



Inconspicuous sustainability in food practices of Dutch consumers with type 2 diabetes

Anke Brons , Peter Oosterveer & Sigrid Wertheim-Heck

To cite this article: Anke Brons , Peter Oosterveer & Sigrid Wertheim-Heck (2020): Inconspicuous sustainability in food practices of Dutch consumers with type 2 diabetes, Environmental Sociology, DOI: [10.1080/23251042.2020.1841371](https://doi.org/10.1080/23251042.2020.1841371)

To link to this article: <https://doi.org/10.1080/23251042.2020.1841371>



© 2020 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 03 Nov 2020.



Submit your article to this journal [↗](#)



Article views: 234



View related articles [↗](#)



View Crossmark data [↗](#)

Inconspicuous sustainability in food practices of Dutch consumers with type 2 diabetes

Anke Brons ^{a,b}, Peter Oosterveer ^b and Sigrid Wertheim-Heck ^{a,b}

^aFood and Healthy Living, Aeres University of Applied Sciences Almere, Almere, The Netherlands; ^bEnvironmental Policy Group, Wageningen University, Wageningen, The Netherlands

ABSTRACT

Efforts to involve consumers in the transition towards sustainable diets often presume a degree of reflexivity on the concepts of health and sustainability in the minds of consumers ‘doing healthy and sustainable food’. Departing from the hypothesis that people with type 2 diabetes have been confronted with a physical health issue which has spurred some reflexivity around food consumption, we study how this reflexivity subsequently relates to sustainability in food practices, through the process of de- and reroutinization of mundane food practices. We take a practice-theoretical approach to compare and contrast reflexivity and performance in food practices, combining in-depth interviews with observations during food shopping and cooking. Our findings illustrate a diversity in the extent to which food practices are disrupted after being diagnosed with diabetes. We conclude that reflexivity is not necessarily inspired only by being diagnosed with a major health issue, but that there are more factors determining whether or not lifestyle changes actually take place, such as experiencing bodily discomforts and broader societal attention to lifestyle change. In terms of sustainability, positive environmental effects could be identified ‘piggybacking’ onto changes in practices that were performed towards a healthier diet, such as diversifying protein intake and eating less processed foods.

ARTICLE HISTORY

Received 11 June 2020
Accepted 21 October 2020

KEYWORDS

Reflexivity; type 2 diabetes; sustainable food consumption; social practices; SES; sustainable diets; routines

Introduction

The world today is facing a major food-related health crisis. Changing food consumption patterns have contributed to a worldwide increase in chronic non-communicable diseases (NCDs) such as type 2 diabetes (Hu 2011; WHO 2003). In 2016, more than 1.9 billion people were overweight or obese (WHO 2020). Many of these NCDs – including type 2 diabetes – occur significantly more often among people with lower socio-economic status¹ (SES) than among people with high SES. This contributes to growing health disparities (Agardh et al. 2011; Monteiro et al. 2004). These epidemiological developments have spurred a global plea for healthier diets (Hawkes, Jewell, and Allen 2013; WHO 2013). As the pressure of the food system on the environment is growing as well, calls for better health are increasingly allied with sustainability in appeals for moving to comprehensive ‘sustainable diets’ (EAT-Lancet Commission 2019; FAO 2012; Garnett et al. 2014; Mason and Lang 2017). Such sustainable diets are intended to be health-enhancing, have low environmental impact, be culturally appropriate and economically viable, thus combining health and sustainability concerns (FAO 2012; Lang 2017).

In attempts to involve consumers in the transition towards these sustainable diets, a degree of reflexivity on the concepts of health and sustainability in the minds

of consumers ‘doing healthy and sustainable food’ is often presumed. Accordingly, the focus is on increasing people’s awareness around healthy and sustainable diets (Grunert 2011). Against this background, it is interesting to explore the effect of being diagnosed with an NCD such as type 2 diabetes on reflexivity regarding health, food and sustainability. Major life events, including contracting an NCD like type 2 diabetes, often disrupt habits and create moments of reflection that contain opportunities for change in routines (Plessz et al. 2016; Warde 2016). Hence, facing a change in health status is likely to forefront the issue of health and consequently the role of food as a central lifestyle element.

Yet, taking a sustainable diets approach seriously means the impact of such a vital health issue should be understood not just in terms of health but also in terms of sustainability. The study departs from the hypothesis that people with type 2 diabetes have been confronted with a physical health issue and subsequently have developed some health-induced form of reflexivity around food consumption. The paper then explores how this reflexivity relates to sustainability in food practices, through the process of de- and reroutinization.

At the same time, studying reflexivity only is not enough for understanding sustainability in food habits. There may be discrepancies between explicit engagements with sustainability and what is actually

happening in terms of environmental impact in everyday performances around food. For instance, Neuman, Mylan, and Paddock (2020)'s study on 'translated cuisines' illustrates how the influence of other cuisines transforms norms of what constitutes a 'proper meal'. This change also has a sustainability side-effect of reducing meat consumption by introducing more legume-based meals. Another recent example comes from Browne, Jack, and Hitchings (2019)'s work on festivals which they explore as sites of already existing sustainability experimentations. They emphasize the importance of looking beyond engineered experiments towards the flexibility and adaptability of existing everyday practices in order to foster sustainable futures. Finally, Dubuisson-Quellier and Gojard (2016) illustrate how their participants explicitly distanced themselves from environmental engagement to differentiate themselves from the social group leading the sustainability movement, while actually performing environmentally friendly practices.

Practice theories highlight the ordinary daily sustainability that might remain hidden in a top-down engineered experiment or an attitudes-focused perspective. Similar to Browne, Jack, and Hitchings (2019)'s call for looking outside of intentional interventions for sustainable consumption practices, this study looks at 'inconspicuous sustainability' that may emerge in de- and re-routinization of food practices after being diagnosed with an NCD. 'Inconspicuous sustainability' here refers to actions that are sustainable in outcome but not necessarily in intention. It conceptually borrows from Shove and Warde (2002)'s notion of 'inconspicuous consumption' to highlight ordinary or mundane consumption practices – such as showering or doing dishes – rather than more conspicuous consumption practices. It also builds on abovementioned work by Dubuisson-Quellier and Gojard (2016). By examining to what extent food consumption practices are environmentally beneficial – regardless of whether reflexivity on sustainability is present with those performing these activities – patterns of so-called 'inconspicuous sustainability' can be identified.

This perspective is particularly interesting when looking at sustainable practices among a population of people with type 2 diabetes, an NCD that is frequently associated with lower SES (Agardh et al. 2011). Many studies have examined the health implications of being diagnosed with type 2 diabetes among low SES populations (see for instance Polhuis 2019). By contrast, sustainability in food practices of this population has received less attention. Sustainability is commonly a concept that is mostly reflexively present among more well-to-do, highly educated groups (Donald and Blay-Palmer 2006). As such, it is related to a certain cultural repertoire that may not be accessible to all people across diverse socio-economic backgrounds (Guthman 2008; Johnston, Rodney, and Szabo 2012). Yet, deeming the poor to

be eco-powerless or even excluded because they cannot buy organic food seems to be a simplification of the complex dynamics at play in everyday food practices. For instance, many low-income consumers already perform 'sustainable' practices (such as frugality, limiting food waste and eating less meat), albeit often out of financial concerns (Katz-Gerro, Cveticanin, and Leguina 2017). Rather than assuming people with lower SES perform less sustainable practices, the present study therefore studies sustainability in food practices of people with type 2 diabetes across SES. In addition, public understanding of sustainable food varies, and may not align with the complexity of the rapidly evolving scientific understanding. This study therefore allows participants to reflect on sustainability aspects they deem most important.

In short, the aim of this paper is to explore the dynamics of de- and re-routinization of food practices of type 2 diabetics and their potential sustainability impact. To achieve this aim, we employ a practice theoretical approach which we elaborate below in our theoretical framework, followed by a methods section and our empirical findings. We demonstrate how food practices that de- and re-routinize after being diagnosed with diabetes also create opportunities for sustainable food consumption. Finally, in our discussion and conclusion we critically reflect on the dynamics of reflexivity and on how current approaches of promoting sustainable diets may exclude from our lens those who do not reflexively perform sustainability.

