ON THE OVER-CONSUMPTION OF FOOD PORTIONS: IS THE PROBLEM IN THE SIZE OR THE NUMBER?

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ABSTRACT

While larger food portions lead to greater consumption, the effect appears to be greater when the larger food portions are created by increasing the size of food units than when created by increasing the number of food units making up the portion. Study 1 shows consumer estimates of food quantities are more sensitive to unit-number information (i.e., the number of units) and less sensitive to unit-size information (i.e., the size of food units). Estimates of the food quantity presented in a portion size are larger when the portion is presented as many, smaller units than when presented as few, larger units. Study 2 demonstrates that participants tend to consume less when a portion is presented as more, smaller units vs. few, larger units. This result along with that of Study 1 suggest the portion-size effect on consumption is inversely related to the portion-size effect on quantity perceptions. When consumers are induced to focus on unit-size rather than unit-number (Study 3), quantity estimates can be made more sensitive to unit-size manipulations. Study 4 extends this finding to show that the portion-size effect on consumption is greatest when quantity estimation is insensitive to portion size change, and mitigated when information focus encourages processing of the relevant information.

Keywords

Portion Size– Numerosity Heuristic – Perceived Quantity — Consumption – Self-Control

Food portions are growing in size and energy density with many considering portion sizes to be a major contributor to the problem of obesity (Chandon & Wansink, 2011; Diliberti, Bordi, Conklin, Roe, & Rolls, 2004; Jeffery et al., 2007; Rolls, Roe, & Meengs, 2006, 2007; Stroebe, Henk, Aarts, & Kruglanski, 2008; Young & Nestle, 2002). Food portions can increase in two distinct ways. One method involves increasing the size (volume or amount) of each unit of food, with some researchers exploring how varying one or more dimensions might affect perceptions and consumption (Chandon & Ordabayeva, 2009). Alternatively, total portion size can also increase when multiple single-serves are combined into multi-serve packs (Ilyuk & Block, 2016). There are some researchers who have examined the effect of partitioning or segmenting a single large unit into multiple smaller portions (Coelho do Vale, Pieters, & Zeelenberg, 2008; Holden & Zlatevska, 2015; Kerameas, Vartanian, Herman, & Polivy, 2015; Scott, Nowlis, Mandel, & Morales, 2008), however these studies confound size and number of food units by offering few, large units vs. many, small units.

The implication remains that portion sizes can be enlarged by increasing the size of the units in a portion, or by adding more units to a portion, or both. Although research has provided evidence for a positive relationship between consumption and portion size, it is not clear whether this effect is the same for an increase in unit size or an increase in the number of units in a portion. The potential effects of increasing size of food-units and number of units in a portion size on both perceptions and on consumption are explored in this research.

Effect of size and number on perception

Consumers appear to exhibit a fairly strong preference for more over less food as reflected in their willingness to accept an offer to ‘up-size’ (Meier, Robinson, & Caven, 2008). Some research suggests that the choosing of larger portions may be related to status-

seeking (Dubois, Rucker, & Galinsky, 2012) which may underlie a wider apparent human view that “bigger is better” as expressed in a wide range of domains such as cars, houses and money. Several findings testify to the idea that consumers prefer larger over smaller objects even in some contexts when it is difficult to discern a rational basis for doing so. For example, while height of a candidate does not immediately seem a relevant criterion in elections, American voters typically elect the taller of two presidential candidates (Persico, Postlewaite, & Silverman, 2001). Similarly, when choosing between two differently sized geometric shapes, subjects tend to select the larger object (Silvera, Josephs, & Giesler, 2002).

However, if larger is preferred, it is surprising that much research has shown that consumers do not make very accurate assessments of portion size. Several studies indicate that people are unable to make accurate judgments of portion size, are generally unaware of changes in portion size, and that size estimates tend to underestimate actual size, and at an increasing rate for increasing size (Chandon & Wansink, 2007a, 2007b; Chernev & Chandon, 2010; Krider, Raghubir, & Krishna, 2001; Wansink, Painter, & North, 2005). Specifically, research suggests that estimates are related to actual sizes by a power function (Chandon & Ordabayeva, 2016; Teghtsoonian, 1965). It follows then that if a portion-size is varied primarily in terms of the size of a single unit (such as in a piece of cake), consumer estimates of the quantity will tend to underestimate the size, and will be insensitive to increases in the unit-size.

