

Discovering Hidden Truths in Marketing Phenomena: can the Data Percolation Methodology Help?

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Descubriendo verdades ocultas en el fenómeno del mercado: ¿puede la metodología de percolación de datos ayudar?

Resumen. Se presenta la metodología de percolación de datos que permite descubrir las realidades subyacentes ocultas en los comportamientos inconscientes de los agentes de mercado; éstos incluyen el hurto y el uso ilícito de los bienes de empresa. Las metodologías tradicionales se muestran muy ineficaces para descubrir estos comportamientos. Este artículo compara dos estudios realizados en el ámbito de las relaciones comerciales, uno por Anderson y Narus (1990) y el otro por el autor para demostrar que la percolación de datos es un método apropiado cuando se trata de entender las motivaciones de los agentes del mercado. Los resultados demuestran la existencia muy fuerte de depredación percibida por parte de ellos.

Palabras clave: metodología de la investigación, percolación de datos, prelación percibida, modelo Mesly.

Abstract. This paper presents data percolation methodology as a tool to discover hidden truths underlying market agents' behaviours. Whether they are consumers, producers, regulators or societal outsiders (e.g. black market), all market agents engage in behaviours that they are not conscious of, or that they wish to hide. These include theft, misuse of company property, and so forth. It appears nearly impossible to use traditional methodologies to fully understand such behaviours or to get participants to disclose them. This paper compares two studies done in the domain of business relationships, one by Anderson and Narus (1990) and the other by the present author to show that data percolation is an appropriate venue when trying to understand market agents' secret motivations. The results show a strong existence of depredation perceived from their part.

Key words: research methodology, data percolation, perceived predation, Mesly model.

Introduction

Most scientific research in sales and marketing focuses on behaviors that are considered socially acceptable and that participants are therefore willing to disclose. The reason is simple: participants do not want to compromise their social position by divulging unethical or shameful behaviors. Most people refrain from talking about negative feelings because it puts them in an uncomfortable position or else they are afraid to suffer from legal or adversarial consequences (e.g. law suit, job loss, etc.).

One can imagine that it would be very hard to obtain straight and honest answers to questions about, for example, company theft through any common research methodology (including qualitative observation). In fact, few universities would grant

an ethics certificate on such matters. Yet, this particular underground economy amounts to billions of dollars every year in North America; some judges are known to reach extravagant if not unfair rulings. To make matters more difficult, market agents operate along multiple dimensions (see McFarland, Challagalla and Shervani, 2006). It may well be that the respondents are not conscious or not willing to be aware of some of their behavioral dimensions; hence the added difficulty of discovering what is concealed in the market agent's mind. Is the financial broker honest or a fraudulent and sneaky salesperson? Why do consumers complain? Are there people in positions of authority, for example at the American Security Exchange Commission (SEC) whose goals are not to actually protect investors? Do pimps deploy marketing strategies to attract, retain or contain

sex workers? None of these market agents (sellers, consumers, regulators, outsiders) are likely to disclose much about their real intentions or activities or if they do, they may lie about them. Research in Functional Magnetic Resonance Imaging (fMRI) has confirmed that at times participants either convey meanings that are contrary to what they really feel or else that they operate along conflicting dimensions altogether (Reimann, *et al.*, 2011). In this context, the concept of hidden truths refers to any internal motivations or logic that secretly justifies one's attitude and behaviors. Put in psychoanalytical terms, hidden truths are what drive people that cannot be easily expressed or admitted publicly; they speak of the subconscious mind.