Theoretical framework

To shed more light on the relationship between reflexivity and everyday performance on sustainability, a practice theories approach is employed. Practice theories have frequently been used to study sustainable consumption practices (Sahakian and Wilhite 2014; Spaargaren and Oosterveer 2010; Welch and Warde 2015). Practice theories are plural but share certain basic tenets, such as a focus on understandings or meanings, bodily experience, know-how or competences and materials (Gram-Hanssen 2010). This paper does not commit to one practice theory but rather integrates these basic shared tenets, borrowing amongst others from Schatzki (2002) and Warde (2005, 2016). Within a practice theoretical approach, routines and habitual behaviour are highlighted rather than assuming rational agents who base their actions on explicit reflections and convictions. This perspective fits very well with the topic of food consumption, as demonstrated by the abundance of food consumption studies using practice theories (Cheng et al. 2007; Paddock 2017; Shove and Southerton 2000). As Warde (2016) puts it, 'we eat in a state of distraction' (p.102): most food consumption happens without explicit deliberation.

Still, moments of reflexivity may arise within practices, due for instance to changes in other practices or changes in the social or material environment (Warde 2016). This includes major life events such as contracting an NCD, which may create ‘fractures’ (O’Neill et al. 2019). These are moments of reflection that can be cause for de- and re-routinization of food practices. However, taking a practice theoretical perspective, Burningham and Venn (2020) also criticize simplistic understandings of life course transitions fostering opportunities for sustainable consumption. They argue that a transition is ‘a drawn-out process of ongoing change’ (p.115) which is always situated within an individual, social and material context. For instance, the needs and desires of others within the household also shape consumption practices. The current paper aims to contribute to this discussion on reflexivity in transitions by exploring to what extent a ‘life course transition’ of being diagnosed with type 2 diabetes creates a disruption and leads to reflexivity and to de- and re-routinization, with potential sustainability benefits.

Moreover, reflexivity also relates to Schatzki (2002)’s conceptualization of practices as ‘doings and sayings’, in particular in relation to sustainable consumption practices. Studying ‘doings and sayings’ means looking at bodily performances of activities within a socio-material context (‘doings’) rather than at meanings or shared values only (‘sayings’). However, the ‘doings and sayings’ within a practice are not always singular. Sometimes, as Walker (2013) illustrates, a set of doings may look the same when observed externally, but can still be different because they are enacted on the basis of diverse meanings. For instance, consuming little energy can be motivated both by thrift and by environmental concerns. This relates to the concept of ‘inconspicuous sustainability’ as introduced above, where there is an apparent discrepancy between reflexive awareness of sustainability (‘sayings’) in the practice and actual sustainable performances (‘doings’). In the present study, we therefore look at both reflexivity and performances to identify patterns of sustainable consumption.

Finally, a note on our approach to healthy and sustainable diets. Although we are aware of the evolving scientific debate and consensus on what constitutes a healthy and sustainable diet, we are less interested in these official definitions. Rather, we want to study how these concepts are performed and understood within daily practices by various consumers. Much of the literature on health in relation to socio-economic differences relies heavily on quantitative measures of dietary intake or food environments (e.g. Mackenbach et al. 2019). By contrast, we want to add a more actor-oriented approach which concentrates on how meanings and understandings figure in practices and co-shape (un)sustainable activities.

Methods

Inspired by practice theories, the methodological approach applied in this study is qualitative. This approach allows for contextual and in-depth understanding of how everyday food practices are performed in situ, which fits with a practice theoretical orientation on routine or ‘doings and sayings’ as outlined above (see also more elaborate practice-methodological reflections by Halkier and Jensen 2011a; Hitchings 2012). Both current practices as well as practice-trajectories over time were studied to understand how and to what extent the diagnosis of diabetes led to de- and reroutinization of food practices. Two particular food practices within domestic consumption were selected: acquisitioning and preparing food, with specific attention to understandings of health and sustainability performed within these practices. Although the practice of eating also figured within the study as an outcome of food acquisitioning and preparing, the practice of eating was not included as a standalone practice. This is because the practice of eating is a very complex practice and is in fact made up of many different practices and would warrant a separate study (see Warde 2016).

Two methods were combined to study both ‘sayings and doings’ constituting practices:

- (1) semi-structured interviews focused on ‘sayings’, verbal accounts of doings, to uncover meanings and understanding;
- (2) complemented by (participant) observation to study ‘doings’ with an emphasis on bodily routines.

The two methods were used to study both food acquisitioning and preparing food and to triangulate and check for disparities between ‘doings and sayings’. The interview was conducted first, after which participants were accompanied in their shopping routes to observe their actual rout(in)es. The practice of preparing food was subsequently observed in participants’ homes. Due to personal circumstances, two participants were interviewed at the university building, where one also prepared food. Twelve interviewees agreed to being observed in both shopping and cooking; six were only willing to be observed during cooking; and one participant only during shopping as he did not cook.

Fieldwork and preparation

To prepare for the fieldwork, the first author consulted a nutritional expert and attended a training session of the local Diabetics association on eating with type 2 diabetes. The interview guide was further informed by the theoretical framework of practice theories. This included paying particular attention to the roles of

the physical and material, meanings and competences (Shove, Pantzar, and Watson 2012). In addition, some retrospective questions were included about whether and how getting type 2 diabetes changed food acquisition and preparation practices. Specific attention was also paid to participants' understandings around health and sustainability, inquiring how participants understood these concepts and to what extent and in what way they considered their own daily food practices as healthy and sustainable. This included questions such as 'What is your idea of sustainability and sustainable food?', and 'To what extent do you think you eat healthily?'

Data collection

Data was collected in the fall of 2019 and early 2020. Participants were recruited online; through flyers distributed at hospitals, GP and dieticians' practices; through personal networks; through a key contact at the Diabetics association; and through a local newspaper. Participants received a gift card (20 euros) for their participation. After an informed consent form was signed, the interviews were conducted, recorded and transcribed in their original language (Dutch). Quotes used in this article were translated by the first author who is a native Dutch speaker. After transcription, the data were coded with Atlas TI. General code categories were drawn up a priori based on the interview guide, and elaborated inductively.

In total interviews and observations were conducted with 22 individuals. Some interviews and

observations also included a partner, when cooking and/or food acquisition was done by a partner rather than the diabetic themselves. Demographic characteristics of the sample can be found in Table 1. 10 participants were male and 12 female. Their average age was 64, and the majority was retired. To indicate SES, educational level, net household income and occupation were included. As Table 1 shows, the educational level of the participants varied widely.² Participants were asked to mark a category of their net income, which all but one participant agreed to. Two-thirds lived in the city of Almere where the recruitment was focused, with the remaining third living across the Netherlands. All participants were Dutch nationals with the exception of two participants, one from the UK and one from Surinam, who had been living and working in the Netherlands for decades and spoke Dutch fluently.

Results

In this section, we present our findings starting with reflexivity and complemented by performances. Our research is exploratory in nature. Throughout our results section, we aim to explore dynamics and mechanisms found in our population rather than making robust causal claims or generalizations. We first outline dynamics of reflexivity in food practices of people with type 2 diabetes, and particularly regarding health and sustainability. Then we expand our gaze to performances or 'doings', looking at emerging competences and other changing socio-material aspects of

Table 1. Demographic characteristics of participants.

	Gender	Age	Diagnosed since (years)	Occupation	Education	House hold disposable income	Food budget in %	Household Size
1	F	67	5	Retired	Vocational school	1000–2000	15%	2
2	F	65	25	Job	UAS*	3000–5000	10%	2
3	M	32	1.5	Job	UAS	1000–2000	10%	4
4	F	72	15	Retired	High school	2000–3000	Open	1
5	M	65	6	Job	UAS	5000+	10%	2
6	M	54	0.5	Job	Vocational school	3000–5000	10–15%	4
7	F	84	20	Retired	Primary school	1000–2000	Unknown	1
8	M	45	3.5	Welfare	Vocational school	2000–3000	Unknown	1
9	M	73	22	Retired	UAS	2000–3000	Unknown	1
10	M	76	20	Retired	UAS	2000–3000	25%	2
11	M	54	18	Job	UAS	5000+	12%	4
12	M	71	15	Retired	UAS	Unknown	Unknown	1
13	M	62	15	Job	PhD	3000–5000	15%	4
14	F	50	0.5	Job	Vocational school	3000–5000	20%	2
15	M	69	2	Retired	High school	1000–2000	Unknown	1
16	F	79	20	Retired	High school	1000–2000	10%	1
17	F	61	7	Job	Vocational school	2000–3000	25%	2
18	M	74	25	Retired	High school	2000–3000	5%	2
19	F	72	16	Retired	High school	2000–3000	6%	2
20	F	54	20	Job	Vocational school	3000–5000	10%	3
21	M	67	23	Retired	UAS	2000–3000	8%	2
22	F	62	22	Retired	High school	1000–2000	30%	4

* UAS: University of Applied Sciences

food practices. Finally, we compare reflexivity and performances of food practices, demonstrating how the identified health-induced changes in performances of practices contain opportunities for sustainable food consumption.

