THROUGH THE WINDOW OF NEUROSCIENCE: A COMPARISON OF PRINT ADS AND TV ADS

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Introduction

Fifteen years ago, at our symposium in San Francisco, I presented a review of recent research in cognitive psychology that had, I thought, some relevance to the practice of readership research. The paper received a polite reception, but there seemed to be some initial bewilderment regarding its applicability. Happily, that bewilderment seems to have diminished over time. It is probably the symposium paper that receives the most frequent requests for copies – even at the distance of these many years.

While this paper is substantially different from its predecessor, it shares a key feature: it asks you to consider modes of learning that are far removed from the statistically-based, inferential methods that form the normative core for our profession. In the case of the San Francisco paper on cognitive methods, some of the evidence came from small-sample controlled experiments. Some came from the study of anomalous, clinically "interesting" individuals. Some came from laboratory experiments. Some came from such allied fields as linguistics or clinical psychology. None of the studies reviewed there relied upon conventional probability surveys, analyzed with the familiar statistical tools of sociology and market research. Scientific progress does not depend exclusively upon those tools and approaches, despite their centrality to our own field.

Today's paper draws upon a similarly broad array of scientific sources, but its scope is even wider – taking in recent developments in neurology, evolutionary biology, medicine (including neuroimaging techniques), and network analysis (among others). These are areas of inquiry in which the recent pace of discovery has been breathtaking. In fact, it is often said that we have learned more about the structure and function of the human brain in the last 10 years than in the entire previous history of humankind (e.g. Koch 2004; du Plessis 2005). Yet this new knowledge is only beginning to work its way into the theory and practice of market research. In his Pulitzer Prize-winning book, the eminent Harvard biologist, E.O. Wilson, coined the term "consilience" to describe the unity of knowledge that connects seemingly unrelated fields (Wilson 1999). The non-statistical part of the methodology described in this paper is based on an emerging consilience regarding the workings of the human mind. The statistical part of the methodology is based on formal network analysis. Neither will be familiar to most professionals in the fields of market research or media research. Thus, even though this is not, like the San Francisco paper, a formal literature review, it will still be necessary to lay out some of the intellectual foundations that underlie the methods used in this empirical inquiry.

The Business Issue: Is High Media Engagement A Benefit or a Liability for Advertisers?

Even if this study's methodologies stem from arcane academic fields, its business impetus will be more familiar to participants in the Readership Symposium.

Over the past few years, the media and advertising professions have engaged in a lively debate about the importance of media involvement (or engagement) – how it can be measured (Ware 2002; Malthouse, Calder and Eadie, 2003), whether it creates a positive halo for ads (Fielding and Bahary, 2003; Ware 2003), whether it is a byproduct of media targeting and relevance (Ephron 2005). Though this conversation seems to have begun in the print media, it has also taken place among the practitioners in other media as well (Knowledge Networks, 2004; Online Publishers Association, 2003; Buchwalter 2005). While evidence for it has been shaky, the assumption has generally been that the more involved people are in the media, the more likely they are to pay attention to the advertising in those media.

Imagine then the surprise that attended the 2003 release of findings from a large-scale behavioral tracking study of TiVo users. The study, co-sponsored by Starcom and TiVo, unobtrusively tracked the behavior of 11,000 TiVo users across 5 months. The study found that TiVo users took full advantage of the "ad zapping" capabilities of their TiVo systems: a full two-thirds of TV programs were time-shifted for later viewing and, among those, 75% of the ads were skipped during playback.

Of particular note to those following the debate about media engagement was the paradoxical finding that the most popular TV programs were the MOST likely to be time-shifted, and thus the most likely to result in ad avoidance. This seemed to stand conventional wisdom on its head. Could it be that advertising in high-involvement media could actually be a liability for advertisers? Research in media other than TV tended to point in opposite directions. In particular, two studies reported at the Cambridge Symposium (Fielding and Bahary, 2003; Malthouse, Calder and Eadie, 2003) indicated that magazine readers did not draw sharp distinctions between the advertising and the editorial of many magazines; moreover they sometimes viewed advertising as an essential part of the "essence" of some magazines – a benefit rather than an annoyance. This seemed to be particularly true for vertical magazines, presumably because they have stronger reader communities with shared interests and passions and because they contain more endemic advertising that is of clear relevance to those readers.

The paradoxical findings of the Starcom/TiVo study led me to frame the following hypothesis for this study:

- Television commercials interrupt the narrative and flow of the TV program, thereby undermining the viewer's control over the television experience. As a result, the more involved the viewer is in the TV program, the more resistant she is to the advertising in that program.
- By contrast, magazine advertising does not fight against the medium in which it is found, does not interrupt the flow, and does not reduce the reader's sense of control over the magazine experience. As a result, the more involved a viewer is in the magazine, the more receptive she is to the advertising in that magazine.

In effect, I hypothesized a similar causal model for the relationship between engagement and ad receptivity. However I propose that the sign is different:

- For TV: ENGAGEMENT → AD RESISTANCE
- For Magazines: ENGAGEMENT → AD RECEPTIVITY

The Starcom/TiVo study had already established a strong behavioral and statistical case for the claim that, for television, high program engagement leads to advertising resistance. Since I could conceive of no feasible observational technique that could provide comparable tracking of magazine reading behavior, I searched instead for methodologies that could be applied equally to both media. However I was also painfully aware of the special problems associated with studying consumers in their relationship to advertising. Decades of research have shown that people often do not remember the advertising they have seen, even when it can experimentally be shown to have influenced their perceptions or behavior.   Social desirability set is a significant problem when interviewing about advertising: People like to complain about advertising and to claim that it does not influence them. They might be willing to articulate their advertising resistance, but could they give a comparable account of their receptivity?

For these reasons, this study eschewed direct questioning in favor of the more psychologically subtle, indirect methods of inquiry gaining favor in some quarters of the market research profession. In particular, we turned to techniques developed by sociologist Gerald Zaltman, Professor at the Harvard Business School and Fellow at Harvard's interdisciplinary Mind, Brain, Behavior Institute. Built upon the foundation of recent advances in neuroscience, Zaltman has developed a methodology known as ZMET (Zaltman Metaphor Elicitation Technique). ZMET borrows from such familiar techniques as projective questioning and laddering, but it extends them in very specific and unique ways. In fact, ZMET is specific and unique enough to have won a patent from the United States Patent Office (Zaltman 2003). However before describing the ZMET approach, it would be helpful to outline at least the key findings from neuroscience that underlie ZMET.