However, portion size can also vary as a function of the number of units included in the portion. Number it appears, is more easily quantifiable for humans, and following the numerosity heuristic, “more pieces of something usually turns out to be more of that something” (Pelham, Sumarta, & Myaskovsky, 1994, p. 105). That is, people assessing the size of something will make larger estimates when it is made up of multiple units than when it is made up of one large unit. That numerosity information is more salient than size is perhaps

surprising as number is an emergent property of a group of objects: “Two fish and two spoons look nothing alike and yet they share twoness” (Brannon, Abbott, & Lutz, 2004, p. p.B59). Nonetheless, even very young infants (6-months old) are reported to be better at discriminating changes in number than changes in size (Brannon *et al.* 2004).

Despite the salience of number and its usefulness in making quantity determinations, the numerosity heuristic can lead to bias. In particular, Pelham et al. (1994) show that due to an ease of processing, there is a tendency to over-rely on number in some situations that are more cognitively taxing. For instance, when asked to estimate the sum of a set of numbers, responses tend to be influenced or biased by the number of items to be added. Similarly, in estimating the total value in an array of coins, people’s responses reflect too much weight being given to the number of coins in the array. In other apparently related research, attribute differences appear larger on scales with many units (expanded scales) than on scales with fewer units (contracted scales) (Pandelaere, Briers, & Lembregts, 2011). Consumers therefore appear to show a higher degree of sensitivity to number, even to the detriment of the metric in which information is expressed. However, there is also a tendency for quantity estimates to be underestimates when based on large numbers of units (Chandon & Ordabayeva, 2016; Cornil, Ordabayeva, Kaiser, Weber, & Chandon, 2014; Howell, 1973; Krueger, 1984).

In sum, both size and number can be used as a basis to estimate quantity of food served. Research generally suggests that both can give biased estimates of quantity. Quantity estimates based on size will tend to be underestimated whereas quantity estimates based on number will tend to be more accurate.

H1: Estimates of food quantity in a portion will increase more when the number of units making up a portion is increased relative to when the size of the units making up a portion is increased.

Effect of size and number on consumption

As larger portions have become more commonplace, some argue that our perceptions of what constitutes an appropriate portion size of energy-dense food have become distorted (Cornil & Chandon, 2015; Wansink & Ittersum, 2007). Distorted perceptions, and more specifically underestimation of the change in portion size are believed to be one of the major contributors to overconsumption, and consequentially, the obesity crisis (Rozin, Kabnick, Pete, Fischler, & Shields, 2003; Young & Nestle, 2002).

One explanation for portion-size influences on consumption posits that consumers underestimate how large a portion is, and in failing to recognize the size of the portion, consequently overeat. However, an alternative view is that portion-size judgments are not made at all and over-consumption simply reflects a unit-bias in which people tend to consume the entire amount of food offered in one portion (Geier, Rozin & Doros 2006). However, Geier et al. suggest that the unit-bias is constrained to an "acceptable portion size" and might be expected to breakdown if a very large portion was provided. So, when a portion is perceived to be very large, the motivation to consume the entire portion and so the portion-size effect, is reduced.

The evidence that quantity perceptions and consumption will be negatively related is reflected in a series of studies showing that people respond to perceived portion size even when portion size is in fact not changed. For instance, Wansink and Van Ittersum (2003) show that using elongated glasses positively influences volume perceptions and negatively influences consumption volume. Yang and Raghubir (2005) find that consumers purchase less when products are in more elongated containers. And finally, Redden and Hoch (2009) find that people create larger portions in situations where perceived quantity tends to be lower (i.e., when variety is present vs. absent).

In sum, a negative relationship between perceived quantity and consumption is expected: as perceived quantity increases, consumption is reduced. Therefore, if perceptions are not sensitive to portion-size changes, then consumption will increase whereas if perceptions are sensitive to change, then consumption will reduce. Changes in the portion-size (whether by unit-size or unit-number or some combination) will be positively linked to changes in consumption if perceptions do not reflect the change in portion-size. If perceptions do not change, then portion-size effect on consumption will be less marked. Our hypotheses for consumption are therefore the converse of Hypotheses 1:

H2: The amount of food consumed from a portion size will increase less when the number of units making up a portion is increased relative to when the size of the units making up a portion is increased.

