

# Consumer Cognitive Dissonance Behavior in Grocery Shopping

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**Abstract** Cognitive dissonance occurs when people have to choose between two equally attractive goods. The unpleasant feeling, in turn, leads to a consequent pressure to reduce it. However, the strong interest in food in consumers' life makes the line between high and low involvement purchases indistinct where also grocery shopping could trigger cognitive dissonance. In this research 100 males and females performed a virtual shopping spree using rate – choose – rate again. In accordance with previous studies, the results showed that participants did give a more favorable score for chosen items. Contradicting to previous research, the results showed that cognitive dissonance occur even for goods categorized as low involvement purchases.

**Keywords** Cognitive dissonance, Consumer decision making, Mental processes, Emotion, Organic food

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## 1. Introduction

Consumers' has in the recent years start paying more attention to their food consumption behavior and are more peculiar than ever of their eating habits [16]. The choice of what to consume includes considerations of health and environment among others. Moreover, when choosing to buy or not buy organic food, this decision itself has been found to be rather complex, with somewhat inconsistent research results. Previous research in consumer behavior has also tried to explain the low purchase frequency of organic foods when consumers hold positive attitudes about organic food suggest that high price [17] and limited availability [6] are said to be common reasons. However, this explanation seems not give the full perspective since previous studies have shown that consumers are willing to pay more for organic products [7]. The complexities around the organic consumer and his decision are obvious - holding positive attitudes towards green consumption is not a reliable predictor if a person decides to purchase organic food or not.

Consumer post-purchase behaviors have been examined in a number of ways in several different settings trying to explain the cognitive processes behind the behavior and which factors that trigger this specific behavior, but still there are few recent studies in the area. A common post purchase behavior is Cognitive Dissonance explained as a person's behavior conflict with one's attitudes, and

consequently, an immediate pressure to reduce it [4]. Factors shaping this cognitive dissonance have been an interesting discussion, where both internal and external elements seem to affect this phenomenon. Values, attitudes, emotions and intention are some of the internal factors that consumers rely on when cognitive dissonance occur [20-24]. In turn these internal factors will also form the consumers' intention and consequently, their behavior [1]. Previous research of post-purchase behavior has focused on high involvement products [25, 28, 29], while low involvement purchase, such as grocery shopping, has been ignored. As the author believes the instance would benefit from being studied with the theory of cognitive dissonance as a consideration. Studies examining the processes underlying expensive investments such as buying a car or a computer show that cognitive dissonance occur easily after the purchase and could be explained by a higher motivational level due to high involvement [3], or emotions [5].

Post-purchase evaluations include several factors shaping consumer behavior. In this paper the author presents a number of these factors that she think dominate the consumer thinking and cognitive processes before, during and after the actual purchase situation. This study examines if low involvement shopping context with non-organic and organic groceries also can trigger cognitive dissonance to occur in the same way as high involvement shopping. Festinger's theory [4] adds a deepened understanding of the complexities concerning the organic consumer and that the following research could extend the knowledge of the cognitive processes of cognitive dissonance as well as contributing with more insights in the consumer behavior research area.

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### 1.1. Purpose

The purpose of the study is to examine consumer behavior from a cognitive dissonance perspective. The present study contains an experiment with the purpose to investigate if the choice between organic and non-organic groceries could lead to cognitive dissonance for the consumer.

## 2. Method

*Participants.* Hundred male and female undergraduate students at a Swedish university (mean = 23 years with SD = 2.57) served as participants and were tested individually performing a virtual shopping spree. The test was voluntary and took 20 minutes to complete. The participants did not receive any compensation for participating in the study (see Table 1 for detailed demographic information).