Neuroscientific Foundations of ZMET

Though many of our notions of how the mind works can be traced all the way back to antiquity (Pinker 2002), one of the most influential frameworks was built by Rene Descartes in the 17th century. With his famous dictum *cogito ergo sum*, Descartes urged us to focus on the rational and verbal aspects of thought as those which made us human and thus distinguished us from animals (Damasio 1994). The father of modern psychology, Sigmund Freud, called our attention to the subconscious and its ability to drive behavior even when we are not aware of it. He also proposed therapeutic approaches designed to surface latent feelings and thoughts; however Freud still worked within the Cartesian system that viewed emotions as the enemies of our higher rational selves. Indeed, most of contemporary psychology has implicitly held to this belief – helping people to manage their emotions in pursuit of healthy adjustment, however that is defined (LeDoux 1996). Even neurology conformed to the Cartesian paradigm. For example, in the 1970s Roger Sperry's surgical work on epileptic patients led to a series of (now-discredited) hypotheses regarding the contrasting functions of the left and right brain hemispheres – with the left supposedly specializing in (rational) verbal functions and the right in visual/spatial (emotional) functions. Market researchers of the time (e.g. Herb Krugman) used Sperry's notions of right brain/left brain differences to formulate hypotheses on how advertising works and should be measured (du Plessis 2005).

However the 1990s witnessed an outpouring of new research, some of it based on new neuroimaging techniques like fMRI (functional magnetic resolution imaging) and fDOT (functional diffuse optical tomography), that have allowed researchers to observe and map brain activity (electrical pulses, blood flows, chemical changes) happening simultaneously in different parts of the brain in response to various stimuli (Kosslyn 1994; Addison 2005). Using these new tools, together with other advances in medical measurement, neurologists are beginning to understand the neurological correlates of consciousness (Koch 2004; Edelman and Tononi 2000; Damasio 2000; Carter 1999). This flood of new insights into the structure and function of the brain has upended long-accepted paradigms, including the Cartesian one (du Plessis 2005). While we still do not have sufficient knowledge and consensus to be able to publish a Gray's Anatomy for the brain, we are closer than might have been imagined only a decade ago. At the risk of oversimplification, here are some of the most important findings from neuroscience that underlie the ZMET approach adopted in this study:

- Emotions originate in the brain's (mammalian) limbic system as autonomic reactions. Rather than "fighting" with the rational, logical functions operating in the (human) prefrontal cortex, the emotional system communicates with the reasoning system to jointly affect behavior. In effect, emotions influence which phenomena we pay attention to with our rational selves (Damasio 1999; Forgas 2001; Luce, Bettman and Payne 2001; Damasio 1994).

- People do not think in words. Indeed, two-thirds of the raw stimuli that reach our brains are visual data that arrive through the visual cortex. Thoughts (ie. neuron activation) precede both consciousness of thought and mental activity involving verbal language. Thus, congruent with Freud's prediction, much thought occurs without conscious awareness of it, and without verbal articulation of it. Indeed 95% of thought is unconscious (ie. happens without our being aware of it), a point that was explored this year in the bestselling book "Blink" by Malcolm Gladwell (Gladwell 2005). Thus, our thinking is not "covert language" but rather tacit knowledge. Cognition shapes language, not the other way around. Even that subset of thought that involves **communication** is, among humans, 80% non-verbal – a kind of paralanguage. (Lieberman 2002; Wegner 2002; Stokoe 2001; Hopkins 2000).

- Because so many of our thoughts are hidden below the level of consciousness and language, surfacing them is a challenge. Non-literal language, and especially metaphors, are central to how humans think: we represent one thing in terms of another. By examining metaphors, researchers can gain access to unconscious thoughts and surface constructs that might otherwise elude detection. While the constructs are interesting in and of themselves, it is the nature and degree of association between constructs that provides the most interpretive insight since this allows one to identify the "thought bundles" -- the mental models (both emotional and rational) by which people interpret stimuli. (Zaltman 2003; Cameron and Low 1999; Fiumara 1995; Lakoff and Johnson 1999).

- Mental models are shared among social groups (or market segments). This phenomenon allows one to construct "consensus maps" representing shared perceptions among members of a population. Nearly all components of the mental map and of the links among the constructs can be derived from relatively small samples, though larger probability samples are required to estimate statistical relationships among the constructs. (Zaltman 2003; Reynolds and Olsen 2001; Zaltman and Coulter 1995; Hauser and Griffin 1993 Clemens and Winkler 1985; Morrison and Schmittlein 1991).

Application of ZMET Interview Methodology in this Study

Zaltman's research methodology draws directly on this body of neuroscientific discoveries and applies them to market research problems. Each ZMET interview is a one-on-one discussion of approximately two hours' length. In preparation for the interview, participants are asked to collect visual images that represent their thoughts and feelings about the research topic. As a result of this pre-interview work, participants arrived for their in-depth interview at an advanced stage of thinking, ready to discuss their thoughts and feelings. In this instance, the research topic was framed in a very simple way:

- For the magazine-involved respondents: "We are interested in your thoughts and feelings about advertisements in magazines and the role they play in your life. Please bring 6-8 pictures that represent these thoughts or feelings".
- For the TV-involved respondents: "We are interested in your thoughts and feelings about advertisements on television and the role they play in your life. Please bring 6-8 pictures that represent those thoughts or feelings".

The 15 magazine-involved respondents were screened to ensure that they subscribe to at least three magazines that they read frequently (ie. at least 3 out of last 4 issues) and that they read thoroughly (at least ½ of the each issue). Quotas were set to ensure that a diverse mix of magazines was represented, cutting across genres and publication frequencies. Naturally, most of the magazine-involved respondents also watched television, so some of their attitudes toward magazine advertising were contrasted to their feelings about TV advertising.

The 15 TV-involved participants had to watch at least an average of two hours of TV/day (a modest level, according to Nielsen), had to follow actively at least two TV shows on commercially-supported television, with at least one of those favorite shows airing on broadcast TV. To facilitate cross-media comparisons, the TV-involved respondents also had to read frequently at least one magazine/month.

The ZMET interview procedure relies on the process known as "laddering" in which the interviewer only pursues leads that are provided by the participant. ZMET strictly prohibits the interviewer projecting herself into the narrative, just as the method eschews the use of conventional discussion guides – devices that usually impose the researcher's agenda and frame questions in ways that fit the researcher's preconceptions. With ZMET, the only legitimate questions are those that follow-up on ideas already expressed by the respondent.

Storytelling about Each Picture. The interview begins with each respondent talking about the pictures he or she has brought to the interview session. The first task is storytelling about the picture – exploring the meaning that the participant associates with each picture that he or she has brought to the interview. The ZMET interviewer will probe, without adding any elements beyond those mentioned by the participant. For example:

- "It's a fragrance ad for Vera Wang. It's launching obviously Vera Wang for men but it shows the one for women as well. So it has a man and a woman holding each other very close kind of looking into each others eyes. But to me I think it's selling, in order to sell their fragrance it's really selling love and closeness and romantic feelings so maybe saying that that fragrance is going to give you all those things."
- *"What's that mean in this context of advertising in magazines?"*
- "I think they're trying to sell something that's not real, something we all want but is really more fantasy than reality."
- *"What's fantasy mean?"*
- "Just kind of over the top, not what's going to happen day to day, but those sort of extra fluffy feelings you might have from things like love that I mean, can happen, but really isn't the reality of everyday daily marriage."
- *"And in your mind is that a positive thing or a negative thing that they over romanticize it?"*
- "I think it could go either way …"

Participants describe images they wanted to find but could not and what the images would express.

