Stockpiling as resilience: Defending and contextualising extra food procurement during lockdown

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ARTICLE INFO	ABSTRACT
	During the U.K.'s lockdown in response to the COVID-19 pandemic, both food shortages and stockpiling were well-publicised events. The U.K's food system has struggled and lockdown shortages are part of an ongoing trend of anxiety around the food system. Analysis of 19 interviews with people responsible for food procurement within households reveals that while shortages were often experienced for a number of weeks, stockpiling did not take the form of buying large quantities. Instead, modest extra procurement is a more appropriate description of food procurement during lockdown. This article maps six resilience strategies utilised by households in the U.K. during lockdown, of which extra procurement was just one.

1. Introduction

The purpose of this article is to provide a qualitative snapshot into experiences of households in the U.K. through mapping the resilience strategies adopted by the households in this sample. Stockpiling is in particular focus. The article begins with a discussion of the current food system and the in-tandem growth of the food sector's financial power, the availability of food and food anxiety. The rising levels of food poverty and insecurity and anticipated outcomes of Brexit are additional concerns. It is within this context that shortages and stockpiling seen during the U.K.'s lockdown are then introduced. The findings argue that resilience strategies were adopted during lockdown in this sample, and although extra procurement took place, stockpiling did not.

The World Health Organisation declared COVID-19 a global emergency on January 30, 2020 (Sohrabi et al., 2020). At time of writing (late August/early September 2020), there have been approximately 339,000 confirmed COVID-19 cases in the U.K., and close to 42,000 confirmed deaths. The U.K. entered phase one, the strictest phase of legally enforceable lockdown between 23rd March and 10th May (a total of 8 weeks). Restrictions began to be lifted between 11th May and 4th July (a further 8 weeks) and these are still ongoing. During phase one of lockdown, leaving the home was permitted for three reasons; to exercise, collect medicine or to buy food. This had a significant impact on food procurement.

Prior to this, shopping daily was common. Meals eaten in restaurants or 'on the go' accounted for approximately 30% of meals eaten (Kantar, 2020b). Delivery services (such as Deliveroo and JustEat) registered

profits of £1.5bn in 2018/2019 (Statista, 2019). During lockdown, the vast majority ate all of their meals inside the home: take-away/delivery options were limited and supermarket visits restricted on governmental advice. Shortages were common for weeks at a time with eggs, flour, milk, canned beans and tomatoes frequently unavailable. The introduction continues to offer a brief overview of factors affecting the food system in the U.K. at the time of lockdown to contextualise stockpiling (see section 1.4). There are many reasons for anxiety regarding the U.K.'s food system at the time of lockdown in the U.K., and these are set to increase in the coming months. These anxieties are part of the wider story of stockpiling.

1.1. Food poverty and food insecurity

Food poverty and food insecurity are major mediators in accessing sufficient and nutritionally appropriate food, giving further cause for concern regarding the food system in the U.K. Food poverty is defined as 'the inability to afford, or to have access to, food to make up a healthy diet' (Department of Health, 2005) and food insecurity is 'having limited access to food' due to 'lack of money or financial resources' (FAO, 2017). Numbers experiencing food poverty and food insecurity in the U.K. approached 10 million in April 2020 (Food Foundation, 2020) – approximately one person for every 6.5 people in the U.K. population. In 2018–2019, 1.6 million food parcels were given out by the food bank Trussell Trust (Trussell Trust, 2019b). These numbers are positively correlated with both insufficient income and delayed benefit payments (Trussell Trust, 2017; Lambie-Mumford & Green, 2015). A frequent

response to financial restriction is to buy less food, and less nutritious foods (Beck & Gwilym, 2020), which can then result in generational ill-health (Joseph Rowntree Foundation, 2015).

Insufficient income and delayed benefit payments have been experienced in great numbers during lockdown due to the economic ramifications of non-essential business closures. A furlough scheme introduced for those who were not able to work (U.K. Government 2020) should have alleviated difficulties in food access. But those made redundant faced a standard five-week wait for income through Universal Credit without additional resource. During lockdown, the numbers experiencing food insecurity is estimated to have quadrupled (Food Foundation, 2020) and the 1.35 million children in receipt of free school meals (Department for Education, 2019) is very likely to rise after the pandemic (Food Foundation, 2020). Lockdown is likely to increase the numbers of those experiencing food poverty and food insecurity.

1.2. Brexit

In addition to the above pre-existing problems in lack of access, there is also reason for doubt regarding a 'no deal' or 'hard' Brexit (Van Reenan, 2016). Once the U.K. completes leaving the European Union's (EU) single market, food industries may suffer and fail to be competitive. The U.K. leaves the E.U. at a time when it is increasingly dependent on imports (FRC, 2018, p. 12). Concerns centre around the economic and environmental management of this process as well as the impact on public health and nutrition. The management of tariff rate quotas through which trade deals are organised, and the impact this may have on both the wider economic management of food and supply chains may affect distribution and increase prices (Downes, 2016). Ecological and environmental concerns centre on changed trading routes (Lang et al., 2017). Further, with new trade deals the U.K. opts out of an established legacy of food safety and quality monitoring under EU legislation known as the White Paper on Food Safety (EU Commission, 2000). There is no defined successor.

There is reason for both immediate concern due to the distribution issues discussed above and concern for the future of the U.K. food system after a no-deal Brexit. This uncertainty is reflected in the findings, manifesting in pre-lockdown extra procurement (see section 3.2). It is within a context of these pre-existing anxieties, difficulty of access and fears for supply chains that the food system in the U.K. was then met with lockdown, which brought significant changes in food habits. The next section discusses the concept of stockpiling in more detail.

1.3. Stockpiling & Just-In-Time delivery systems

Stockpiling has been understood as the cause of both food shortages and empty shelves in supermarkets mentioned above. Academically, although much research is still being done, stockpiling is understood primarily as an emotionally-informed and individualised behaviour (Garbe et al., 2020). A definition is put forward by Power et al. (2020) 'an accumulation of goods predominantly motivated by a desire to minimise the loss of, or *the risk of* losing access to, certain products, and may arise due to a *belief* that a product is in short supply, will soon no longer be available' (Power et al., 2020, emphasis added). According to this definition, stockpiling is a behaviour based on minimising risk of loss of access due to the belief of short supply. The implication here is that this behaviour is fear-based rather than a cognitive and considered response to shortage.

