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Social media is not the 'silver bullet' to reducing household food waste, a response to Grainger and Stewart (2017)

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Abstract

In our reply to Grainger and Stewart (2017) we concur with their observation on the need for evidence-based synthesis in examining the efficacy of behaviour change interventions. We argue that our paper (Young et al. , 2017) makes a contribution to the body of knowledge on behaviour change and in so doing it provides an important piece of the jigsaw in understanding the influence of social media on food waste behaviour.

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1. Introduction

Grainger and Stewart (2017) highlight several important points in their reply to our paper (Young, Russell, 2017). In our response we address the key points raised in relation to methods, evidence-synthesis and conclusions as to whether the use of social media is an effective intervention strategy to reduce household food waste. We are grateful to these scholars for their engagement with our research and we are happy to be able to respond by providing more detail on the points raised.

2. Methods: Sample size, effect size, and self-reported data

Grainger and Stewart (2017) state that "From the data that are presented in Young et al. (2017) we would conclude that there was no effect of the interventions and that there was no or a minimal effect of time on food waste behaviour. In addition, to a relatively small sample size (n = 2018) and small effect size the reliance on self-reported measures of food waste increases the risk of bias (as acknowledged by Young et al. 2017)."

Whilst we agree that a larger sample size is almost always desirable, our sample of 2,018 respondents is arguably a sufficient basis to generate a robust set of results. In this context, we note that out of the 390 individual studies that have been analysed in the evidence-synthesises mentioned in Grainger and Stewart (2017), only 23 have employed a larger sample when compared to our study (see Table 1). In the context of consumer research, meta-analytic reviews show that very few consumer studies (less than 10%) have sample sizes greater than 500 (Peterson et al. , 1985). Hence, we argue that our sample size is ample to demonstrate the effect of the food waste intervention on the targeted consumer population.

Table 1: Sample sizes of studies used in evidence-synthesises mentioned in Grainger and Stewart (2017).

Evidence-synthesises mentioned in Grainger and Stewart (2017)	**Focus of social media interventions**	**Studies employing larger sample than n=2,018**
Barak et al. (2008)	Psychotherapeutic interventions in the context of e.g. depression, tinnitus or binge drinking	01 out of 156 studies
Brouwer et al. (2011)*	Healthy lifestyle promotion	13 out of 64 studies
Davies et al. (2012)*	Physical activity	01 out of 34 studies
Kuijpers et al. (2013)*	Patient empowerment in the case of cancer survivors	00 out of 19 studies
Maher et al. (2014)	Health-related behaviour change more generally	03 out of 10 studies
Wantland et al. (2004)	Web-based therapies of chronic illnesses	01 out of 22 studies
Webb et al. (2010)*	Health-related behaviour change more generally	04 out of 85 studies

*mentioned in Short et al. (2015)

We agree with Grainger and Stewart's (2017) observation that p value and effect size are relevant, and for this reason have reported both statistics in our paper. Furthermore, our reported effect size of.01 is a small effect. We respectfully disagree, however, that this small effect size indicates no effect. It is not uncommon to find small effect sizes in consumer research (Peterson, Albaum, 1985, Wilson and Sherrell, 1993), but a small effect is not equivalent to no effect. Given the widespread use of laboratory studies and student participants in consumer research (Peterson, Albaum, 1985, Wilson and Sherrell, 1993), we argue that our finding of even a small effect from a field study with participants who are consumers is a unique and important finding.

As we note in our paper, the use of self-reported behaviour is a limitation of our research. Yet, this in and of itself is not a reason to discount the findings of this study. Indeed, Wilson and Sherrell (1993) show that only 6% of consumer behaviour studies observed behaviour. The pragmatic challenges of observing food waste behaviour meant that it was not possible in this study and we therefore relied on self-reported behaviour.

3. Evidence-synthesis

On the second point, Grainger and Stewart (2017) state that "Rather than suggesting that social media cannot be used as an effective behaviour change agent in the realm of food waste we suggest that Young et al. (2017) well illustrates the importance of evidence-synthesis. The lack of behaviour change from a relatively small sample of people in a study with an untargeted intervention provides one small piece of the jigsaw."

We agree that evidence-synthesis is crucial in assessing the overall advancement of a topic such as food waste interventions. Our social influence approach was based on an evidence-synthesis by Abrahamse and Steg (2013). Our aim was not to attempt to provide one definitive answer to the question of the effectiveness of social media interventions and thus

we agree with Grainger and Stewart (2017) that our study can and is one part of a larger jigsaw.

We do contend, however, that our study is arguably one of the more relevant parts of the jigsaw of the effectiveness of food waste interventions. Our study provides an input to the broader social media intervention evidence mentioned by Grainger and Stewart (2017). In particular our study is one of few field experiments as opposed to those conducted in laboratory conditions. We argue that laboratory experiments can be valuable in identifying behavioural effects but they cannot really assess the effectiveness of social media in getting people to reduce waste in practice (Peterson, Albaum, 1985, Wilson and Sherrell, 1993). We would therefore encourage and invite further field-based research in this area, including replication studies that further test the robustness of our findings.

4. Social media as an effective intervention for reducing food waste

Finally, Grainger and Stewart (2017) state that "The jury is still out on the potential for social media to influence behaviour change and hence reduce food waste but it is imperative that evidence still be collected and a variety of intervention strategies assessed. Disregarding social media as a potential effective intervention on the basis of any single study would be irresponsible and should not be advocated."

In responding to this point, we argue that research is about building up a strong evidence base and there is a need to report findings both positive and negative (Cumming, 2014). In our paper we have presented the findings of a field study and have been explicit about the methods and results. In contributing to the evidence on the effectiveness of food waste reduction interventions our research makes a contribution to this body of knowledge. We highlight the strengths and the limitations of our study in our paper (Young, Russell, 2017) and in this response and we maintain that the results of our field experiment show that social media was not a silver bullet in influencing household food waste reduction for the participants in our study.

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