Reflexivity

In this sub section, we discuss three different elements of reflexivity as they emerged out of our empirical findings. We start with a general analysis of reflexivity and changing food practices, after which we zoom in more closely on health and reflexivity and on sustainability and reflexivity. Throughout these three themes, we highlight how reflexivity does not come about in a singular fashion after the type 2 diabetes diagnosis. Rather, the findings show diversity in the extent to which food practices are disrupted after being diagnosed with diabetes. We distinguish several key factors within food practices or adjoining practices that also shape reflexivity, such as changing medical protocols, practice trajectories over time, and other household members.

Reflexivity and changing food practices

Our assumption based on literature was that being diagnosed with type 2 diabetes brings reflexivity to food practices. While this assumption is valid in general among our participants, there is variety in when and under which conditions such moments of reflexivity occur. The moment of being diagnosed with diabetes itself does not necessarily lead to profound reflection for everyone. For instance, some more recently diagnosed participants did not change their food habits much, while others who were diagnosed earlier did change their diets more radically over the last two years. Reflexivity on health and food appears to be driven by more than just the event of being diagnosed with the disease. Although providing information and advice matters, more factors are needed to explain how food practices actually change. These can be found in other bundled practices or practice elements, such as a changing context of medical protocols for treating diabetes or participants experiencing bodily effects of diabetes.

Starting with the former, there has been a shift in the way diabetes is being treated. This is characterized by increasing attention for the relationship between lifestyle and diabetes (Hu 2011). The treatment protocol changed from prescribing medication to also recommending dietary changes. For older participants who were diagnosed over twenty years ago, there was no real dietary advice beyond 'eat less sugar and cakes' upon their diagnosis:

'It wasn't very well known back then. Only sugar-free pastries and no chocolates etc. Other than that, you

weren't educated on it. Even though you can do a lot more to live a healthy life, so I started to work on that.'
(Participant 16 – F, 79, diagnosed 20 years ago)

Yet, despite the more recent attention to dietary changes in treatment protocols, we found that the older participants were, the less likely they were to completely overturn their food routines. Even with new treatment protocols available, some older participants still understood diabetes primarily as 'sugar disease' ('suikerziekte') – a term which is frequently used in Dutch to refer to diabetes. Consequently, de- and reroutinization remained concentrated on reducing sugar consumption, as this older participant illustrates who was diagnosed more recently, when protocols had already changed:

'When I was cooking, I added a scoop of sugar and salt, also in the vegetables. It's really good! You won't believe it, but it just makes the food tastier. Now I'm leaving out the sugar. The exception is if I make something that really can't do without sugar, like corn – you really have to cook that with sugar. But then I won't snack during the rest of the day.' (P1 – F, 67, diagnosed 5 years ago)

Those diagnosed more recently (<10 years) received concomitant information about diets, and obtained the opportunity to consult a dietician providing elaborate dietary and lifestyle advice. For example, participant 14 (F, 50, diagnosed 0.5 years ago) got a recommendation for a cookery book from her dietician including weekly meal schemes which she gladly used. This demonstrates the relevance of the type of information received at the reflexivity moment of being diagnosed with diabetes. At the same time, it also illustrates the power of habituation (Warde 2016) among older participants who only de- and routinized their sugar consumption.

Three participants stand out in particular, as they recently completely or partially reversed their diabetes after having had diabetes for nearly two decades. Over the years, they started to suffer more bodily discomfort, such as diminishing eyesight or overall listlessness. These physical issues, together with the continuous increase in their insulin dose and frequency, inspired them to reflect on their own health and the need for change. Two of them subsequently signed up for a program called 'Reverse Type 2 Diabetes'. This is a new initiative that is sponsored by health insurance companies and has a high success rate. 92% of participants completely or partially reversed their diabetes, and 30% does not use any medication at all anymore (Voeding Leeft 2020). The newly available treatment approach focused on dietary changes in combination with emerging bodily effects of diabetes inspired reflexivity to eventually change lifestyles after having been diagnosed many years ago. The other interviewee also managed to

reverse his diabetes recently but did so on his own. For these participants, reflexivity arrived recently after many years of living with diabetes but led to major de- and reroutinization.

Here, bodily discomfort due to diabetes contributed to reflexivity. Yet, there was large diversity in the extent to which participants experienced bodily discomfort, which also depended on how long participants have had diabetes. Participants who were diagnosed recently struggled with not really noticing anything in their body, which made it harder to change their lifestyle because the health urgency was not particularly pertinent. Only when this interviewee had to undergo a serious by-pass operation as a result of a heart condition she started reflecting on the importance of taking care of her body, including of her diabetes:

'I knew I had it, but I just didn't want to admit it. I was like, I'm not that old, and I'm already on these and these meds, and I don't want more. Very stupid. Now I think, how could I ever think like that? If you're sabotaging your body by categorically denying you have diabetes, you're doing a very bad job. That's when I changed course radically' (P1 – F, 67, diagnosed 5 years ago)

When routines are disrupted the process of reroutinization takes over, in which a 'new normal' is created (Warde 2016). One interviewee who successfully participated in the Reverse Type 2 Diabetes program illustrated this process:

'At some point, your diet's just going to feel normal. That's the thing with lifestyle change. People sometimes ask me: how do you manage to keep it up? I turn it around: do you guys insist on eating potatoes, fries, pizza, etc. all the time? Yes, they say, that's perfectly normal. That's the point, if you change your lifestyle, you get a different normal way of eating.' (P9 – M, 73, diagnosed 22 years ago)

For another group of participants (n = 5) being diagnosed with diabetes did not change much in terms of their reflexivity on health or food. They felt they were already keeping a healthy diet. Reflexivity emerged earlier on in previous lifestyle practices influencing their current knowledge around health. This includes growing up in a family with a lot of attention to food or having children with type 1 diabetes:

'If you have a child with diabetes, you're going to look things up. [...] I have two kids with type 1 diabetes and my daughter has had it for 25 years, so you already start watching your food and carbs. And they had already warned me because it's very common in the family: my Dad's family all have type 2 diabetes, so I knew I could expect it' (P2 – F, 65, diagnosed 25 years ago)

This meant that for these participants, being diagnosed with type 2 diabetes did not change much in terms of dietary habits, as reflexivity on health as well

as on food was already strongly present. In short, it appears reflexivity in food practices arises from a number of different sources rather than just from being confronted with a physical health issue.

Health related reflexivity

Having outlined general dynamics of change in food practices upon a type 2 diabetes diagnosis, we now zoom in on a particular theme, i.e. reflexivity around health. Four key mechanisms or themes emerged from the data in relation to health: know-how about health; self-efficacy; being in control; and the competing values of food quality and taste.

Firstly, the extent to which health-induced reflexivity led to de- and reroutinization was impacted by particular understandings of health in food practices. All respondents were aware of the relationship between food and diabetes, although to varying extents. For many participants their understanding and know-how around health appeared to be driven by their diabetes, as it was centred around specific dietary recommendations that apply in particular to diabetics. This meant it was at minimum focused on limiting the intake of carbohydrates and sugar:

'If I relate it to myself because of diabetes, I would try to be carbohydrate-conscious (...). Looking at what kind of fats you eat, like now with those wholegrain products, you really notice that you feel full' (P8 – M, 45, diagnosed 3.5 years ago)

Others had a more elaborate understanding of health, extending to consuming fresh and minimally processed food and dietary diversity. As mentioned before, a small number of participants already paid a lot of attention to food and health before their diagnosis. They therefore had a very elaborate understanding of healthy food, e.g. knowing which vitamins could be obtained from particular vegetables.

Secondly, there were some differences in experiences of self-efficacy towards diabetes and adapting food practices. About half of the participants mentioned diabetes being an inherited disease running in their family. However, there was variety in the extent to which those participants still felt they had an active role in their diabetes:

'I think if people are serious about their – well, illness, I don't call it illness, although I guess it is an illness actually ... People don't want it, they don't study it, and when they hear they have it don't want to hear it. And then they go to the doctor and say: I don't feel well, and then the doctor says: well, let's see, how do you eat? Type 2 [diabetes] is 90% your own responsibility.' (P4 – F, 72, diagnosed 15 years ago)

'That's the difficulty of type 2, it's inherited. So that's why I am angry: my fault? It's not my fault at all.' (P20 – F, 54, diagnosed 20 years ago).

