Bringing Our Values to the Table: Political Ideology, Food Waste, and Overconsumption

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ABSTRACT

Consumers served large meals are often confronted with the tradeoff between wasting food and overconsumption. Although these outcomes are negatively correlated, researchers have rarely considered how individuals who subscribe to different political ideologies resolve this tradeoff. Two experiments show that when consumers are served large portions, making the potential for food waste salient produces opposing reactions among liberals and conservatives. Liberals become concerned with avoiding the negative environmental consequences of food waste and eat more than normal (i.e., they overconsume) to prevent waste. In contrast, conservatives focus more on taking personal responsibility to avoid the negative consequences of overconsumption and eat less than normal, avoiding overconsumption but producing more food waste. Practical implications for marketers and researchers are discussed.

Keywords: political ideology, food waste, overconsumption

Whether eating at home or dining in restaurants, consumers often encounter large servings of food. In some cases, they have clear opportunities to choose "right-sized" portions (Haws and Liu 2016) or save uneaten food for consumption later (Mirosa and Mirosa 2018). In many instances, however, these options are not available or salient. As a result, consumers are confronted with a tradeoff between letting food go to waste or overconsuming. This conflict is particularly pernicious today, as standard portion sizes in U.S. restaurants have been steadily increasing (Young and Nestle 2002; NHLBI 2013), as have concerns for the environmental impact of food waste, implicating a further clash of underlying values.

Although past research has confirmed the problems associated with overconsumption (e.g., CDC 2020) and food waste (Block et al. 2016) separately, it has seldom considered the tradeoff between the two adverse outcomes of overconsumption and waste. Overconsumption has the benefit of minimizing food waste but poses the risk of short-term physical discomfort as well as long-term negative health consequences (e.g., weight gain; Young and Nestle 2002; Haws and Liu 2016). On the other hand, wasting has the benefit of maximizing pleasure from the meal (Cornil and Chandon 2016), but has the consequence of discarding excess resources, a factor that increasingly concerns consumers whose attention has shifted to sustainability and climate change related issues (Dowd and Burke 2013; White, Habib, and Hardisty 2019).

Consumers' decisions are often shaped by their underlying values. Thus, this waste versus overconsumption tradeoff can be viewed through the lens of the inherently different values that politically liberal and conservative consumers hold (Jost, Federico, and Napier, 2009). Liberals tend to be outwardly focused, valuing the protection of vulnerable others and the environment, whereas conservatives are focused inward, attaching importance to personal responsibility (e.g., Caprara et al. 2006). Thus, political ideology might play a significant role in determining how consumers address the tradeoff between food waste and overconsumption. The current research tests the prediction that when waste is made salient, liberals will focus on the fact that unconsumed food will be discarded and harm the environment and will want to eat more to avoid waste. Conversely, conservatives will focus on their personal responsibility and will want to avoid overconsuming, causing them to eat less yet waste more.

THE POLITICS OF CONSUMPTION

A burgeoning literature has confirmed the important role political ideology plays in consumer decision-making (e.g., Jost 2017; Shavitt 2017). Political ideology is defined as a set of values and attitudes that include cognitive, affective, and motivational components, which explain how society should function to achieve social justice and social order (Jost 2006; Nail et al. 2009). Differences in underlying values can help to explain the role of political ideology in people's choices (Kidwell, Farmer, and Hardesty 2013; Farmer, Kidwell, and Hardesty 2020). On one end of the spectrum, liberals are known to value social benevolence (i.e., the protection and care for others; Caprara et al. 2006; Sterling, Jost, and Bonneau 2020) and place greater weight on issues of fairness (Graham, Haidt, and Nosek 2009). On the other end of the spectrum, conservatives place more weight on the maintenance of existing societal norms and matters of duty, self-promotion, and status (Caprara et al. 2006; Ordabayeva and Fernandes 2018; Ordabayeva 2019).

An understanding of these differences might help to explain preferences in diverse social domains, beyond politics. For example, research on the impact of political ideology on sustainable consumer practices (Hardisty, Johnson, and Weber 2010) has found that, due to their tendency towards benevolence values, liberals generally have greater concern about the

environment (Unsworth and Fielding 2014) and the human impact on the environment (Druckman and McGrath 2019) than conservatives do. Liberals are also generally more interested in purchasing local food for environmental benefits (e.g., reduced fuel for importation) compared to conservatives, who often find messages highlighting the environmental benefits of local food consumption unappealing (Witzling and Shaw 2019). Yet, consumers from all points of the political spectrum have shown an increase in sustainable behaviors with the right type of appeal. Notably, when persuasive appeals are consistent with consumers' underlying values (e.g., empathy, fairness and individuality for liberals; duty, authority, and adherence to group social norms for conservatives), the appeals are processed more fluently and are more successful in promoting sustainable practices, such as recycling behavior (Kidwell et al. 2013). Further, when foods were framed with health appeals that were incongruent with values tied to political orientation (patriotism and tradition for liberals, and social justice and sense of community for conservatives) they were less effective in influencing perceptions of healthfulness (Boeuf 2019). In short, specifically drawing attention to consumers' values can be effective in encouraging behavioral change, yet the path to doing so may differ based on political ideology.

Ideological differences in values can also be leveraged to understand how consumers resolve the tradeoff between waste and overconsumption in eating. We predict that when consumers are confronted with large portions of food, making waste salient to liberals can lead them to focus on food waste and its environmental implications for society at large, thus increasing their desire to avoid waste by overconsuming. This is supported by past research which suggests that liberals are generally more receptive to regulations surrounding food consumption (Lusk 2012), and are acutely aware of humans' role in causing climate change (Druckman and McGrath 2019). When waste is made salient to conservatives, however, we

predict it will lead them to link waste to overconsumption and a lack of self-control (Young, Hinnant, and Leshner 2015), which they will seek to avoid. Further, attempts to coax conservatives to avoid waste might be seen as coercion, which conflicts with their values.