**Table 1.** Participant demographic data

Demographic data	M	%
<b>Age</b>	23	84
<b>Sex</b>		
Male	47	47
Female	53	53
<b>Living situation</b>		
Student	100	100
<b>Relationship status</b>		
Married	1	1
Girl/Boyfriend	56	56
Single	43	43
<b>Household type</b>		
Apartment	74	74
Student corridor	26	26
<b>Number of household members</b>	2	74

*Design.* The study reported here is a contribution to consumer behavior research carried out with a more naturalistic and experimental research approach. A simplified shopping experience was simulated on a computer. Grocery items were exposed to the participant in random order and the participant had to act according to instructions on the screen. The method employed was rate-choose-rate which has been used in previous studies examining cognitive dissonance with good reliability and results (e.g. [11]). To avoid bias of political correctness, the participants were not told that the study examined decision making of organic food. Rather, they were each told that the aim of the study was to examine consumer's shopping behavior. As the focus was to measure dissonance between the organic versus non-organic options, it was a requisite to detach the brand name from the choice situation in order to get comparable unbiased results. In previous studies of cognitive dissonance participants often rated the level of desirability of the goods they have to choose between (see for example [2, 4, 11]). This is a suitable measurement when comparing high involvement goods, but would not fit low involvement decisions. Desirability would

be less suitable when investigating low involvement purchases because groceries are neither desirable themselves, nor something the consumer think of as special when buying it. Therefore *frequency* was used in present study as a measure of desirability. Frequency is more suitable because you buy groceries you like more frequently, and groceries you do not like less frequently.

On the opening screen the participant was introduced to a short text describing the upcoming experiment and how this was to simulate a regular shopping spree, "just as he or she were out shopping another Tuesday". The instruction was expected to make the participant to act as "regular" as possible. After the participant confirmed that the instructions were understood, the first (of three) data collection phase started. A total of 50 items, 25 organic and 25 non-organic, were shown one and one on a computer screen. The items shown represented the most frequently bought grocery items. These items were picked out according to answers given in a pilot study carried out before the main experiment. In the final and third phase the participant had to rate the items again and this time he also had to give a reason why he made that particular choice. As in previous studies (e.g. [2]) this was assumed to facilitate the reduction of dissonance. Different alternatives were suggested, including health aspects, price, for environmental reason, among others. The reasons on the list were chosen because they are general motives used to explain consumer's behavior toward organic food shopping (see for e.g. the comprehensive meta analyses made by [10]). This phase was made to increase the ability for the consumer to go from dissonance to consonance.

In this study, the participants' attitudes towards organic food were also examined. To assess this information Schwartz' [22] value orientation questionnaire was used.

*First rating (1).* In random order, items were shown one and one and the participant was asked to rate each object on how often he or she bought each item. The seven point scale ranged from "Never buy" (1) to "Buy sometimes" (4) to "Buy very often", (7). "Never buy" was defined as buying the item one time a year or less, "Buy sometimes" as buying the item approximately one time a month and "Buy very often" as buying item at least one time a week. The seven point scale was used because it has a clear middle point and it captures variations without presenting too many choices. It has also showed good responsiveness and validity [12]. The participant was exposed to one object at the time on a computer screen and had to rate each object before moving on to the next screen. The first part of the test was finished when the respondent had rated all of the 50 food items. The purpose of this step was to find out which items the participant did buy to the same extent, and consequently, would consider as equally attractive. Thus, cognitive dissonance could either be measured between two objects equally attractive, or when a person's attitudes and actual behavior is dissonant. In this study only pairs of objects with similar ratings with one conventional and one organic, were of interest. This implies that pairs of objects rated differently, were not relevant for further examination.

*Manipulation of dissonance (2).* The participant had to choose between pairs objects considered equally attractive and were rated similar. Similar was defined as 2 +/- on the seven point scale. Two same objects, always one organic and one non-organic product, were exposed to the participant who had to choose to put one of the products in his or hers shopping basket. The instructions given to the participant read as follows: "It is time to fill your shopping basket. The items will show in pairs, and you should pick one of them. Just like as if you were grocery shopping another Tuesday." Here, it was assumed that being forced to choose a good, and consequently, force the participant to reject an equally preferred good, would create a state of unpleasantness which the participant would want to reduce by giving the chosen item a more favorable score in the second rating.