In terms of self-assessment, almost all participants considered themselves to eat healthily, although some did mention that they had not eaten healthily in the past. Only three participants did not consider their own diet very healthy, because they were snacking too much and struggling to control their impulses.

Thirdly, the feeling of being in control was a recurring theme. This figured in being able to decide for yourself how you eat, in knowing what your blood sugar level is and in being able to resist temptation:

'I always need to finish something when I open it, be it a packet of biscuits or a bag of liquorice. I try to watch myself, no matter how hard it is. The easiest thing, they say, is not to buy it but to walk through the aisle with blinkers on. But I do need a few things from there, like chocolate bars. If my blood sugar is low, I can boost it in a number of ways. The easiest way is to drink a Coke or have a chocolate bar. [...]

[I] So you have to have snacks in the house but you have stay away from them?

Yeah, that's hard. I'm kind of taking advantage of that.' (P8 – M, 45, diagnosed 3.5 years ago)

Resisting this temptation required self-control, which not everyone possessed in equal measure. Moreover, many participants struggled with control as they experienced being limited in their freedom. Sometimes having diabetes can even make you feel imprisoned, as one participant described it. What is considered particularly challenging is to be told by a dietician what (not) to eat. Rather than following these recommendations to the letter, some participants would prefer living a bit shorter over living a restricted life:

'I do everything I can without sugar, but if there's a party or a birthday, I'll just have a pastry. I won't pass. I'd rather die a year earlier.' (P12 – M, 71, diagnosed 15 years ago)

Living a good life here prevailed over always acting healthily, demonstrating the balancing act between pleasure and risk, social and physical considerations that occurs in consumption practices (Lindsay 2010). This battle between the desire for control and the temptations provided by the social and material environment also illustrates the deficiencies of a rational actor-model that underlies a lot of consumer research (Kollmuss and Agyeman 2002). Our participants indicated that despite their good – rational – intentions, they did not always manage to be in control. At the same time, participants did find resourceful ways to cope with and counter these feelings of being bodily imprisoned by changing mental perspectives. For instance, the two participants who joined the 'Reverse Type 2 Diabetes' programme emphasized a change in dealing with tastes and preferences. Rather than framing a product as 'something I am

not allowed', they rather constructed it as 'something I do not want'. This way, they still managed to keep being in control of their diabetes. This also requires having insights into what effect certain foods have on your blood sugar level, which generates new skills and know-how on food. We will further elaborate on this in the section on performances.

Finally, the importance of good quality food and food that tastes well came up in many interviews and observations. Particularly around meat, the importance of good quality was emphasized by multiple participants, which meant they specifically bought this at the butcher. Tasty food was also important, and occasionally this was associated with organic, which is in line with findings of previous studies (Cerjak et al. 2010; Godin and Sahakian 2018). One participant recently changed his shopping habits to almost exclusively shopping at the organic store, because he found the produce tasted much better there. However, taste also changes as food patterns change and can also become re-routinized, as this participant explains, who radically changed his diet:

'Taste changes when you eat something else for three months. Then you just get used to the taste you eat. For example, I had to go to a lunch meeting, so I told them: I don't eat bread, just give me a cup of soup. But I got a beetroot salad with sour herring, and I never used to eat beetroot before because I didn't like it at all. But my taste had completely changed, and it was absolutely delicious. And you also get used to eating celeriac without salt, so I now eat a lot less salt.' (P9 – M, 73, diagnosed 22 years ago)

These different dynamics around health and reflexivity again illustrate how there is not one clear pathway in which being diagnosed with type 2 diabetes creates increased know-how on health. Rather, taking a practice theoretical approach sheds light on how a variety of meanings (i.e. being in control, quality, taste) also co-shape reflexivity on health. The results show how changing food practices towards more healthy food routines requires more than providing information on health, but also demands taking seriously other meanings at play within food practices that may compete with health understandings.

Sustainability related reflexivity

The third and last element of reflexivity is sustainability-related reflexivity. Building on the assumption that being diagnosed with type 2 diabetes brings reflexivity to food practices in terms of health, the next step is to explore to what extent and how this relates to reflexivity on sustainability in food practices. This was studied by inquiring after participants' understandings of sustainability in their food practices. To begin, there was quite some variety in what participants associated with sustainable food, ranging from food waste (n = 7) to food packaging (n = 5), local food (n = 4), animal

welfare (n = 3), reducing meat (n = 2), seasonal food (n = 2), and organic food (n = 1). Sometimes one participant mentioned multiple concepts:

'Buying products of the season of course. Not too much, so you don't have to throw things away. Things that haven't been exported, home-grown. Things that don't have to cook for too long. But mostly home-grown. I don't need strawberries for Christmas.' (P4 – F, 72, diagnosed 15 years ago)

Sustainability was most commonly associated with food waste. This aspect of sustainability has received much attention in public campaigns by the Dutch government (Soethoudt, Vollebregt, and Burgh 2016). One participant even went to a farmer in the rural hinterland just outside the city to collect leftover onions and carrots after the harvest:

'I asked a farmer when he was harvesting his carrots and onions. You can keep them very well, so we just put 40 kilos of onions and 40 kilos of carrots in the barn, we could eat stew all winter. It's a shame nothing happens with that! Things could be much more sustainable, in general' (P6 – M, 54, diagnosed 0.5 years ago)

Moreover, many participants also referred to other sustainable practices such as separating waste (n = 11), reducing energy consumption (n = 3) and low-impact travelling (n = 3), which are bundled to food practices through their common meaning of sustainability. The practice of separating waste also led to becoming more reflexive about the amount of plastic packaging that comes with food, which was considered unsustainable by some.

Reducing meat consumption, while broadly understood as (one of) the most important element(s) of sustainable food (Garnett et al. 2014), was not commonly associated with sustainability in our sample. Only two participants shifted to having one or more vegetarian meals out of concern with the environment, which was in both cases instigated by family members. For those thinking of organic food and animal ethics, a number of participants tended not to trust labels on products in supermarkets indicating organic or animal welfare (such as the Dutch 'Beter Leven' ('Better Life') label that ranks animal welfare). Sometimes participants were also confused in general about what is actually best for the environment, as this participant illustrated when talking about organic products:

'I'm a bit of two minds here. On the one hand, I think, well, the environment. But on the other hand, I think there's such a lot of crap. I prefer to do things cold turkey, all or nothing' (P14 – F, 50, diagnosed 0.5 years ago)

Finally, almost half of our participants actually did not really know what sustainable food entailed:

'I think it's a good idea but I don't know what it is exactly. I have this much money and I come into the store and I want this and that and that. So I don't know exactly what it is, I'd like to try it but I don't know what it is' (P15 – M, 69, diagnosed 2 years ago)

For our participants, health-related reflexivity on food did not necessarily extend to developing reflexivity on sustainability in their food practices. All of our participants did become reflexive on health in relation to food consumption after their diagnosis, but not in equal manner on sustainability. Those who did know about sustainability mentioned non-diabetes-related motivations coming from adjoining practices, such as having children who worked in a sustainability-related field. This lower reflexivity on sustainability transpires despite increased attention in society at large for the relationship between lifestyle and environmental impact, somewhat similar to the growing consideration of the connection between lifestyle and type 2 diabetes.

This limited reflexivity in terms of sustainability is interesting in relation to both the income and educational levels of our participants. The majority of these participants with little understanding of sustainable food scored relatively low in terms of SES. On average they were not highly educated and had an income between 1000–2000 Euro. This link between SES and understanding or valuing sustainability is supported by Blue et al. (2016)'s and Walker (2013)'s practice-based analysis that the essential elements for some practices are not evenly distributed across society, but that these are structured according to wider patterns of socio-economic inequality. Whereas this unequal distribution is often applied to financial resources, our sample illustrates this also includes having access to meanings like sustainability. However, this does not mean that their actual practices are unsustainable, which we will demonstrate now by looking towards performances of practices.

Performances

Having established the dynamics of reflexivity in terms of both health and sustainability, we now turn to the complementary aspect of performances or 'doings' as central practice element. These doings also get de- and re-routinized after a type 2 diabetes diagnosis, as will be outlined below. We zoom in on relevant elements in the two practices of preparing food and food acquisition, highlighting how change here also comes about in diverse ways and is contingent on aspects like competences and adjoining lifestyle practices.