Across the political spectrum, consumers in the U.S. are generally more concerned about overconsumption than food waste. As a result, large portions are likely to spontaneously activate thoughts about overconsumption rather than wasting. A pretest confirmed this assumption. Participants were shown either a small or a large portion of French fries then indicated how much the fries made them think about both wasting food and eating too much. Although large portions increased thoughts about both overconsumption and waste, it increased thoughts about overconsumption more than thoughts about wasting (see Web Appendix for full details on the pretest). This suggests that large portions alone are not sufficient to make food waste salient, highlighting the need for specific waste primes to bring this concern to mind for consumers. Interventions and/or subtle cues are necessary to activate the different cognitions associated with waste versus overconsumption when considering a large portion size.

Our central hypothesis is that:

H1: When served a large portion of food, making waste salient (versus not) leads (A) conservatives to consume less but (B) liberals to consume more.

We predict that these hypothesized effects are driven by (i) the importance that conservatives place on their personal responsibility to avoid the negative personal consequences of overconsumption and (ii) the importance that liberals place on avoiding the negative social and environmental consequences of waste. In a pretest of these assumptions (for details see Web Appendix), the concept of food waste was explicitly made salient to all participants by exposing them to a billboard reading: "USDA statistics show that 30% of food is wasted in the U.S." They indicated whether they thought food waste was more of a societal or personal responsibility, and whether food thrown out negatively affects the environment. Finally, they responded to a measure of political ideology used by Kidwell et al. (2013). Conservatism was positively correlated (r = .34, p < .001) with the belief that the problem of food waste was a matter of personal responsibility, but was negatively correlated (r = .26, p < .01) with the belief that waste was a societal responsibility.

These data support the notion that when the potential for food waste is salient, liberals are likely to shift their focus from themselves (their satiety) to the broader society, and that the resulting environmental concerns (Unsworth and Fielding 2014; Druckman and McGrath 2019) will lead them to overconsume in an effort to reduce waste. In contrast, making food waste salient to conservatives will shift their focus to themselves and the personal responsibility of exercising self-control (Ordabayeva 2019). Therefore, they are likely to avoid the negative consequences of overconsumption by eating less (and wasting more). However, because this effect is the result of a tradeoff, only when portions are large and the potential for waste is highlighted (i.e., the tradeoff between waste and overconsumption is made salient) will liberals overconsume to avoid waste and conservatives waste to avoid overconsumption. Specifically:

H2: When consumers are served a large portion of food, the interactive effect of political ideology and waste salience on intended consumption predicted by H1 is mediated by perceptions of the importance of wasting food relative to overconsuming.H3: When the portion of food served is small, the effects predicted by H1 will be attenuated.

These predictions were tested in two main experiments and one supplemental experiment (see Web Appendix for details). In all experiments, political ideology was measured and the salience of waste was manipulated. Experiments 1 and 2 both measure intention to consume and demonstrate the divergent directional shifts in consumption that result for conservatives and liberals (Hypothesis 1). Experiment 1 also tests whether the importance of avoiding waste versus overconsumption mediates the moderated effect of political ideology on intended consumption (Hypothesis 2). Experiment 2 replicates the key result using a subtler and more natural manipulation of waste salience (i.e., packaging waste) while also manipulating portion size to demonstrate the necessity of large portions for the effect of political ideology to emerge (Hypothesis 3).

Taken together, the findings demonstrate that consumers show opposing shifts in consumption patterns based on their political ideology and the salience of food waste. Specifically, a liberal political ideology can promote consumption choices that bear a personal cost (i.e., overconsumption) in an effort to avoid the environmental costs of waste. Conversely, a conservative political ideology can promote consumption choices that may increase environmental costs (i.e., waste) in an effort to take personal responsibility and avoid the personal costs of overconsumption.

EXPERIMENT 1

Experiment 1 tested the central hypothesis (Hypothesis 1) that political ideology and waste salience shape consumption decisions, while also addressing the underlying process stated in Hypothesis 2. All participants were shown a large portion size in this experiment to allow for the possibility of food waste or overconsumption. Additionally, an explicit prime of food waste

was used to make the possibility of food waste salient and thus to activate the tradeoff between waste and overconsumption necessary for testing Hypotheses 1 and 2.

Design and Participants

We employed a political ideology (measured) × 2 (waste salient vs. not salient) betweensubjects design. Amazon Mechanical Turk workers in the U.S. (N = 470; 54.9% female, 44.5% male, .6% other; $M_{age} = 39.95$, SD = 13.34) were recruited to participate.

First, participants read a vignette asking them to imagine they passed multiple public service announcement billboards on the road while driving to a restaurant for dinner. All then saw a billboard about texting and driving, and one about seatbelt safety. In the control condition, participants only saw these two billboards. In the waste salient condition, participants saw an additional billboard that read, "USDA statistics show that 30% of food is wasted in the US."

Next, participants were asked to imagine that, once at the restaurant, they ordered a large serving of chili cheese fries (see Web Appendix). Participants then indicated separately (i) how important it was for them to avoid wasting food and (ii) how important it was for them to avoid overeating (scales: from 1 = Not at all important to 7 = Very important, presented in a randomized order). After this, participants indicated the percent of the fries they intended to consume (0 – 100%). All participants were told: "Anything the customer does not use must be thrown out for hygiene reasons." Thus, participants were explicitly informed that food that was not consumed would be wasted, implying a waste versus overconsumption tradeoff.

All participants then responded to standard demographic measures, including a validated measure of political ideology (0 = very liberal, 100 = very conservative; Kidwell et al. 2013) and party affiliation (Democrat, Republican, Independent, or N/A). The latter was included to check

for consistency in responses (i.e., between political ideology and party affiliation; see Web Appendix for a discussion of this exclusion criteria). Finally, as an attention check, participants were presented with a multiple-choice question about their favorite food, and explicitly instructed not to make a choice. Any participant who made a choice was excluded from the analysis, following prior work (Oppenheimer, Meyvis, and Davidenko 2009).

Results and Discussion

Thirteen participants were excluded from the analyses for inattention. Six additional participants were excluded for inconsistent responses across political ideology and party measures, leaving us with a final sample of 451 respondents.