In the same theme media coverage has been significant, claiming that stockpiling caused food shortages. One notable example is Bilborough's video plea, which places responsibility for food shortages on

the public. Bilborough states 'people are just stripping the shelves of basic foods.. You just need to stop it' (BBC News, 2020 [1]). The Secretary of State for Health and Social Care,[2] Matthew Hancock, stated on televised news that the video 'demonstrates the consequences of being irresponsible', repeating 'there's a perfectly adequate food supply in this country, it is not a problem and it is not going to be' (BBC News, 2020). One Guardian[3] article highlights the psychological origins of panic buying, namely, infectious fear (Wilson, 2020). There was significant media backlash aimed at individuals for stockpiling. Assuming there is plenty of food for all, stockpiling becomes an activity endangering fair distribution for 'more vulnerable groups' (Power et al., 2020).

Conversely, the argument here is that stockpiling behaviour is a reasonable response to the shortages experienced during and just before lockdown. Kantar (2020a) finds in a recent analysis of shopping habits that an additional 15 million supermarket visits were made the week before the U.K. lockdown was announced. This occurred for one week, and due to lockdown restrictions and temporary caps introduced by most supermarkets during that week, this did not happen again. Only 3% of shoppers were engaged in buying food in 'extraordinary quantities' during that week (ibid.). Following this week, stockpiling consisted of 'a few extra items' in shopping baskets (ibid.). These few extra items resulted in increased demand of 35% for the remaining duration of lockdown, due to the closure of restaurants/take-away (Kantar, 2020b). This approximates Christmas demand (BRC, 2020), and is not unprecedented . Despite this, shortages were seen for several weeks. The supermarket's logistical infrastructure is likely to have been an aggravating factor.

Supermarkets largely operate on a 'just-in-time' (JIT) delivery model (Christopher & Peck, 2004; Lawrence, 2004). The JIT model aims to minimise the time that food is within the floor space of the supermarket - so it is delivered *just in time* to ensure it can be purchased. This system is vulnerable to unpredicted surges in demand (Albino & Garavelli, 1995) as seen at the beginning of lockdown. This one surge in demand, followed by the steady increase in demand, has been enough to disrupt the lean estimates predicted by the JIT delivery system.

For individuals there has been good reason for concern about their own food supply during lockdown. Further, the governmental advice at this time was that individuals who became symptomatic of coronavirus should self-isolate and not leave the house for any reason for 14 days. This meant that opportunity for domestic food procurement was drastically reduced. Ensuring your household has enough food is considered behaviour. Moderate stockpiling is a resilient response to governmental instruction.

1.4. Anxiety

The current food system can be characterised through a discussion of food anxiety which increases as the economic power of the food sector grows (Jackson, 2010). It is possible to see the growing food system in the U.K. as a runaway power, and therefore a cause of anxiety. Globally, government power is matched, and in some cases, overturned by large corporations (Clapp, 2016). The Horse Meat Scandal in 2013 revealed that horse meat was present in products labelled as beef or pork. This suggests that the routine testing of food stuffs is inadequate which introduces food safety concerns. It was the private company Findus who first informed the government that horse meat had been found in meat products, leading to widespread testing (U.K. Government, 2013). The

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[1] *The British Broadcasting Corporation is the only state-funded public service broadcaster in the U.K., offering news via the internet, radio and television broadcasts.*
[2] *This role encompasses responsibility for social policy regarding health and social care and the National Health Service.*
[3] *The Guardian is an international news outlet which has a monthly readership of approximately 47 million people (Guardian, 2020).*

BSE crisis is another example of failures in food safety (Gerodimos, 2004). Both examples undermine the perceived power of the government to protect the public's health.

These examples of systemic failures in food safety are not the only causes of anxiety in the contemporary food system. Food anxieties also develop when there is not enough food, as seen in food poverty and food insecurity (Garthwaite, 2016). Numbers experiencing insufficient food are likely to be exacerbated by financial repercussions of both lockdown and Brexit. The media coverage documented above regarding shortages is able to either develop or exacerbate pre-existing anxiety around food.

1.5. Resilience

It is necessary to foreground the findings with a discussion of resilience because resilience is a multi-layered concept which is used in a variety of different disciplines. Resilience is often seen as a counterpoint to anxiety. The concept began in ecological and psychological disciplines to describe movements within sets of boundaries in biological systems (Brand & Jax, 2007, for an example of ecological resilience in the U.K.'s food systems, see; Global Food Security Programme, 2016). In this vein, a resilient food system is the 'capacity over time of a food system and its units at multiple levels to provide sufficient, appropriate and accessible food to all, in the face of various and even unforeseen disturbances' (Tendall et al., 2015). In other words, there must be enough nutritionally appropriate food available to all over time, despite systematic stressors such as economic change, to consider a food system resilient. Resilience has ready application to social scientific understandings, and it is this critical form of resilience which informs this discussion. It has been criticised for neoliberal connotations when related to individuals as it asks people to manage themselves despite the action, or neglect, of the state's governing bodies (Pavicevic, 2016). A sociological definition is similar, describing "processes by which … ways of life mediate responses to systematic social and economic stresses … and how, in turn, these ways of life are impacted by these responses (Estêvào et al., 2017, p. 17). It is the capacity to withstand systematic shock which is the common thread in social explanations of resilience, and it is this capacity to resist which was seen in this sample. These households transformed during food shortages to become additional barriers to a vulnerable food system that struggled with a surge in demand. In absorbing shortages, they created a microcosmic and resilient food supply. The stockpiling, or better, extra procurement evidenced in the findings section is therefore understood in this article as a resilient and rational response to actual shortage in spite of the perspectives shown above. The next section discusses the methods used to gather the data from which the findings are developed.