Together, hypotheses 1 and 2 indicate that quantity perception tends to be more insensitive to unit-size and so consumption is driven more by portion sizes when manipulated in terms of unit-size. In general, this implies that if consumers could be encouraged to calibrate portion size correctly, their consumption might be less subject to influence by portion size. Accordingly, we propose:

H3a: Inducing a focus on unit-number will increase estimates of portions comprising many, small units relative to few, large units. The effect will be reversed for inducing a focus on unit-size.

H3b: Inducing a focus on unit-number will reduce the consumption of portions comprising many, small units, relative to few, large units. The effect will be reversed for a focus on unit-size.

STUDY 1

Method

A sample of 193 US inhabitants were recruited via Amazon Mechanical Turk (mTurk) (93 men, 100 women; M_{Age} = 37.18, *SD* = 12.02). Participants were asked to estimate the weight of visual representations of chunks of chocolate. Chocolate was selected as the target product as it is easily and often broken down into discrete units of a predefined size. A total of 16 photographs were developed showing chocolate chunks reflecting a combination of four different unit-sizes (12.5g, 25g, 37.5g, 50g) and four different unit-numbers (1, 2, 3 4). Subjects were presented with four photographs selected at random from the 16 combinations and were asked to estimate the total weight on a slider that ranged from 0 to 10 ounces (see Table 1).

<<Insert Table 1 here>>

Results and Discussion

The observed mean estimates in each condition (converted to grams) are presented in italics in Table 1. A visual examination reveals that portion size estimates tended to be overestimated for smaller unit sizes (e.g., 12.5g) and underestimated for larger unit sizes which may suggest a general insensitivity of quantity estimation to unit-size. Meanwhile, portion size estimates tended to be responsive to increasing unit-number (i.e., increased with number), but at a declining rate.

To examine more formally, both the actual and estimated weights were transformed into a logarithmic scale in order to capture the non-linear (power) relationship between them as established previously in the literature (Chandon and Wansink 2007a; Cornil *et al.* 2014; Krishna 2007; Stevens 1971). A hierarchically structured model was run in which both the number and the size of the chocolate chunks were modelled. In this model, the participant level serves as a higher-level variable. On the lowest level, both the unit-number and unit-size serve as predictors of the estimated weight. The dependent variable (estimated weight) was

log-transformed and the independent variables were standardized. The results suggested that unit-number was a significant predictor of estimated weight (B = .32, t = 6.03, p < .001) while unit-size was not (B = .03, t =.55, p = .58).

The implication is that the quantity estimation is more sensitive to unit-number and less sensitive to unit-size, reflected in the much larger and statistically significant standardized regression coefficient for the unit-number relative to that for unit-size.

Estimates of portion size tend to be overestimated for smaller unit-sizes and underestimated for larger unit-sizes suggesting a general insensitivity of quantity estimation to unit-size.

STUDY 2

Like Study 1, Study 2 was designed so that both the unit-size and unit-number in the portion size varied independently. However, this study focused on the effect of unit-size and unit-number on amount consumed. It was expected that consumption would be more related to manipulations of unit-size (where quantity estimates were found to be insensitive) than to manipulations of unit-number (where quantity estimates are sensitive). Quantity perceptions were not measured prior to consumption in order minimize creating any spurious correlation between independent variables and consumption.

Method

A sample of 185 undergraduate students was recruited to participate in a lab experiment (73 men, 112 women). All participants were offered a snack comprising chocolate brownies. Participants were not informed of the intention of the research study to study amount consumed and were invited to eat *ad libitum* while watching a video. Participants

were offered a plate of brownies manipulated in terms of unit-size (8g, 16g, or 32g) and unit-number (1, 2, 4, or 8). This 3x4 between-subjects design gave results as shown in Table 2.

<<Insert table 2 here>>

Results and Discussion

The mean amount consumed observed in each condition is presented in italics in Table 2. Consumption increased more for portion sizes made up of larger unit-sizes (see changes across rows in Table 2) than for portion sizes made up of increasing unit-numbers (see changes across columns in Table 2). Indeed, the amount consumed from a fixed portion size declined as the total portion was segmented into more units (see Figure 1 below).

The findings affirm hypothesis 2 which states that the portion size effect, the effect of portion size on consumption, is more a function of unit-size than unit-number. In fact, we find that increasing unit-number of any reasonably large portion (32g of brownies or more) leads to a reduction in consumption.