Intended Consumption. A bootstrapping analysis using Hayes' (2018) PROCESS for SPSS (model 1) tested the interaction of political ideology and waste salience on intended consumption (see Figure 1). Political ideology did not significantly affect intended consumption (p = .596), but the waste salience manipulation did (b = 10.89, p = .004). Central to our theorizing, the hypothesized interaction between political ideology and waste salience on intended consumption was significant (b = -.20, p = .009), with the pattern of results showing that when waste is made salient (vs. not salient), liberals intend to increase consumption (reducing waste) and conservatives intend to decrease consumption (increasing waste). A floodlight analysis (see Figure 1; also Web Appendix for full analysis) showed that for liberals, these differences are marginally significant (p < .10) at values ≤ 35.00 on the 100-point political ideology scale (representing 44.8% of the sample) and are significant at values ≤ 33.04 (representing 44.3% of the sample). For conservatives, the group differences are marginally significant at values ≥ 95 on the political ideology scale (representing 4.7% of the sample).



Figure 1. Intended Consumption as a Function of Political Ideology and Waste Salience (Experiment 1).

Note: The grey dotted line and shaded area indicate the Johnson-Neyman points at 33.04 and 95 along the x-axis (0 = very liberal, 100 = very conservative). Liberals in the waste salient group intended to consume significantly more than liberals in the not salient group at all values of political ideology \leq 33.04. Conservatives in the waste salient group intended to consume less than conservatives in the not salient group at values of political ideology \geq 95 (although we acknowledge this difference was marginally significant at p < .10). We note that although the comparison on the conservative side only includes extreme values \geq 95, taken together these regions of significance include 49% of the sample.

Mediation Analysis. We computed the importance of avoiding waste versus overconsumption by taking the difference, subtracting avoidance of overconsumption from avoidance of waste. Values ranged from -6 to 6, where higher positive values indicate greater importance placed on the avoidance of waste relative to overconsumption and more negative values indicate greater importance placed on the avoidance of overconsumption relative to waste. This variable was used as a mediator in our subsequent analysis to test Hypothesis 2. Please see Table 1 for mean values and correlations among political ideology, the importance of avoiding overconsumption,

the importance of avoiding waste, and the focal combined mediator measure.

Table 1. Correlations and Means of Political Ideology and Avoiding Waste andOverconsumption Measures (Experiment 1).

	Μ	SD	1	2	3	4	
1) Political Ideology	39.86	28.92	1				
2) Avoiding Waste	5.22	1.72	08†	1			
3) Avoiding Overconsumption	4.80	1.90	.06	08	1		
4) Relative Importance of Avoiding	42	2 67	- 10*	71***	_ 77***	1	
Waste (vs. Overconsumption)	.72	2.07	10	./1	//	1	

*Correlation is marginally significant at the .08 level (2-tailed), *correlation is significant at the .05 level (2-tailed), **correlation is significant at the .01 level (2-tailed), ***correlation is significant at the .001 level (2-tailed).

A bootstrapping analysis using Hayes' (2018) PROCESS for SPSS (model 7) tested the indirect effect of the interaction of political ideology and waste salience on intended consumption, mediated by the relative importance of avoiding waste (vs. overconsumption; see Table 2). The first path of the model tested the interaction of political ideology and waste salience on the relative importance of avoiding waste. The effect of political ideology was not significant (p = .939), but the waste salience manipulation was (b = 1.12, p = .009). More importantly, the interaction of political ideology and the waste salience manipulation (b = -.02, p = .028) had a significant effect on the relative importance of avoiding waste (vs. overconsumption). Supporting Hypothesis 2, the second path yielded a significant effect of the relative importance of avoiding waste (vs. overconsumption) on intended consumption (b = 4.64, p < .001). Finally, a significant index of moderated mediation supported our hypothesized indirect effect of political ideology and waste salience on intended consumption, through the relative importance of avoiding waste (vs. overconsumption; index of moderated mediation = -.09, 95 % CI = [-.175, -.006]).

		b	SE	Τ	р	95% LLCI	95% ULCI
	Political Ideology (PI)	<.001	.01	08	.939	012	.011
а	Waste Salience	1.12	.43	2.64	.009	.285	1.958
ath	PI × Waste Salience	02	.01	-2.2	.028	036	002
Ч	Simple Slope: Not Salient	<.001	.01	08	.939	012	.011
_	Simple Slope: Waste Salient	02	.01	-3.11	.002	032	007
	PI	02	.03	63	.530	084	.043
ath b	Relative Importance of Avoiding Waste (vs. Overconsumption)	4.64	.35	13.27	< .001	3.956	5.331
$\mathbf{P}_{\mathbf{c}}$	Indirect Effect: Not Salient	002	.03			057	.053
	Indirect Effect: Waste Salient	09	.03			157	029
	Index of Moderated Mediation	09	.04			175	006

 Table 2. Intended Consumption as a Function of Political Ideology and Waste Salience,

 through Relative Importance of Avoiding Waste (vs. Overconsumption) (Experiment 1).



Figure 2. Intended Consumption as a Function of Political Ideology and Waste Salience, through Relative Importance of Avoiding Waste (vs. Overconsumption) (Experiment 1).

Note: ** denotes a significant coefficient at p < .001, * denotes significant at p < .05, NS denotes not significant

The results of Experiment 1 demonstrate that when confronted with a large portion of food, making waste salient affects intended consumption differently based on one's underlying political ideology (Hypothesis 1). Specifically, conservatives decrease intended consumption (Hypothesis 1A), and liberals increase intended consumption (Hypothesis 1B). The interactive effect of political ideology and waste salience on consumption decisions (Hypothesis 2) is driven by a shift in the relative importance consumers placed on avoiding waste (vs. overconsumption).

A supplemental experiment (N = 193) was conducted to confirm that the hypothesized interaction of political ideology and waste salience is robust. As expected, the interaction

replicated, although the contrasts varied slightly.¹ Importantly, this additional study increases the generalizability of our effects by using different food stimuli—chips and salsa (see Web Appendix for full details).