Preparing food

Within the practice of preparing food, some differences can be identified between cooking skills and

know-how of different participants and how these (did not) change after being diagnosed with type 2 diabetes. These differences relate among others to gender, age, existing health knowledge and the influence of other household members. In general, almost half of the participants considered themselves to be good cooks, enjoyed cooking and took the time for it (30–60 minutes per day, during the week). More women than men considered themselves to be competent in cooking. Six of the men did not cook at all, but either their partner cooked, ready-made meals were bought in the supermarket or freshly made meals were delivered to their home through different services. For older participants without partner, the women tended to still cook albeit simple meals. Older single men tended to look for alternatives, as they had never really cooked in their lives. Most older participants prepared traditional food, sticking to the standard traditional Dutch meal of potatoes, meat and vegetables. Some implemented lower-carb alternatives to potatoes, such as sweet potato or turnip. They hardly used recipes, did not experiment much and did not include many novel products developed for diabetics such as legume-based pasta (chickpea spaghetti) or vegetable-based rice (cauliflower rice) that was recently introduced in the supermarkets.

Those participants that considered themselves to be good cooks all enjoyed experimenting in the kitchen with new recipes and products. Two participants returned to recipe-inspired cooking after being diagnosed with diabetes. They both changed their diet radically towards a low-carb diet which required new input. Many participants used cookery books specifically targeted at people with diabetes (with less carbohydrates and sugar). One participant who was following a strict low-carb diet improved his cooking skills but notably also started baking his own treats, as ready-made snacks typically contained too many carbs. Being able to cook well was also linked to having more knowledge about health. This was particularly clear in reverse, as those participants who could not cook or did not like to cook were also not very reflexive in terms of health. As participant 8 (M, 45, diagnosed 3.5 years ago) illustrates, when he recently started to cook simple meals from scratch – rather than eating micro-waved ready-made meals every day – he started to also think about what actually goes into the food and what that effect that has on your body in terms of health.

Contextual conditions also shape the practice of cooking, as cooking and eating are embedded in social and material relations with other members in the household (Halkier and Jensen 2011b; Miller 2013). Partners of people with type 2 diabetes were jokingly referred to as a ‘type 3’, as they were often affected by having a diabetic in their household. When participants switched to lower carb meals, partners sometimes ate along. In one case a partner who was

overweight also lost weight. However, more often partners did want to continue eating carbs. This meant the person cooking had to prepare partly separate meals, for instance cooking both potatoes and turnip (low-carb variant), or rice and cauliflower rice.

Food acquisition

Within the second practice under study, i.e. acquisition of food, key themes that emerged were the diverse dynamics around finances and the emerging competences around being able to read food ingredient labels. In general, for all of our participants, the supermarket was the most frequented retail outlet for food shopping. Half of the participants also frequently visited fresh markets, primarily to buy fish, fruits and vegetables. For those participants keeping a strict low-carb diet, about 90% of products in the supermarket were a no-go, as only fresh, un- or minimally processed foods were part of their diet. Still, most people were quite satisfied with their local food environment. Six people sometimes went to a nearby farm to buy local food such as eggs or cheese.

For most participants, finances were not a particularly limiting factor in their food shopping practices. About one third of them did not know what they spent on food every month. More than half stated they would not shop differently if they had more money. Seven people felt somewhat limited financially. Only two participants explicitly and frequently referred to money being a limiting factor in their shopping practices (both with incomes between 1000–2000, for a 1- and 2-person household, respectively). This translated primarily into shopping based on offer. Both selected where to go shopping based on wherever specific products were discounted that week. Only one participant specifically mentioned that his financial situation limited him in eating food which was better in terms of his diabetes. He expressed the will to eat better (i.e. healthier), but only if this was financially feasible:

‘There was a kind of bread my previous dietician recommended. You couldn’t buy that in the supermarket but only at Bakker Bart [a bakery chain in the Netherlands]; never been there. The new one tells me to buy wholegrain bread. That’s only 70 cents, for half a loaf of bread. The one the former dietician recommended, she said you should try half, and that costs 3.50. 3.50 for half a bread, I say! That’s a huge difference between 3.50 and 70 cents’ (P15 – M, 69, diagnosed 2 years ago)

There were more participants who shopped for offers, independent of their financial situation. There was a distinction between participants not actually having money to spend or participants not wanting to spend money. One participant stated she was financially very comfortable (monthly income of 3000–5000 for a 2-person household), but still watched every penny

when doing groceries. She was used to this from times when the family did not have as much money. She now rather enjoyed being thrifty:

'It's a sport. I live in a nice house so I could spend more, but it's just a sport. I think if something is on sale, let's say string beans are always 2.99 or so and if they're 0.99 cents I'll take them. But that's just more of a sport' (P2 – F, 65, diagnosed 25 years ago)

On the other side of the spectrum, one of the two participants with a self-proclaimed rather limited budget, was very motivated by animal ethics and did not mind paying extra for free-range eggs:

'I only buy free range eggs. And I don't mind at all that they are more expensive, because it's just the two of us anyway. We don't really eat a lot of eggs. If I bake something, then yes, but normally, no. So I don't care if it costs an extra fifty cents or a euro' (P1 – F, 67, diagnosed 5 years ago)

Moving away from finances, the diagnosis of diabetes also brought on new competences in food shopping. As many participants were now at least to some extent watching their carbs, sugar and/or salt intake, reading and understanding ingredient lists on food products became important. As one participant explained, in the program 'Reverse Type 2 Diabetes', this is a skill that is taught to everyone by means of a 'groceries game':

'You do a shopping game with lots of products you can pick, and then you have to guess how many sugar cubes are in them. And then you look at the packages, and in that way you learn to look at what's in them' (P9 – M, 73, diagnosed 22 years ago)

However, not everyone was doing it, as some participants considered the information on labels too complicated:

'We don't like reading labels. They should actually start simplifying the labels. If you want to use labels, then you shouldn't argue about 4.8 or 4.6 grams of something in a product, but rather just say if it is a product with lots of sugar or average sugar or low sugar. Nobody is interested whether it is 14.3 or 12.9 grams. You can write out a whole list of ingredients, but for about half of them, nobody knows what it means and what it is' (P6 – M, 54, diagnosed 0.5 years ago)

This confusion also sometimes extended beyond reading labels to understanding what exactly is healthy. Participants felt the industry tried to trick them sometimes and they encountered a lot of contradictory information on the internet. Yet, despite the confusion, most participants had become more competent in terms of overall food and health knowledge since being diagnosed with diabetes. This happened through enrolment in new practices such as consulting with a dietician or attending food and lifestyle courses.

In sum, both in the practices of preparing food and acquisition of food, changes in performances or 'doings' take place after being diagnosed with type 2

diabetes. However, these changing performances do not necessarily follow one pathway, but are contingent on a variety of other practice elements. De- and re-routinization of food practices after diagnosis with type 2 diabetes is not singular but diverse. This includes differences in trajectories of said practices (e.g. having a limited budget in the past influencing current food shopping practices), on household characteristics (e.g. being single or not, being male or female) and on competing meanings (e.g. caring about animal welfare versus buying cheaply). This analysis brings us to the final element of this paper: what do these diverse dynamics of de- and re-routinization that occurred after being diagnosed with a major health issue have to offer in terms of sustainable consumption potential?

Inconspicuous sustainability

This section brings together the identified changes in reflexivity and practice performances to analyse them in terms of sustainability – or rather as 'inconspicuous sustainability' as introduced before. Many food-related lifestyle changes that were implemented in practices motivated by health also had positive environmental effects, without explicitly being labelled as such by participants as carriers of practice themselves. Mostly those with lower SES had limited or no reflexivity on sustainability but actually did perform sustainability in their daily food activities. Many of these participants had no or very limited explicit understanding of sustainability and could have easily been labelled as not performing sustainable practices, if our study would have stopped at examining values or attitudes on sustainability.

To illustrate, cutting down meat consumption is a central element of sustainable diets (EAT-Lancet Commission 2019; Garnett et al. 2014). Coincidentally, for the majority of our participants eating less meat was part of their shift to a healthy diet that fits a diabetic, which came with increased reflexivity on health and food after diabetes:

'I try to eat as many vitamins, minerals, different types of vegetables together as possible so that it's always a balanced meal. I eat in a flexitarian way, which means I eat meat twice a week, fish twice, chicken and cheese once and beans twice. So I vary that as much as possible. And then I always try to make sure that every meal is complete in terms of nutrients.' (P2 – F, 65, diagnosed 25 years ago)

Even though only two participants explicitly associated eating less meat with sustainable food, in terms of practice performances, more than half of our participants reduced their meat consumption. However, this occurred not for the sake of sustainability but because of health considerations. Another participant was unfamiliar with the concept of sustainable food, but did

prepare mostly vegetarian meals because of her religion and consumed mostly local, fresh and organic food from her husband's vegetable garden, which makes for rather sustainable food patterns (Garnett et al. 2014).