2. Methods

A short online semi-structured anonymous Qualtrics questionnaire was distributed via websites and online mailing lists over a three-week period from 17th April 2020 to May 1, 2020. The questionnaire asked for limited demographic information, including banded yearly household income and age, gender and location. Remaining questions focused on participants' food procurement practices and any changes during the U.K.'s lockdown. Participants were asked to contribute their email address to be interviewed (see Appendix 1 for the questionnaire questions). All respondents who left their email were contacted and these interviews are the basis for the findings. Interviews were held between week 7 and week 12 of lockdown (please see Appendix 2 for the interview questions). In total there were 19 semi-structured interviews with 5 men and 14 women on their households' usual food practices, lasting between 1 h and 2.5 h (please see Table 1).

Interviews were either recorded Skype, MS Teams, Zoom or telephone conversations, necessitated by the pandemic. This still provided the opportunity to co-construct rich data (Alshenqeeti, 2014). As found in previous research (Oltman, 2016) this additional distance can create a

Table 1
Participant information.

Name[a]	Gender	Household Income/Year	Age	Household	Location
Rowan	Woman	£31-40,000	20–29	2 adults	London
Isabel	Woman	£31-40,000	50–59	2 adults	Edinburgh
Barbara	Woman	£30–39,000	60–69	2 adults, 1 carer	Bristol
Sarah	Woman	£50,000+	30–39	2 adults	Town Near Bristol
Laura	Woman	£31-40,000	40–49	2 adults	Town in Midlothian, Scotland
Natalie	Woman	£21–30,000	20–29	2 adults	Stevenage
Sophie	Woman	£50,000+	40–49	2 adults	Worcester
Lauren	Woman	£21–30,000	30–30	2 adults, 2 children	London
Carol	Woman	£50,000+	50–59	2 adults, 3 children	Town Near Bristol
Vicky	Woman	£31-40,000	50–59	2 adults, 2 children	Town in West Lothian, Scotland
Abi	Woman	£31-40,000	30–39	2 adults, 2 children	Town Near Leicester
Kathryn	Woman	£41–49,000	30–39	2 adults, 2 children	Bristol
Naomi	Woman	£50,000+	30–39	2 adults, 2 children	Bristol
Debbie	Woman	£21–30,000	50–59	1 adult, 1 child	Manchester
Herbert	Man	£30–39,000	20–29	2 adults	Birkenhead
Stephen	Man	£20–29,000	30–39	2 adults, 2 children	Liverpool
David	Man	£41–50,000	30–39	2 adults, 4 children	Town Near Manchester
Paul	Man	£50,000+	60–69	2 adults	Town Near Bristol
Peter	Man	£31-40,000	30–39	2 adults, 2 children	Manchester

[a] Names are pseudonyms chosen by participants.

safe space through which to discuss difficult topics, and some of these interviews approached shame, frustration and guilt. Data was reflexively thematically analysed (Braun & Clarke, 2019) using a grounded approach and a critical bricolage framework, (Kincheloe, 2005). In practice, this means that themes were in a continuous cycle of analysis, triangulation with the questionnaire answers and respondent validation (Torrance, 2012).

Ethical approval was approved by UWE's Ethics Committee before commencement of the project (UWE REC REF No: HAS.20.03.156). Interviews were conducted with fully informed, ongoing consent. All identifiable details were anonymised, and names are aliases which have been chosen by participants. All interviews were recorded and transcribed with permission. Interviewees were offered a copy of this transcription for comments, and a copy of the findings for their comments. All data were stored on a password encrypted remote hard drive.

Interviewees lived permanently in London, Bristol, Edinburgh, Manchester and Liverpool or neighbouring areas, and had disposable income enough to be able to meet the U.K. average without-children household expenditure on food of £61.90/week (ONS, 2019a). There were no participants from Wales or Northern Ireland. All participants' household income exceeded £21,000 per year and all participants were aged between 24 and 69. This means that households most likely to experience food insecurity and/or poverty were not interviewed, those with limited income and older individuals (Dowler & Connor, 2012), and these interviews cannot approach these experiences. Of 19 households, eight contained two adults, eight were two adults and two or three children (of which 5 were independent children), one contained 2 adults and 1 carer and one household contained two adults and four children.

Given the context of this study (stockpiling during lockdown), it was

anticipated that both social desirability bias (Fisher, 1993) and demand characteristics (Orne, 1962; McCambridge et al., 2012) would be particularly relevant, and so triangulation was introduced to counter-balance the negative impact on validity (King & Bruner, 2000). The distance created between the researcher and interviewees through conducting online interviews will have mediated both of these effects. Further, there was little emphasis on stockpiling at the beginning of the research process. All interviewees were informed that the interviews were intending to understand the lived experience of lockdown and changes in food habits including ways of cooking and organising the mental and domestic labour of eating. The theme of stockpiling was emergent through the research process. Themes were actively co-constructed between researcher and participant (Miller, 2017), meaning that the accounts here are a result of not only of the partici-pant's narratives of their own experience but will also have been affected by the interviewer (Birch & Miller, 2000). In order to mediate the interviewer effect, interviews were analysed in the context of par-ticipants being masters of their own life-worlds (Todres, 2017), and so the analysis gave due deference to these experiences throughout.

3. Results

This article shows changes around food practices during the COVID-19 lockdown in the U.K. in households at or above the U.K.'s average national food expenditure (ONS, 2019a). The notion of stockpiling as irrational, selfish and emotionally motivated is not supported in this data. Instead, stockpiling is a considered reaction to ongoing food shortages aggravated by the JIT supermarket delivery system. Stock-piling that occurred within this sample is actually one arm of a multi-faceted resilience strategy enacted by households to manage the shortages in supermarkets during the beginning of lockdown. This findings section moves through a discussion of stockpiling behaviours, and then to resilience strategies: changes in food outlets utilised, buying earlier and extra, the informal economy, preservation, changes in the home economy, and planning. To begin, this section turns to the role of notions of risk and anxiety.

