Empathy and Experiment: Applying Consumer Science to Whole Grains as Foods

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ABSTRACT SUMMARY

In a world of plenty, getting consumers to buy and eat "good for you" foods, such as those containing whole grains, can become problematic, especially when the alternatives are inexpensive, tasty, and less nutritious products. As a society we are becoming increasingly accustomed to what tastes good and is affordable, rather than to what is good but perhaps slightly less tasty and perhaps more expensive..

In this age of plenty convincing consumers to purchase and use whole grain requires two types of knowledge about consumer motivations. The first is the understanding of what drives consumers in terms of basic needs. The second is the messaging we use to convince.

For the first part—understanding—we present a structured system which takes into account a deep, psychodynamic understanding of consumers using the so-called "5 Keys approach," inspired by a mélange of therapeutic techniques, predominantly: cognitive behavior therapy (Aaron T. Beck), self psychology (Heinz Kohut), and analytical psychology (Carl Jung). The 5 Keys approach ends up being the soft-science part of a binary approach, to be followed by the hard-science part—experimentation.

For the second part—convincing—we must uncover messages which are grounded in understanding and which convince. We discover the convincing messages through structured experimentation, beginning with messaging about people, products, situations, and emotions. The experiments create the test messages, acquire ratings of interest, and identify clearly what's working.

The combination of empathy (insight development about the person) and experimentation (what's working), along with segmentation (how people differ), produce a corpus of knowledge and immediate direction that can be used to enhance the consumption of whole grain foods.

Introduction

Profoundly understanding consumers at the psychological level provides a lot of the necessary information to convince consumers. The issue is not understanding, however, but how to understand. For the most part, neither scientists nor marketers really know what "convinces" a consumer to change habits to incorporate the whole grain product. There is a growing use of experimental design to help design products; howev-

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er, experimental design by itself cannot work alone. Experimental design requires input. The input chosen here comes from a structured approach to understanding the consumer, an approach based in clinical psychology, and incorporating principles of cognitive behavior therapy (CBT), psychodynamics, and psychoanalysis. Such inputs are rich, coming both from the topic area of whole grains and also from the ever-changing stew of human motives, feelings, and behaviors (7).

Getting to Empathy—Psychology Origins

For the longest time market researchers have recognized the need for a deeper psychological understanding of consumers. Whereas many researchers have ventured down that path, most have shied away from completing the journey. Halfway through, they either lose track or find themselves traversing landscapes they don't particularly want to experience. Nor do their clients know how to deal with that information. Consequently, most marketing and communication efforts tend to remain peripheral or superficial, oftentimes missing the mark and unable to impact thought, appeal to emotions, or change behavior.

Enter 5 Keys, a holistic qualitative research paradigm, designed to efficaciously explore the psychic apparatus of consumers in its various dimensions. In a typical 5 Keys study, the researcher uses any one or even a hybrid mix of qualitative techniques such as observation, ethnographies, in-depth interviews, focus groups, storytelling, online bulletin boards, and so forth. The foregoing methods, often used as stratagems for interviewing, engage consumers, pull out responses, and generate insights.

These insights, in turn, can be formalized by assigning them to one of five groups—five key dimensions: personality, cognition (automatic thoughts), affect (moods), behavior (motor), and physiological responses (e.g., sweating and pupil dilation), respectively. These five dimensions are not necessarily independent at a functional level; a change of an element or behavior in any one dimension may result in the element or behavior changing on other dimensions, often in a way not easy to predict.

The qualitative data for the 5 Keys are collected in a systematic, hypothesis-testing manner. This first, "soft" approach relies on methods we often associate with the process of psychotherapy and psychotherapy's intuition-oriented approach to understanding.

The knowledge development process is rigorous, despite the

softness often associated with psychotherapy. Typically the research begins with an "assessment" designed to lead to a "hypothesis" about the nature of the mechanisms causing or maintaining consumer reactions. The process ends with a customized "action plan." As fieldwork proceeds with respondents being interviewed and observed, the researcher collects data, generally descriptive, with the goal to evaluate the effects of the proposed action plan on the five aforementioned dimensions.

Historically, we trace the formulation of the organization into the five dimensions and the specific investigative methods to Beck's (1976) cognitive theory and therapy. Protocols for data analysis rely on Kohut's self psychology (specifically Kohut's framework of empathy, self-object, mirroring, idealizing, alter-ego, and tripolar self) and finally invoke Carl Jung's typological approach to personality typing.