*Second rating (3).* After choosing between two equally preferred items, the participant was told to rate each object again. The purpose was to see if the participant tried to reduce the dissonance by making the chosen alternative more desirable and the unchosen alternative less desirable – hence give higher rating for the chosen item and lower for rejected item. As in the first rating, the items were exposed one and one with a seven point scale ranging from "Never buy" to "Buy very often". Along with the object, a reminder telling participant if he or she chose or rejected item appeared. By reminding the participant of which choice he or she made in the first rating, it was expected that this would affect the rating, analogues to dissonance theory [4]. According to Brehm [2] participants could reduce their dissonance when they had to give a reason why s/he made that particular choice. Therefore, different reason alternatives were presented along with the item including health aspects, price, for environmental reason, among others. The reasons on the list were chosen because they are general motives used to explain consumer's behavior toward organic food shopping (see for e.g. the comprehensive meta analyses made by [10]. The participant was free to choose one to ten motives. It was expected that this extra information that matched the options' attributes, would facilitate the reduction of dissonance and therefore would make the magnitude of dissonance more distinct (for complete list of reasons, see Table 2).

**Table 2.** Motives for making the choice. Motives have been collected from a meta-analysis by [10]

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Health aspects
Taste
Environmental reasons
Availability
Physical appearance
Nutrients level
Price
Animal welfare
Quality
Other (fill in) _____

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*Value orientation.* Upon completion of rate – choose – rate,

the participant was asked to give answers to [22] value orientation survey. The survey consisted of 12 questions on a Likert-type five point scales ranging from completely disagree to completely agree. In this study it was the questions belonging to the self-transcendence cluster that was to be considered. Data collected from 20 countries found the mean self-transcendence score to be 3.9 [22]. This anticipates that individuals scoring 3.9 or higher must be considered as being more social responsible oriented than most people. See Table 4 for complete list of values measured and factor loadings. The value orientation has been used in several studies to measure which values serve as guiding principles in a persons' life. For e.g. it has been used in Swedish samples to measure if a person's guiding principles could be used to predict an environmentally friendly behavior [8, 9].

*Demographic data.* On the final slide, participants filled in answers about their sociodemographic characteristic including age, sex, living situation, relationship status and number of household members. The complete test was written in Swedish.

### 3. Results

**Table 3.** Observed ratings for all items. The % Chosen means the choice percentage of each item when the organic and non/organic item was equally rated in Rate 1

Products (Organic / Non-organic)	Overall Mean	SD	% Chosen
Flour	2.3 /2.78	.75/.83	67/54
Sugar	1.56/1.69	.88/1.01	76/65
Baking powder	1.23/1.73	.76/.54	3/23
Rice	1.43/1.42	1.12/.98	45/56
Potatoes	3.23/3.12	.87/.86	11/78
Pasta	2.88/2.14	.85/.57	53/57
Meat	1.89/2.65	1.15/.87	3/11
Shrimp	.56/.63	1.01/1.14	2/2
Milk	5.76/6.01	.56/.78	23/92
Yoghurt	3.31/4.57	.93/.86	34/75
Cream	.99/1.02	.23/.47	23/11
Crème fraiche	1.75/2.77	.75/.54	21/3
Sour Cream	1.7/1.73	.88/.89	45/23
Apples	3.56/4.07	.87/.85	31/79
Bananas	3.66/3.17	1.23/1.41	66/73
Mangos	.93/.77	1.4/.98	23/14
Grapes	2.97/2.89	1.2/.76	31/49
Pears	1.61/1.18	.98/.87	1/33
Lettuce	1.21/0.24	.78/.79	56/57
Tomatoes	2.03/1.87	.67/.83	47/48
Cucumbers	1.3/1.13	.71/.99	35/67
Onions	.84/.93	.32/.76	34/23
Washing powder	.55.75	.97/.77	84/73
Dish-washer detergent	.53.82	.76/64	54/73
Toilet paper	1.34/1.98	.32/.54	13/87

The study consisted of a virtual simplified shopping experience where participants had to rate two goods considered equally attractive, choose one of them, and rate again (see Table 3 for detailed information about the item attractiveness rating and consumer choice). The findings of the test showed an attempt to dissonance reduction.

First, all items were rated to find out which items the participant considered equally attractive. Second, the participant had to choose between two items equally attractive, always one organic and the corresponding non-organic item. Only items with similar rating were considered in the choice situation. For the second rating, all items from the choice situation was to be rated again. Changes in scores between the two ratings were marked positive if it indicated an increase, given the item was chosen, and an increased score for rejected items between first and second rating was marked as negative. This because reduction in dissonance could be accomplished either by raising the desirability for the chosen item, or by lowering the desirability of rejected item, or both.