3.1. Risk and Anxiety

The themes of risk and anxiety often mirrored phrases that were present in media reports and governmental outputs (such as "unpre-cented situation"). These themes of risk and anxiety were particularly present during supermarket visits, as these were one of the three reasons for which the U.K. population were permitted to leave the house during this time period. All but two participants discussed at great lengths the measures taken to avoid contracting coronavirus, including cleaning practices upon returning home and changing times of activity to avoid other people. Participants connected these behaviours to managing risk and anxiety, evidenced in new cleanliness behaviours, or 'washing the shopping'.

3.1.1. Washing the self and the shopping

Risk is foregrounded by Beck's (1992) classic definition, in that the spread of COVID-19 was intimately connected to globalisation. The advent of the COVID-19 pandemic has further compounded anxious embodiment by adding to the list of reasons for anxiety around food. Food anxieties on a social scale originate cognitively and the body be-comes the holding bay for these anxieties (Kjærnes, 2016).

The bodies in this study were painfully ever-present and under threat of COVID-19. The luxury of the 'absent' body (Leder, 1990, p. 2) was replaced and instead individuals were temporarily '(dys)embodied' (Williams, 1996, p. 25), or dysfunctionally embodied. The notion of risk was experienced alongside emotions of fear, anxiety and doubt – the fear is of an invisible threat entering and superseding the bodily boundary (Douglas, 2002). Risk was the major mediator for activities outside the home, mediating the number of times that participants left the home,

entered supermarkets, cleaning both themselves and their clothes upon return:

> Jenny: being in a supermarket unable to control what other people are doing I find a half an hour shop I would come home and feel like I was infected and I wanted to come home and clean and put every-thing into quarantine and just be very kind of anxious about there being virus everywhere

> Abi: the last time my husband came in with the shopping I was like don't touch daddy no! get the food away! we closed them in another room and it was like upstairs, have a shower he decided to shower after coming back with the shopping … it's such a bizarre world we're in at the moment

Jenny and Abi discuss significant anxiety at the prospect of con-tracting COVID-19, and the people around them, and changes both their behaviour, and temporarily, their relationships with their family. Par-ticipants also discussed washing the shopping:

> Rowan: we wash the shopping we get home and everything that's food cupboardy and stays in the bag and is left for 3 days unless we need it in which case it gets wiped down or we touch it and then wash our hands, everything in the fridge we stick it in the bath and turn the bath on swish it round with washing up liquid I've got it down to quite a good - the fresh loose veg goes in first without any washing up liquid just in cold water and is scrubbed, then washing up liquid goes in and everything else goes in anything without like perforations in it gets washed … you just have people making your life more difficult when you're in the supermarket trying to be considerate of other people and you get someone walk straight up to you and you're like *f*ck off*!

Visiting the supermarket became a particularly conflicted activity – both necessary and potentially lethal. Other people were a considerable source of anxiety. This is not within the scope of this article, but it is reasonable to imagine that this level of anxiety is likely to encourage anxiety behaviours or exacerbate previously existing health anxieties (Rajkumar, 2020). Anxiety predicated by a sense of risk was a repeated theme throughout the interviews and acted a structuring factor for planned and actual activity. Although these interviews were completed to understand stockpiling, in actuality these interviews revealed resil-ient extra procurement.

3.2. Stockpiling vs. Extra Procurement

Interviews suggest that while modest extra procurement did occur, panic buying or stockpiling did not. Participants in these interviews distanced themselves from the act of stockpiling altogether and were critical of it:

> Kathryn: I think what was really ugly about the panic buying stage was the height of uhh individualistic behaviour, the height of selfish behaviour

> Naomi: something slightly untoward happens and everyone panics and I felt like it wasn't the shops fault it was the people's attitudes that led to them having to put on these restrictions

> Herbert: it was like a really shameful thing to be doing .. I think it's because it's an inherently selfish action to take especially when there isn't necessarily a shortage, it was always portrayed as a shortage that was self-caused and self-perpetuating, which meant that the people who were doing it caused it and they were the ones at fault … I would be embarrassed to go up to a till with five 20-packs of toilet roll

Taken together, stockpiling was portrayed as "individualistic", "selfish" and "self-perpetuating" behaviour which caused supermarkets

to limit the freedom of others. There is a sense of the parent-child dynamic to these descriptions; the supermarkets placing caps on items were behavioural corrections. Despite this characterisation, *all* participants also ensured that they had enough food to stay inside for 14 days:

> Kathryn: I normally buy a nine pack of toilet rolls, and a couple of weeks before lockdown maybe and I went to the shop and I bought two packs of nine rolls
>
> Naomi: we bought the same stuff, we did get more cans but we didn't stockpile it was like ok, better get a couple cans of beans, get some extra tuna stuff like that we didn't buy anything that we didn't usually buy, but it was just the tactic was there

Kathryn and Naomi's comments have been selected here to give an example but they are not unusual, this pattern is repeated across every interview to greater or lesser extent: stockpiling was criticised, though every person also tried to ensure that there would be enough food by buying a small amount more. Stockpiling was understood by participants as it had been discussed in the media and outlined above; a panic-led, individualistic behaviour which meant that large amounts of the same items were bought (for example, a trolley full of flour or canned beans). Therefore, my participants distanced themselves from this behaviour (seen in section 3.3.1 below).

In contrast to the governmental and media explanations of stockpiling, it is a primary argument in this article that extra procurement is a resilience strategy. In the long term, the term stockpiling should be avoided in favour of extra procurement for future examinations of extra procurement.

Brexit was mentioned in close connection with stockpiling, as seen in Herbert's comment, but also in Barbara's:

> Herbert: I think, thinking about it, in terms of what I would personally do in the future, I shall now be having a little stock pile, it's not an unreasonable thing to have, particularly with Brexit round the corner, I would now consider myself more likely to stockpile beforehand
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> Barbara: I upped my stocks quite deliberately as soon as the Brexit went through I try to have about two months in hand … when they were going on about all these people who were bulk buying and hoarding, I thought well I'm not doing that because I've already done it!