- *"Were there any issues or ideas for which you were unable to find a visual image?"*

Participants further explore the metaphoric meaning of selected pictures.

- *"If you could widen the frame of this picture in all directions, and it doesn't have to be realistic, what else would I see that would help me better understand your **thoughts and feelings about advertisements in magazines [or on television]** and the role they play in your life?"*

Participants represent the research issue in the form of sensory experiences.

- *"What **sound** could I hear that would represent your thoughts and feelings about advertising in **magazines?**"*
- *"What **sound** would represent your thoughts and feelings about advertising on **television?**"*

Participants create a story about the research topic.

- *"I would like you to use your imagination to create a short story. The story should express your **thoughts and feelings about advertising in magazines/on television** and the role it plays in your life. Please include at least these **characters**: (1) **you**, (2) **advertising in magazines**, and (3) **advertising on television** ."*

Summary Collage. While the interview has been taking place, a technician in an adjoining room has been using software to format all of the respondent's images into a computer file. At the end of the interview, each participant works with the software technician to create a summary collage which summarizes the participant's thoughts and feelings – effectively linking up the different elements represented by the diverse images. The interview concludes by asking questions about the meaning of the collage assembly of images.

A New Twist: Application of Formal Network Analysis to ZMET Data

Though Zaltman's research team typically analyzes their interview data using context-rich, qualitative methods, we took a different, more mathematically unique route for analysis of these data. Indeed, we applied the context-neutral methods of formal network analysis to assess the degree to which the ideas people hold about TV and magazine advertising are connected enough to form coherent "maps" that guide their understanding and behavior toward advertising in those media.

As noted earlier, this study relied upon one-on-one in-depth interviews with relatively small samples of consumers (N=30). As such, it falls outside of the tradition of statistical surveys. While some dogmatists might prefer asking superficial questions to large samples to this study's in-depth probing of small samples, our choice of the ZMET approach is justified, in part, by a market research tradition that has established that key consumer constructs can be discovered even with small sample sizes. This will be intuitively obvious to any who have undertaken extended focus group projects – only to discover that 80% of the key ideas surface within the first two or three groups, with the remaining groups mostly covering repetitive ground or offering "confirmation". A more formal exploration of this phenomenon was undertaken in 1993/1994 by a consortium of three big companies – DuPont, Eastman Kodak and General Motors. This consortium conducted a meta-analysis of several proprietary studies in which one-on-one interviews had been conducted with at least 100 respondents. In this meta-analysis, they attempted to understand how many interviews were needed to surface most of the key constructs. The results, displayed in Figure 1, show that the key inflection point comes very early: at some point between 5 and 9 respondents.

Figure 1: The Power of Small Samples

No. of participants (one-on-one interviews) required to provide all Key Constructs

Dupont/ Eastman Kodak/ General Motors Research Consortium 1993-94
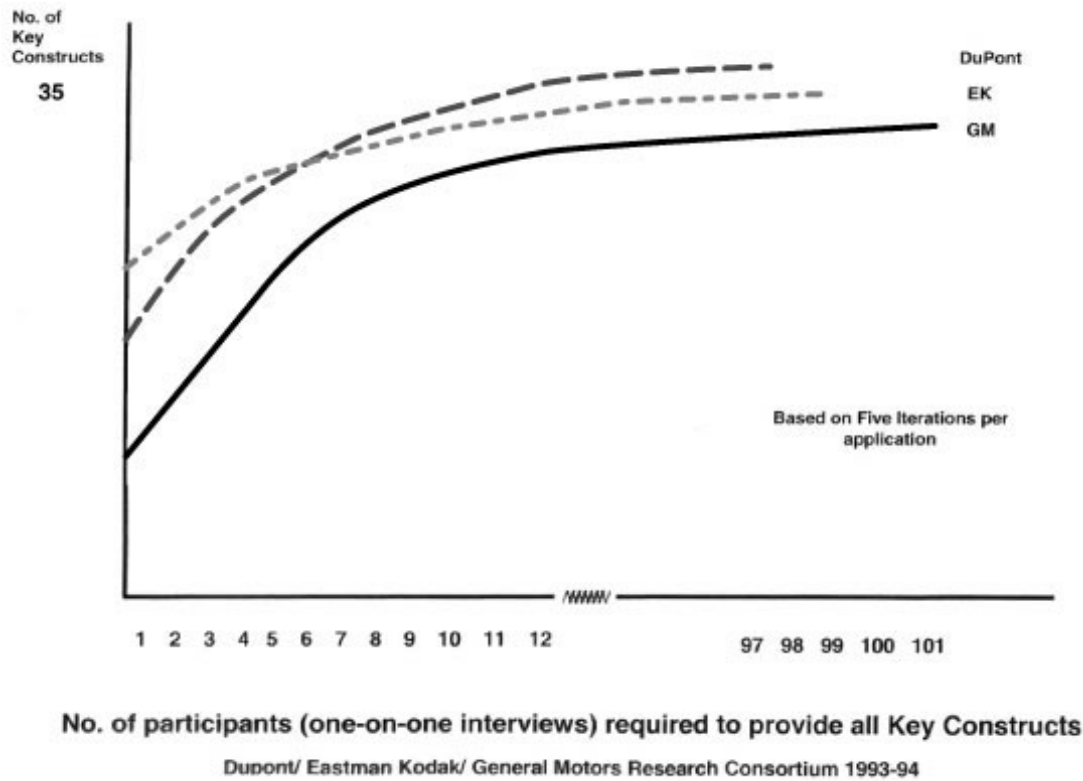
In this instance, we were interested not just in surfacing the key constructs concerning consumers' relationship with magazine advertising and with TV advertising, but also in understanding how those constructs were connected in people's minds. For this, we turned to a set of measures, derived from the mathematical domain of graph theory, more usually applied to social network analysis to analyze the patterns of relationships among people. In essence, we adapted that approach here to analyze the patterns of thoughts that connect the constructs related to TV and magazine advertising. This provided us a context-free, content-free method for analyzing the ZMET interview data.

The raw interviews were transcribed verbatim and content analyzed. While conventional content analysis would tabulate the frequency of mentions of particular items of content, this analysis looked also at the frequency with which constructs were linked and the closeness of that linkage. So, for example, a respondent might have linked the idea of "reading" to the idea of "volunteering my time". Then, in turn, she might have linked "volunteering my time" to the idea of "control". The idea of "volunteering my time" would have had a direct link to the other two constructs, but the constructs of "reading" and "control" would have been one degree of separation in the network analysis. The coded interview data are thus analyzed to find the thresholds at which consensus develops regarding those linkages and those degrees of separation. This is shown in Figure 2.