An additional health and lifestyle-related example can be found in shifts to low-carb meals, in which advanced competences contributed to greater general awareness around food with positive environmental consequences. Cooking competences that emerged after being diagnosed with diabetes included cooking from scratch with fresh or minimally processed food rather than eating ready-made meals, which is considered better for the environment (Garnett et al. 2014). Moreover, based on concerns other than sustainability – health, quality and taste – one participant changed his diet towards mostly organic food, which also can have positive sustainability effects (Magnusson et al. 2003; Mondelaers, Verbeke, and Huylenbroeck 2009). Additionally, when as a result of diabetes the new competence of reading ingredient lists and labels emerged into the practice of buying food, this sometimes led to an increase in attention for the origin of food products as listed on the packaging:

'With fresh fruit and stuff, I look at whether it's coming from Morocco or wherever. I really look at that. Then I don't buy it, if I have a choice. I sometimes buy blueberries. You have them from Morocco or wherever, far away, but also from the Netherlands. I prefer to buy from the Netherlands. Maybe they cost a quarter more, but ... I really look at that. Also because I've started to look more at those packages and stuff, I also look more at the origin.' (P18 – M, 74, diagnosed 25 years ago)

Finally, many participants indicated wasting (almost) no food, which is another important element of a sustainable diet (FCRN, 2020). Particularly the older single participants wasted almost no food, as they had become very routinized in preparing appropriate portion sizes. Yet, most of these participants either stated they did not care about the environment because they felt too old for it or simply had no idea what sustainable food entailed. Several participants also purchased local food products from a nearby farmer. Although this could be considered an indicator of sustainable consumption, most participants expressed motivations of perceived better quality rather than sustainability concerns.

All of these activities occurred as side-effects of changing food practices over the course of being diagnosed with type 2 diabetes and can be considered to be beneficial in terms of sustainability. In other words, positive environmental effects could be identified 'piggybacking' onto changes in practices that were performed towards a healthier diet. Changes in food

practices motivated by a reflexivity on health, such as diversifying protein intake and eating less processed foods, thus contain interesting potential if looked at with a sustainability lens.

Discussion and conclusion

Our study illustrates the importance of not only exploring the reflexive and conspicuous to gain an understanding of sustainable consumption (Browne, Jack, and Hitchings 2019; Shove and Warde 2002). Rather, our study demonstrates how the ordinary and daily practices around food are characterized by change and improvisation. Our practice theoretical approach has been instrumental in foregrounding performances around sustainability that take place outside the scope of explicit reflexivity on sustainability. Whereas discussions on the attitude-behaviour gap focus on the discrepancy between attitude and behaviour from an attitude perspective – why do pro-environmental attitudes not translate into pro-environmental behaviour – we approached the question in a different way. Taking a practice theories perspective, we looked at 'pro-health activities' and how they implicitly or explicitly also address sustainability. By broadening our scope beyond reflexivity, we uncovered environmentally relevant changes in actual activities regardless of pro-environmental attitudes. This illustrates that being informed and motivated about sustainability seems not to be the only road to consuming more sustainable food. Rather, change can also come from other sources than changing beliefs or know-how, and there is opportunity for sustainable food considerations to latch onto health-induced changes in food practices.

Similarly, in terms of health our study showed how rather than from changing attitudes by being educated on health only, reflexivity on health can also come from diverse elements or cues in the socio-material environment (Polhuis 2019). In our study, being diagnosed with a major health issue also appeared not to be sufficient motivation for changing lifestyles, in spite of the opportunities for change it might contain according to the literature (Verplanken and Wood 2006). We concur with Burningham and Venn (2020)'s view on change as a drawn-out and ongoing process, rather than as singular pathway of transition. It is striking that in our sample, the most comprehensive lifestyle changes of participants occurred recently, over the past two or three years, even though these participants had been diagnosed with diabetes for almost two decades. External factors seemed to play a more important role in producing lifestyle changes here, such as experiencing bodily symptoms of diabetes and changes in adjoining practices such as changing

treatment protocols for diabetes from medication only towards also including elaborate dietary recommendations. This calls for recognizing diversity in experience rather than providing generalized understandings of how reflexivity comes about and how food routines change after major life events.

With these findings, the present study also provides a contribution to Boström, Lidskog, and Uggla (2017)'s call for environmental sociology to provide a better understanding of the role of reflexivity. They state that 'it is questionable whether reflexivity is sufficient in itself as a principle to guide practice towards more sustainability' (p.13) and recommend further research to look at the embeddedness of and conditions required for reflexivity. The present study has provided such a contextual and embedded understanding of the role of reflexivity in consumption practices towards more sustainable practices. The results demonstrated the diverse pathways of change, de- and re-routinization and specific moments of reflexivity. We showed how elements of sustainable consumption can still be identified even when there is no explicit sustainability-related reflexivity, but rather through changing performances of practices due to health-related reflexivity. We therefore conclude with Boström, Lidskog, and Uggla (2017) that the concept of reflexivity is useful for environmental sociology, but that reflexivity is not uniform and therefore requires an in-depth, qualitative and contextual approach.

We found a difference in reflexivity between the concepts of health and sustainability. This is particularly relevant as increasingly the two are integrated into one ideal planetary diet (EAT-Lancet Commission 2019). In our study, we explored the extent to which being more conscious of health and food due to a food-related lifestyle disease such as type 2 diabetes also affected people's understandings of sustainable food. For our sample, this did not seem to be the case. While participants were indeed more conscious of health after diabetes, this was distinct from understandings of sustainable food. It also became clear that changing lifestyle practices for health reasons seems to have more appeal than doing so for sustainability reasons, as health is much more personal and can have direct bodily manifestations. Being confronted with a personal health issue led to changes in food practices towards more health for almost everyone, whereas being confronted with sustainability in the media almost every day did not – at least not explicitly. This is in line with findings from other more quantitative studies such as Van Loo, Hoefkens, and Verbeke (2017).

However, whereas this study recommends that messages combining information on health and sustainability will not drive off certain consumer groups and may appeal to a larger group than a message on health only, our qualitative work shows that sometimes there was aversion towards sustainability messages – even though actual performances could still be earmarked as sustainable. This observation complicates the agenda for integrating health and sustainability in explicit terms by appealing to these values, as they do not necessarily go together in people's minds.

Finally, as an outcome of our focus on both reflexivity and performance in food practices, we have illustrated the complex role socio-economic differences play in understanding sustainable practices. While practice theories have been critiqued for their lack of attention to power and inequalities, in our study this approach has aided in providing a more nuanced understanding of socio-economic differences, primarily because it allowed us to look beyond activities undertaken from environmental concern only. By including participants across SES and studying their understandings and performances around health and sustainability in food practices, we illustrate how SES alone does not explain or predict (un)sustainable practices. It is important for policy efforts to recognize this diversity in motivations for pro-environmental actions, rather than only focusing on those groups of citizens complying with the most dominant understandings of sustainability concerns. Consumers should not be considered 'eco-powerless' when they do not explicitly align with values around sustainability. Rather than being disempowered and passive, consumers appeared creative and competent, who adapt to their new lifeworld after diabetes and are resourceful in navigating their daily life after being disrupted by a major health issue.

Notes

1. SES is usually determined based on education, occupation and income levels (Shavers 2007)
2. In the Dutch educational system, a university of applied sciences degree and upwards is considered 'highly educated'.

Acknowledgements

The authors wish to thank all participants for their time and cooperation in this study. A special thanks to students of 2BVG ('19-'20) at Aeres UAS Almere for their contribution to the data gathering, as well as to dr. Jessica Paddock at SPAIS for her valuable feedback to earlier drafts of the paper during the first author's research stay at the University of Bristol. Finally, we want to thank the two anonymous reviewers for their constructive feedback on earlier drafts of this paper.

Notes on contributors

Anke Brons is a PhD candidate at Aeres University of Applied Sciences and at the Environmental Policy Group at Wageningen University, both in the Netherlands. Her PhD project focuses on questions of inclusiveness around access to healthy and sustainable food in a Western urban context, from a sociological perspective. Her research interests include food consumption, food systems, social equity and social practice theories.