In six interviews, connections were made between the COVID-19 pandemic and Brexit, in that COVID-19 was considered to be a 'practice run'. In particular, the fear was that these shortages would be seen again immediately following the U.K.'s departure from the EU. This fear is likely to have foregrounded extra procurement, and so some participants were primed to engage in extra procurement by fears regarding the impact of a no-deal Brexit, an event far preceding the COVID-19 lockdown.

In the interview with David, who is in a household of six, he discusses with anger being tricked into stockpiling due to lack of access to food – importantly, he did not buy more than his household would usually consume in the same period of time:

> David: what really really pissed me off about it was, I think I fell into the trap of hoarding, not because I feared that I was gonna run out of stuff I started to hoard because I knew that the click and collect slots[4] were few and far between, you couldn't get regular weekly ones … I felt a little bit wrong turning up and hoarding all this food in my van because it looked like I was buying to sell because I had that much I felt really guilty I felt really self-conscious about it

Extra procurement was, in this case, inevitable due to the shortages and difficulties in access. This quote also demonstrates the significant negative connotation in being someone who stockpiled – it carried a significant stigma (Goffman, 1963). David is very concerned not to appear part of the problem group responsible for stockpiling, despite not "hoarding". Panic-led stockpiling did not occur in this sample, and instead, extra procurement should be regarded as a form of resilience. It is first of the resilience strategies highlighted in this article.

3.3. Resilience strategies

There are five resilience strategies in addition to extra procurement that came through in these interviews: earlier, unusual procurement, use of alternatives, use of the informal economy, changes in the ordering of the domestic food economy, preservation methods and planning. Each of these were used extensively by participants, and the adoption of these represents a significant change in the daily life of participants.

3.3.1. Earlier, unusual procurement

Although there was significant change in the kinds of food procured, and procurement strategies changed, there was limited change to the reported amounts of food bought, to the amount of two or three cans of beans or tomatoes or an extra packet of chicken pieces, or one extra package of toilet roll that fitted with usual shopping habits. As discussed in section 3.2, this was not viewed by any of the participants as stockpiling portrayed in the media, and instead it was a way of ensuring that their household did not go without food. Two important distinctions between the two were amounts bought and what was bought. So for example, one or two items extra of the foodstuffs that are regularly consumed in the household was not considered stockpiling, but buying a case or shopping trolley of one item was considered stockpiling. Therefore, for the people in this sample, they were not stockpiling, they were being responsible and careful.

In addition to extra procurement, interviewees discussed both shopping earlier, and buying items which were not normal for their household. This latter, 'unusual' procurement was often to adapt around unavailable foods. This was particularly marked in households with children, adult children and/or other adults for whom the interviewee had caring responsibilities. Both were acts of care (Lupton, 1996) over panic:

> Naomi: I wasn't leaving it until we were completely out of food … but we were shopping a few days before that because if there's no food we've got to make sure that we've got a few days' worth here for the kids

Naomi in her interview jokes about usually leaving food shopping until the cupboards and fridge are noticeably bare, but since lockdown, she has been sure to go food shopping a few days before stocks run low 'for the kids'. She lives with her partner, but their children take priority. Buying food earlier is clearly an example of care for their wellbeing and protection from hunger.

Unusual items were bought as an alternative to a usual and preferred item where there was limited or no availability. For example: wholemeal rice or pasta rather than white or plain flour rather than bread flour:

> Kathryn: At the height of empty shelves and going [to the supermarket] and being like, no I have to buy UHT milk, there's no milk

Kathryn states here that 'there's no milk' and therefore she felt she had to buy an alternative to her usually preferred milk. This is an interesting snapshot into usual food procurement, in that UHT milk is considered 'not milk', it is outside of her usual food habits and therefore is not considered legitimate. Participants who criticised panic buying did so partly because there were "always alternatives" but it is seen here that needing to choose alternative foods was quite considerable change.

Where extra food was bought for comfort, participants relate this

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back to their childhood:

> Herbert: I bought club bars[5] for the first time in ages, we had them when we were kids and then you didn't really buy them when you were an adult … I saw them and thought I remember them being nice, I could do with something nice at the moment

> Isabel: I haven't done this as an adult I haven't bought custard powder and next time I saw it at a supermarket I was like I'm having some of that!

Both Herbert and Isabel are in different life stages and are not under financial strain, and yet they have reverted back to foods from childhood. This link between comfort food and childhood has been established (Locher et al., 2006) but in this instance it suggests that the search for comfort has manifested partly through procurement of unusual foods.

3.3.2. Use of alternative outlets

This use of alternative food shops were responses to supermarket food shortages. All of the major six supermarkets were discussed, and most frequently Tesco, Lidl and Aldi. This broadly mirrors Kantar's current league tables (Kantar, 2020b). These supermarkets were also still the most common sources of food procurement before the lockdown. During the lockdown, the notable change was the diversity of alternative food sources sought during the periods of food shortage in the U.K.

All but 2 of 19 interviewees usually shopped at one specific supermarket before lockdown. Fourteen of the interviews mentioned visiting alternative food outlets during lockdown. These included independent supermarkets, corner shops or receiving home deliveries or placing orders from local and/or independent outlets:

> Debbie: there's a friend of my son who has a catering business and they downscaled so instead of bigger parties, they do smaller food now, they do Mediterranean food so we've been using them … we've had a veg box from the local farming places the local farmers market, so it all works really so why not do it?

These changes were at points positively regarded due to the perceived increased quality of the new foods that exceeded supermarket quality:

> Sophie: the veg we get from the stall at the garden centre lasts longer than the supermarket veg we got before and it tastes so much better

Increased time flexibility was also a feature as to whether or not participants said they would continue with new shopping habits, as Herbert says:

> Herbert: I quite like the flexibility that I have at the moment and I felt before like Saturday morning was just for shopping, whereas now I can go during the week at random times and still have a full weekend

Flexibility, and convenience, is increasingly important in food procurement and preparation (Warde, 1999) so positive regard for foods that allow more flexibility is unsurprising. Although this looks like Paddock's (2016) alternative consumption, for many interviewees the flexibility afforded was at least in part due to their being able to work at home, and so it is unlikely that this flexibility would be maintained once usual working patterns resume. This suggests that it is the changes to the working week that creates this sense of flexibility rather than amended shopping habits.