Figure 2

Generating consensus network data
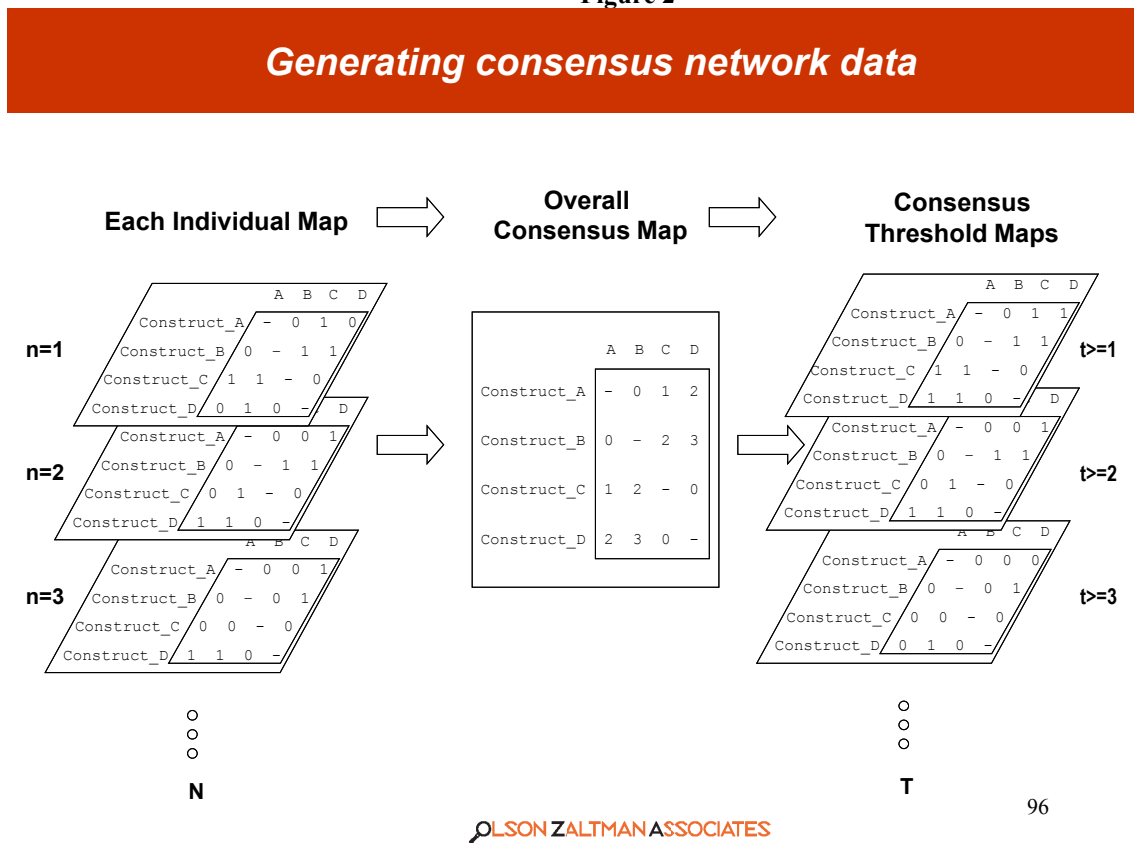
Thus the network analysis uses this transformation of the raw interview data to begin exploring the acceptable threshold at which consensus appears among the respondents. The network measures, though a mainstay of network analysis, are probably unfamiliar to most market researchers. Key criteria for analyzing and mapping consensus constructs include:

- At what threshold do we see the inflection point for the percentage of all evoked constructs?
- How densely are the different constructs linked at that threshold?
- How do the constructs cluster themselves and form intrinsic linkages representing a "map" of market perceptions?

More formally, these are represented as:

Figure 3

Selecting consensus map thresholds (measures)

- **Percentage of all evoked constructs**

$$= \frac{map_1 \cap map_2 \cap \wedge \cap map_T}{map_1 \cup map_2 \cup \wedge \cup map_N}$$

$$= \frac{28}{95} = 29\% \text{ for } T = 9$$

- **Consensus map density**

$$= \frac{2L}{g(g-1)} =$$
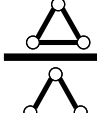
$L = 0, g = 4$ $L = 2, g = 4$ $L = 6, g = 4$
Density = 0%   *Density = 33%* *Density = 100%*

$$= \frac{32}{28(28-1)} = 8.5\% \text{ for } T = 9$$

- **Percentage of "two-step" triples in triad census**

$$= \frac{172}{19656} = 0.88\% \text{ for } T = 9$$

- **Weighted clustering coefficient**

$$= \frac{48}{172} = 28\% \text{ for } T = 9$$

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Though the DuPont/Eastman Kodak/General Motors meta-analysis led us to expect that we would see a convergence of measures at the parsimonious T=9, an examination of the four key descriptive network measures shown in Figure 4 suggested that the richest consensus maps would emerge from setting the threshold at T=11.

Figure 4
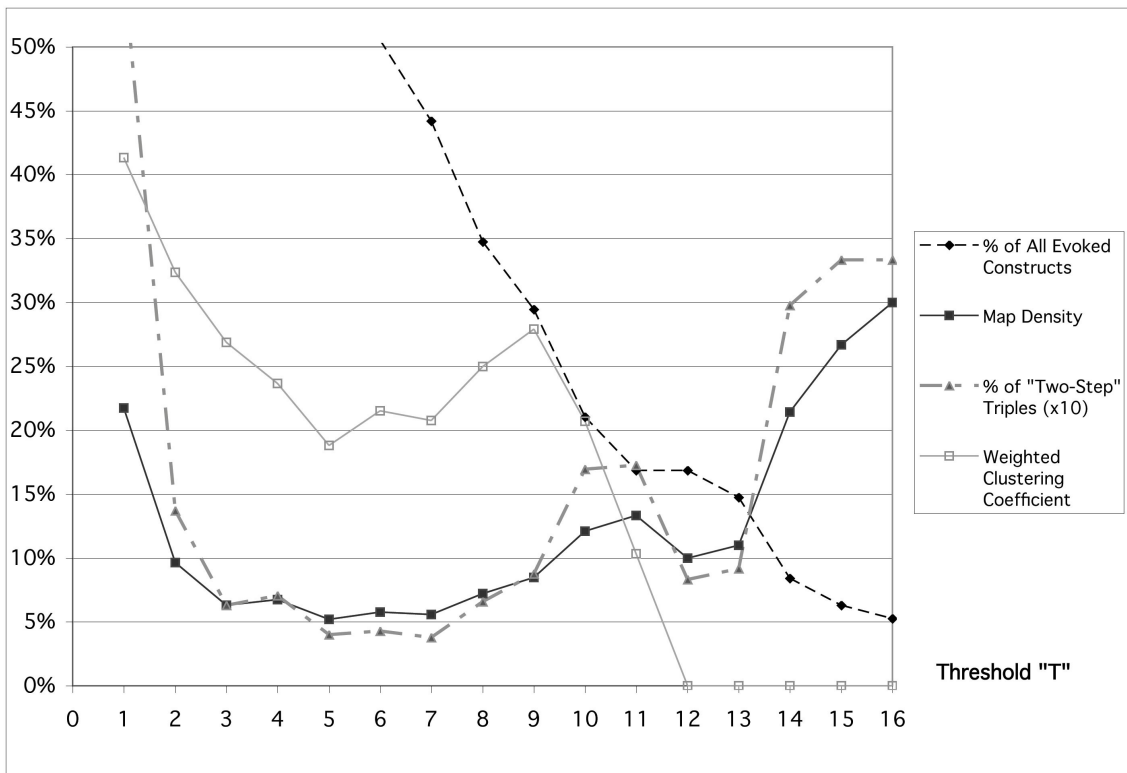
The network analysis proceeded next to assessing the structure of the consensus maps by examining three network properties:

- Network cohesion and contrality. These measures described the overall connectedness of the emerging map of consumer constructs about magazine and TV advertising, representing the degree to which those constructs were linked in the minds of the people we had interviewed. The formal network measures evaluated here included:
    - Average geodesic path length (ie. degree of separation)
    - Percent of theoretical maximum for the average path
    - Diameter
    - Degree of centralization
    - Betweenness centralization

- Cliques in the map substructure. Applied to this study, network "cliques" are thoughts that are completely connected to each other (e.g. salt & pepper, yin & yang). Measures included:
    - Number of cliques
    - Percentage of the constructs that were in cliques

- Structurally equivalent clusters in the map substructure. Translated to this application, this part of the analysis looked for thoughts or constructs that are similar because they connect to the same set of other thoughts.
    - The measure for this network feature required calculation of the percentage of the maximum Euclidean distance of the most uniquely connected construct (see Figure 5).

Figure 5

Describing consensus map structure (measures)

Euclidean distance: $d_{ij} = \sqrt{\sum_{g=1}^{G}(x_{ig} - x_{jg})^2}$

	A	B	C	D	E
Construct_A	–	1	1	0	0
Construct_B	1	–	1	1	1
Construct_C	1	1	–	0	0
Construct_D	0	1	0	–	0
Construct_E	0	1	0	0	–

$d_{AB} = \sqrt{(0-0)^2 + (1-1)^2 + (0-1)^2 + (0-1)^2} = \sqrt{1+1} = 1.414$

$d_{DE} = \sqrt{(1-1)^2 + (1-1)^2 + (0-0)^2 + (0-0)^2} = \sqrt{0} = 0$
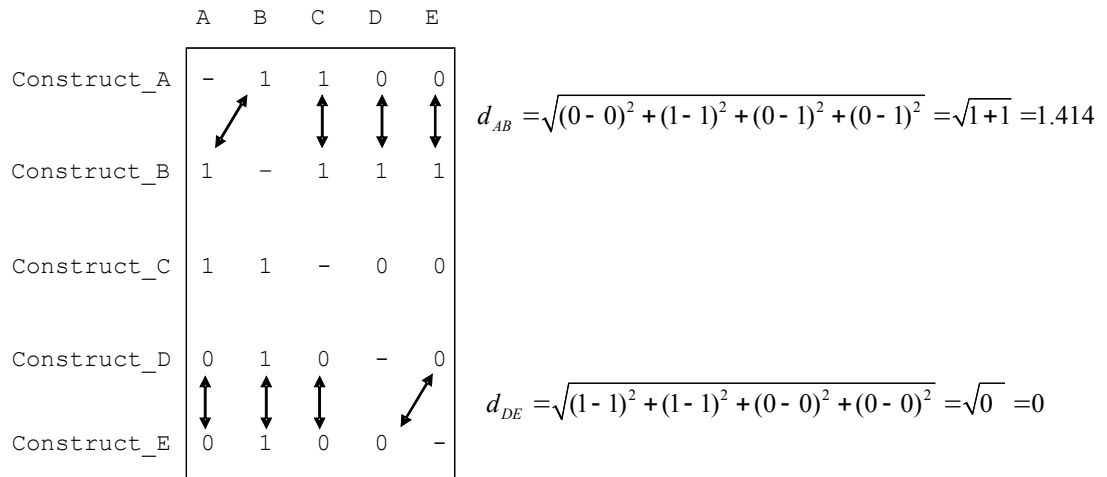
The smaller the distance, the more structurally equivalent the constructs

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The examination of the Euclidean distance measures argued for setting the threshold lower, to T= 6, since at that level one sees the maximum differentiation of the constructs. Beyond T=6, the constructs start becoming more structurally similar to each other, as can be seen in Figure 6.

Figure 6

Ultimately, we elected to set T=9 for most of our analyses. However it was clear that the maps generated by our network analysis were nearly the same within any range from T=4 to T=11. At the higher thresholds, there were fewer constructs and simpler map structures. At the lower thresholds, there were more constructs, but they tended to have more overlapping meanings. However it was clear that the fundamental results were robust, regardless of the T level we selected. It was also clear that the underlying structures of the consensus maps were very similar for both magazines and TV. Indeed, the participants tended to have very similar views of advertising in the respective media, regardless of whether they were mostly magazine-involved or mostly television-involved. As indicated in Figure 7, the underlying network properties are quite similar for the two consensus maps generated by our research.

Figure 7

Describing consensus map structure (results)

Magazine and TV Segments have similar complexity of structure

(T=4)	Magazine Segment	TV Segment
Characteristics		
% of All Evoked Constructs	49%	47%
Density	5%	6%
% of "Two-Step" Triples	0.4%	0.4%
Weighted Clustering Coefficient	14%	15%
Cohesion & Centrality		
Average Path Length	4.37	4.40
% of Max Avg Path	35%	38%
Diameter	10	10
Network Degree Centralization	18%	16%
Network Betweenness Centralization	43%	52%
Substructure		
# of Cliques	7	8
% of Constructs in Cliques	33%	44%
% of Max Euclidean Distance to Most Unique	50%	50%

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Results: What Did We Learn About Consumers Relationship to Magazine and Television Advertising?

By now, diligent readers will have worked their way through a lot of methodological preliminaries. First we discussed the neuroscientific research that underlies ZMET. Then we discussed the ZMET methodology itself and its specific application to this research problem. Most recently, we detoured through the rigors of formal network analysis, the approach we selected for analyzing the 70 hours of interview data available from our fieldwork. What did it all net us?

The key constructs that we surfaced through the interviews are summarized below. Each key construct related to advertising ultimately appears on the consensus maps that are the output from our network analysis.