At the very basis of 5 Keys is the psychological construct called the "schema." The schema can be thought of as a nonconscious, latent structure: a way by means of which a person is able to organize his world and take action. The schema enables the person to interpret his or her experiences. External stimuli, situations, and life events activate latent schemas, triggering specific behavioral patterns whether positive or negative. It is these external stimuli which are to be studied through experimentation, but first understood through the schema.

Empathy as a Source of Raw Material

Now that we have the basis for understanding a person and his behavior, how can we use empathy to guide us in the development of "raw material" that will be used when we test ideas?

We begin by recognizing that schemas, although latent, organize external behavior (2). That means that the topic we study, in this case whole grains, can be first understood in the mind of the consumer and afterwards profitably studied by experimentation. Observing the consumer's external behavior in the context of an environment gives one an idea of the "underlying schema," or what's going on to organize this behavior. That underlying schema will generate ideas about how the consumer "perceives" and "values" the world. Furthermore, observing how an individual talks about and behaves in an environment where the researcher can get at thought, mood, physiological response, and behavior will give a sense of the structure of the person's schema (3).

Now that we have the basic approach, it becomes the task of the researcher to talk with the respondent, observe behavior, develop a sense of the underlying schema, and finally from that schema intuitively extract ideas, sound bites, and thought bites. These extracted ideas are the basis of the stimuli to be tested.
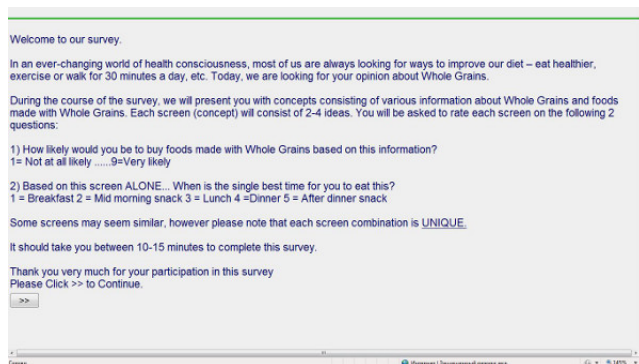
The extracted ideas are both "objective," referring to the topic, and "subjective," referring to the experience. The therapist would move forward to use these ideas to change the person's behavior, e.g., you should spend an extra dollar on this superior brand of whole wheat bread as it is better for health. The experimenter would move in a different direction, using these insights to create simple descriptive phrases to be used in experiment, the second part of the research, to which we now turn.

Experimentation

Good experiments in communication require that the consumer be exposed to stimuli in a situation that cannot be "gamed." That is, when answering survey questions, consumers have become very adept at giving back the appropriate answers. Methods which identify the key values and drivers for consumer interest in good-for-you products are especially valuable when these methods also resist the tendency of respondents to answer in so-called "politically correct" ways. We present the use of one of these methods, conjoint analysis, which mixes and matches ideas and identifies what elements are important for consumer decisions in whole grains (9).

The combination of empathy provided by the insight tools and experimentation provided by experimental design of ideas produces a work product for new directions in design, development, and communication.

Experimental Methods

The basic experimental design, which produces the stimuli for experimentation, comprises four silos or groups of ideas emerging from the first, "empathic" portion of the project. The emergent ideas were polished and edited to fit a predetermined experimental design allowing exactly nine messages in each silo. The 36 elements were, in turn, combined into 60 unique vignettes about whole grains, each vignette comprising exactly 2–4 elements or messages, at most one element from each silo. The average vignette comprised three elements, with each element appearing five times in the vignettes for a respondent.

Each respondent evaluated a unique set of 60 vignettes created by the basic experimental design, with that basic design slightly altered (permuted) to produce a new set of 60 vignettes for each succeeding respondent (4). Figure 1 shows the orientation screen, which respondents saw when they entered the study. Figure 2 shows an example of a test vignette.

