflexive thought in action changes the course of the cooking, a conclusion that was confirmed by the SR interview data. In this way, *Author 2* aims to ensure that the end product is acceptable for her family to eat. In this episode, food sense can be interpreted to emerge as the mediating ability needed to bring the cooking process to its end and, again, produce a meal acceptable also by the rest of the family. However, when asked if she thought that she succeeded, she quickly answers that it did not:

Author 1: 'But then, I think that an interesting question is kind of the one that did this cooking process, as an entirety, succeed or not?'

Author 2: 'No.'

Author 1: 'Even though you, after all, succeeded in any case, kind of...'

Author 2: 'So, according to the others [other family members], like, according to the others, it did. According to me, no.'

Author 1: 'So, you were disappointed in the process, but what about the result?'

Author 2: 'Well, you know, the food at the table, so you know, it was like okay.'

Author 1: 'Yes.'

Author 2: 'That there is food at the table, yeah, okay.'

Author 1: 'And how, how did the others react to the food?'

Author 2: 'Well, in no way, everyone was like nothing would have happened, like they didn't know anything about anything. Like it was for me, personally.'

Author 1: 'Yeah.'

Author 2: 'For me, it was only okay, like in principle it [the food, the process] succeeded, from the perspective of feeding the family.'

Author 1: 'Yeah.'

Author 2: 'So, it was like from this perspective...'

Author 1: 'Yeah, yeah.'

Author 2: '...but from the viewpoint from which I started doing it [the cooking], the new frying pan received a rather big, the new material, the new element received...'

Author 1: 'Okay.'

Author 2: '...a rather big part in the whole process.'

The preceding excerpt illustrates that, while the prepared meal was generally acceptable in the social and cultural context, and while the overall aim of feeding the family was fulfilled, the experience of the process was disappointing and dissatisfying for *Author 2*. From her perspective, these negative emotions took precedence, and ultimately influenced the whole experience so that she reported in the SR interview never to have used the pan since. In this way, even though the potential of re-formulating and changing a routinised way of action (Re-defining; third level of food sense) through introducing a new cooking tool (i.e., the pan) is present in the episode, the video data complemented with Author 2's report in the interview do not give indication that the testing of the pan would ultimately have changed her habitual way of cooking in any way. Overall, then, despite *Author 2's* enthusiasm, motivation and knowledge of how to handle the pan—all of which provide a fruitful starting point for learning—a tension between knowledge (i.e. how the new material should be treated before use) and action (i.e. how to use the pan in practice) remained. Thus, Dewey's incorporation of thought and action in terms of successful and emotionally satisfying use of the new pan during the cooking process, as well as the formation of a novel routine (i.e. using the pan on a regular basis after the episode) remained unfulfilled. Nevertheless, it would be an understatement to say that no learning whatsoever took place in the episode. When defined as forms of reflexive thought in action, and as the ability to flexibly and creatively overcome ruptures that emerged in the flow of activities, the episode can be said to be filled with informal learning and the use of food sense as the ability to make sense of (Understand) and act upon (Apply) the contextual and surprising elements of the cooking process. From the perspective of the third level of food sense (Re-defining), however, simply having knowledge of something did not appear to transfer into re-definition of routines. In addition, the role of unpleasant emotions and the overall negative experience of the practitioner herself seemed to play important roles in this empirical example as barriers for adopting a new way of doing.

Summary of results: Revisiting the three levels of food sense

In the earlier sections of this article we introduced a threefold classification of food sense (i.e. Understanding, Applying, Re-defining; see Figure 1), and conceptualised these three levels empirically as mediating abilities within a chain of activity (see Figure 2). With the help of the empirical examples of this article, the definitions of each level of food sense were revisited and complemented, as presented in Figure 3.

Figure 3. Definitions for the three levels of food sense

(1,5-column fitting image)

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In sum, we define ‘Understanding’ as the ability to define and interpret emerging ruptures in activity; ‘Applying’ as the competence to plan and execute solutions that function in context; and ‘Re-defining’ as the reformulation of activities to enable new ways of doing. Each preceding level in Figure 3 should be interpreted as being included in the one following it, thus, underlining the embedded nature of the classification, and the added depth and complexity of each level.

Discussion

This article explored food sense as a form of reflexive thought in action and as an outcome of informal learning in home cooking. The analysis of the empirical data focused on examining ruptures that emerged in ongoing activities; and on identifying the varying ways in which these disturbances were solved in practice. Furthermore, we refined the literature-based definition of the concept of food sense into a model consisting of three consecutive levels: Understanding; Applying; and Re-defining. The results portrayed home-cooking in this study as creative and unfolding decision-making; situational negotiations of an acceptable meal; and as a process including also tensions between knowledge and action. In reference to the three levels of food sense, two of the three empirical examples represented ‘Understanding’ (first level) and ‘Applying’ (second level). One of the empirical examples included potential for renewing habitual ways of action through introducing a new cooking tool (i.e. the carbon steel pan). However, in this particular example, the negative feelings of the person in charge of the

cooking process (*Author 2*) functioned as a hindrance of changing existing cooking habits – despite the possession of relevant knowledge and initial motivation.