### 3.1. Rating Changes – chosen Good

The data in Table 2 shows consumer's ratings of non-organic products before and after the choice was made. The result reveals significant score changes for the non-organic item after it has been chosen. With a mean score of 2.62 before the item was chosen and a mean score of 2.9 after the choice was made, the total rating change is 0.28. To find if mean difference between the two samples are statistically significant, a one sample t-test was used. Comparing the two means for the ratings of the non-organic products, a one sample t-test gave the following result with  $t$

(117) = 4.18,  $p = .00$ . This indicates that the difference between the increase scored when comparing the initial rating and the second rating after the choice, is significant from zero.

### 3.2. Rating Changes – unchosen Item

Reduction of dissonance could also occur through making the unchosen alternative less desirable. Here, the first rating gave the mean score 1.98 and the second rating with a mean score of 2.13. For reduction of dissonance, the score should have been lowered in the second rating. Therefore, no tendencies for dissonance reduction could be found in ratings of the organic products when choosing the non-organic option ( $t(110) = -2.038, p = .05$ ).

### 3.3. Total Dissonance

Reduction of dissonance could also be made through increasing the desirability of chosen item, and lowering the desirability of the rejected item. Adding the two together, the results show tendencies for dissonance reduction, but the result is not significant from 0 ( $t(112) = 1.177, p = .25$ ).

To diminish the possibility that the results only occurred by chance, the corresponding data was collected when the organic object was chosen. The data in this study shows a slight tendency for dissonance reduction when rating the non-organic option, but the results are not significant from 0. The total dissonance showed no results, same as for the rating of the organic option. The insignificance of the results might be explained by the low frequency of the organic option chosen, which was only chosen 4 of 17 times on average (see Table 3).

**Table 4.** Choice: Non-organic. Means of initial ratings, rating changes and dissonance

	Total goods rated (No.)	1 <sup>st</sup> rating Mean (SD)	Number Equally rated (%)	Choice: Number of non-organic (%)	2 <sup>nd</sup> rating Mean (SD)	Dissonance	P
<b>Non-organic</b>	50	2.62 (.63)	17(34)	13 (76.47)	2.9 (.75)	0.28	0.00*
<b>Organic</b>	50	1.98 (.93)	17(34)	13 (76.47)	2.13 (.89)	-0.15x	**
<b>Total dissonance</b>						0.13x	0.245

\*- significant from zero at the 0.01 level

\*\* - no dissonance occurred

x - a minus indicate a decrease in dissonance

**Table 5.** Choice: Organic. Means of initial ratings, rating changes and dissonance

	Total goods rated (No.)	1 <sup>st</sup> rating Mean (SD)	Equally rated (No.)	Choice: non-organic (No.)	2 <sup>nd</sup> rating Mean (SD)	Dissonance	P
<b>Non-organic</b>	50	2.4 (1.76)	17 (34)	4 (23.53)	2 (1.23)	0.4	0.11*
<b>Organic</b>	50	3.85 (.77)	17 (34)	4 (23.53)	3.1 (.64)	-0.75x	**
<b>Total dissonance</b>						0.35x	**

\*\* - no dissonance occurred

x - a minus indicate a decrease in dissonance

% is presented in parenthesis

### 3.4. Explanation of Choice

When participants went through their second rating, the items were presented with a list of motives why the particular choice was made. The participants were asked to give their reasons from a list of ten alternatives why they chose the item they did, and why they rejected the other item. 61% of the participants that chose the non-organic product explained their choice with "Price". Price should be understood as being the more affordable option when choosing the non-organic item, with the opposite truth for the organic option. Another recurring explanation was "Physical appearance", which was given as a reason in 23% in all cases when choosing the non-organic option. Either, participant gave the reason meaning that they recognized the product, or because they thought the physical appearance of the non-organic product was more appealing. The ambiguity will be treated further in the discussion. When participants chose the organic product, the reason given was "Because of environmental concern" (41%) and "Animal welfare" (35%). The other motives were only chosen by less than 5% of the participants and will therefore not be discussed further.