There was also a strong concern across the sample to support their local communities:

> Debbie: I do think it's alright we can live much simpler lives and support our local people y'know because they are *our people,* they're our community and we *should* support them

The people in this sample were concerned about their own food supply as many food items were still hard to find. The government's response to these food shortages has been inconsistent (Power at al., 2020), and there was little unified public messaging offered about the food shortages, save denying them. This response is at odds with participant's experiences which weakens trust (Lang, 2003; Price, 2020) and creates further anxiety (Jackson, 2015). These references to supporting the local are examples of defensive localness (Winter 2003), in which a support of the local is an assertive response to difficulty and perceived incompetence in the wider social structures.

3.3.3. Informal economy

In every interview bar one there was participation in the informal food economy of friends, neighbours and family which was new for participants and began during lockdown to mitigate lack of food and potential hunger. This includes food received as food parcels from external organisations, supermarket runs, and items added to other's supermarket shops or online shopping lists, and all but three participants procured food for others. In 10 interviews interviewees also discussed neighbourhood groups, on WhatsApp or Facebook, that were active in food distribution. Three participants had engaged with these groups in order to receive food. In three cases, the informal economy temporarily became the main form of food procurement due to suspected coronavirus, in 5 cases this was due to shielding or self-isolating. For the rest of the sample the informal economy was a way of managing shortage, risk and lowering the number of supermarket visits. The informal economy proliferated during the lockdown experience for this sample:

> Kathryn: when I've realised I need to do a shop in Aldi I text my mum right do you need anything? and she gives me her list as well … we've started getting a veg box and now I've got a regular fortnightly veg box … so on Friday I'll go down and pick up one for my parents in law, drop that off and another for their friends

This amount of procurement for others was common in the sample. The vast majority of food passed through pre-existing social networks, and provided a buffer for these interviewees, their neighbours, friends and family. For those with parents in another city, the informal economy could become quite complicated, operating through other extended family members:

> Isabel: I've only just managed six weeks in to get them a shop but even then, the slots are like gold dust … my mother's not enjoying not going out and trying to get her the food she likes without winding up the family member, these are not easy things!

This is another increase on the mental load and emotional labour for individuals already challenged by changes in daily behaviours, shopping habits and the requirements of staying inside.

3.3.4. Changes in the ordering of the domestic food economy

The domestic food economy encompasses the procurement, production, preparation and disposal of food in the home (McIntosh & Zey, 1989). Women in the sample were responsible for the majority of the foodwork in their households. Women's primacy in food studies is a long established trend (DeVault, 1991). Women retained the majority of the foodwork during lockdown. This was true for all but three households in the sample. For all but 2 households, the 'order' of food shopping changed – instead of buying food according to meals they liked, households primarily cooked and ate what was in the cupboard, shopping when it was necessary. This also encouraged changes in the amount wasted:

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[5] *Club bars are a long-standing brand of cost-effective chocolate biscuit.*

Kathryn: it's a bit more interesting in some ways it forces you to eat different things try and use it up and not waste it I found a way of cooking swede finally that my husband will eat so that felt like a win

Food waste was a worry for many of the interviewees. For 18 households, waste was viewed as an individual problem, rather than a systemic issue (Evans et al., 2012):

Lauren: I feel like we're being a bit more wasteful again, not massively but slightly, I'd like to be less like that

Participants raised the issue of their own food waste autonomously, despite not explicitly being asked at any time in the interviews. Food waste is not usually seen as particularly important by members of the public (Evans, 2012) and so this represents a significant departure from current literature. The issue of food waste has become more visible during lockdown, reflecting the salience that food took on in lockdown in a wider sense.

3.3.5. Preservation methods

Changes occurred within the home also in how food was stored. Broadly, food was bought, frozen, and therefore stored in bulk:

David: so, these are the big freezers I wheeled them out the garage and I put all the fresh food that I could freeze in there safely and they are full vegetables that you can freeze and beans, they're in the freezer … milk, we overordered on milk and I froze that. We had to move our diet over to frozen food so kievs and pizzas

Herbert: we make a list of things we might like, and I'll go and buy them and we freeze stuff down that can be frozen so meat, milk, any veg

The regeneration of the freezer as a form of active storage is particularly marked within these interviews. The freezer has been a fundamental aspect of convenience in food (Pantzar et al., 1999), but these interviews suggest that the freezer has been temporarily redefined as a resilient way of managing shortage.

Several participants also bought items in containers much bigger than they would usually buy where it was the only option available:

Abi: he bought a massive ridiculous bag of flour and it's too big to go in a cupboard so it lives under the stairs .. we have to scoop it with a cup to make stuff from it

Laura: I've a 5kg thing of oil cause that's what there was

Space in the home became a bulwark against shortage and an important way to manage shortages. This highlights that for those with limited living and or storage space, there would be less capacity to manage shortages through less opportunity to store large containers of food. It also highlights that for poorer households, buying larger containers of food and drink would not be an option available for them, adding to the difficulties encountered by households on lower incomes (Trussell Trust, 2019).

3.3.6. Planning

Planning and list-making became a time-consuming activity. Meal planning required much closer attention as opportunities to eat outside of the home were removed. Making a list became necessary as opportunities to procure food was limited. This meant the re-introduction to shopping lists of lunch foods, children's lunch foods, snack foods, and regular meals and drinks that individuals would usually have been eaten outside the home. For example, a take-away coffee and lunch or a roast dinner on a Sunday:

Carol: you can only buy 80 or 85 items and I've realised it's just not quite enough so I've had to really think about what I'm buying in multiple packs so you can reduce your number which is quite interesting in itself, so if I buy 5 bananas that's five items, if I get a

bag of bananas that's one .. so, you have to think differently about it which is *interesting*

As seen in Carol's statement, there was a significant thought shift required for online ordering. There were also several mentions throughout the interviews of the irrationality of the limits introduced by the supermarkets, as mentioned in Carol's statement above with bananas. If loose items were bought, they counted as separate goods. Whereas if items were bagged together that counted as one item. This can be seen as the influence of the bureaucratic nature of supermarkets, and so a feature of the irrationality of rationality (Ritzer, 2013).