EXPERIMENT 2

Experiment 2 was designed to test the boundary condition of smaller portion sizes. According to the proposed conceptualization, a waste versus overconsumption tradeoff should not exist when portions are sufficiently small because the possibility of waste and/or overconsumption is not viable. Further, waste within the context of food consumption can be made salient in many different ways, including portion size and also the type of packaging material used (e.g., single-serve plastics vs. reusable containers). Thus, in order to further generalize findings, a more subtle waste salience manipulation was employed, and a different food choice was examined. Specifically, the salience of waste was manipulated through a subtle cue that is typical in restaurants: the use of single-serve condiment packets (i.e., higher waste, as it wastes the condiment and packaging) versus a reusable cup (i.e., lower waste, as it only wastes the condiment). This manipulation extends our findings to other forms of waste that are harmful to the environment and relevant to consumers and managers alike. Additionally, as condiments are typically complimentary and smaller in size relative to an appetizer or full meal, they are less likely to organically activate overconsumption concerns, providing a conservative test of our predicted effects.

¹ The pattern of results of the supplemental experiment were slightly different from those of Experiment 1. Specifically, the differences in intended consumption between the waste salient and not salient conditions were more pronounced for conservative (Hypothesis 1A) and less pronounced for liberal consumers (Hypothesis 1B). We speculate that this may be due to the time when data was collected—May of 2020, shortly after the declaration of COVID-19 as a pandemic. See Web Appendix for a full discussion of these results.

Design and Participants

Undergraduate students at a U.S. university (N = 225; 57.8% female, 42.2% male; $M_{age} =$ 19.34, SD = 2.32) were invited to a laboratory session to participate in a political ideology (measured) × 2 (waste: more salient vs. less salient) × 2 (portion size: large vs. small) between-subjects experiment. They were asked to imagine going to a restaurant for breakfast and ordering a meal that included a side of toast with butter. To manipulate the salience of waste, half were served butter in disposable plastic packets (i.e., waste more salient) while the other half were served butter in a reusable cup (i.e., waste less salient). Pretesting confirmed that the meal was viewed as more wasteful when participants were served a large portion of butter in multiple disposable plastic packets (see Web Appendix for pretest details).

To manipulate the potential for overconsumption, participants in the large portion condition were served an oversized portion of butter (either in a large bowl or multiple disposable plastic packets), while those in the small portion condition were served a small portion of butter (either in a small cup or a single plastic packet; see Figure 3). Consistent with Experiment 1, participants in all conditions were told: "Anything the customer does not use must be thrown out for hygiene reasons."

Next, participants indicated how much butter they intended to consume (scale: 1 = very little, 100 = all of it), and responded to demographic questions, which included the political ideology and party affiliation measures used in Experiment 1, as well as some exploratory measures. No participants provided inconsistent responses to measures of political ideology and party affiliation, thus none were excluded from the analysis.

Figure 3. Experiment 2 Stimuli



Results and Discussion

A bootstrapping analysis using PROCESS model 3 (Hayes 2018) tested for the focal interaction between political ideology, waste salience, and portion size on intended consumption (see Figure 4; see Web Appendix for full analysis). No main effects were observed (all ps > .221). In addition, none of the two-way interactions attained significance (all ps > .507). Critical to our hypothesis, the target three-way interaction of political ideology, waste salience, and portion size on intended consumption was statistically significant (b = -.69, p = .038).



Figure 4. Intended Consumption as a Function of Political Ideology, Waste, and Portion Size (Experiment 2).

Note: The grey dotted lines and shaded areas indicate the Johnson-Neyman points along the x-axis (0 = very liberal, 100 = very conservative) ≤ 23.31 and ≥ 95.97 when the portion was large (top graph), indicate that liberals in the waste salient group intended to consume significantly more than liberals in the not salient group, while conservatives in the waste salient group intended to consume significantly less than conservatives in the not salient group. In the small portion size condition (bottom graph) Johnson-Neyman points ≥ 19.41 indicate that all but the most liberal consumers (i.e., < 19.41) in the waste salient group intended to consume significantly more than those in the waste not salient group.

Replicating the results of prior experiments, when the portion size was large (see top graph in Figure 4), there was a significant interaction between political ideology and waste salience (b = -.55, p = .014). Liberals consumed more (and wasted less) when waste was more salient (vs. less salient). Floodlight analysis showed that these group differences are marginally significant ($p \le .10$) at values ≤ 30.00 on the 100-point political ideology scale (representing 32.5% of the sample) and significant (p < .05) at values ≤ 23.31 (representing 27.2% of the sample). Conversely, conservatives consumed less (and wasted more) when waste was more salient (vs. less salient) in the large portion condition. The differences between the waste more (vs. less) salient groups are marginally significant at values ≥ 80 on the political ideology scale

(representing 7.9% of the sample) and significant at values \geq 95.97 on the scale (representing 3.5% of the sample).

Confirming the hypothesized boundary condition, when portions were small (see bottom graph in Figure 4), the interaction between political ideology and waste salience was not significant (p = .577). Participants generally intended to consume more when waste was more salient (vs. less salient). These differences are marginally significant (p < .10) at values ≥ 15.00 on the political ideology scale (representing 91.0% of the sample) and are significant at values ≥ 19.41 (representing 84.7% of the sample). Although speculating on why the effect of waste primes was not significant among the most liberal consumers when the portion was small is beyond the scope of the inquiry regarding the boundary condition, it might offer an interesting avenue for future research.

These findings extend those of Experiment 1 in two key ways. First, the subtle manipulation of waste salience used in Experiment 2 (i.e., disposable plastic butter packets vs. a reusable cup) provides a more conservative test of Hypothesis 1 and generally expands the scope of the key findings to other cues that might signal wastefulness. Second, by independently manipulating the portion size and waste salience, we show that the differential effects of political ideology only emerge when the portion is large, and therefore overconsumption is possible (Hypothesis 3).