Peter Oosterveer is a professor at the Environmental Policy Group at Wageningen University, the Netherlands. His research interests are in global public and private food governance arrangements and innovative institutional developments in sustainable food production and consumption. He is studying food consumption practices from a sociological perspective and is particularly interested in how consumers access sufficient, sustainable and healthy food.

Sigrid Wertheim-Heck is a professor of Food and Healthy Living at Aeres University of Applied Sciences and a senior research fellow at the Environmental Policy Group at Wageningen University, both in the Netherlands. Her interest in global urban food security informs her research on the relationship between metropolitan development, food provisioning and food consumption, focusing on equitable access to sustainable, safe and healthy foods.

Disclosure statement

The authors declare that they have no conflict of interest.

Funding

This work was supported by Gemeente Almere (Almere 2.0) in cooperation with Flevo Campus.

ORCID

Anke Brons  <http://orcid.org/0000-0002-4667-1833>
 Peter Oosterveer  <http://orcid.org/0000-0002-3067-3068>
 Sigrid Wertheim-Heck  <http://orcid.org/0000-0002-4261-9181>

References

- Agardh, E., P. Allebeck, J. Hallqvist, T. Moradi, and A. Sidorchuk 2011. "Type 2 Diabetes Incidence and Socio-economic Position: A Systematic Review and Meta-analysis." *International Journal of Epidemiology*, 40 (3), 804–818. doi:10.1093/ije/dyr029
- Blue, S., E. Shove, C. Carmona, and M. P. Kelly 2016. "Theories of Practice and Public Health: Understanding (Un) Healthy Practices." *Critical Public Health*, 26(1), 36–50. doi:10.1080/09581596.2014.980396
- Boström, M., R. Lidskog, and Y. Ugglå 2017. "A Reflexive Look at Reflexivity in Environmental Sociology." *Environmental Sociology*, 3(1): 6–16. doi:10.1080/23251042.2016.1237336
- Browne, A. L., T. Jack, and R. Hitchings 2019. "Already Existing'sustainability Experiments: Lessons on Water Demand, Cleanliness Practices and Climate Adaptation from the UK Camping Music Festival." *Geoforum*, 103, 16–25. doi:10.1016/j.geoforum.2019.01.021
- Burningham, K., and S. Venn 2020. "Are Lifecourse Transitions Opportunities for Moving to More Sustainable Consumption?" *Journal of Consumer Culture*, 20(1), 102–121. doi:10.1177/1469540517729010
- Cerjak, M., Ž. Mesić, M. Kopic, D. Kovačić, and J. Markovina 2010. "What Motivates Consumers to Buy Organic Food: Comparison of Croatia, Bosnia Herzegovina, and Slovenia." *Journal of Food Products Marketing*, 16(3), 278–292. doi:10.1080/10454446.2010.484745
- Cheng, S. L., W. Olsen, D. Southerton, and A. Warde 2007. "The Changing Practice of Eating: Evidence from UK Time Diaries, 1975 and 2000." *The British Journal of Sociology*, 58 (1), 39–61. doi:10.1111/j.1468-4446.2007.00138.x
- Donald, B., and A. Blay-Palmer 2006. "The Urban Creative-food Economy: Producing Food for the Urban Elite or Social Inclusion Opportunity?" *Environment and Planning A*, 38(10), 1901–1920. doi:10.1068/a37262
- Dubuisson-Quellier, S., and S. Gojard 2016. "Why are Food Practices Not (More) Environmentally Friendly in France? The Role of Collective Standards and Symbolic Boundaries in Food Practices." *Environmental Policy and Governance*, 26(2), 89–100. doi:10.1002/eet.1703
- EAT-Lancet Commission. 2019. "Food, Planet, Health: Healthy Diets from Sustainable Food Systems." Report. <https://eatforum.org/initiatives/the-eat-lancet-commission/eat-lancet-commission-summary-report/>
- FAO. 2012. "Sustainable Diets and Biodiversity: Directions and Solutions for Policy, Research and Action. International Scientific Symposium, Biodiversity and Sustainable Diets United against Hunger, FAO Headquarters, Rome, Italy, 3–5 November 2010." In *Paper presented at the Sustainable Diets and Biodiversity: Directions and Solutions for Policy, Research and Action. International Scientific Symposium, Biodiversity and Sustainable Diets United Against Hunger*, 3–5 November 2010. Rome, Italy: FAO Headquarters, Rome.
- FCRN. 2020. "Food Systems and Contributions to Other Environmental Problems." *Foodsource*. <https://foodsource.org.uk/chapters/5-food-systems-contributions-other-environmental-problems>
- Garnett, T., M. Appleby, A. Balmford, I. Bateman, T. Benton, P. Bloomer, ... D. Fraser 2014. "What Is a Sustainable Healthy Diet?" A discussion paper.
- Godin, L., and M. Sahakian 2018. "Cutting through Conflicting Prescriptions: How Guidelines Inform "Healthy and Sustainable" Diets in Switzerland." *Appetite*, 130, 123–133. doi:10.1016/j.appet.2018.08.004
- Gram-Hanssen, K. 2010. "Standby Consumption in Households Analyzed with a Practice Theory Approach." *Journal of Industrial Ecology*, 14(1), 150–165.
- Grunert, K. G. 2011. "Sustainability in the Food Sector: A Consumer Behaviour Perspective." *International Journal on Food System Dynamics*, 2(3), 207–218.
- Guthman, J. 2008. "If They Only Knew": Color Blindness and Universalism in California Alternative Food Institutions." *The Professional Geographer*, 60(3), 387–397. doi:10.1080/00330120802013679
- Halkier, B., and I. Jensen 2011a. "Methodological Challenges in Using Practice Theory in Consumption Research. Examples from a Study on Handling Nutritional Contestations of Food Consumption." *Journal of Consumer Culture*, 11(1), 101–123. doi:10.1177/1469540510391365
- Halkier, B., and I. Jensen 2011b. "Doing 'Healthier' food in Everyday Life? A Qualitative Study of How Pakistani Danes Handle Nutritional Communication." *Critical Public*