In their 2011 article, Davis, Golicic and Boerstler comprehensively list the 95 studies that have been done between 1990 and 2008 using multiple methods and that have been published in five leading marketing journals: one discusses illegal drug abuse (1992) and one refers to grey market economy (2006). All others examine common behaviors. Given that only 4 to 8% of total research involving multiple methods is published (Davis, Golicic and Boerstler, 2011; Hanson and Grimmer, 2007) it can be said that the marketing field has vastly ignored some crucial phenomena that structure our societies. In fact, Bryman (in Bergman Eds., 2008) referring to qualitative and quantitative research argues that "[...] in only 18% of articles were the two sets of findings genuinely integrated [...]";¹ this goes to show that the use of multiple methods is, indeed, minimal in the marketing field. It would be worth researching the truth about how people involved in any questionable, quasi illicit or bluntly illegal activities think, plan and operate. Doing so could assist managers in developing administrative mechanisms to control deviant behaviors such as company's property theft, whether these are expressed consciously or unconsciously.

This paper rests on the assumption that only through an advanced form of multiple methods (larger in its *modus operandi* than triangulation) can hidden truths be uncovered—a form called herewith data percolation.

This paper begins with a short overview of the use of multi-methods. An explanation of the core concepts and research steps associated with data percolation follows. A brief review of the Anderson and Narus' 1990 paper is also provided. Results obtained with the traditional method used by Anderson and Narus (the classical hypothetico-deductive one) and those obtained through data percolation are then compared. We conclude by outlying the limits of our argumentation while highlighting exciting new venues in marketing research; the rationale being that digging deeper into human motivation may orient manager's tasks and help improve their company's overall performance.

1. Out of the 4% of the articles using multiple methods, only 18% are argued to be truly integrated.

1. The use of multiple methodologies

As Wieseke *et al.* (2008) explain, it is essential that researchers elect the most appropriate method failing what errors will occur, including in modeling (Jarvis, MacKenzie and Podsakoff, 2003) and biases will permeate the research (see Sawyer and Peter, 1983). It can be said that mixed methods offer a better grab on the context in which the participants behave thus offering a stronger possibility of identifying behaviors of interest (Bonoma, 1985) such as hidden truths and patterns. Second, they provide a better means of creating scales that fit that context, as often scales developed internally (in the university) are not adequately matched to the intricacies of the outer world (Plouffe, Hulland, and Wachner, 2009). Finally, they are a means of changing perspective, which is conducive to theory generation (Heller, 2007).

There are disadvantages in using multiple methods. It may be difficult to align the problem with one of the methods (Munro and Mingers, 2002); there is a potential for creating a "soup" of paradigms (Buchanan and Bryman, 2007). The researcher runs the risk of diluting the investigation (Bryman and Bell, 2007). Furthermore, the use of multiple methods is not favored in many scientific papers and is costly in terms of time, resources and effort (Brewer and Hunter, 1989; Hurmerinta-Peltomäki and Nummela, 2006). Finally, it requires a great deal of sensitivity to reality (Bazeley, 1999)—in the interview process for example.

Since the late 70's, academicians have referred to the effort of cross-checking the information collected using qualitative and quantitative methods as triangulation (Denzin, 2006). It has become evident that collecting information using these two methods is not enough; one must be able to cross-check it. While triangulation refers to comparing data from various sources once it has been collected, it does not provide instructions as to how to build appropriate models, how to minimize the researcher's biases and how to plan ahead of time for the discovering of hidden truths. Most particularly, triangulation comes short on important objectives that the researcher in quest of finding hidden truths may have: a) searching for contrasting cases; b) deliberately uncovering patterns; and c) providing rival explanations.

As such, using quantitative and qualitative methods and adopting triangulation are a step in the right direction but not enough to uncover those motivations that have (sometimes negative) social value.

2. Data percolation

Over decades, authors have pointed out the fact that the marketing domain needs to be updated and improved (Peter, 1979, Anderson, 1983; Podsakoff and Dalton, 1987;

Gummesson, 2002) and its analytical tools put to better use (Panagopoulos and Avlonitis, 2008). A myriad of authors from different cultural backgrounds, including Patton (1990), Creswell (1994) and D'Astous (2010) have recognized the need for marketing research to be grounded and useful to society.

It is based on these concerns and the evidence of shortfalls with both traditional marketing research techniques and triangulation that data percolation has been developed in order to investigate market areas that are more difficult to approach or access and that may conceal hidden truths.

