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BEAUTY AND THE BEAST: GENDER DIFFERENCES IN FOOD-RELATED BEHAVIOR

A BELA E A FERA: DIFERENÇAS DE GÊNERO NO COMPORTAMENTO RELACIONADO À ALIMENTAÇÃO

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ABSTRACT

Among the decisions that consumers have to make are food choices, including the decision to eat healthily. Both motives for food choice and the behavior reported by consumers can describe how people relate to healthy food, and both demonstrate gender differences. To achieve a sample of 309 people, respondents were randomly selected and balanced by age and gender. Individuals were recruited through contact in supermarkets. The sample consisted of 174 female and 135 male respondents. Results of the logistic regression analysis showed that the main difference between genders is the way they interpret healthiness as a motive for food choice. While men find it important that the products they eat keep them healthy, women consider the fact that food choices are nutritious to be more important. In addition, other motives and behaviors that distinguish men and women with respect of food choices and healthy eating were observed.

Key-words: food consumption, gender differences, healthy food.

A BELA E A FERA: DIFERENÇAS DE GÊNERO NO COMPORTAMENTO RELACIONADO À ALIMENTAÇÃO

RESUMO

Entre as decisões que os consumidores têm de fazer estão as escolhas alimentares, incluindo a decisão de comer saudavelmente. Os motivos para a escolha de alimentos e o comportamento relatado pelos consumidores podem descrever como as pessoas se relacionam com a alimentação saudável, e ambos demonstram diferenças entre os gêneros. Para conseguir uma amostra de 309 pessoas, os entrevistados foram selecionados aleatoriamente e equilibrados por idade e sexo. Os indivíduos foram recrutados por meio de contato em supermercados. A amostra foi composta por 174 mulheres e 135 homens entrevistados. Os resultados da análise de regressão logística mostraram que a principal diferença entre os sexos é a maneira de interpretar salubridade como um motivo para a escolha de alimentos. Enquanto os homens acham importante que os produtos que eles comem os mantenham saudáveis, mulheres consideraram como fato mais importante as escolhas alimentares nutritivas. Além disso, outros motivos e comportamentos que distinguem homens e mulheres com relação a escolhas alimentares e alimentação saudável foram observados.

Palavras-chave: consumo de alimentos, diferenças de gênero, comida saudável.

1 INTRODUCTION

With the increasing health consciousness, consumers are adopting a healthy diet more than ever before. This healthiness trend can be noted by the increasing amount of healthy foods available such as low calorie products and organic foods.

The growth in the production and consumption of healthy food represents a new scenario in the food sector. Furthermore, healthy eating issues are of interest to, not only manufacturers and retailers, but also the government and health care professionals. According to Withrow and Alter (2011), almost 3% of funds allocated by governments are spent on health care for obese people. Obese individuals also represent 30% higher medical expenses than normal weight people. If other diseases were considered in addition to obesity, these numbers would be even more significant. Food-related behaviors influence both present and future state of health (Figueiredo, Jaimel, & Monteiro, 2008) and can be important to avoid some diseases (Ministério da Saúde, 2005; Figueiredo *et al.*, 2008).

According to Brazil's Ministry of Health's (2005) data, during the period between 1970 and 2003, mortality rates caused by chronic diseases increased from 34.4%, in 1979, to 48.4%, in 2003. The most common chronic diseases are diabetes, heart disease, high blood pressure, high cholesterol, and others (Michaelidou, Christodoulides, & Torova, 2012).

In Brazil, food has an important role in consumers' lives. According to IBGE (Brazilian Institute of Geography and Statistics), in 2008 and 2009, expenses related to food represented 20% of total expenses of Brazilian's households. Within this context, it has been configured as the second main expense, right after housing expenses.

Among decisions made by consumers, food choices stand as one of the most important ones. In this regard, both motives for food choice and eating habits adopted by consumers are useful for understanding how people behave in relation to healthy food. Bublitz, Peracchio, and Block (2010) mentioned that research should examine and compare both men and women in their behavior related to food. This article investigated gender differences regarding food consumption patterns, especially in terms of motives for food choice and actual behavior.