<<Insert Figure 1 here>>

More formally, the extent to which consumption deviated from the total portion size was regressed onto the number of units and the unit size. The dependent variable was log-transformed. We found that unit size was a significant predictor ($B = .06$, $t = 5.03$, $p < .001$) and the number of units has a positive effect ($B = .42$, $t = 9.20$, $p < .001$). Importantly, the standardized regression coefficient unit-number ($\beta = .60$) was significantly larger than that for unit-size ($\beta = .33$; $z = 5.88$, $p < .001$). That is, the presentation of more food units resulted in consumers eating less (deviating more from the total food portion provided).

STUDY 3

The aim of Study 3 sought to confirm that estimates of food portions were driven more by unit-number than unit-size. In Study 1 (and 2), unit-number and unit-size were manipulated independently which provided a complex design to disentangle their respective impacts. In Study 3, consumers were subjected to a task aimed at having them focus on unit-number or unit-size information. The aim was to show that inducing a focus on either unit-number or unit-size information would lead to predictable biases in quantity estimation.

Method

A sample of 123 undergraduate students (38 men, 85 women; M_{Age} = 21.36, *SD* = 9.02) was recruited to participate in a lab study. Using a 2 x 2 between-subjects design, participants were randomly assigned to one of two food presentations (many, smaller units vs. few, larger units) and one of two information focus conditions (unit-number vs. unit-size). Subjects were shown one of two plates both holding a 50g portion size of chocolate; on one plate, the chocolate was presented as four 12.5g chunks (units), on the other as one 50g chunk of chocolate.

To induce the desired information focus, before viewing and estimating the weight of the chocolates, participants engaged either in a task that focused on the unit-number or unit-size. Specifically, participants in the unit-number focus completed three drawing tasks in which they were asked to draw 7 x 1kg bags of trash 4 x1l bottles of motor oil, and 10 x .5l water bottles. Participants in the unit-size condition completed the same three drawing tasks but in a second part, were instructed as follows: “Could you please draw the same amount of trash/motor oil/water by drawing only one single bag or bottle”. It was hoped that this instruction would shift subjects from the default unit-number focus as shown in Study 1 to a more unit-size focus. All drawings were checked to see that they correctly represented the

amount. Immediately after completing this task, participants were shown one plate of chocolate and asked to estimate the weight of the chocolate shown on a slider scale ranging from 0 to 100 grams.

Results and Discussion

A two-way ANOVA with food presentation and information focus as the independent variables and the weight estimates as the dependent variable showed a significant main effect of food presentation ($F(1,119) = 6.51$, $p = .012$), and a non-significant main effect of information focus ($F(1,119) = 1.52$, $p = .22$). Importantly, there was a significant interaction effect ($F(1,119) = 6.51$, $p = .012$). When participants were induced to focus on unit-number, seeing more, smaller chocolate chunks resulted in higher weight estimates than seeing few, larger units ($M_{MS} = 61.88$ vs. $M_{FL} = 36.47$; $F(1,119) = 16.37$, $p < .001$). Inducing participants to consider unit-size information led to slightly higher weight estimates for the presentation of few, larger units vs more, smaller units ($M_{FL} = 56.35$ vs. $M_{MS} = 52.30$) although this difference was not statistically significant ($F(1,119) = .535$, $p = .466$). This perhaps reinforces that unit-number tends to be the default focus in generating weight estimates.

The results show then that weight estimates tend to be higher when food is presented in more, smaller units, but that this can be attenuated when participants are induced to focus on unit-size information.

STUDY 4

Study 4 is intended to extend the effect of the information focus on consumption. More specifically, it is predicted that when consumers are encouraged to focus on unit-

number, their increase in consumption with increasing portion size will be less than for those encouraged to focus on unit-size.

Method

A sample of 189 students (100 men, 89 women; M_{Age} = 21.53, *SD* = 4.92) was recruited for an experiment in exchange for monetary compensation (€5). As in Study 3, a 2x2 between subjects design crossing 2 food presentations (many smaller units vs. few larger items) with 2 information focus conditions (unit-number vs unit-size) was used. Participants in Study 4 were offered brownies rather than chocolates. They were offered 100g of brownie presented on a plate containing either six 16.6g pieces of brownies (many smaller units) or two 50g pieces (few larger units).