Experimental design enables us to estimate the marginal or part-worth contribution of each of the 36 elements to the rating of "interested in buying" and the contribution of each element to the selection of one of the five day-parts (breakfast,

Fig. 1: The orientation screen shown at the start of each interview.
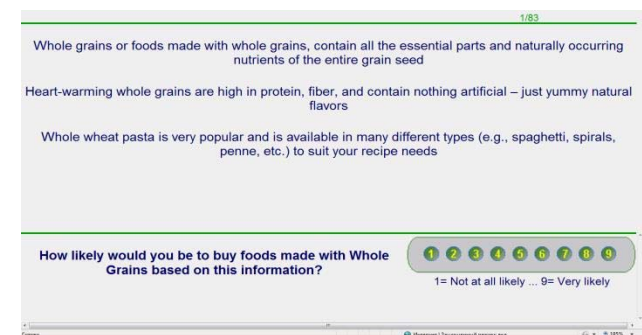

Fig. 2: An example of a test vignette.

mid-morning snack, lunch, dinner, and after-dinner snack)

For analysis, we transformed the nine point rating of purchase to a binary rating to reflect "not interested in purchasing the whole grain product" (original rating of 1–6 on the nine point purchase scale), or "interested in purchasing the whole grain product" (original rating of 7–9 on the nine point purchase scale.)

The foregoing analysis, done at the level of the individual respondent, reveals the key drivers of interest for each respondent. Subsequent analysis aggregates the individual data into group results, defined by who the respondents are, what the respondents do behaviorally with regard to whole grains, what the respondents believe, and, most important for this paper, the pattern of the messages to which the respondents react. This latter analysis, looking at people with common points of view regarding whole grains, is known as mindset segmentation and will be one of the foci of our analysis.

The second part of the analysis, relating elements to time of day, was also done at the level of the individual. The second analysis reveals the linkage between elements and specific day-parts, allowing the creation of messages to consumers which both convince, and move the intuitively appropriate time of consumption to a specific, desired day-part.

Results and Discussion

Table I shows the strongest performing and weakest performing elements. The number emerge from OLS (ordinary least-squares) regression, with the independent variables being the 36 elements presenting aspects of whole grains, the dependent variable being either 0 (original rating 1–6, interpreted as not buy) or 100 (original rating 7–9, interpreted as buy).

The numbers in Table I allow this interpretation:

1. Base size = number of participating respondents (299), and therefore the number of individual-level models which emerge from the study.
2. Additive constant = 40 = percent of respondents expected to say "buy" (i.e., rate a vignette 7–9) in the absence of elements. The additive constant, a purely calculated parameter, gives us a baseline level of interest in whole grains in the absence of messaging.
3. Winning elements—those elements which would drive up the percent of respondents saying they would purchase. The set of 36 elements provides a rich matrix of

Table I: Winning elements which drive stated purchase intent and losing elements which detract from stated purchase intent.

Base Size—Total Panel	299
Additive constant (predisposition to buy)	40
Winning elements (add to purchase)	
Whole grains protect against cancer, cardiovascular disease, diabetes, and obesity	12
Just three daily servings (or 48 g) of whole grains can reduce the risk of heart disease by 25–36%	10
Studies have shown that populations eating fiber-rich whole grains consistently have lower risk for colon cancer	8
Did you know...Fiber from whole grains protects against breast cancer	8
Losing elements (detract from purchase)	
Sweet…wholesome…satisfying corny delight	–2
Mild, clean flavor and an elastic texture similar to that of regular pasta	–2
Cornmeal…good for the whole family	–6

information. Those elements performing well, with impact values or coefficients from the regression of 8 or higher, are the ones dealing with whole grain as protection from serious disease (e.g., heart disease, colon cancer, or breast cancer). For the total population then, we see that to be attractive, whole grains ought to have an almost medical tonality.

4. The losing elements are those which talk about some of the sensory properties of the product.
5. The total panel data suggests that whole grains drive interest because of their "protective value." As we will see, this is not the case when we divide the population into mindsets.

Marketers know that people differ based upon a host of different factors, some geodemographic, some attitudinal, and some behavioral. One might want to divide the population by gender, by health concern, and so forth. The results are similar to those of the total panel.

Another way to divide people looks at the pattern of their responses to the 36 elements, putting together into non-overlapping groups of individuals who show similar response patterns to the 36 whole grain elements. This limited segmentation is known as mindset segmentation, a hallmark of the newly emerging science of mind genomics, the experimental science of the everyday (8).