### 3.5. Value Orientation

**Table 6.** Two factors were extracted by means of principal component analysis and rotated according to varimax. Factor loadings <.40 are not shown. SE – Self Enhancement (Mean=3.14) ST – Self Transcendence (Mean=3.90)

Value types	M	SD	Factor ST	Factor SE	Communality
Social justice	3.8	.8	.77		.59
A world of peace	4.0	1.0	.72		.52
Equality	3.9	.9	.70		.49
Helpful	3.7	.8	.66		.44
Responsible	4.4	.6	.64		.46
Forgiving	3.7	.8	.63		.40
Successful	3.4	.8	.74		.57
Authority	2.5	.9	.70	.50	
Wealth	2.9	.9	.68	.48	
Ambitious	3.8	.8	.62	.54	
Capable	4.0	.7	.60	.47	
Social power	2.0	.8	.55	.32	
Percent variance	28.4	19.7		48.1	

To measure the level of social responsibility one has to look at the score for those questions belonging to the cluster of self-transcendence in the value orientation. A high score indicates a society-directed behavior closely linked to holding positive attitudes towards organic food. The population mean for self-transcendence, with data collected from 20 countries, is 3.9 [8]. This anticipates that individuals scoring 3.9 or higher must be considered more socially responsible than average. Participants in this study had a mean score of 4.0. With a one sample t-test, it could be stated that the mean differences are significant ( $t(114) = 32.11, p = .00$ ). The high self-transcendence score indicates that the

participants in this study are more environmentally concerned than the mean population. Self-transcendence score and comparison of population means was adapted from [22]. The results also showed no correlations between the frequency of buying organic items and value orientation self-transcendent,  $r = .256, p = .16$ , either no correlations for the frequency of buying non-organic items and value orientation self-enhancement  $r = .178, p = .29$  (see Table 4).

## 4. Discussion

The aim of this study was to examine why, despite positive attitudes towards low involvement purchase of organic food, consumers do not purchase organic food to a high extent. The study examined how the psychological state cognitive dissonance could affect consumers' decision making of organic food. The predictions were based on a theory by Festinger [4] and a complementing value orientation questionnaire adopted from Schwartz [22] was used to give information about the participants' attitudes as a background variable to be able to compare a possible discrepancy between attitudes and behavior. The findings of this study suggests that an individuals' ability to rationalize one's decision by reducing the unpleasant arousal cognitive dissonance, makes it attainable for consumers to keep repeating making decisions even when there is an obvious discrepancy between their beliefs and behavior.

The purpose of the study was to investigate if the choice between organic and non-organic groceries could lead to cognitive dissonance for the consumer. The findings confirm that consumers do have a tendency to selectively attend to and process information in a way that justifies past behaviors [27], which here was done through increasing preference for chosen items. The participants in the study attend and process information carefully. This contradicts to previous research arguing that low involvement purchases are driven by habits and unconscious thinking [14, 13, 18].

In present study the change in preference before and after a choice was made was measured. In previous studies, this method has mainly been used to measure the level of dissonance arising from a choice versus rejection situation [2]. However, when examining consumers decision making towards organic food, there are several complexities one need to confront, for example the inconsistency of a positive attitude towards organic food and a contradicting behavior. It has been found that people hold positive attitudes towards organic food. Hence, this does not reflect the actual buying frequency. Considering it is very unpleasant to make decisions that is not in line with one's attitudes, one has to find ways to rationalize these decisions. If people were not able to rationalize one's decision, it would be highly unimaginable that people would continue taking such decisions. This rationalization makes the decision congruent and therefore the dissonance will be reduced and maybe even absent. This assumption does not require that there has to be two options to choose from, hence, the attitude and behavior

is more than sufficient to create a state of dissonance. This finding also indicates that it is not the level of involvement that is the dominating factor triggering cognitive dissonance, rather the actual appearance of dissonance.