Although it is obvious that further testing and refining is crucial, our experience is that the three-level model of food sense worked well as an aid for analysis, and, thus, provides a fruitful base for continuance and development. Furthermore, our focus on the social, cultural, and context-bound dimensions of home cooking offers a complementary perspective to the more individually-oriented and/or knowledge-based approaches to cooking skills and learning in the current literature, such as those conceptualisations of food literacy that emphasize merely the acquisition of critical knowledge as information and understanding (see Truman et al., 2017). Overall, there seems to be a shift at work within the field of cooking research towards more context-sensitive, critical food studies perspectives (*Ibid.*), as well as holistic, descriptive, pragmatic and transdisciplinary approaches (Trubek et al., 2017). This article can be positioned as a part of this shift.

Our definition of informal learning, when paired with the current literature on research methods (Huan, 2014; Thorpe & Holt, 2008), support the choice to use a video-stimulated, in-depth interview to capture reflexive thought in action in events that could not have been detected through the video data alone. Thorpe and Holt (2008) position stimulated recall within the group of so-called introspective methods, which are particularly suitable for examining and analysing learning processes, interpersonal skills, and decision-making processes (i.e., learning in action). Additionally, supported by other studies (e.g., Surgenor et al., 2017), it is clear that using only the video data without the opportunity for retrospection would have provided rather limited materials for analysis for this study. Nevertheless, the use of the video data to stimulate discussion during the SR interview allowed tapping into the sensory dimensions of food-related experiences (i.e., touch, smell, taste, and sound of food), which would be difficult for a research participant to convey through interviews or other verbal methods alone (Stilling Blichfeldt et al., 2015; Wills et al., 2015). Daily practises that often include non-reflective, routine, or corporeal dimensions may be challenging to verbalise, underlining the importance of collecting data on activities *in situ* and engaging in introspective reflection. It is worthwhile to study what people actually do, not simply what they say they do (Martens & Scott, 2017), and to complement interview, survey, or diary methods with approaches that capture the flow of activities in so-called naturally-occurring situations.

Dewey's notions of reflexive thought and action, which have served as this article's theoretical backbone, is valuable not only for further study on home cooking, but also for research and development in the broader field of food education. During our analysis process, we found this theoretical background in many ways useful for our key aim to develop a more nuanced and structured approach to the question: How to study food sense in practice? We want to highlight, however, that while cooking is a very important platform for food related learning, it is not the only form of experiential, active learning (i.e. learning by doing) in which food education can be implemented or in which food-related learning more spontaneously takes place in people's daily lives (e.g., purchasing food ingredients, planning meals, eating out). Importantly, in addition to a deeper and empirically rooted understanding of how food related learning takes place in daily life, modern food education is in need of flexible and context-bound conceptualizations of its aims that not only support the organization of food education

teaching but also provide frameworks for evaluation. This is the broader discussion to which our development of the concept of food sense in this article has aimed to participate.

We also wish to highlight that when dealing with social phenomena as multifaceted and complex as people's daily food practises and food-related learning, we need not only multiple methods but also a variety of theoretical perspectives to be able to understand these phenomena in their entirety (Dyke & Bryant, 2012). Avenues for further research include expanding the empirical data's scope to include the process of acquiring food from the supermarket or eating the prepared meal; as well as longitudinal data allowing systematic analysis of processes of change. Further research might also find it useful to include a wider variety of families and/or life stages. The fact that this experimental study focused on a family with small children and was limited to the perspective of an experienced cook and food researcher must be considered as limitations. Also, the multiple roles of one of the authors (*Author 2*) of this article (i.e. as the person producing the data, being the informant in the stimulated-recall interview, and participating in the early stages of the analysis process) is a caveat, from which follows that the results presented in this article must be generalised with caution. Accordingly, further research with larger samples and a higher variety of informants with different backgrounds is essential for deepening the results and developing the analytical framework outlined in this article.

Conclusions

This article has intended to participate to the discussion of food-related informal learning in cooking as an open-ended phenomenon and as a creative interaction between people and their social, cultural, and material worlds (Dewey, 1916; 1929; 1938; 1958). Within food education, there has been an increasingly prominent interest in examining social learning integrated with practice and in beginning research with what matters for people in their daily lives. As our empirical examples have illustrated, all food-related activities are not either rational or linear by nature. Ability to make compromises and to solve practical problems in action on the one hand and the central role of emotions in the construction of experience on the other hand proved to be crucial for a deeper understanding of informal learning and food sense in the process of home cooking. Thus, to understand people's daily food practises and to support change and learning, we must acknowledge that simply increasing knowledge is not an effective long-term solution. New ways of researching food-related teaching and learning are needed. In terms of developing the concept of food sense, the article produced a new model consisting of three progressive elements of reflexive thought in action, namely, 'Understanding', 'Applying', and 'Re-defining'. Based on our analysis, we suggest that focusing on reflexive thought in action – in its differing forms – offers fruitful opportunities for further development in the field of food education.

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