- Both TV and magazines help people relax. Both provide escape from daily life and allow people to imagine themselves in a different world.
    - o TV is relaxing in that it offers an escape to fantasy. It makes few demands on the viewer to be involved – a feature that is seen as a benefit. TV helps people disengage from active thinking. It speaks and flashes images without any interaction from the viewer. Though TV sometimes provides information and utility, its primary role is to provide low-stress entertainment. For some, it provides "white noise" that helps people disengage from the world without feeling lonely.
    - o Magazines are also relaxing in that they provide the reader with a sense of intimacy. The reader's voice becomes the magazine's voice as they project themselves into the magazine. In effect, the reader lends the magazine his or her own voice. The reader provides the soundtrack. Magazines are also strongly associated with learning and with personal efficacy. Readers also find it relaxing to exercise their minds and to open up to new ways of seeing the world.

- Consumers feel overwhelmed by the incessant barrage of TV advertising. They feel attacked by the quantity and unrelenting stimulation of TV commercials, and the onslaught leads to a battle for control. TV commercials interrupt the enjoyment of the entertaining program narratives; the more involved the viewer is in that narrative, the more irritated they tend to be at the interruption and by their inability to control that experience. There is considerable resentment of advertising that is seen as manipulative – that works through fear or through outright misrepresentation or deception. As a result, consumers erect barriers that make advertising more difficult: they resist spending time or paying attention; they doubt claims; they experience specific ads as part of the blur of clutter. In this environment, it is increasingly difficult for advertisers to put across their messages.

- Magazines offer consumers an entirely different experience. While TV undermines the viewer's sense of control,

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magazines do the opposite: they increase the reader's feeling of control and efficacy. Rather than being shouted at and distracted, readers feel that magazine ads invite them into the world of the advertisement, an invitation they are comfortable accepting as long as they retain their sense of control. Magazine ads are viewed as mostly appropriate to the magazines in which they appear – and this perception is not limited to endemic advertising in vertical magazines. Because magazine ads tend to be targeted far more precisely than TV ads, the ads in magazines are seen as appropriate, as relevant to the individual reader or to his or her peers. The still images of magazine ads actually have an advantage in that readers elect to linger on them or to pass them by; when they do linger, they "volunteer" to immerse themselves in the ad's embrace for as long as they want to appreciate and absorb it.

- Consumers create their own mix of ideas by using some of the ad and some of their own frame of reference. It is the interplay between ideas in the ad and those consumers already have that produce a new frame of reference. Successful ads engage consumers' storytelling abilities. When images in an ad can be easily interwoven with the consumer's memories or imagination, a very powerful brand story is created by the consumer. The best print ads actually tend to be those that are not didactic, but that leave part of a puzzle for the reader to decode. In a world that is perceived as dangerous and chaotic, magazine ads have the aesthetic appeal of order, peace, harmony and control.

Probing Metaphors Related to Television Advertising

- TV commercials most often work by trying to be funny and entertaining (like the programs in which they are placed). TV commercials try immediately to grab the viewer's attention by using humor or by being provocative. Entertaining commercials can spark conversation and become part of a social interaction with other people. Humor will make people laugh, but it usually does not provide a sufficiently compelling idea that will motivate toward making a purchase. Moreover, many TV commercials go too far with humor – taking exaggeration or fantasy to an extent that lessens the personal relevance of the commercial. The attempt to make commercials entertaining for everyone in a short period of time makes viewers feel that the advertisers think they are stupid; being made to feel stupid can make consumers feel disconnected and even distrustful of an ad.

- Visual movement is a unique characteristic of TV commercials, and many viewers appreciate TV commercials which show products in motion. However the movement in TV commercials often lacks direction. Many commercials have too many things going on in them, all at a fast pace, which makes them difficult to follow. When assembled, as they are, in commercial pods, these fast-paced TV commercials quickly pollute the senses and lead to the feeling of "bombardment". The lack of direction in the visual movement causes problems with the interpretation of the ad's message since viewers are thrown off by a cue along the way. Viewers frequently focus on something in the chaos of the ad other than the product or the message.

- TV commercials disrupt the viewer's efforts to escape to a fantasy world. The stark contrast between the theme and the tone of the show and the theme and the tone of the commercials aggravates the sense of being disrupted. This problem is exacerbated by the lack of consistent theme or tone among the commercials in a commercial break – all contributing to the sense of chaos and disruption, to the sense that TV commercials aggressively "come at" them.

- Inability to avoid this disruption reminds viewers of their lack of control. Viewers feel trapped when TV commercials disrupt their show. They cannot control the disruption, the duration of the interruption, nor the lack of personal relevance that the commercials have to their lives. This lack of control stimulates feelings of frustration that the commercials are wasting their time.

- Having no control makes viewers feel that TV commercials are only interested in leading them to buy products. Cynicism becomes a line of defense against manipulation. Viewers personify TV commercials as a used car salesman, or as a snake – slippery, deceptive, shifty.

- TV commercials do not allow viewers enough time to adequately reflect on the ads message. When a viewer does see a commercial that is interesting, there isn't enough time to contemplate if the product has personal relevance to him because he is immediately distracted by the next commercial. Partly because of their short time duration, TV commercials typically are shown repetitively. Repeated viewing of the same commercial provokes feelings of boredom, irritation and, ultimately, retaliation. Forms of retaliation (short of TiVo) include daydreaming, talking to others in the room, changing the channel, pushing the mute button, turning down the volume, going to the bathroom, fetching food or drink, or using other media at the same time (e.g. the Internet).

- Commercials turn the relaxing TV experience into a battle for control. In this context, DVDs and TiVos become crucial weapons for consumers attempting to reassert control over their viewing experience.

- Viewers symbolize TV commercials with the color RED: stimulating, alive, attention-getting, but also overwhelming, distracting, warlike, loud, angry, disruptive and intruding. Red is the color of battle and of war.

Probing Metaphors Related to Magazine Advertising

- The magazine experience creates a sense of control. Readers control the time they spend with the magazine, and they know what to expect from magazines and their ads. Magazine ads don't shout at readers, but rather invite them into the world of the advertisement. Control remains with the reader. Because readers are in control, they feel comfortable accepting the invitation to step into the world of the magazine ad. Accepting the invitation is like accepting a warm embrace. With a still image, the reader can volunteer to immerse himself in the ad's embrace for as long as he wants to appreciate and absorb it.

- The real world is chaotic, but magazine ads restore a sense of order and serenity.

- Readers co-create with magazine advertising. They project their meanings into the ads. Consumers enjoy advertising that gives them pieces of a puzzle. By completing the puzzle with their own pieces, the ad becomes part of the consumer. Having a share in this construction allows the reader to more easily envisage using the product and/or getting benefits from it. Being able to envisage oneself using the product in the ad inspires feelings of comfort and ideas about how the product will fit into their lives. When readers can hear their own voices speaking in the ads, their sense of trust and comfort is increased – easing the way toward making a purchase.