GENERAL DISCUSSION

Taken together, these results demonstrate that when food portions are large and waste is made salient, conservatives and liberals respond differently. Specifically, liberals, who are more concerned about environmental effects of waste, overconsume to reduce waste. Conservatives, who are more concerned with personal responsibility, waste to reduce overconsumption. Thus, public service interventions highlighting the negative consequences of food waste (Experiment 1 and supplemental experiment) or different forms of packaging that enhance the salience of potential waste (Experiment 2) can have unforeseen negative downstream consequences. Such warnings may lead to unintended negative personal consequences for liberals in the form of unhealthy overconsumption. Conversely, these reminders may ironically promote the negative societal consequences of food waste among conservatives, as they seek to curtail overconsumption. Accordingly, these findings provide novel insights into the consequences of political ideology outside of the realm of politics, and heed recent calls for inquiry into when and why attempts to promote greater good (i.e., minimizing food waste) can have unintended negative consequences (Labroo and Goldsmith 2021).

While prior work has studied food waste and overconsumption independently, the current research is the first to consider them in tandem. In doing so, this research contributes to multiple bodies of literature. First, these findings contribute to research that focuses on the broad problems of waste and sustainable consumption (Bolton and Alba 2012; Haws, Winterich, and Naylor 2014), and more specifically on the problem of food waste (Block et al. 2016; Raghunathan and Chandrasekaran 2020). Interestingly, the present findings show that large portion sizes alone are sufficient to activate overconsumption concerns, but do not appear to make food waste salient to the same extent. The inverse effects of this waste versus overconsumption paradox are apparent for consumers on opposite ends of the political spectrum only when cues suggesting waste are made salient.

In the current research, we employed a variety of waste cues and types of food to increase generalizability. However, the decisions studied in our experiments involved consumption intentions. Although this methodology is consistent with much prior literature on food decisionmaking (see Vosgerau, Scopelliti, and Huh 2020), future research should confirm our findings using real consumption and additional food product categories.

Also, relevant to understanding food decision-making, our stimuli in Experiment 2 used packaging as a manipulation of waste (disposable plastic vs. reusable). Amid growing concerns over packaging waste, the role packaging plays in making waste salient and how consumers respond to subtle waste cues ubiquitous in the marketplace presents a viable avenue for future research. Interestingly, as the results in Experiment 2 demonstrate, when the portion was small (i.e., overconsumption was not likely), the single-use plastic packaging increased consumption intentions for all but the most liberal consumers (those ≤ 15 on the 100-point political ideology scale). Given the negative personal consequences directly linked to consuming excess fats, like butter, future research should further probe this potentially informative result.

In addition, previous research has demonstrated a link between political ideology and a variety of individual difference variables including age, ethnicity, socioeconomic status (Ghitza and Gelman 2014), and even obesity rates (Krauss et al. 2017). Delving deeper into the role of these related variables would be an important contributor to the understanding of how consumers manage the waste versus overconsumption tradeoff. Similarly, emotions can be powerful predictors of consumption behavior, notably in the domain of food. We hope future research will examine if and how concerns about waste and overconsumption relate to specific emotions' conflicting effects on consumption, such as guilt and shame, and whether these differences are related to political ideology.

Further, it would be interesting to examine financial motivations as an additional psychological antecedent to food decision-making in this context, as the goal to save money (i.e., avoid financial waste) is one of the most commonly reported among consumers (Haws and

Winterich 2013). Future research should examine under what conditions—for example, the stable personality trait of waste aversion (see Bolton and Alba 2012; Raghunathan and Chandrasekaran 2020)—consumers consider the tradeoff between financial waste and overconsumption. Additionally, while we find evidence that our effects emerge as a result of concerns about social/environmental consequences among liberals and personal consequences among conservatives, future research would benefit from further testing of these dual processes in other contexts beyond food decision-making.

The findings of the present research have important implications for policy makers and managers. Given that public service campaigns have been conducted to combat both food waste and issues related to overconsumption (e.g., obesity), it is important to understand the joint effects of these efforts on consumers. These effects appear to differ based upon consumers' individual characteristics, specifically, differences in political ideology. Further, we suggest that managers of restaurants may take proactive measures, such as reducing portion sizes of side items similar to the French fries in Experiment 1 (perhaps with the consent of customers, as per Schwartz et al. 2012), or bring smaller portions of complimentary items, such as condiments (Experiment 2), changing the default to consumers needing to request more of these items. Together, our findings highlight the potential value of managers in the food service industry knowing the political makeup of the market they serve.

We contend that these issues of food waste and overconsumption are of particular importance amid the COVID-19 pandemic, when so many restaurants have been forced to close while food waste and access to fresh food continue to be a significant issue (i.e., food from farms is being thrown away while some people go hungry, Gregory 2020). Exacerbating these issues are the politicization of public health messaging, regulation compliance, and individual restaurant policies for service (Goldsmith and Lee 2021).

In conclusion, the findings presented here offer a deeper and more nuanced understanding of the decision processes and outcomes that result when consumers face the common tradeoff between waste and overconsumption in food decision-making. While further research is necessary to test other boundaries of these effects, we believe the current set of experiments offer a meaningful first step towards understanding how political ideology and its associated values shape decision-making in this context.

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WEB APPENDIX

PRETEST: THOUGHTS ABOUT WASTE VERSUS OVERCONSUMPTION

Amazon Mechanical Turk workers in the U.S. (N = 100; 51% female, 49% male; $M_{age} =$ 39.60, SD = 13.09) were recruited to complete a short pretest. They were shown either a small or a large portion of French fries and imagined being served this portion at a restaurant. Participants then indicated separately how much the fries made them think about wasting food and eating too much (scale: 1 = "Not thinking about this at all" to 7 = "Thinking about this very much," presented in a randomized order).



To ensure that participants viewed the large portion as such—thus opening the possibility for overconsumption—we asked them to evaluate the portion size of fries (1 = Very small, 7 = Very large). As expected, the large portion was viewed as significantly larger than the small portion (p < .001), confirming the success of our manipulation. We also tested for differences between conditions in terms of waste thoughts (p = .005) and overconsumption thoughts (p < .001). We confirmed that the large portion significantly increased both waste and overconsumption relative to the small portion.