2 MOTIVES AND BEHAVIOR UNDERLYING HEALTHY FOOD CHOICE

Jomori, Proença, and Calvo (2008) stated that human food choices are based on many factors that influence individual decisions. Connors, Bisogni, Sobal, and Devine (2001) believe that the decision-making processes related to food include both individual and social factors. Food has social and cultural functions and is not only a search for nutrients (Jomori *et al.*, 2008; Steenkamp, 1993; Steptoe, Pollard, & Wardle, 1995). Moreover, food consumption involves subjective aspects such as emotion (King & Meiselman, 2010), and rational aspects, such as price (French, 2003) and convenience (Botonaki & Mattas, 2010).

According to Steptoe *et al.* (1995), tastes and habits are examples of factors that influence people's decision making at the individual level. Furthermore, it has long been recognized that there are many others factors that influence and may be dominant in food selection. These factors include social interactions, as well as cultural and religious aspects (Kiefer, Rathmanner, & Kunze, 2005)

When making a decision in the food context, the consumer is making a food choice. A food choice is the way people consider and select food and beverages in terms of their acquisition and preparation (Furst, Connors, Carole, & Falk, 1996). In spite of the apparent simplicity, this process is complex and involves multiple questions: *who eats what, why, when and where?*

Food choices are influenced by context, consumers' experiences, and consumers' preferences. People's choices, and thus, preferences, can be affected by the frame and context of the decision making process. This is because preferences are not stable and sometimes axioms of preference theory, which assume them as unchanging, are violated (Lusk & Briggeman, 2009). An important aspect of consumer behavior in terms of food choice is its dynamism. When facing complex processes, humans tend to simplify the decision making process (Connors *et al.*, 2001; Onken, Hastie, & Revelle, 1985). As individuals have new experiences, they learn and develop personal strategies. Therefore, people make their future choices based on past experiences (Furst *et al.*, 1996; Köster, 2009).

The implementation of personal strategies aimed at simplifying complex food choices will depend on the comparison of the motives for food choices. Trying to develop a formal set of measures, Steptoe *et al.* (1995) developed a brief questionnaire to assess perceived influences on food selection at the individual level, and identified nine distinct factors: health, mood, convenience, sensory appeal, natural content, price, weight control, familiarity, and ethical concern. Considering all these factors, consumers tend to negotiate them as a strategy for food choices. This negotiation is made through the balancing and prioritization of the motives for food choices (Connors *et al.*, 2001).

Investigating the motives and barriers for intentions of healthy eating and their impact on behavior, Michaelidou *et al.* (2012) showed that food motives help to predict behavioral intention in

terms of multiple food choice contexts. This finding highlights the evidence that factors like time and cost could be unimportant when it comes to adopting a healthy diet.

When it comes to healthy eating, some considerations are involved. Basic recommendations include the need to adopt a balanced diet which contains enough portions of vegetables and fruits (Michaelidou *et al.*, 2012; Figueiredo *et al.*, 2008). It is also important that food contains functional properties, without large amounts of fat and sugars (Ministério da Saúde, 2005; Figueiredo *et al.*, 2008). According to the Brazilian guide to promote a healthy diet, however, healthy eating is not a foregone conclusion. Instead, foods have individual and collective attributes, social and cultural meanings, affective and behavioral meanings, which can not be ignored. Therefore, food as a source of pleasure is also an important approach.

3 GENDER AND FOOD CONSUMPTION

According to Preucel and Hodder (1996), food is a way through which people can interact. These kinds of social interactions have taken place for a long time, including ancient cultures, especially in terms of gender relations. In the context of food habits, the demographic variable of gender presents a major influence on food choice behavior (Ares & Gámbaro, 2007).

Gender differences are influenced by other socio-demographic factors in different countries. These differences may be more consistent among less educated and rural subgroups because of traditional beliefs (Prattala *et al.*, 2006). On the other hand, the differences tend to be lower in developed countries (Ares and Gámbaro, 2007; Prattala *et al.*, 2006).

Gender differences in food consumption are related to social norms and cultural beliefs, like motives and behaviors. Some foods are labeled masculine and some are seen as feminine. As an example, the consumption of meat symbolizes a masculine diet, while the consumption of vegetables and fruits represents a feminine one (Prattala *et al.*, 2006).