Data percolation is a research design allowing for the alignment of five different sources of information, including qualitative and quantitative sources, within a single research project, that is organized in a series of specific research steps. Its goal is to provide a family of responses (Sobh & Perry, 2006, p. 1202) through multiple investigative loops. The end result is a refined image of reality whose validity is provided by the use of these diverse sources of information and various levels of analyses. As such, data percolation is conducive to unveiling hidden truths as it accepts a wide range of realities and interactions as well as temporary statements and models (Hirschman, 1986).

The eighteen steps to performing data percolation are as follows:

General:

1. Keeping a diary of activities and a tally of words and concepts found in the literature to ensure a close follow-up of the theory building effort;

Initial development:

2. Performing a self-assessment (auto-ethnographic) of one's own motivations and biases through an interview by an independent researcher (up to five (5) 1.5 hour-long interviews);

3. Investigating key constructs in multi-disciplinary sciences to favor a re-mapping of knowledge (Klein, 1996, p. 42-43; Greckhamer *et al.*, 2008), and then narrowing down the scope of research as better definitions of key constructs develop;

4. Defining constructs by their own meaning and by their opposite;

5. Creating a template model, which should be as simple as possible;

Full development:

6. Using five sources of information: *a)* Literature (scientific and non-scientific); *b)* Experts; *c)* Qualitative sources (*e.g.* through interviews); *d)* Quantitative sources (*e.g.* through the use of questionnaires/surveys); and *e)* simulation (computer-generated, plays or games to allow for the creation of scenarios that minimize the presence of uncontrollable variables);

7. Seeking contrasting cases or fields of investigation (Yin, 1997);

8. Using multiple informants aiming first for small samples (qualitative analyses to define key constructs – oneself, few

participants, focus groups). As the research progresses, the researcher moves on to larger groups (quantitative analyses with medium sized groups for pre-tests (Churchill, 1979); larger groups for confirmatory analyses);

9. Discovering no less than three significant observables (phenomena or behaviors that can be observed and measured and that are manifestations of the key constructs in action) (see Bollen and Lennox, 1991);

10. Attempting to minimize errors (*e.g.* through the use of proper psychographic measurements and adequate use of analytical tools such as Cronbach's alpha) (see Mesly, 2011a);

11. Seeking to identify the nature and strength of relationships between key constructs through a carefully-drafted hypothetico-deductive approach;

Final development:

12. Bringing the initial template model to a more complete form once hypotheses are tested;

13. Performing the 7-steps of the data percolation test: *a)* cross-checking data (“Have I obtained similar results across the methods? Does information collected from one method help the understanding of the results of the other methods?”); *b)* identifying contrasting results (“Have I obtained contrasting results with contrasting participants?”) and rival explanations (Yin, 1999; Patton, 2002; Miles and Huberman, 2003); *c)* identifying emerging concepts; *d)* identifying patterns or trends; *e)* seeking hidden truths (“What subconscious thoughts or behaviors seem to be revealed?”); *f)* establishing the minimal and maximum thresholds (“In what brackets of intensity do the constructs seem to operate?”); *g)* taking a step back; *h)* identifying the indifference point. This is the point at which the respondents' motivation to participate changes –they become irate or else do not want to disclose more of themselves anymore;

14. Completing the model;

15. Posing the final question: “Do I obtain a ‘clearer, more accurate and nuanced view’ (Rocco *et al.*, 2003, p. 26)?”

16. Discussing and writing the final report so as to be understood by the participants of the research (Glaser and Strauss, 1967);

17. Anchoring the research work and final write-up in: *a)* Context (*e.g.* distributors in the USA); *b)* Marketing trend (*e.g.* transactional marketing); *c)* Concept (*e.g.* predation); *d)* Model (*e.g.* Anderson & Narus, 1990); and *e)* Past research (*e.g.* McFarland, Challagalla & Shervani, 2006).