	Portion Size	Ν	М	SD	df	t	р	d
Perceived Portion Size	Small	48	3.33	1.31	00	11 67	< 001	1.15
	Large	52	6.02	.98	98	11.0/	< .001	
Waste Thoughts	Small	48	2.02	1.52	00	2.61	.005	1.69
	Large	52	2.90	1.83	98			
Overconsumption	Small	48	2.83	1.65	00	4.60	<.001	1.87
Thoughts	Large	52	4.56	2.04	98	4.02		

Next, we conducted a 2 (small vs. large; between subjects) × 2 (waste thoughts, overconsumption thoughts; within subjects) mixed ANOVA to test the extent to which the large portions activated thoughts of waste versus overconsumption. The size manipulation again yielded a significant between-subjects effect ($F(1, 98) = 18.84, p < .001, \eta^2 = .16$). Additionally, a significant within-subjects effect demonstrated that, regardless of portion size, participants generally think about overconsumption more than food waste ($F(1, 98) = 41.44, p < .001, \eta^2 = .30$). Finally, a significant between and within-subjects interaction effect ($F(1, 98) = 4.82, p = .030, \eta^2 = .047$) demonstrates that large portions on their own implicate thoughts about overconsumption more than they implicate thoughts of wasting. This supports the need for more explicit primes of food waste for consumers to bring this concern to mind.



Note: Error bars represent ± 2 SE.

EXPERIMENTAL STIMULI



Waste Salient Condition (Experiment 1 and Supplemental Experiment)

Food Portions (Experiment 1 and Supplemental Experiment)



Large Chips (Supplemental Experiment)



Waste Salience and Food Portion Stimuli (Experiment 2)



PRETEST: FOOD WASTE SALIENCE – SOCIETAL/PERSONAL RESPONSIBILITY, SOCIAL NORMS, AND ENVIRONMENTAL EFFECTS

We conducted a pretest to confirm the assumptions that conservatives place more importance on their own personal responsibility to avoid the negative personal consequences of overconsumption and the importance liberals place on avoiding the negative social and environmental consequences of waste. Amazon Mechanical Turk workers in the U.S. (N = 98; 44.9% female, 55.1% male; $M_{age} = 41.34$, SD = 13.35) were recruited to complete a short pretest. They were asked to imagine passing a billboard with a public service announcement on their way to a new restaurant for dinner. All participants viewed the stimuli used in subsequent experiments to make food waste salient—a billboard which read: "USDA statistics show that 30% of food is wasted in the U.S." They indicated how much they thought food waste was a societal or personal responsibility (1 = societal, 6 = personal). Participants also indicated their agreement (1 = strongly disagree, 7 = strongly agree) on how normal, acceptable, and common food waste is, how much eating all one's food reduces waste, if food not consumed increases food waste, and if food thrown out affects the environment. Finally, they responded to standard demographic measures, including a validated measure of political ideology (0 = very liberal, 100 = very conservative: Kidwell et al. 2013) and party affiliation (Democrat, Republican, Independent, or N/A). No participants were excluded from the analysis for providing inconsistent responses to measures of political ideology and party affiliation.

Confirming our assumptions about the values underlying liberals' and conservatives' responses to waste salience, political ideology was positively correlated (p < .001) to our bipolar measure of social—personal responsibility. This supports our position that liberals view waste as more of a societal responsibility and conservatives view it as more of a personal responsibility to address. Ideology was negatively correlated to views of waste as common (p = .033) and affects

the environment (p = .009), supporting that waste salience activates liberals' focus on the environment.

	М	SD	1	2	3	4	5	6	7	8
1) Political Ideology	37.84	31.08	1							
2) Responsibility for food waste (Societal – Personal)	3.60	1.54	.34***	1						
3) Wasting food is normal	4.11	1.79	03	.10	1					
4) Wasting food is common	5.94	1.23	22*	02	.27**	1				
5) Wasting food is acceptable	2.20	1.38	01	.16	.41**	02	1			
6) Eating all your food reduces waste	5.65	1.51	.037	.17	14	.06	07	1		
7) Food not consumed increases waste	6.17	.98	.026	.21*	13	.19	28**	.45***	1	
8) Food thrown out affects the environment	5.03	1.50	26**	19	30**	.07	29**	.16	.17	1

*Correlation is significant at the .05 level (2-tailed), **correlation is significant at the .01 level (2-tailed), ***correlation is significant at the .001 level (2-tailed).

EXCLUSION CRITERIA: POLITICAL IDEOLOGY AND PARTY INCONSISTENCY

In all experiments, our independent variable assessing political ideology consisted of a validated measure used in prior research (scale: 0 = very liberal, 100 = very conservative; Kidwell et al. 2013). Additionally, we collected a measure of political party affiliation (Democrat, Republican, Independent, or N/A). Because political ideology is broadly linked to party affiliation (in the U.S., Democrats are generally the most politically liberal and Republicans are generally the most politically conservative) we interpreted extreme discrepancies across these measures—i.e., very liberal (≤ 25) respondents identifying as Republican or very conservative (≥ 75) identifying as Democrat—are indicative of inattentive respondents. Out of a total of 905 participants across our 3 experiments, we excluded 23 participants who provided inconsistent responses to measures of political ideology and party affiliation from our analyses following these guidelines (we note that there were no instances of this in Experiment 2).

EXPERIMENT 1 RESULTS: INTENDED CONSUMPTION AS A FUNCTION OF POLITICAL IDEOLOGY AND WASTE SALIENCE

	b	SE	t	р	95% LLCI	95% ULCI
Political Ideology (PI)	.03	.05	.53	.596	074	.129
Waste Salience	10.89	3.71	2.93	.004	3.595	18.192
PI × Waste Salience	20	.08	-2.61	.009	345	049
Simple Slope: Not Salient	.03	.05	.53	.596	074	.129
Simple Slope: Waste Salient	17	.06	-3.09	.002	277	062



Note: The grey dotted line and shaded area indicate the Johnson-Neyman points at 33.04 and 95 along the x-axis (0 = very liberal, 100 = very conservative). Liberals in the waste salient group intended to consume significantly more than liberals in the not salient group at all values of political ideology \leq 33.04. Conservatives in the waste salient group intended to consume less than conservatives in the not salient group at values of political ideology \geq 95 (although we acknowledge this difference was marginally significant at p < .10). We note that although the comparison on the conservative side only includes extreme values \geq 95, taken together these regions of significance include 49% of the sample.