In this study the participant had to choose between two alternatives of the same product: one organic and one non-organic that the consumer purchased to the same extent. The study showed, similar to earlier research, a significant preference change for chosen goods. When rating the chosen non-organic product a second time, the participant gave a higher rating which indicates that after the product was chosen the participant considered the object more attractive. This preference change might have been facilitated by two things: First, the participant was reminded of if s/he chose or rejected the item, second, the participant was given a list with reasons depicting possible motives why he chose that particular product. This could be explained as follows; before the decision was made, the participant had an opinion about the product and in this study the opinion was equal to purchase frequency. It is, according to dissonance theory, inconvenient to make a decision when a preferred item has to be rejected for another preferred item [4]. For a consumer to feel satisfied with ones' decision, a strengthening process favoring the decision made will occur and the feeling of satisfaction is enhanced – in other words the process of cognitive dissonance takes place. In the same way as a car buyer rationalizes his decision after it has been made, a consumer of non-organic food rationalizes his decision to make it acceptable. It is also true that after a decision is made, people tend to seek information congruent with one's decision.

Food shopping is considered a low involvement behavior [26] and therefore consumers most often do not take up different options for evaluation. In other words, consumers do not even consider other brands before buying. Instead, their well-established consumptions routines will make the choice for them. This habitually behavior is from a psychological perspective called cognitive scripts. A cognitive script, also called a schemata, could be likened with a manuscript of different behaviors that helps us behave and navigate in our daily life. Through the use of schemata, most everyday situations do not require effortful processing, instead automatic processing is all that is needed. [13] is convinced that most human behavior falls into automatic processing patterns because that it is the most convenient for us and that it would be impossible to consider every decision we make every day. Because of this “autopilot” that activates when consumers make everyday decisions, the uptake of new information is hampered. For the consumer, the easiest way to reach a decision while grocery shopping is to give in for automatic processing and choose the option that looks familiar. That requires almost no effort for the consumer.

Given that is true, applying cognitive dissonance theory could give an extra dimension to what is known about schemata, which could at least partly explain why consumers keep taking the same decisions without evaluating the

options. These results could explain the fundamental acts by consumers and explain how it is possible for consumer's to keep repeating the same contradicting decisions.

In the study the value orientation of the respondents examining if consumer value orientation could be a predictor for the buying behavior of organic food was also measured. The results showed that the respondents rated their value orientation towards a strong self-transcendent behavior. Thus, this self-transcendence could not be found in a higher extent of buying organic grocery items.

## 5. Conclusions

The findings in the study indicate that the interpretation of differences in consumer behavior according to the high and low involvement as it has been explained before is too frugal, and the line between what is known as high and low involvement not as clear today as it once originally was both for which cognitive processes that is dominated in a specific purchase situation with specific characteristics but also the complexity of the definition of involvement itself when situational factors seem to have an impact on the decision and the post-purchase behavior of the consumer which could be related to the situational factors by [19].

In summary the results showed no total dissonance which could be explained by the low frequency of the organic option chosen. Price and physical appearance were explained as reasons when choosing the non-organic item, while animal welfare was pointed out as the reason when choosing the organic item. Overall, the results showed high value orientation ratings.

Further, the findings suggests that an individuals' ability to rationalize one's decision by reducing the unpleasant arousal cognitive dissonance. The confirmation of a consumers' decision can therefore be an efficient way to affect consumer purchase both during the actual purchase but in particular it could facilitate for future purchases the consumer will make. By keeping the unpleasant feeling of cognitive dissonance makes an excellent opportunity for marketers and retailers to affect the consumer to make the choice they want the consumer to make.

An interpretation of the high score of self-transcendence could be that consumers separate their actions of different areas and these actions are also valued differently. Recycling at home does not mean that you have a strong belief to do it at work, or buying non-organic food does not mean that you never buy environmental friendly products such as clothes or electronic equipment. This could imply that consumers base their self-transcendence from one area that they rate as important to them and ignore other areas such as level of buying organic goods in their grocery shopping into this account. According to Lerner, Stern and Lowenstein [15] the results maybe indicate that decisions are influenced by the ambient emotion the consumer happen to be feeling in the purchase decision that Schwartz [22] means lie outside the content of their beliefs.

## 6. Limitations

Due to the limitations of this study, changes of preferences when a consumer chooses the organic option should be further examined. Also, because of the well-known complexities around the organic consumer, the author suggests that an in-store experimental study could contribute to increase the knowledge of the organic consumer's decision making and other low involvement decisions made by consumers. Even if real life experiments in the laboratory is useful and showing the appearance of the fundamental basic cognitive processes, real world shopping spree could deepen the actual fluctuating consumer behavior in a wider range of measures, such as heart rate and eye tracking.

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