The activity of going to a supermarket also became very planned and co-ordinated, and took a considerable toll on many of the participants:

Rowan: yeah, together we write out a list, and we divide a page in half of what I'm gonna get and what he'll get, he'll get the dry goods and I get the fresh stuff, I'll take a trolley and he'll take a basket, it's very much a military operation, then I find him, he puts his stuff in the trolley and I help him pick up the rest and then we go to the queue, it's definitely a lot more organised that it was and it takes like an hour, it's kind of traumatic like you're really fatigued afterwards

In addition to the emotional aspect of managing risk, participants also had to manage the mental load and time demand of this extra planning. This is a counterpoint to the increased flexibility seen in section 3.2, shopping trips were rare but when they did occur they were much more intensive and considered activities than pre-lockdown. Food procurement during lockdown created a greater demand on thought, from planning meals and shopping trips, cleaning the self and the shopping when returning home, and acceptable behaviour within supermarkets.

3.4. Poverty of access

Although no interviewees said that they had missed meals due to a lack of food, there was loss of access to food and particularly for shielding participants securing food was very difficult. There were complex, nebulous bureaucratic processes reported by interviewees, completion of which often resulted in being told that the supermarkets had no capacity:

Barbara: Sainsbury's were saying they were prioritising vulnerable people and they had a telephone line and usually you got told there were too many and sorry try again and one time after many attempts I got through and I was sent all around the houses only to be told there wasn't enough people to answer the phone and answer the phone another time and I gave up eventually.. Morrisons had a massive queue their app stopped working … you had to go online and they put you in a queue for 30 mins 45 minutes whatever, try again later, I'd never really shopped online at Tesco's but I tried Tesco's I couldn't get through Iceland I couldn't get through, I sometimes go to the shop in town and I will do a shop and then they'll deliver it and I rang the shop and I explained the situation but they hadn't got a driver but as soon as they came back they're ring me and take an order on the telephone, well, they didn't

Barbara's statement here offers sense of the suffocating heaviness of her experience, and it merits being read aloud. Barbara later elaborates that this experience has highlighted her 'lack of independence', which was 'a bitter pill to swallow'. Barbara did not experience a lack of food, but procuring food took a considerable amount of time, energy and patience. David and Debbie, also in shielded households, experienced similar powerlessness the face of procedure in procuring for their families. This bears remarkable similarity experientially to the sense of being in a cage of bureaucratic irrationality (Ritzer, 2013; Weber, 1905). Further compounded by the sense of anxiety which has affected all interviewees, the ability of shielded individuals to procure food for their own families was severely compromised as they felt had fewer options to

rely on.

While the support network that had emerged in Barbara's neighbourhood was discussed as largely a positive thing, it also reflected a sense of personal loss of freedom and independence, feelings often followed by guilt and shame (Garthwaite, 2016). This had been exacerbated significantly by the difficulty Barbara experienced in trying to procure food adequately for her household (as above). The extra unpaid food labour in managing the food shortage in a way that maintains nutrition for their households suitable for purposes of management of illness and/or disability is a double burden (Hochschild & Machung, 2012) and in turn, a form of symbolic violence (Krais, 1993).

4. Discussion

The argument presented is that the stockpiling behaviour presented in medias did not occur in this sample. There is also further evidence that it did not occur widely; for one week and involving 3% of the population (Kantar, 2020a). What is demonstrated in these interviews are six resilience strategies, only one of which features extra procurement. Households in this sample demonstrated significant flexibility in where and how they shopped, storage methods and disposal, all of which required significant mental and logistical thought work. Lockdown and the resultant food shortages have been nothing short of a complete change in terms of the domestic food system, taken on as an individualised task to manage their own food supply. For all participants, but especially those shielding, the need to protect family members and themselves has at times come into acute conflict with the need to eat. This has been a particular feature of food procurement during lockdown in the U.K.

It bears repeating that none of these participants reporting stockpiling; instead, every household ensured that they had enough food for their families in case of needing to isolate inside their own homes for 14 days. It can be seen throughout this article that all of these resilience strategies were considered, agentic adjustments. Freezers were re-engaged, extra-detailed shopping lists made and both food itself and the people buying it were meticulously washed as risk was managed. These behaviours both represent and require considerable planning throughout the period of lockdown in many areas of day to day life, contrary to the idea that changes in shopping habits were due to panic-led stockpiling. Agentic, considered and meticulous behaviour that is repeated over many weeks and months does not support the form of stockpiling outlined at the beginning of the article, which is erratic and emotionally based. The term 'extra procurement' should instead be used for the buying habits demonstrated during lockdown. As an aside, if this extra procurement enables individuals to better meet a government regulation (in this case, to stay inside for 14 days) then it might even be looked on as obeyance.

This article also highlights that there is growing cause for anxiety on an individual level regarding the food system. For Kneen, distancing is the primary logic of the contemporary food system, which is 'increasing the physical distance between the point at which food is actually grown or raised and the point at which it is consumed' (1993: 37). Because we do not know where our food has come from, who has touched it or how it was treated, we do not trust it. For Jackson (2015) food anxieties are high despite the current increasing availability. Although initially a paradox, food anxieties originate because foods are placeless until they arrive in the supermarkets. This creates a lack of confidence and trust which in turn gives rise to embodied anxiety (Abbots, 2017). The process of the U.K. leaving the E.U. suggests that food chains will be longer still, and food will become even more placeless.