Publication:

18. Presenting the research in two contrasting formats: scientific and non-scientific (*e.g.* conferences).

For some research contexts (*e.g.* judges' biases) it appears difficult, if not impossible, to discard the researcher's influence (see Hammersley and Atkinson, 1983). As Maxwell puts it (1997, p. 92), it thus makes more sense to understand

the subjectivity of the researcher and to therefore use it productively. This is why an auto-ethnographic exercise is recommended at the onset of data percolation.

By looking at the research problem through the kaleidoscope of methodologies, sources and participants, the researcher is better equipped to extract concealed truths from the data collected. Resorting to such a broad approach requires a fair bit of resilience in that it may be hard to find a common language across the different analytical angles (Karpinski and Samson, 1972). Secondly, it may even be more difficult to bring all of the results towards one central model and to articulate a core argumentation (see Sinaceur, 1992). Thirdly, focusing on the most appropriate individual sub-methodology (quantitative, etc.) may prove challenging. The researcher has to learn to focus on his core concepts and his most representative group of participants as the research progresses (Choi and Pak, 2007). Finally, the researcher runs the risk of covering too large of a field of investigation thus losing sight of the original context (Klein, 1990); hence the requirement to always keep the template and final model as simple as possible.

Proper use of data methodology allows us to examine a construct or phenomena from all possible angles and eliminate shadow areas (hidden truths). Table 1 gives an example of the same emerging construct (*perceived predation*) being looked at from the five sources of information used in data percolation as the research progressed over time:

As can be inferred from table 1, multiple ways of looking at the same reality are mandatory in data percolation methodology. In the above left box (#1) one of the models found in the literature (Ring and Van de Ven, 1994) portrays the interaction between a buyer and a seller. Box 2 is an expression of a si-

imilar interaction from a mathematical point of view). Box 3 proposes a similar model based on the qualitative research we conducted (Mesly, 2010). Box 4 is an example of the working model adapted to run structural equation modeling (SEM). Box 5 is the same template model adapted to simulation software (Matlab). Finally, box 6 is the initial template using data percolation modeling system (see Mesly, 2011a).

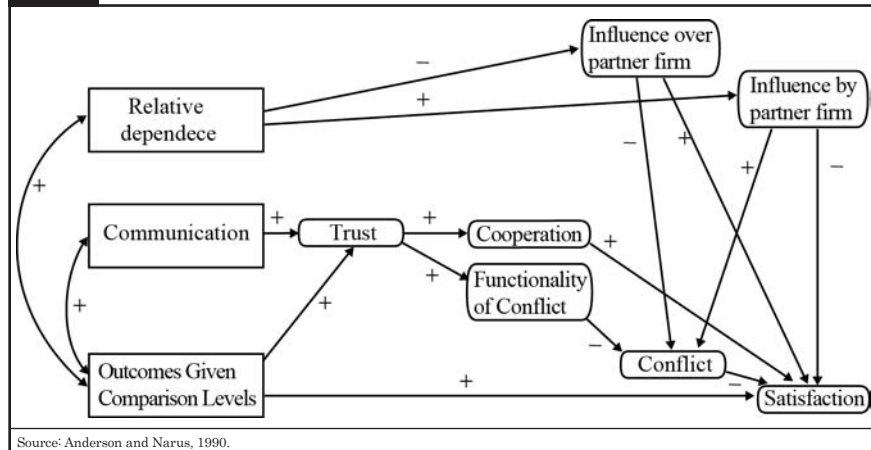
These are all representations of the same reality with each representation enriching the other just like a group of experts would collaborate and bring forth their own expertise on a particular problem (Delphi method). Going through the steps of data percolation methodology, the researcher could be led, for example, towards the concept of perceived predation – a hidden truth in the sense that most people experience such a feeling, with few being able to clearly describe it. A classic example is when a potential buyer walks into a used-car dealership and feels he will be taken advantage of based on an asymmetry of information, therefore subconsciously perceiving the salesperson as a predator.