Gender-specific differences relate to both nutrient intake and recommendations for dietary allowances. Men have a higher energy intake, and a higher percentage of the energy in men's diets is derived from animal products. Men's diets are characterized by meat, bread, and alcohol (Kiefer *et al.*, 2005; Prattala *et al.*, 2006). Men consume more fat than women (Bonomo *et al.* 2003). On the other hand, frequency of fruit and vegetable intake is higher among women, Gender has a consistent effect on the consumption of vegetables - women tend to consume vegetables more often (Figueiredo *et al.*, 2008; Kiefer *et al.*, 2005).

Previous research indicates that women have a higher awareness and better knowledge of nutrition than men. For women, nutrition frequently plays a central role in their conception of health.

Women are more concerned about healthy eating habits (Kiefer *et al.*, 2005; Prattala *et al.*, 2006; Turrell, 1997). Men prefer a traditional diet that is high in fat and meat, whereas women more frequently prefer healthy foods and a low-calorie diet. Women are more often affected by problems related to their eating behavior, such as cravings for special foods, than men are. For women, restrained eating is much more common (Kiefer *et al.*, 2005). Findings of Figueiredo *et al.* (2008) reveal that women on diets present a positive correlation with the intake of fruits and vegetables.

To understand what makes people include healthy products in their diet, it is important to investigate the factors that determine food choices. Several external and internal factors may influence consumers' decision-making processes and the analysis of these aspects provides better understanding of healthy eating.

4 METHOD

A quantitative study was conducted in the city of Lavras, located in the Brazilian state of Minas Gerais. With the purpose of assessing the differences between genders in motives for food choice and healthy eating, a structured questionnaire was designed based on previous studies and on dietary guidelines. To reduce time and costs of the study, an online survey method was chosen.

The total sample size included 309 respondents, who were selected in order to achieve balanced age and gender. Such individuals were recruited through an offline method that consisted of making contacts at supermarkets. During those occasions, the objectives of the study were explained and the e-mail addresses of the consumers were requested.

Data collection was performed between September and December of 2011 via the Internet. The questionnaire was structured and self-administered. A link for the online survey was sent via e-mail to the recruited respondents. It consisted of three parts. The first part was related to motives of food choices and the items were inspired by the Food Choice Questionnaire developed by Steptoe *et al.*, (1995). Only the most important motives for food choice were included. The six motives that are more often considered by consumers in their food choices are: healthiness, taste, price, safety, convenience, and social interactions (Connors *et al.*, 2001; Furst *et al.*, 1996; Lusk & Briggeman, 2009). For each of the six motives, four items were included in the questionnaire. A 5-point Likert-type scale was used and respondents evaluated whether each item was very important (5) or not important at all (1) to them and if they agreed or not with the sentences related to motives of food choice.

The second part of the questionnaire was designed to measure healthy eating. In order to measure this complex concept (Paquette, 2005), recommendations of the World Health Organization

(WHO, 2004) and the strategies for eating healthily identified by Falk *et al.* (2001) were transformed into ten sentences, which the respondents scored on a 5-point Likert-type scale. An item evaluating (ranging from 1 to 10) one's own diet quality was also included.

The last part of the questionnaire consisted of socio-demographic questions.

The data obtained through the application of the online questionnaire was coded into SPSS 16.0 format. In order to understand gender differences related to the motives for food choice and healthy eating, logistic regression was conducted following the procedures as recommended by Hair, Black, Babin, Anderson, and Tathan (2009).

5 RESULTS AND DISCUSSION

Sample characteristics can be observed through the frequency distribution of descriptive information obtained in the study. Table 1 provides socio-demographic characteristics of the sample.

Table 1
Sociodemographic characteristics of the sample.

	% of Total Sample (n=309)
Gender	
Female	56.3
Male	43.7
Age	
< 21 years	10.4
21 – 30	48.5
31 – 40	18.8
41 – 50	14.6
51 – 60	5.8
> 60 years	1.9
Education	
< 8 years	1.3
8 years	1.6
11 years	13.6
> 11 years	27.5
Graduate	17.2
Postgraduate	38.8

Average Income	
≤ R\$1000	26.5
R\$1001-3000	38.2
R\$3001-5000	19.7
R\$5001-7000	8.4
R\$7001-9000	3.9
>R\$9000	3.2

Despite the attempt of balancing the sample regarding genders, a slight prevalence of women can be observed. It should be noted that the sample was biased towards high education and lower age groups, which can be explained by the use of the online survey method.