- Health*, 21(4), 471–483. doi:10.1080/09581596.2011.594873
- Hawkes, C., J. Jewell, and K. Allen 2013. "A Food Policy Package for Healthy Diets and the Prevention of Obesity and Diet-related Non-communicable Diseases: The NOURISHING Framework." *Obesity Reviews*, 14, 159–168. doi:10.1111/obr.12098
- Hitchings, R. 2012. "People Can Talk about Their Practices." *Area*, 44(1), 61–67. doi:10.1111/j.1475-4762.2011.01060.x
- Hu, F. B. 2011. "Globalization of Diabetes: The Role of Diet, Lifestyle, and Genes." *Diabetes Care*, 34(6), 1249–1257. doi:10.2337/dc11-0442
- Johnston, J., A. Rodney, and M. Szabo 2012. "Place, Ethics, and Everyday Eating: A Tale of Two Neighbourhoods." *Sociology*, 46(6), 1091–1108. doi:10.1177/0038038511435060
- Katz-Gerro, T., P. Cveticanin, and A. Leguina 2017. "Consumption and Social Change: Sustainable Lifestyles in Times of Economic Crisis." In M. J. Cohen, H. S. Brown, and P. J. Vergragt (Eds.), *Social Change and the Coming of Post-consumer Society: Theoretical Advances and Policy Implications*. (95–124). Abingdon: Routledge.
- Kollmuss, A., and J. Agyeman 2002. "Mind the Gap: Why Do People Act Environmentally and What are the Barriers to Pro-environmental Behavior?" *Environmental Education Research*, 8(3), 239–260.
- Lang, T. 2017. "Re-fashioning Food Systems with Sustainable Diet Guidelines: Towards a SDG2 Strategy." Report. London, UK. <https://foodresearch.org.uk/publications/re-fashioning-food-systems-with-sustainable-diet-guidelines/>
- Lindsay, J. 2010. "Healthy Living Guidelines and the Disconnect with Everyday Life." *Critical Public Health*, 20(4), 475–487. doi:10.1080/09581596.2010.505977
- Mackenbach, J. D., K. G. M. Nelissen, S. C. Dijkstra, M. P. Poelman, J. G. Daams, J. B. Leijssen, and M. Nicolaou 2019. "A Systematic Review on Socioeconomic Differences in the Association between the Food Environment and Dietary Behaviors." *Nutrients*, 11(9), 2215. doi:10.3390/nu11092215
- Magnusson, M. K., A. Arvola, U.-K.-K. Hursti, L. Åberg, and P.-O. Sjöden 2003. "Choice of Organic Foods Is Related to Perceived Consequences for Human Health and to Environmentally Friendly Behaviour." *Appetite*, 40(2), 109–117. doi:10.1016/S0195-6663(03)00002-3
- Mason, P., and T. Lang 2017. *Sustainable Diets: How Ecological Nutrition Can Transform Consumption and the Food System*. London and New York: Routledge, Taylor & Francis Group.
- Miller, D. 2013. *A Theory of Shopping*. Hoboken (NJ): John Wiley & Sons.
- Mondelaers, K., W. Verbeke, and G. V. Huylenbroeck 2009. "Importance of Health and Environment as Quality Traits in the Buying Decision of Organic Products." *British Food Journal*, 111(10), 1120–1139. doi:10.1108/00070700910992952
- Monteiro, C. A., W. L. Conde, B. Lu, and B. M. Popkin 2004. "Obesity and Inequities in Health in the Developing World." *International Journal of Obesity*, 28(9), 1181–1186.
- Neuman, N., J. Mylan, and J. Paddock 2020. "Exploring (Non-) Meat Eating and "Translated Cuisines" Out of Home: Evidence from Three English Cities." *International Journal of Consumer Studies*, 44(1), 25–32. doi:10.1111/ijcs.12542
- O'Neill, K. J., A. K. Clear, A. Friday, and M. Hazas 2019. "'Fractures' in Food Practices: Exploring Transitions Towards Sustainable Food." *Agriculture and Human Values*, 36(2), 225–239. doi:10.1007/s10460-019-09913-6
- Paddock, J. 2017. "Household Consumption and Environmental Change: Rethinking the Policy Problem through Narratives of Food Practice." *Journal of Consumer Culture*, 17(1), 122–139. doi:10.1177/1469540515586869
- Plessz, M., S. Dubuisson-Quellier, S. Gojard, and S. Barrey 2016. "How Consumption Prescriptions Affect Food Practices: Assessing the Roles of Household Resources and Life-course Events." *Journal of Consumer Culture*, 16(1), 101–123.
- Polhuis, C. 2019. Turning points for healthful eating in people with Type 2 Diabetes Mellitus and Low Social Economic Status.
- Sahakian, M., and H. Wilhite 2014. "Making Practice Theory Practicable: Towards More Sustainable Forms of Consumption." *Journal of Consumer Culture*, 14(1), 25–44.
- Schatzki, T. R. 2002. *The Site of the Social: A Philosophical Account of the Constitution of Social Life and Change*. University Park, PA: Pennsylvania State University Press.
- Shavers, V. L. 2007. "Measurement of Socioeconomic Status in Health Disparities Research." *Journal of the National Medical Association*, 99(9), 1013.
- Shove, E., and A. Warde 2002. "Inconspicuous Consumption: The Sociology of Consumption, Lifestyles and the Environment." *Sociological Theory and the Environment: Classical Foundations, Contemporary Insights*, 230(51), 230–251.
- Shove, E., and D. Southerton 2000. "Defrosting the Freezer: From Novelty to Convenience: A Narrative of Normalization." *Journal of Material Culture*, 5(3), 301–319. doi:10.1177/135918350000500303
- Shove, E., M. Pantzar, and M. Watson 2012. *The Dynamics of Social Practice: Everyday Life and How It Changes*. Thousand Oaks: Sage Publications.
- Soethoudt, H., M. Vollebregt, and M. V. D. Burgh 2016. *Monitor Voedselverspilling: Update 2009–2014*.
- Spaargaren, G., and P. Oosterveer 2010. "Citizen-consumers as Agents of Change in Globalizing Modernity: The Case of Sustainable Consumption." *Sustainability*, 2(7), 1887–1908. doi:10.3390/su2071887
- Van Loo, E. J., C. Hoefkens, and W. Verbeke 2017. "Healthy, Sustainable and Plant-based Eating: Perceived (Mis)match and Involvement-based Consumer Segments as Targets for Future Policy." *Food Policy*, 69, 46–57.
- Verplanken, B., and W. Wood 2006. "Interventions to Break and Create Consumer Habits." *Journal of Public Policy & Marketing*, 25(1), 90–103. doi:10.1509/jppm.25.1.90
- Voeding Leeft. 2020. *Keer Diabetes 2 Om*. Amsterdam, The Netherlands. <https://keardiabetesom.nl/>
- Walker, G. 2013. "Inequality, Sustainability and Capability." In E. Shove and N. Spurling (Eds.), *Sustainable Practices: Social Theory and Climate Change* (95, 181–196). London & New York: Routledge.
- Warde, A. 2005. "Consumption and Theories of Practice." *Journal of Consumer Culture*, 5(2), 131–153. doi:10.1177/1469540505053090
- Warde, A. 2016. *The Practice of Eating*. Cambridge, UK: Polity Press.
- Welch, D., and A. Warde 2015. "Theories of Practice and Sustainable Consumption." In L. Reisch and J. Thøgersen, (Eds.), *Handbook of Research on Sustainable Consumption*, (84–100). Cheltenham, UK: Edward Elgar Publishing Ltd.
- WHO. 2003. *Diet, Nutrition, and the Prevention of Chronic Diseases: Report of a Joint WHO/FAO Expert Consultation* (vol. 916). Geneva, Switzerland: World Health Organization.
- WHO. 2013. *Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020*. World Health Organization, Geneva, Switzerland.

WHO. 2020. *Obesity and Overweight*. World Health Organization, Geneva, Switzerland. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>

Appendix

Interview guideline

Food acquisitioning

- (1) Can you tell me what you ate yesterday?
 - a. Where and with whom?
 - b. Was that a typical meal for you? How was it/not? Where did you do your shopping for that meal?
 - i. Is that where you usually do your shopping? Where else? [*market – farmer – ethnic supermarket – vegetable garden for your groceries*] [*now/past*]
 - c. How often do you do groceries?
 - d. When do you do groceries?
 - e. What means of transport do you usually use for doing groceries?
- (2) To what extent are you able to buy what you want in terms of food?
 - a. To what extent do you sometimes not buy something for financial reasons?
 - i. If so, what do you do then?
 - b. [How] would you eat differently if you had more money?
 - c. Do you ever buy products you don't know? What reasons yes/no?
- (3) To what extent are you satisfied with the food environment in your neighbourhood/place of residence? [*now/past*]

Food preparation

- (1) What are we cooking today?
 - a. Do you cook this more often?
 - b. How is this different/similar to how you normally cook?
 - a. Week vs. weekend?
 - c. Do you enjoy cooking?
 - a. Easy/hard?
 - d. What is important for you in cooking? [*convenience, health, money, familiar, safe ...*]
 - e. To what extent do you use a recipe in your cooking?
 - f. Do you ever prepare products you do not know?
 - a. What do you do with them?
 - g. How long do you like to cook?
 - h. How often do you cook?
 - a. What do you do for food if you don't prepare food? [*ready-made meal, frozen, delivery, eating out ...*]
 - i. For whom do you cook?

- j. What quantities do you usually cook? [*per day, multiple days*]
 - a. What do you do with leftovers?
 - k. To what extent are you able to cook in the way you want to cook?
- (2) What you remember about the first time you cooked?
 - a. Where/when?
 - b. What did you prepare?
 - c. Where did you learn to cook?
 - d. To what extent do you still cook in this way?
 - (3) Where do you usually consume food?
 - a. With whom do you eat?
 - b. Do you have any other activities during eating? [*watching TV, gaming, work, ...*]

Type 2 diabetes

- (1) Type 2 diabetes
 - a. Since when?
 - b. Treatment? [*Huisarts, POH, specialist, anders ...*]
 - c. Medication?
- (2) To what extent and how would you say type 2 diabetes has influenced your food habits?
 - a. Easier/harder to cook? Shop?
 - b. New knowledge and/or competences?
 - c. Influence on the household?
 - d. What do you miss most?
 - e. What would you do differently in terms of food shopping and cooking if you did not have diabetes?

Kitchen

- (1) To what extent are you satisfied with your kitchen?
 - a. What kind of stove [*gas, electric, ...*]
 - b. How and where do you store food?
 - a. Do you have enough space?
 - c. Oven/freezer?
 - d. To what extent is there anything you miss in your kitchen?

Health and sustainability

- (1) What is your idea of health/healthy food?
 - a. Would you say you eat healthy or unhealthy on average? For what reasons?
- (2) Do you have any other allergies influencing your food habits?
- (3) What is your idea of sustainability/sustainable food?
 - a. To what extent are you worried about the environment?
 - b. [if applicable] To what extent do you feel capable of acting on your concern?