SUPPLEMENTAL EXPERIMENT

This supplemental experiment was designed to replicate the results of Experiment 1 to test Hypotheses 1, which specifies that political ideology and waste salience jointly shape intended consumption (i.e., waste vs. overconsumption). All participants were shown a large portion size to enable the possibility of overconsumption.

Pretest

Amazon Mechanical Turk workers in the U.S. (N = 103; 39.8% female; $M_{age} = 37.22$, SD = 12.21) were recruited to complete a short pretest. They were shown an image of a large bowl of tortilla chips and imagined being served this portion at a restaurant. To ensure that participants viewed the portion as very large—thus opening the possibility for overconsumption—we asked them to evaluate the portion size of chips (scale: 1 = extremely small, 100 = extremely large). The average rating of 74.35 (SD = 18.90) was significantly higher than the midpoint of 50 (t(102) = 13.07.24, p < .001, d = 1.29). Thus, the pretest confirms this was indeed considered a large portion of chips.



Design and Participants

Amazon Mechanical Turk workers in the U.S. (N = 210; 37.1% female, 62.9% male; $M_{age} = 35.21$, SD = 11.06) were recruited to complete a short online study and assigned to a political

ideology (measured) x 2 (waste salient vs. not salient) between-subjects design. Participants were asked to imagine they were going to a restaurant for dinner. In the waste salient condition, participants were asked to imagine that they passed a billboard on the way to dinner, which read: "USDA statistics show that 30% of food is wasted in the U.S." on their way to dinner. There was no billboard in the waste not salient condition.



Next, participants were asked to imagine that at dinner they were served a large bowl of tortilla chips. Following the image of the chips, participants provided an indication of the amount chips they intended to consume (1 = very few, 100 = all of them). Finally, all participants responded to standard demographic measures, including a validated measure of political ideology (0 = very liberal, 100 = very conservative; Kidwell et al. 2013) and party affiliation (Democrat, Republican, Independent, or N/A). The latter was included to check for consistency in responses (i.e., between political ideology and party affiliation). Seventeen participants were excluded in Experiment 1 for providing inconsistent responses to the measures of political ideology and party affiliation (see Web Appendix for a discussion of the exclusion criteria), leaving a final sample of 193 respondents.

Results and Discussion

A bootstrapping analysis using Hayes' (2018) PROCESS for SPSS (model 1) tested the interaction of political ideology and waste salience on intended consumption (see Figure below).

Although not central to the inquiry, political ideology had a main effect on intended consumption (b = .30, p < .001), indicating that conservatives generally intended to consume more than liberals. The waste salience manipulation did not significantly affect intended consumption (p = .216). Central to our theorizing, the hypothesized interaction between political ideology and waste salience on consumption was significant (b = .23, p = .043). In line with Hypothesis 1A, a floodlight analysis showed that conservatives intended to consume less when waste was made salient (vs. not). This difference is marginally significant (p < .10) at values ≥ 70.00 on the 100-point political ideology scale (representing 31.1% of the sample) and significant (p < .05) at values ≥ 79.50 (representing 21.2% of the sample).

Intended Consumption as a Function of Political Ideology and Waste Salience (Supplemental Experiment).

					95% CI		
	b	SE	t	р	Lower Level	Upper Level	
Political Ideology (PI)	.30	.08	3.63	<.001	.135	.457	
Waste Salience	8.15	6.56	1.24	.216	-4.797	21.097	
PI × Waste Salience	23	.11	-2.04	.043	453	008	
Simple Slope: Not Salient	.30	.08	3.63	< .001	.135	.457	
Simple Slope: Waste Salient	.07	.08	.84	.402	088	.22	



Intended Consumption as a Function of Political Ideology and Waste Salience (Supplemental Experiment).

Note: The grey dotted line and shaded area indicate the Johnson-Neyman point at 79.50 along the x-axis (0 = very liberal, 100 = very conservative). Conservatives in the waste salient group intended to consume significantly less than conservatives in the not salient group at all values of political ideology above this point.

The results of this supplemental experiment support Hypothesis 1 by demonstrating that, when served a large food portion, making waste salient affects consumption differently based on one's underlying political ideology. Specifically, conservatives decrease the quantity they intend to consume in response to waste salience (Hypothesis 1A). The key interaction was significant in support of our theory, although the contrast between experimental groups was not significant among liberals (and therefore Hypothesis 1B was not supported).

This supplemental experiment was run in the May of 2020, shortly after the declaration of COVID-19 as a pandemic. During this time, municipal lockdowns dramatically changed how consumers interacted with restaurants, and protests surrounding mask mandates were prevalent

nationwide. Despite the difficulty of collecting data related to food consumption in the midst of a deadly pandemic, the predicted interaction was replicated. Furthermore, these results were replicating using different food stimuli—chips and salsa—to increase generalizability. However, the pattern of results in this supplemental experiment diverged from that of Experiment 1 in two key ways. First, while floodlight analysis shows conservatives intended to consume significantly less in the waste not salient (vs. waste salient) condition (supporting Hypothesis 1A), the difference among liberals across waste conditions did not reach statistical significance (i.e., Hypothesis 1B was not supported). Second, in the waste not salient condition, conservatives intended to consume significantly more than liberals (i.e., a positive simple slope), but consumption did not differ significantly between liberals and conservatives in the waste salient condition (i.e., a flat simple slope) as it did in Experiment 1, where the simple slope was negative.

It is likely that the politicization of COVID-19 explains why both the liberal and conservative responses to waste primes were muted, while conservative consumption in the waste not salient condition was exaggerated, perhaps indicative of hoarding behavior or reactance to the perceived infringement of their liberties.