Applying k-means clustering to the pattern of 36 coefficients from our 299 respondents reveals three clusters or mindset segments, two smaller ones (S1, S2) and one larger one (S3). The segments are parsimonious and interpretable: parsimonious because there are only three rather than the more typical seven or more segments often seen in attitudinal studies, and interpretable because each segment tells a fairly simple story.

1. Segment 1, "Whole Grains as Guardian," with 77 respondents, is the least interested in whole grains (additive constant = 34, meaning about one out of three people in that segment would be interested in whole grains as a basic idea)
2. Segment 2, "Basically Interested," finds the idea of whole grains interesting (additive constant = 49 meaning one out of two is interested), but finds no message compelling beyond whole grains.
3. Segment 3, "Foods which Cure," with 160 respondents, a bit more than half, respond to whole grains as a health-giving product for many diseases. Segment 3 is the target group for marketers, with the message focusing on health.

Knowing that a person is interested in whole grains does not immediately tell us the segment to which that person belongs. Typically, in these mind genomics studies, one fails to find a strong covariation between membership in a mindset segment and easy-to-measure characteristics of a person, such as age, gender, or even products purchased. Yet the data in Table II suggest very strong differences in the reactivity of the segments to the same message; what one segment "loves" another segment may hate.

To identify a person as a member of a segment requires that we move away from the traditional approach of data-mining, an epidemiological approach that looks for relations between segment membership and standard measurable properties of a person. Rather, the thinking must follow the modern medical

model in which a person is tested individually for the pattern of reactions to a set of stimuli, and from that pattern the person is typed. Blood tests to diagnose various body conditions are an example. We are all familiar with laboratory tests with our blood, which tests return with a pattern of our bodily function, and which tests point to possible medical problems.

Adopting the medical model, we create a short intervention (a "typing wizard") based on the original segmentation. Through DFA (discriminant function analysis) we identify those particular whole grain elements from our set of 36 which effectively put a person into one of the three mindset segments. DFA allows us to create a short test of four questions, based on the four discriminating elements. From the pattern of reactions to the four elements, a person is assigned to Segment 1, Segment 2, or Segment 3 for whole grains.

We see an example of the "segment assignment wizard" in Figure 3. The key discriminating elements from the conjoint analysis are edited slightly to make them simple, stand-alone phrases, each scaled on a 1–3 scale. The respondent simply clicks the answer for each question, and virtually immediately is assigned to the appropriate mindset segment, along with the appropriate messages to say to the respondent, as well as the appropriate messages to avoid. Figure 4 shows the messages that one can give to the now-assigned respondent, messages which are appropriate for the segment to which a person is assigned, but at the same time a message that does not greatly irritate people in the other segments.

Time of Day and Its Link to the Elements

We finish the analysis with a cursory look at the linkages between the 36 elements and the day-part, provided to us by the selections in question #2. As it stands, question #2 is not a typical numerical scale, but rather a scale known to measurement theorists as a nominal scale. The scale points refer to something, namely a day-part for consumption.

We transform the data, to create five new variables, taking

Table II: The three whole grain, mind-set segments, showing the base size, the additive constant (basic interest in whole grain prior to messaging), and the strongest performing elements for each segment. Segment 3 is the promising target

	S1	S2	S3
Base Size	77	62	160
Additive constant (predisposition to buy)	34	49	39
Seg1 - WG as guardian			
Did you know...fiber from whole grains protects against breast cancer	10	-9	14
Seg 2 – Basically interested... but not in specifics			
Cornmeal…good for the whole family	-6	1	-9
Seg 3 – Food which cures			
Whole grains protect against cancer, cardiovascular disease, diabetes, and obesity	7	-1	19
Just three daily servings (or 48 g) of whole grains can reduce the risk of heart disease by 25–36%	4	-3	19
Studies have shown that populations eating fiber-rich whole grains consistently have lower risk for colon cancer	0	-4	17
Did you know...fiber from whole grains protects against breast cancer	10	-9	14

on the value of 0 or 100. For example, looking at breakfast, we look at the selection of the one day-part for a vignette. If the day-part breakfast had been selected, then the breakfast variable would have the value 100; if not selected, then the breakfast variable would have the value 0. This simple decision rule and transformation allows us to create our five new variables and analyze them at an individual level to discover the linkage between each of our 36 elements and each day-part.