The food systems at play in the U.K. are already vulnerable. This is clearly revealed through the shortages seen during lockdown. However, these were just one feature of difficulties within food distribution, and the shortages are the first major examples of supplier shortfall in distribution seen in the U.K. There is, moreover, an ongoing and wider issue with financial distribution. The rapid expansion of food banks and food

re-distribution organisations should be seen as a health barometer: the more food banks, the more the food landscape in the U.K. is struggling. An important feature of resilience in the food system is accessibility, and therefore, the causes of inaccessibility are flag points which merit further consideration. In the U.K. these flag points are lack of income and delays in benefit payments (Trussell Trust, 2019a). There is a great wealth of empirical literature re-stating this link. However, the number of food banks continues to rise. The U.K. government's current intention is to leave the E.U. at the end of this calendar year which creates potential for further vulnerability through both economic instability and inadequate, unsafe and disrupted supply chains. Several participants in this study were already bracing for shortages through extra procurement, and if a significant percentage of the population do likewise, we may see more empty shelves in the future. This will create further difficulty in provision which will be compounded by pre-existing issues in access.

4.1. Strengths

The primary strength of this study is the timing of it, which gives greater validity. The aim of the study was to capture what was changing in relation to food procurement during the COVID-19 lockdown in the U.K. To that end, interviews took place during the strictest phases of lockdown, and it is this which gives the interviews their richness. Participants were living through what they were discussing, and so the interviews benefit from a connection with the emotional aspect of procuring food during lockdown. As the interviews continued, participants started to discuss the end of shortages on some food items allowing a discussion of change and comparison in the moment. This allowed for greater understanding of how the participants moved through this period of time in a much richer and deeper way. The validity introduced by the timeliness of these interviews is of crucial importance in this study.

4.2. Limitations

Although the study took place at the time and is high in validity, the limitation of this is that the study engaged a small sample and was not representative of the U.K. as a whole. While this research can offer a *valid example* of the experience of food procurement during lockdown, it should be considered a first step into understanding stockpiling in the context of COVID-19. Participants were dispersed across England and Scotland and so Wales and *Ireland* are not represented. The lack of representativeness is further exacerbated by the recruitment strategy. The online questionnaire, while able to generate lots of responses, also means that the sample was entirely self-selected. The self-selected sample combined with the time urgency damages representativeness. Further study should engage a larger sample and do so across the United Kingdom.

4.3. Implications

There are two significant implications of this article: firstly, that more research is needed within certain groups. Secondly, extra procurement is documented here as a novel response to anticipated shortage.

Firstly, the findings highlight the need for further research with groups who are likely to have found food procurement during shortage much harder. For example, those with pre-existing illness and disability (Trussell Trust 2017), BAME groups (ibid.), elderly groups (Purdam et al., 2019), and those with lower incomes (Lambie-Mumford, 2015). The resilience strategies highlighted above are harder to achieve if you fall into these categories. This is due to limited capacity to physically investigate other options, lack of space to store extra food, and the time and financial flexibility to buy extra food. For elderly groups, digital literacy and access to an internet connection is likely to have an impact

on food access during this time. Further research should focus on these groups, particularly in the context of potential future shortages caused by predicted COVID-19 outbreaks and the anticipated economic disruption represented by Brexit.

The second and main implication of this study is that it highlights extra procurement as a means of preparing for future food insecurity. Participants discussed extra procurement to manage shortages and potential future lack of access during lockdown. Several also mentioned pre-existing extra procurement habits in advance of Brexit. This suggests that there is distrust in regular food supplies being maintained during and after this process. The food shortages discussed in this article were widespread and became part of usual experience, which has not happened in the U.K. since rationing was ended. These experiences taken together with the approaching environmental crisis (Raiten & Aimone, 2017) and Brexit, the anticipation of or lived experience of food

shortages may increase, and so it is possible that this behaviour may become more common place in the future.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.appet.2020.104981.

Appendix 1. Questionnaire

Order	Question Text	Qualtrics Question Type	Answer Options
1	Where do you live? (Village/Town/City and Country)	Free Text	
2	How would you describe your gender?	Multiple Choice	Woman, Man, Non-binary, Other
3	Approximately, how old are you?	Multiple Choice	18-19, 20–29, 30–39, 40–49, 50–59, 60–69, 70–79, 80–89, 90–99, 100+
4	How would you describe your occupation?	Free Text	
5	What is your household's approximate income per year?'	Multiple Choice	0-10,000, 11–20,000, 21–30,000, 31–40,000, 41–50,000, 51,000+
6	Have you bought extra food in the last 6 months? *(If no, questionnaire moves to question 11)*	Multiple Choice	Yes/No
7	If yes, why?	Free Text	
8	If you have bought extra, how much do you think you have spent on extra food?	Free Text	
9	Of this extra food bought, is there either usual food items or brands that are in your regular shop?	Free Text	
10	Have you bought food that you would not usually buy? If yes, please say what they are and why you have bought them.	Free Text	
11	Has your experience of food shopping changed in the last two weeks particularly? If yes, how and why?	Free Text	
12	Have you had enough food consistently in the last month (even if it was not the food you preferred)?	Multiple Choice	Yes/No/Other
13	Do you think you will change the way you shop in the coming weeks? If so, why?	Free Text	
14	Out of 10, how much have the last three months changed how you think about the food system we have?	Multiple Choice	0- Not at all to 10 – A lot
15	If your previous answer is above 1, please give more details (What has changed? Is this positive or negative?)	Free Text	
16	If you are happy to be interviewed remotely, please include your email address here:	Free Text	

Appendix 2. Interview Schedule (Semi-Structured)

1. Introductions, ethics, does participant have any questions, confirm start of recording.
2. Name/age/living situation/etc.
3. Usual food shopping habits (before two months ago)
   - Online/delivery/in-person procurement
   - Usual purchases
   - Frequency of procurement
   - Which shops/foods preferred?
4. Last two months
   - Experience of procurements
   - Usual purchases
   - Frequency of procurement
   - Thoughts?
5. Understandings of food chain/food procurement before COVID
6. Any new food habits?
7. Any positives?
8. Anything to add that came to mind during conversation?

9. Closing, discuss pseudonym, offer copy of findings for review, final check in case of questions, re-iterate ethics.

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