- Magazine ads that suggest metaphors invite readers to solve a puzzle. Comprehending metaphorical ads is mentally satisfying. Whereas TV commercials usually tell linear and literal stories, some readers think that magazine ads rely on combining different cues that are less linear and more metaphorical. Similarly, some magazine ads remind readers of maps. Consumers enjoy ads that seem to contain markings or cues from their own personal experiences. Being able to recognize the representation of those experiences makes readers feel distinctly human. Like maps, magazine ads are viewed as being more informative (especially by comparison to TV commercials). Like maps, magazine ads serve as a resource for future journeys – with information to be stored away until needed at time of product consideration. Ad reading, like map reading, can make people feel smarter and more aware of their surroundings.

- Magazine advertising does not disrupt its own medium. Magazine advertising is frequently compared to bridges or highways that connect the editorial parts of the magazine together and that are part of the "flow" experience of going through a magazine. Because magazine advertising is part of the same relaxing flow experience of reading a magazine, readers do not put up their guard when they encounter magazine advertising.

- Readers symbolize magazine ads with the color BLUE. Blue is relaxing, calming soothing. It is symbiotic with the whole process of reading, with dark blue representing symbiosis or "working together".

  - From the Penguin Dictionary of Symbols: "Light blue is the color of meditation; as it darkens it becomes the color of dreams. Blue evokes the idea of eternity, calm, the superhuman, the heavens. It awakens a yearning for purity. Blue surroundings calm and soothe but unlike green they do not stimulate, since they provide merely an escape from the world".
  - From the Encyclopedia of Traditional Symbols: "In the war between Heaven and Earth, blue and white were allied against red and green".

The Deep Metaphors

- Zaltman's method seeks to discover the "deep metaphor" connected to the object of the study. A "deep metaphor" is a fundamental orienting structure that operates automatically and unconsciously. It is the lens through which we view the world, a system developed through embodied cognition. Deep metaphors are usually created early in life to make sense of the world. They are socially shared and thus rooted in social contexts. They are few in number and universal. (Zaltman 2003).

- The deep metaphor for television is **movement**, whereas the deep metaphor for magazines is **container**. This is reflected in common forms of speech related to the different media: we see a program "on" TV, but we read an article "in" a magazine. "On" connotes transience and motion, while "in" connotes integration and control.

- TV moves. It does not demand any interaction and can easily carry the viewer away to a fantasy world. However the fantasy world is broken each time there is a commercial break. TV commercials themselves have movement, but these rapidly and constantly change direction. The result is confusion and the feeling of being overwhelmed. The viewer takes a combative position to move against the efforts of the commercials.

- The magazine container offers the reader complete control. The magazine only invites rather than demands that the reader step into the ad. Accepting the ads invitation happens more frequently with magazine advertising because the magazines are more targeted to their audiences, thus the ads are more relevant and more consistent in theme and tone with the content of the magazine. Because the reader has complete control, he is comfortable lingering as long as he wants with the ad, projecting himself into the ad if desired. Or the reader can disengage from the ad at any time and continue the journey through the magazine. The reader takes a collaborative position with the advertising because he appreciates the respectful way that the magazine ad makes its approach.

- Which advertising form is closest to a 3D experience? Some consumers initially think of TV as being a multi-dimensional medium because it has sound as well as movement, whereas print ads are still and silent. However when consumers discuss the system of advertising that operates in both media, they describe the frustration of their inability to absorb adequately the images that flash at them rapidly from the screen. Even when they encounter a commercial that is personally relevant, the short duration of the commercial only allows for a small mental space to be opened where the images can reside before it is crowded out by the next image. The soundtrack of the commercial often distracts from the communication, adding to the sense of overload. The lack of time to integrate any images more fully into one's mental eye and "own it" by adding images to it from one's own experience means that most images from TV commercials do not resonate. This makes it difficult to engage the consumer in storytelling. By contrast, readers hold magazines close to them and feel no need to defend against sensory overload. They more easily become immersed "in" the magazine. In the world of the magazine, the reader controls the flow through the articles without needing any defenses. When he meets an ad that is personally relevant, he can wander around in it for as long as he likes, bringing new images to the scene from his own experiences and dreams. Wandering around in his own imagery creates a very three-dimensional experience. The reader gains more trust and confidence when he likes what he envisages and is thereby more motivated towards considering a purchase.

The Consensus Maps

As noted earlier, consensus maps are a key output of the ZMET methodology. In this study, they were generated both by the usual evaluative techniques of the ZMET analysts, but also independently by the context-free network analysis techniques described above. Consensus maps represent bundles of thought, or constructs, that many consumers share regarding a specific subject. A particular thought never stands alone, but rather is connected to related ideas and thoughts. In a sense, consensus maps represent the "lens" through which we view and interpret reality. They thus serve as a graphic representation of the way that consumers frame their thinking about a topic. Consensus maps thus capture the socially shared connected constructs that are most prominent in their minds. In this sense, they serve as an "anatomy" of the mind of the market.

Given the similarity of the network analysis diagnostic results for the magazine and the TV segments, it is not surprising that the maps for the two segments are very nearly identical.

For the magazine-involved respondents, the constructs that link most directly to Reading are the constructs of Control, Stillness, Projecting My Meaning, Being Open to Interpretation, Flow Experiences, and Being Informative. The constructs have a high degree of centrality, with relatively few interconnections to each other, but with tight links back to the central construct of Reading. The "Informative" construct is critical since it links to several other advertising-relevant constructs: making the reader feel Smart, demonstrating Relevance, commanding Attention, Encouraging Action (and through that link, encouraging Product Experimentation). The "Informative" construct also connects more distantly to social notions of Common Interests (with other readers of the same publications) and to the Enhancement of Relationships. However the core constructs that are most closely linked to magazine Reading are those that define very private, quiet, personal, and autonomous values.