Participants were seated in isolated cubicles, to exclude the influence of others on their consumption. Their first task was designed to encourage a focus on unit-size or unit-number. Participants were given the task of estimating quantities from pictures for three different categories: garbage, motor oil and water. For each category, participants saw four illustrations. The first showed a single amount (of garbage, motor oil or water). The three remaining images showed a greater quantity – either as multiple units (unit-number focus) or as one larger unit (unit-size focus). Participants were asked to guess the quantity of the larger depictions. The accuracy of their responses was assessed and it was found that all participants' answers were accurate regardless of whether guessing from unit-number or unit-size.

Next, participants were instructed to watch two movie fragments of five minutes each, about which they would be questioned afterward. While watching, they were provided with plated brownies are were free to eat as much of them as they wanted. Before the movie fragment started, participants were asked to provide an estimate of the weight of the plated

brownies by an open question. After watching the movie fragments for 10 minutes, participants were instructed to return the plate to the supervisor before completing the remainder of the questions.

Results and Discussion

A two-way ANOVA was run with food presentation and information focus as the independent variables and the weight estimates as the dependent variable. This analysis yielded a non-significant main effect of food presentation ($F(1,185) = .14$, $p = .711$), a non-significant main effect of information focus ($F(1,185) = 2.25$, $p = .14$). The interaction of both variables was significant ($F(1,185) = 12.24$, $p = .001$). When participants were induced to focus on unit-number, presentation of a plate with more, smaller pieces of brownie resulted in higher weight estimate compared to fewer, larger pieces of brownie (($M_{MS} = 98.47$ vs. $M_{FL} = 79.81$; $F(1,185) = 4.58$, $p = .034$). Participants induced to focus more on size information showed a reverse pattern of results: their weight estimates were significantly higher when the food portion comprised few, larger items vs. more, smaller items ($M_{FL} = 91.75$ vs. $M_{MS} = 68.66$; $F(1,185) = 8.05$, $p = .005$).

A second two-way ANOVA examined consumption as the dependent variable. This analysis resulted in a non-significant main effect of food presentation ($F(1,186) = .19$, $p = .664$), a non-significant main effect of information focus ($F(1,186) = 2.43$, $p = .12$), and a significant interaction effect ($F(1,186) = 9.53$, $p = .002$). When participants were induced to focus on unit-number, presentation with a plate of more, smaller pieces of brownie resulted in lower average consumption relative to few, larger pieces ($M_{MS} = 48.56$ vs. $M_{FL} = 64.53$; $F(1,186) = 5.78$, $p = .017$). The opposite result was observed when participants were induced to focus on unit-size information: consumption was lower for the presentation of few, larger units relative to many, smaller units ($M_{FL} = 43.46$ vs. $M_{MS} = 55.49$; $F(1,186) = 3.80$, $p = .053$).

The pattern of results observed in Study 4 offers strong support for Hypothesis 3 that quantity estimates are higher when the focus on size or number matches the presentation of portion size (few, larger units vs. many, smaller units). And amount consumed showed the opposite effects: greater sensitivity in portion size estimates was related to reduced portion size effects on consumption.

To test the negative relationship between estimates and consumption more directly, a moderated mediation model based bootstrapping analysis (Preacher and Hayes 2008) was conducted. This analysis revealed that the interaction effect of food presentation and information focus on consumption was mediated by quantity estimates (Indirect Effect Estimate = -4.87, *95% CI* = -12.05 to -.31).

GENERAL DISCUSSION

A great deal of research provides evidence for the portion size effect, that consumption is positively linked to portion sizes (Zlatevska et al. 2014). What is less clear is whether this portion-size effect is the same when a portion size is increased by increasing the size of the food units or by increasing the number of food units. We showed that even when both unit-size and unit-number information is available, estimates of portion size tend to be more responsive to unit-number than unit-size (Study 1) and consumption volume (the portion-size effect) tends to be more responsive to unit-size than unit-number (Study 2). Studies 3 and 4 provided support for the notion that inducing attention to relevant information (unit-size or unit-number) reduces distortion of quantity estimates and the portion size effect is ameliorated. Study 4 also provides support for the notion that the effects of portion size on quantity estimates and consumption are negatively related. Specifically, when portion-size estimates are not responsive to a change in the portion size, this blindness to the larger portion

size tends to be associated with higher consumption of this larger total portion. This result aligns with other research showing that consumers will tend to consume less if a portion is perceived to be bigger (Redden and Hoch 2009, Wansink and Van Ittersum 2003, Yang and Raghubir, 2005).