3. An overview of Anderson and Narus 1990 study²

In their 1990 article, Anderson and Narus examined the relationship between distributors and manufacturers, taking into consideration both sides of the equation (a multi-informant approach). The article is written along the typical parameters of research in marketing, with a heavy reliance of previous theory, the use of hypotheses and subsequent quantitative analysis. The main argument is the positioning of trust as a consequence of cooperation (see figure 1), rather than the opposite (trust leading to cooperation), for the static one period of time (p. 45) that the authors are focusing on.

The study is done at one point in time and not in a longitudinal manner; therefore it is impossible to establish a temporal effect along the different constructs. Yet, several statements emphasize a temporal effect: first, the authors mention “A primary consequence of relative dependence is influence” (p. 43). By influence, one must read some sense of power—one party having influence or power over the other—. It can be said that the assumption here is that relative dependence leads to power games. As pointed out by the authors: “In contrast, the firm with lesser relative dependence can use its superior position to request changes of its partners

Figure 1. Model of Manufacturer and Distributor Working Partnerships.



2. A note to the reader: the present paper is in no way a criticism of our marketing colleagues' work. While some people refer to the work done in the marketing field as "junk science" (Blake, Cassels and Graydon, 2011, p. 4), this in no way reflects our position. The present paper should be viewed as an effort to open new possibilities in the sales and marketing field and to expand the expertise of the marketing science community.

that it believes will [...] increase its own outcomes [...]” The important potential hidden fact here is that it may well be that the firm subject to such treatment perceives the other one as a predator—a concept used over decades (see Thorsten Veblen at the beginning of the 20th century; Bolton and Scharfstein, 1990). However, it would be unrealistic to ask such firm whether it thinks the other party is a predator or not.

A second argument relates to the assumption of causality. Anderson and Narus posit on several occasions that there

are causal relationships, for example, between what we now dub as power games (influence) and conflict (p. 44), as well as between communication and trust (“communication causes (present) trust”, p. 45). It seems that the construct “outcomes given comparison levels” relates to the perception that one party has of the other, in particular to the perception of fairness. This terminology did not likely come from the twenty interviewees or so conducted by the two researchers. It is likely that managers would have rather been talking about the way

Table 1. Different ways of seeing the same reality.

<p>1) Literature review</p>	<p>2) Mathematical modeling</p>
<p>3) Qualitative</p>	<p>4) Quantitative: SEM</p>
<p>5) Simulation</p>	<p>6) Data percolation template</p>

Note: elaboration with Matlab based on Mesly, 2010.

Source: Mesly, 2011.

Legend: prédation perçue = perceived predation; confiance = trust; équilibre = win-win (equilibrium); coopération = cooperation; bonne entente = atmosphere; produit = product; méga-construit = mega-construct

they perceive the other party in more colloquial terms. Over decades, numerous authors from various backgrounds have pointed out the difficulty of determining causality between two constructs (See Ackoff, 1957; Brannen, 1992; Brewer and Hunter, 1989; Neuman, 1994; Cossette and Lapointe, 1997; Miles and Huberman, 2003; Buchanan and Bryman, 2007). Furthermore, “functionality of conflict” is not a construct per se; it is a measure or an attribute (as an example, durability is an attribute of product, not the product itself).

The argument being made here is that the methodology used by the authors does not permit to uncover hidden truths. It may be also that Anderson & Narus’ model could be simplified to reinforce the definition and role of each important construct and to better reflect the reality as the managers see it, as follows (see figure 2).

Anderson and Narus recognize that dependence is an antecedent to the establishment of the manufacturer-distributor relationship (p. 43); hence, dependence should be put in an ante position. Similarly, satisfaction is seen as a consequence of a good working atmosphere (the reverse of conflict); hence it must be put in an ex-post position. Anderson and Narus relate trust to the possibility of loss (p. 45), which would result from power games (the exaggerated and perhaps undue influence of one firm over the other; a concept similar or equate to opportunism). In other words, power games affect trust di-

rectly. Overall, the revised model is easier to apprehend and points more easily towards a possible hidden truth: perceived predation, which is the fact that one feels the other agent may try to take advantage of him for his own benefit, by surprise.