Table III shows us the elements most closely linked with each day-part. We expect a value around five when there is a random linkage between day-part and element. We see very strong linkages, perhaps because many elements directly mention the day-part. Many of the elements not specifying the day-part fail to show a strong linkage.

Conclusion

Through qualitative research motivated from psychodynamic practice, the 5 Key approach provides both product-centered ideas and people-centered ideas. Psychodynamics as such provides a rich, often unique resource but does not tell us which of the elements in the resource are important and which are irrelevant.

Through experimental design of ideas (conjoint analysis) we quantify the importance of different messages as drivers of interest in whole grains. We see the application of experimental design here, for a set of 36 elements divided into four silos of
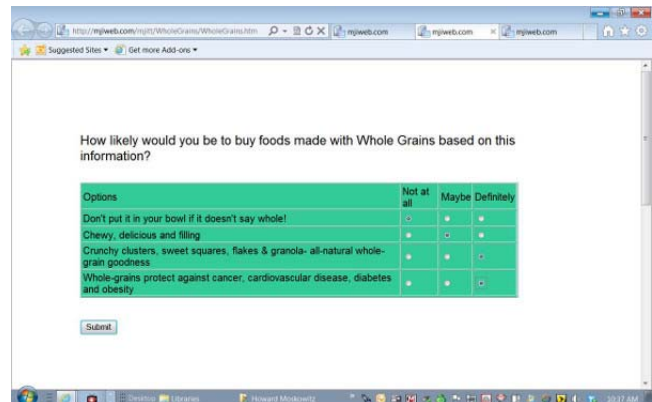

Fig. 3: The assignment wizard—four questions taken from the discriminating elements in the conjoint analysis, and answered according to a three-point scale.
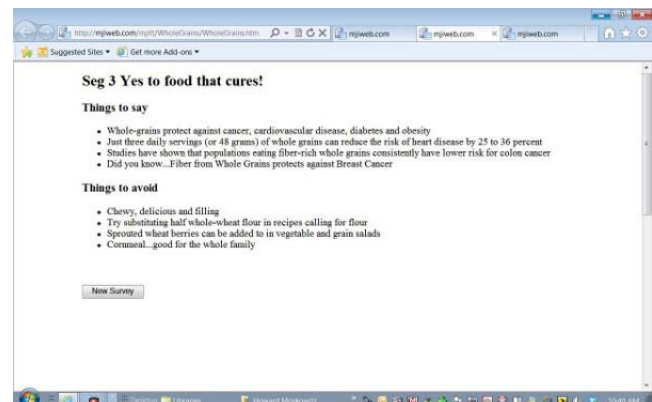

Fig. 4: Assigning the respondent into Segment 3, and the feedback provided by the assignment wizard for the particular respondent.

nine elements each. By presenting the respondent with different combinations of messages, we reduce the possibility that the respondent can answer in a so-called politically correct fashion.

The combination of empathy and experimentation provides a new tool for the researcher, a tool whose parts are already well known. The psychodynamic approach is known to con-

sumer researchers, but does not appear to have been used as the input to experimental design of ideas In turn, experimental design at the level of the individual respondent, ordinary least squares regression, clustering, and discriminant function analysis, in concert, enables us to create a knowledge base of powerful and presumably effective messages useful for design, development, and marketing.

Table III: The strongest linkages between day-part (column) and element (row). A linkage around +5 would be expected for a random linkage between day-part of element

Breakfast	
For breakfast: oat, buckwheat cereal, and whole meal waffles or pancakes are just a few options	61
Oatmeal in the morning is a great way to ensure you're getting some of the daily requirement for whole grains	52
Mid-morning snack	
Whole grain power bars… a quick way to ensure you're getting whole grains in your diet	35
Real nutrition, nothing artificial…a feel-good snack	21
Lunch	
Use whole wheat pitas, whole grain breads, or whole grain tortillas when making sandwiches	55
Sprouted wheat berries can be added to in vegetable and grain salads	29
Dinner	
Add whole grains with dinner as a side or main dish…and you've easily and simply met your RDA goals	43
Whole wheat pasta is very popular and is available in many different types (e.g., spaghetti, spirals, penne, etc.) to suit your recipe needs	43
Wild rice…goes well with the sea food	41
Whole wheat spaghetti…have you tried it?	41
After dinner snack	
Instead of chips, have 1 cup of popcorn as a quick snack	43

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