This research suggests that number of units is a more powerful indicator of quantity than physical size, in line with the numerosity heuristic (Pelham et al., 1994). An important consequence of this is that consumer calibration of portion sizes is poorer when the size of food units is increased (as opposed to the number of units). The effect of portion size on consumption is greater when portion sizes are increased by unit-size (where the calibration is poorer). Increasing a portion size in terms of unit-number tends to facilitate better estimation of the total portion size quality, and the portion size effect is mitigated. Encouraging a focus on unit-size (the oft-neglected dimension) can also help improve quantity estimation and mitigate against the portion size effect to some extent.

The implications are that creating many, smaller food units might be helpful for people trying to resist the pull of larger portion sizes. However, there are additional issues to be considered in this regard as some research suggests that the offer of many, smaller units can lead to increased consumption among some people, notably those who are diet-conscious (Coelho do Vale et al., 2008; Holden & Zlatevska, 2015; Scott et al., 2008). Moreover, the effectiveness of creating many, smaller units probably depends on the extent to which the food units are perceived as reasonable units for guiding consumption. Marking subunits of chips may be useful (Geier, Wansink, & Rozin, 2012), but single chips and single M&Ms may not count as meaningful units.

The scope of this research was limited to demonstrating the relative impact of size and number on quantity estimates and consumption and to showing support for a negative relationship between quantity estimates and consumption. The way in which portion size

quantity estimates and consumption are affected by both unit-size and unit-number deserve further attention. It was noted that portion size estimates tended to be very poorly calibrated based on unit-size (overestimated for smaller unit-sizes and underestimated for larger unit-sizes) and more accurate for unit-number, but becoming increasingly less accurate as unit-number increased.

The relationship between perceptions (estimates of portion size quantity) and consumption deserves much more attention. This research showed that they are negatively related, but it remains unclear how the two are related. The portion-size effect simply describes the way that larger portions lead to larger consumption. Whether portion size estimates mediate consumption, whether they are even generated, seems unclear. It may be that notably larger portion sizes tend to create a kind of cognitive reset and a contrast effect (Martin, 1986; Martin, Seta, & Crelia, 1990) encouraging moderation of consumption and a reduced portion size effect.

However, an even bigger challenge is whether and how to implement these ideas in the real world so as to tackle the real-world problem of obesity. Can increases in unit-number be encouraged? Will they be acceptable to marketers given that in some ways, they communicate larger portion sizes well which might encourage purchase, but also reduce the portion size effect. What is the danger that they might backfire for those high on dietary restraint and how might this be managed? Can people be encouraged or induced to give more consideration to unit-size so that they may more accurately assess the portion size quantity based on growing unit-sizes? This research along with many others exploring the intricacies of portion size effects invites a great deal more attention to field research aimed at finding effective implementations for tackling obesity.

The portion size effect is powerful, but its influence can be mitigated by increasing portion sizes through the increase of unit-number over increases in unit-size. It might also be

mitigated by helping people to more accurately gauge portion sizes, especially by having them focus on unit-size information, given that people appear to be inclined to eat less from what are perceived to be bigger portions.

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Table 1. Total Weight and *Mean Estimated Weight* of Chocolate Chunks Dependent on the Unit Sizes and Number of Units

Unit Size	Number of Units			
	1	2	3	4
12.5	12.5 *23.5*	25 *39.77*	37.5 *65.86*	50 *71.32*
25	25 *29.45*	50 *57.75*	75 *84.93*	100 *113.58*
37.5	37.5 *35.14*	75 *70.56*	112.5 *100*	150 *122*
50	50 *46.11*	100 *83*	150 *125.45*	200 *146.01*

Table 2. Weight and *Mean Consumption Amount* of the Portion of Brownies Dependent on the Unit-sizes and Unit-number

Unit Size	Number of Units			
	1	2	4	8
8	8	16	32	64
	7.2	*12.3*	*20.9*	*34.0*
16	16	32	64	128
	11.5	*24.7*	*39.3*	*54.8*
32	32	64	128	256
	26.1	*49.3*	*66.1*	*71.7*

Figure 1. Amount consumed from total portion size (gms) by unit-number