4. Comparison between Anderson and Narus’ approach and data percolation methodology

Data percolation is a search for meaning (Greene, 1994; Maxwell, 1997) and for a conceptually dense view at reality (Strauss and Corbin, p. 278); only through such efforts can the researcher uncover the truth.

In Anderson and Narus’ model, there seems to be a power game between manufacturers and distributors that may lead to conflict taking into account the presence of trust and cooperation. Numerous studies have since then recognized a strong link between trust and cooperation (e.g. Morgan and Hunt, 1994). In their meta-analysis, Palmatier *et al.* (2006) concluded that 90% of the studies on the subject confirm this link. Our own study was done using data percolation methodology and involved eight groups of different sizes (28 to 252 participants) in two contrasting sectors of activity (the automotive industry and the arts).³ It yielded similar levels of trust-cooperation linkages, with a coefficient of determination at $R^2 = 0,815$ –after verifying for normality of residues and of populations (Mesly, 2010).

Figure 2. Anderson and Narus (1990) reformulated model.

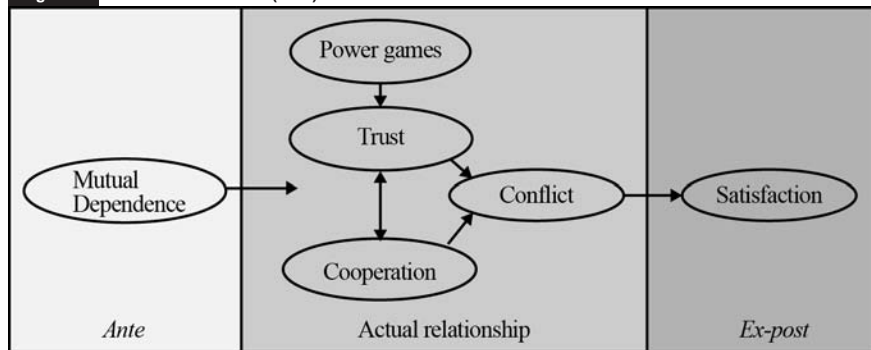
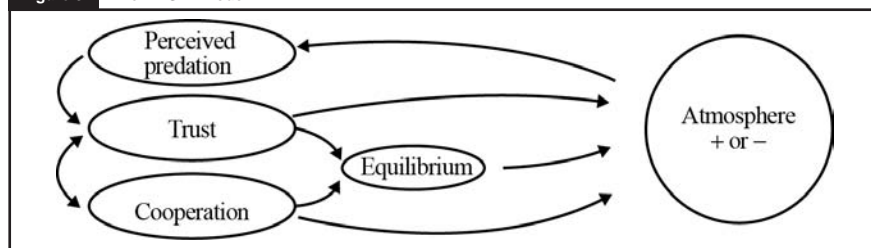


Figure 3. The MESLY model.⁴



3. We did not test a distributor-manufacturer set up but, in the case of car dealerships, the relationships between clients and the sales and service force. As a reference, Coviello and Brodie (2001) and Addis and Holbrook (2001) argument remains valid: conclusions reached in B2B settings apply equally well to interpersonal interactions as, in the end, it is people that interact.

4. Formerly known as the OPERA model in previous works (Mesly, 2010, 2010a, 2011)

In the Anderson and Narus questionnaire, the question about conflict is straightforward: “Disagreements between Manufacturer X and our firm have ___ the productivity of our working relationship? (Considerably increased/considerably decreased)”. Hidden truths cannot be uncovered by directly asking these kinds of questions: it amounts to asking the petty criminal whether he has stolen –yes or no. The answer will invariably be “no” even if he did and was caught on camera. Furthermore, the participant needs to be able to easily relate to the questions; the concept of “productivity of our working relationship” is quite hard to grasp and may have a whole set of different meanings depending on the respondent (a methodological hurdle that is evidently not recommended: see Dickes *et al.*, 1994).