Figure 8

Magazine Segment
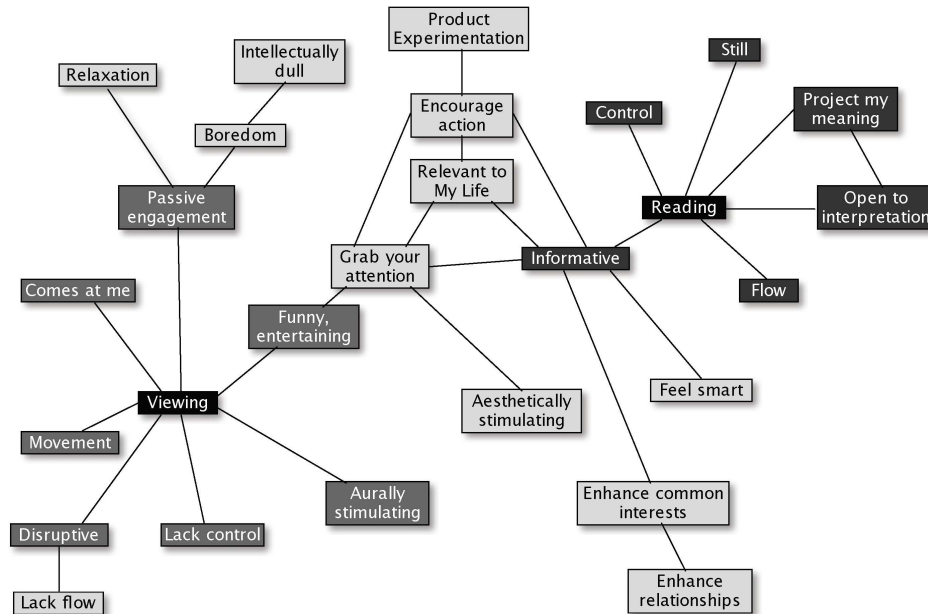
Notice, however, that the cluster of constructs surrounding Viewing is also highly centralized – but the constructs in that represent far more ambivalent values than we saw huddled around Reading. On the plus side, Viewing is associated with being Funny/Entertaining, a construct that is linked closely to Grabbing Attention – and from there to Encouraging Action (and ultimately to Product Experimentation). However it is also associated with Passivity. As the map shows, Passivity is a two-edged sword: it links to Relaxation (a good thing), but it also links to Boredom, and through that to Intellectual Dullness. This may be the reason that "experience sampling" studies have shown consistent correlations between TV viewing and depression (Cziztenmahalyi **). Here Viewing is also associated with constructs that we already have discussed: Comes At Me, Movement, Disruptive, and Lack of Control.

Figure 9 presents the consensus map results for the TV-involved participants. Again, it is striking how similar it looks to the map generated by the magazine-involved respondents. Indeed it has most of the same constructs as were found among the magazine-involved, but in somewhat different positions and with different patterns of inter-connection. For the TV-involved, the Passivity of watching TV does not lead either to Relaxation or to Boredom, as had been true for the magazine people. Passivity is just a feature of Viewing, without any further connotation. The Funny/Entertaining benefit of Viewing is just as salient as among the magazine-involved, but it links to a richer set of other constructs: not only does it Grab Your Attention, but it also provides Uplift and a socially valued ability to Spark Conversation with other viewers. However here again we see sharp ambivalence toward TV advertising that is even more stridently drawn among the TV-involved than among the magazine-involved. Viewing is linked directly and closely with Lack of Control (which links to Takes/Wastes My Time and to Not Relevant to My Life). Viewing is also linked closely and directly to Disruption and to Retaliation. The experience of Disruption ramifies into a host of secondary constructs, all of them negative: Lack of Flow, Irritation, Repetitive, and Boredom.

Figure 9

TV Segment
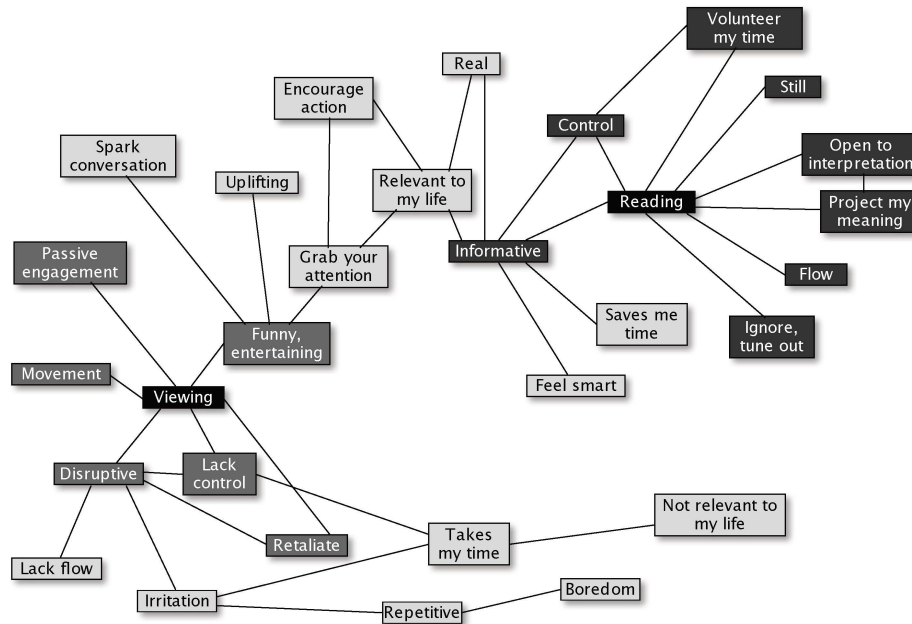
Thus, the field of play here is actually a field of war, with concepts of defense and retaliation central to the viewing experience. Indeed, if we pause to reflect on the metaphors that are implied in the language of the advertising business, we can quickly see how bellicose and militarized our underlying notions of advertising really are (Atkin 2004). Our brand managers conceive of themselves as "generals" in a war to make consumers behave the way we want them to behave, rather than inviting the consumers to co-create the brands with them. Our marketers run "campaigns", and they "target" consumers in their search for "market domination". Depending on their tactics, they might try to "ambush" consumers, or to "surround" them in a multi-media "blitz". If possible they will "launch an attack" on their competitors in an attempt to "penetrate" a market or to "capture" market share. This mentality, so fundamental to the television advertising model, does not respect consumers; indeed it holds them in contempt. As Figure 9 so richly demonstrates, consumers are wise to this game and are apt to return the favor. Perhaps it is time for advertisers to reconsider what kind of relationships they really want to have with their customers.

Conclusion

We began this exploration of the difference between the consumer's experience of television and magazine advertising because of the anomalous findings of the Starcom/TiVo study two years ago. That study was behavioral and quantitative, based on the unobtrusive tracking of a large sample of PVR users across several months. This study was psychological and qualitative, based on recent advances in neuroscience and on novel ways of translating those advances into market research practice. And yet both studies ended up with the same conclusion – an example of "consilience" that would warm E.O. Wilson's heart.

For magazines, advertising is part of the pleasure of the experience. If a reader doesn't fancy an ad, he or she can skip it easily because the reader is always in control. Thus, though this study does not prove it directly, it reinforces our sense that greater reader engagement in a magazine is associated with greater receptivity to the advertising in that magazine.

However for television, the present study confirms the Starcom/TiVo finding that the more avidly involved the viewer is in a TV program, the more likely they are to be annoyed at the commercial interruptions in that program, and thus to retaliate. Retaliation is not limited to those fortunate enough to have PVRs. We have shown that viewers are quite willing and able to retaliate using more the primitive weapons of inattention, channel zapping, muting, or multitasking that are always at their disposal. Thus in the realm of TV, higher engagement in the program leads to lower receptivity to the advertising.

Perhaps advertisers who are paying a price premium to be on the most popular shows should reconsider their entire approach.

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