6 LOGISTIC REGRESSION

Logistic regression is an analytic technique used in multivariate modeling of categorical dependent variables (Demaris, 1995). According to Hair *et al.* (2009), logistic regression is preferred over discriminant analysis in situations of non-normality, which is the case of the present study since an analysis of skewedness and kurtosis showed that all the variables have non-normal distributions. The dichotomous variable used as the dependent variable in logistic regression is gender, with “0” being female and “1” representing male. Since the online survey tool used had a feature that did not allow respondents to leave blank answers, no missing values were found.

The independent variables included in the model were all the 24 items related to motives for food choice, the 10 items that measured healthy eating, and the score of individual evaluation of the quality of one’s own eating habits. In order to run the model, a reverse elimination method was employed. Table 4 shows the final results of the logistic regression. The model that resulted from the logistic regression has a predictive power of 73.8%. The Hosmer and Lemeshow test was non-significant which also indicates the acceptability of the model.

According to Hair *et al.*, (2009), in order to analyze to what extent one independent variable affects the probability of the dependent variable being 1 or 0, it is better to analyze the value of $\text{Exp}(B)$ than B itself. $\text{Exp}(B)$ can be interpreted in terms of the change in odds. If the value exceeds 1, then the odds of gender equals 1 occurring increase; if the figure is less than 1, any increase in the predictor leads to a drop in the odds of gender being 1. Hence, it is possible to say that “keep me healthy” is the variable that has the greatest impact on the probability of gender being male (the highest $\text{Exp}(B) = 2.107$), while “are nutritious” is the variable that most increases the chance of gender being female (the lowest $\text{Exp}(B) = 0.603$).

Gender is the dichotomous dependent variable in the logistic regression. Hence, it can be equal to 0 (female) or 1 (male). According to the model provided by the analysis, the probability of the gender being 1 is determined by Equation 1:

$$p(x) = e^{B_0 + B_1x + B_2x + B_3x \dots} \quad (1)$$

1-p(x)

Table 2
Logistic Regression.

Variables Included in the Model	B	S.E.	Wald	Sig.	Exp(B)
Are nutritious (HEALTHINESS)	-0.506	0.245	4.273	0.039	0.603
Keep me healthy (HEALTHINESS)	0.745	0.266	7.835	0.005	2.107
Are good to my teeth/skin/hair/nails (HEALTHINESS)	-0.475	0.154	9.582	0.002	0.622
Are tasty (TASTE)	0.254	0.201	1.602	0.206	1.289
Food should be a source of pleasure. (TASTE)	-0.329	0.170	3.726	0.054	0.720
Are cheap (PRICE)	0.436	0.203	4.623	0.032	1.547
Are not expensive (PRICE)	-0.342	0.208	2.703	0.100	0.710
I compare prices before buying food products. (PRICE)	-0.474	0.106	19.795	0.000	0.623
I enjoy having company during my meals. (SOCIAL INTERACTIONS)	-0.248	0.125	3.910	0.048	0.780
I try to eat smaller portions. (HEALTHY EATING)	-0.360	0.162	4.959	0.026	0.697
I stop eating when I feel satisfied, avoiding eating in excess. (HEALTHY EATING)	-0.194	0.144	1.816	0.178	0.824
I eat daily at least 3 portions of fruits and/or vegetables. (HEALTHY EATING)	-0.193	0.135	2.051	0.152	0.824
I choose restaurants that offer healthy meals. (HEALTHY EATING)	0.185	0.140	1.756	0.185	1.204
I replace conventional products with their healthier versions (e.g. low calorie, no sugar) (HEALTHY EATING)	-0.462	0.137	11.464	0.001	0.630
In a 1 to 10 scale, how do you evaluate your eating habits? (SCORE)	0.331	0.111	8.973	0.003	1.393
Constant	4.141	1.451	8.140	0.004	62.860

The table above shows the variables that appeared in the model. Some variables are present in the table, but were not significant. According to the values of the regression's coefficients B shown in Table 4, the variables that significantly and positively affect the odds of gender being 1 (male) are: "keep me healthy"; "are cheap"; and the score in a 1-10 scale. On the other hand, the variables that affect negatively the probability of gender being 1, thereby increasing the chances of gender being female, are: "are nutritious", "are good to my teeth/skin/hair/nails"; "Food should be a source of pleasure"; "I compare prices before buying food products"; "I enjoy having company during my meals"; "I try to eat smaller portions"; and "I replace conventional products with their healthier versions". So, our results demonstrate some differences in food consumption between men and women.