The final result of our research based on Anderson & Narus’ model is as follows (see figure 3):

What has come out using data percolation is the concept of perceived predation, which in essence relates to the ratio between weaknesses and strengths (hence, it is an expression of power games) pertaining to one market agent while facing another market agent. Put simply, agents such as a manufacturer or a distributor fear that the other party may take advantage of one's own vulnerabilities by surprise, betting on the sentiment of mutual trust and the on-going cooperative efforts to conceal his real intentions. In the OPERA model, the starting point is perceived predation, which directly affects trust. Trust and cooperation work hand in hand with no precedence of one over the other. A sense of win-win (equilibrium) serves as a mediating variable. Together, trust, cooperation and equilibrium form the construct of atmosphere, which can be positive or negative (conflict).

The above MESLY model unifies the concept of opportunism (Williamson, 1975 –transactional marketing) with that of the relational marketing trend (e.g. Grönroos, 1994), within the framework of interpersonal considerations (Grayson, 2007). Even though Anderson and Narus' paper has strong connotations of opportunism and predation, none of these concepts are discussed. Data percolation methodology has allowed to enable a similar model, which proves much richer and meaningful in its details, pointing out to respondents' silent fears.

Conclusion

In this paper, we endeavored to demonstrate that data percolation methodology is a superior system for uncovering hidden truths. We have identified the concept of perceived predation as opposed to simply assuming that there were possible negative intentions on the part of a market agent. Ideally, the researcher would start with as large a conceptual vision of his emerging model possible and then would narrow it down as he continues his research. He would begin by investigating himself and then proceed to involve participants in contrasting economic activity areas, and more of them as time goes on.

When the reality is obscure or little known, data percolation seems to be a sound approach to aid in structuring the researcher's thoughts and tactical moves, leading him to a more complete understanding of the situation (see Karpinski and Samson, 1972). Hidden truths belong to these kinds of problems that cannot likely be revealed by addressing them from the confine of one particular method. The use of multidisciplinary, multiple methodologies and multiple informants is assumed to reinforce the generalizability of the researcher's results (see Maxwell, 1997).

Data percolation is no doubt very demanding; yet, we believe it actually shortens the time required to do meaningful research because thoughts are better modeled and errors (such as psychometric ones) as well as biases are reduced. Data percolation may not be suited for all types of research; however, it presents two major advantages. First, it appears to be a practical methodology to seek inner motivations that the researcher could not otherwise detect. Implications could be socially impactful: for example, a car dealership manager could develop a strategy to limit or eliminate the image most people have of used-car salespersons as potential predators. A positive image could lead to better sales prospects and repeat business.

Most particularly, a better understanding of all ranges of market agents' motivations could lead to better marketing practices as well as more rigorous laws in order to anticipate, control or punish deviant behaviors. It is through the understanding of consumer behaviors, for example, that the marketing field has evolved over the last 50 years, with such key theories as Maslow's pyramid of needs and such practices (now officially forbidden) as subliminal advertising. As researches accumulate using data percolation methodology, the researcher will likely be able to identify more profound behavioral phenomena that could assist the manager in building a better relationship with customers. It is only through further experimentations with the methodology that it will reveal its full potential or else point towards improvements, as it remains in limited use at the moment.

Second, data percolation may be an excellent way of teaching methodology in doctoral studies because it covers a wide range of techniques and demands various abilities that any researcher should possess.

While perceived predation seems a reasonable construct to delve into since predation exists in nature and has seen many manifestations in human history, it may well be that other significant constructs are yet to be discovered.

Data percolation is a new way of doing research and it requires further development. It has borrowed from various sources ranging from Checkland's soft systems approach (see Checkland, 1999) to grounded theory; yet, researchers have not provided full evidence of its value. This remains to be achieved. We believe data percolation is a methodology that could be used in social sciences at large (ex.: in psychology, anthropology or sociology) for such sensitive subjects as, for example, incest. It does not appear limited to sales and marketing. To recall, the researcher using data percolation first and foremost considers flexibility and rigor to be necessary partners in every effort to uncover hidden truths.



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