Another possible reason for these divergent patterns of results may be differences in the how the waste salience manipulation was presented. In the supplemental experiment, we used a standalone public service announcement on a billboard to make waste salient, whereas in Experiment 1 the same manipulation was embedded within unrelated public service announcements also shown to the control condition. Given recent findings that political messaging can cause reactance among individuals passionate about a cause (Bélanger, Schumpe, Nisa, and Moyano 2020), it is possible that the overt waste prime had this backfire effect on liberal consumers that were most passionate about environmental issues. One fruitful avenue for future research would be to test for differences among conservatives and liberals in terms of how the relative subtlety of a persuasion appeal shapes its effectiveness. The cause underlying these differences in results across experiments highlight a call for further inquiry in this area.

EXPERIMENT 2 PRETEST

In Experiment 2, we contend that disposable plastic butter packets (vs. reusable cup) serve as a cue of waste. To confirm this, we conducted a pretest with the same design and stimuli as Experiment 2 and measured how wasteful participants considered the meal to be.

Design and Participants

We recruited 211 participants (66.8% female, $M_{age} = 43.02$, SD = 16.69) from CloudResearch—an online panel tool similar to Amazon Mechanical Turk. After consenting to participate in our study, participants were asked to imagine they were going to a restaurant for breakfast. They ordered a plate of eggs, bacon, and toast, and asked the server for some butter for the toast. They were told that, upon returning, the server brought a large (vs. small) portion of butter, served in either individual disposable plastic packets (waste more salient) or a reusable cup (waste less salient). Thus, we used a 2 (waste: more salient vs. less salient) × 2 (portion size: large vs. small) between-subjects design identical to Experiment 2. Each condition was accompanied by a corresponding image (see Figure 3 in main paper). Participants then indicated how wasteful their meal was (scale: 1 = not wasteful at all, 100 = extremely wasteful). Participants responded to demographics.

Results

A 2 (waste more salient vs. waste less salient) × 2 (large vs. small) ANOVA was run with the evaluation of wastefulness of the meal as the dependent variable. Neither portion size nor waste salience had a significant main effect on perceptions of wastefulness (both *ps* > .282). However, the interaction of portion size and waste salience was significant (*F*(1, 207) = 5.53, *p* = .020, $\eta^2 = .03$).

Simple effects analyses show that there was no significant difference between large and small portions when waste was less salient, nor were there significant differences between the waste more versus less salient conditions when the portion was small (both ps > .266). However, there was a significant difference between large and small portions when was more salient ($M_{large} = 29.37$, SD = 23.58; $M_{small} = 19.18$, SD = 20.86; F(1, 207) = 4.77, p = .030). The analyses also revealed a significant difference between the waste more salient and less salient conditions the when the portion was large ($M_{more} = 29.37$, SD = 23.58; $M_{less} = 18.15$, SD = 21.42; F(1, 207) = 5.72, p = .018). Taken together, these results demonstrate that the meal was perceived as most wasteful when the portion size was large, and waste was more salient.

		N	М	SD
Small Portion	Waste Less Salient	52	23.35	28.54
Small Portion	Waste More Salient	56	19.18	20.86
T D d	Waste Less Salient	52	18.15	21.42
Large Portion	Waste More Salient	51	29.37	23.58

Wastefulness of Meal as a Function of Waste, and Portion Size (Experiment 2 Pretest).

	df	F	р	η^2
Waste	1,207	1.16	.282	.01
Portion Size	1, 207	.56	.445	.003
Waste × Portion Size	1,207	5.53	.020	.03
Simple Slope: Large vs. Small (within Waste Less Salient)	1, 207	1.24	.266	
Simple Slope: Large vs. Small (within Waste More Salient)	1,207	4.77	.030	
Simple Slope: Waste More vs. Less Salient (within Small Portion)	1,207	.87	.353	
Simple Slope: Waste More vs. Less Salient (within Large Portion)	1,207	5.72	.018	



Note: Error bars represent ± 2 SE.

	1	CE			95%	95%
	D	SE	t	р	LLCI	ULCI
Political Ideology (PI)	.08	.16	.47	.641	244	.395
Waste	15.63	12.73	1.23	.221	-9.462	40.715
Portion Size	-10.92	11.67	94	.350	-33.929	12.084
PI × Waste	.14	.24	.58	.563	329	.603
PI × Portion Size	.09	.21	.44	.662	325	.511
Waste × Portion Size	11.41	17.16	.67	.507	-22.414	45.227
$PI \times Waste \times Portion Size$	69	.33	-2.09	.038	-1.333	037
Simple Slope: Waste Less Salient \times Small Portion	.08	.16	.47	.641	244	.395
Simple Slope: Waste Less Salient \times Large Portion	.17	.14	1.23	.219	101	.439
Simple Slope: Waste More Salient × Small Portion	.21	.17	1.24	.218	127	.552
Simple Slope: Waste More Salient × Large Portion	38	.18	-2.08	.039	740	019

EXPERIMENT 2 RESULTS: INTENDED CONSUMPTION AS A FUNCTION OF POLITICAL IDEOLOGY, WASTE, AND PORTION SIZE



Note: The grey dotted lines and shaded areas indicate the Johnson-Neyman points along the x-axis (0 = very liberal, 100 = very conservative) ≤ 23.31 and ≥ 95.97 when the portion was large (top graph), indicate that liberals in the waste salient group intended to consume significantly more than liberals in the not salient group, while conservatives in the waste salient group intended to consume significantly less than conservatives in the not salient group. In the small portion size condition (bottom graph) Johnson-Neyman points ≥ 19.41 indicate that all but the most liberal consumers (i.e., < 19.41) in the waste salient group intended to consume significantly more than those in the waste not salient group.

FREQUENCY DISTRIBUTIONS

Political	'Ideology	(Independent	Variable)
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Export	N	М	SD	25 th	50 th	75 th
Experiment	1 •	171	50	Percentile	Percentile	Percentile
1	451	39.86	28.92	15	41	58
2	225	46.14	25.90	25	49	64
Supplemental	193	48.02	33.02	15	50	75

Intended Consumption (Dependent Variable)

Evnoviment	N	M SD		25 th	50 th	75 th
Experiment	11	1 V1	SD	Percentile	Percentile	Percentile
1	451	73.02	23.28	60	77	93
2	225	53.87	33.12	24.5	58	83.5
Supplemental	193	63.20	26.50	40.5	69	83