7 GENDER DIFFERENCES IN FOOD CONSUMPTION

7.1 MOTIVES FOR FOOD CHOICE

Prattala *et al.* (2006) researched gender differences and their results are consistent in showing stability of masculine versus feminine food habits. The authors believed that in Baltanic countries (Estonia, Latvia, and Lithuania), which represent Eastern European transition societies, gender differences may be larger than in Finland, a society characterized by welfare ideology and a high degree of gender equality. However, gender differences were similar in all countries. This shows that gender differences are more influenced by inherent characteristics of men and women rather than a consequence of the environment they live in.

The way men and women understand healthiness seems to be different according to the findings of the logistic regression. While the preference for foods that "are nutritious" was higher for women, men tended to prefer foods that "keep them healthy". These different conceptions of healthiness may reflect the bigger interest of women in nutrition and diet-related issues (Turrel, 1997), while men see healthiness in a straightforward way (Kiefer *et al.*, 2005).

The significant difference between men and women when considering the benefits of food to their teeth/skin/hair/nails reinforces the findings of Turrell (1997) that reported that women had a heightened concern about their physical and personal appearance than men. While women tend to care more about foods that have benefits to their physical appearance, men seem to find general healthiness more important. Our results conform to Chambers, Lobb, Butler, and Traill (2008) who indicated appearance, in particularly women between 18 and 30 years old, as a reason for making particular food choices. Contrary to our findings, previous research about consumption of fruit and

vegetables indicated that the benefit of this kind of food provides little motivation for young male consumers to eat healthier (Herbert, Butler, Kennedy, & Lobb, 2010).

Considering taste, the analysis supported the idea that men and women consider taste similarly in their food choices. This fact can be due to the high importance of taste as a motive for food choices for both genders, as stated by Glanz, Basil, Maibach, Goldberg, and Snyder (1998). Women are highlighted for considering food as source of pleasure. Our finding is contrary to the research of Kiefer *et al.* (2005) which identified a higher probability of food being a source of pleasure for men. Usually men eat more red meat, pork, alcohol, and sausages, and in this way, men's approach towards nutrition is uncomplicated and pleasure orientated (Kiefer *et al.*, 2005).

Regarding price, men prefer foods which are cheap while women tend to compare the prices of food products before buying them. This could be explained by the value given by men to their time, which could lead them to avoid spending it on price-comparison shopping (Marmorstein *et al.* 1992). The difference in the way men and women place value on the price factor in food consumption was also identified in the studies of Glanz *et al.* (1998) and Steptoe, Pollard, and Wardle (1995). Both studies indicated that women tended to give more value to price than men. According to the authors of the second study, while men present a more spontaneous pattern of food purchasing, women typically go shopping for the household, which makes them more aware of budgetary limitations. That can explain how they compare prices while shopping, looking for the higher value for money rather than merely the cheapest option available.

When social interactions are considered, women seem to give more importance to this aspect of food and eating than men. That could help explain the high susceptibility of women to modify their eating behavior when accompanied (Hermans, Larsen, Herman, & Engels 2009; Robinson, Tobias, Shaw, Freeman, & Higgs, 2011).

These observations strengthen the points made previously regarding women being more compliant with dietary guidelines, spending more time comparing prices, and caring more about appearance and, thus, choosing products that make them look good. In addition, men seem to care more about their general healthiness and, even though they spend less time comparing prices, they value products being cheap more than women do. Furthermore, men care more about food being cheap, but are not willing to spend their time on price-comparison shopping. Moreover, social interactions related to food and eating appear to be more important to women than they are to men. Our results suggest that men and women have distinct priorities regarding food choices, especially when considering motives such as healthiness, price, and social interactions.

7.2 HEALTHY EATING

Considering healthy eating, we observed that women tend to comply more with dietary guidelines than men. According to previous studies, this can be explained by the fact that women are more knowledgeable about food and nutrition (Turrell, 1997). This assumption is based on the traditional and historical attitude about domestic jobs. Women have been more involved with food through the years because of their care giving roles, which makes them more knowledgeable about food and nutrition.

As shown in Table 2, women tend to engage in healthier eating behavior than men, which can be seen through the majority of the variables selected by the logistic regression. Just one variable demonstrated a trend toward healthy eating behavior in men, but it was not significant.

According to the Table 2, women try to eat smaller portions. Men's diets are characterized by nutritional behavior based on large portions and the women's are characterized by moderation (Kiefer *et al.*, 2005). Another variable that was significant and demonstrates female behavior was "I replace conventional products with their healthier versions (e.g. low calorie, no sugar)". Men prefer a traditional diet, high in fat. Women prefer healthy foods and an energy-reduced diet (Kiefer *et al.*, 2005). In addition, advertising of light products and low-energy dense food is mainly targeted at women, who seem to be more vulnerable to the appealing relation between less calories and better body shape (Stephens, Hill, & Hanson, 1994).

Prattala *et al.* (2006) also showed that women's diets are healthier than men's. In this sense, women are more concerned about a healthy diet and more often worried about classifying foods according to the assumed nutrient content than men. Since the sentences created to measure healthy eating were based in dietary guidelines, these findings suggest that women have greater compliance to these guidelines or that they are more knowledgeable about food and nutrition, which is in accordance with the observations made by Turrell (1997).

When respondents were asked for evaluations of their eating habits, men were more likely to have higher scores. Interestingly, our findings are not in agreement with the studies of Kiefer *et al.* (2005), in which women considered their eating habits healthier than men.

8 CONSTRUCTS NOT IN THE MODEL

Men and women behaved similarly in the case of food safety and convenience motives.

Food safety is a major issue nowadays. There were no significant differences between men and women regarding their concern with food hygiene and presence of additives and pesticides. This finding contrasts with that of Miles *et al.* (2004) who observed distinct differences between men and women when dealing with food safety issues. Probably, the similar behavior of both genders supports the idea that the general level of concern with food safety has increased, which may be because of the awareness of recent foodborne illness outbreaks (Brewer & Rojas, 2008).

In regards to the factor of convenience, consumers of both genders have less time to prepare their food and, trying to reduce their efforts in food preparation, they often opt for convenience products. In this study, men and women had similar views on convenience as a motive for food choices. That strengthens the statement of Scholderer and Grunert (2005) who believe that demographics are not the only aspect that drives the consumption of convenience products.

9 CONCLUSION

Health is clearly not the only factor people take into account when making their food choices. Many factors can lead to the adoption of healthy eating habits (Steptoe *et al.*, 1995). Hence, it was important to explore the role of other influences on food choice and to understand them in terms of gender differences.

This investigation brought to light some differences between genders related to food consumption. Considering the 35 variables surveyed, 15 were presented in the model and only 10 significantly affected the odds of being masculine or feminine. Furthermore, it has to be considered that this study did not analyze observed behavior, only reported behavior.

Using logistic regression to determine the predictor variables of the dichotomous variable gender, the analysis strengthened the points made previously, namely women being more complied with dietary guidelines, spending more time comparing prices and caring more about appearance; choosing products that make them look good. In addition, men seem to care more about their general healthiness and, even though they spend less time comparing prices, they value products being cheap more than women do. Both men and women reported that they eat foods that “keep them healthy”, so it was a motive for food choice for both genders. When social interactions in the food context are considered, women seem to give more importance to this aspect than men. However, concerning

healthy eating, the analysis showed that women tend to have healthier eating behavior than men do. Thus, there seems to be a divergence between motives for food choice and healthy eating behavior.

The results of the logistic regression analysis identified that the main difference between genders is the way they interpret healthiness as a motive for food choice. While men find important that the products they eat keep them healthy, women consider more important the fact that they are nutritious. This can be explained by the fact that women are more concerned with nutritional facts of food products.

All these findings corroborate the existence of gender differences in consumer food-related behavior. It is important that future research explore the reasons why those differences exist and, also, why in some cases men and women have similar behaviors and opinions. This study is not free of limitations. We have used convenience sampling that affects the generalizability of the findings. Additional suggestions for further studies are the observation and analysis of the relations of gender with other socio-demographic variables, such as age and educational level.

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