REVITALIZING DORMANT IDEAS

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ABSTRACT

Ideas rejected by a scientific community in an earlier historical period may be a rich source for creative insight. However, we rarely access the past. Support for revitalizing old ideas is provided by challenging existing assumptions about old ideas and reviewing history of science evidence. Some preliminary techniques for accessing dormant ideas are provided.

INTRODUCTION

By accessing our past we continually open up possibilities for our future (Kockelkorn 1975).

While it is generally acknowledged that the generation of new ideas enhances theory development (Olson 1982; Zaltman et al., 1973; Hunt 1983), relatively few discussions have focused on how to think creatively (Argyris and Schon 1974; Novan and Reason 1981; Dewar 1970). The purpose of this paper is to suggest that new ideas can be developed by examining the past. Termed theory revitalization, this method involves renewing ideas which initially appeared in an earlier historical period. Typically these old/dormant ideas received little or no attention during their initial period of discovery. Yet several of these "outdated" ideas may enhance theory development by stimulating the discovery of "new" ideas.

Creative, interesting and insightful ideas often develop by viewing a phenomenon from a variety of perspectives (Arieti 1976). The divergent views which spur creative thought are often supplied by colleagues and communicated through the academic literature. While accessing the ideas of others to help create ideas of our own is an important and appropriate scientific activity, we tend to access ideas in a selective fashion. Those we utilize tend to reflect current and/or classic thinking.

Biases in favor of current ideas demonstrate an implicit belief that they are more informative, enhanced by recent scientific development, and more relevant than would be true for dormant ideas. Thus, while attitudes toward using classic or current works are positive, attitudes toward using "dated" and non-dominant work are less favorable. These biases promote historical amnesia by ignoring a history of creative thinking.

In the following sections we consider whether our reluctance to explore dormant ideas is appropriate and whether a historically myopic view of "relevant" literature hinders or aids theory creation and scientific discovery. The rationale for revitalizing dormant theories will be strengthened if (1) biases are shown to be based on weak assumptions, (2) evidence indicates that dormant ideas may be valuable, and (3) reasons why old ideas should be revived are compelling. In order to explore these issues more fully attention is directed toward those factors that inhibit the utilization of dormant ideas (Hunt 1970; Zaltman et al., 1982). We also explore whether the reasons for ignoring them are unethical or detrimental to theory development.

REVITALIZING DORMANT THEORIES: CAPACITIES AND CONSTRAINTS

The ways in which we evaluate the status of dormant ideas is strongly tied to the ways we evaluate the state of knowledge. The "truth" or "reality" tests we employ provide guidelines about how we know what we know. However, they also affect the extent to which we are resistant to both new and old ideas (Zaltman et al., 1982). We propose that two broad classes of truth tests are utilized to evaluate dormant ideas: nonscientific and scientific. The nature of these truth tests and the extent to which they justify ignoring dormant ideas is explored below.

Nonscientific Truth Tests. Socialization plays a dominant role in how ideas and theories are evaluated (Peter and Olson 1963). Through socialization we learn that a majority rule or dominant trend is relied upon to indicate the most fruitful areas of research, the most promising research papers, and the most unlikely candidates for theoretical consideration (Olson 1982). Three types of truth tests derive from the socialization process: consensus, tradition, and authority.

Consensus is relied upon by utilizing those ideas which others consider "interesting" and "relevant." Typically these represent ideas from the current and classic literature. Following traditions and authority we cite classic work and give differential attention to the ideas of noted scholars. Although these truth tests serve some important purposes (Zaltman et al., 1982), they also tend to narrow the range of acceptable ideas. While explicitly acknowledging the value of current and classic theories, they implicitly suggest that ideas that have not been traditionally popular, those that are not cited by noted scholars, and those that others have failed to acknowledge are not useful. Thus while it is convenient to think that dormant ideas have little merit, the truth tests we use to justify ignoring them provide no compelling reasons why dormant ideas should not be explored and revitalized. Dormant ideas may be highly relevant and interesting; however, tradition, authority, and consensus implicitly provide barriers to their revitalization. Such tests promote the belief that others are better judges of appropriate, useful and relevant ideas. They are more reflective of the power of group norms in theory development than the usefulness or nonusefulness of old ideas.

Scientific Truth Tests. A second bias against old ideas stems from perspectives on the power of scientific or empirical truth tests. Those who utilize these tests presume that theoretical merit can be empirically determined. According to this perspective dormant ideas are ignored because they have been empirically "disconfirmed." Strict adherence to this truth test implies that one accepts the falsificationist perspective (Popper 1959).

The extent to which falsification can be achieved, however, has been questioned recently from a philosophy of science perspective (Lauden 1977; Sauer, Highswonger and Zaltman 1982). The extent to which one can falsify a theory can be questioned on methodological grounds. Namely, the adequacy with which conclusions about a theory can be derived depends on the extent to which valid tests of the theory have been performed (Duhem 1953). For example, in order to have complete confidence that a theory should be rejected it must be shown that:

(1) There is perfect correspondence between observables and theoretical constructs.

(2) Observable variables are objective representations of reality, not theory laden (Kuhn 1970).

(3) Measurement methods do not change the phenomena being measured.
Observables are reliably measured.
Methods of observation are sufficient to tap the underlying construct.
The construct under investigation is not confused with the level of the construct that is manipulated.
The relationship between observables has been examined in terms of both linear and nonlinear associations.
The statistical power and the desired magnitude of effect have been seriously considered.
All populations in all settings, over all occasions, have been tested and in no case was a relationship found.

Since few of these assumptions can ever be met, few definite statements about the falsity of a theory can ever be made. If one questions falsification as a viable reality test, the impetus for reconsidering dormant ideas or perhaps previously "falsified" theories is strengthened.

In sum, barriers to reinvestigating dormant ideas or theories are not well supported by intuitive logic or established philosophy of science criteria. Not only are these biases toward old ideas uniform across disciplines; the history of science literature suggests that the revitalization of old ideas may be extremely valuable.

EVIDENCE FROM THE HISTORY OF SCIENCE

The benefits of revitalizing dormant ideas is demonstrated by reviewing patterns of scientific discovery over historical time. The following examples illustrate the impact that dormant ideas and theory revitalization have had on scientific progress.

In 1865 Gregor Johann Mendel published a paper explaining the laws of the inheritance of dominant and recessive characteristics in genetics. His ideas were ignored until 1900. Today the works by both scientists are considered to be of major scientific consequence. Darwin is typically credited with the theory of natural selection. However, his ideas came from the work of Thomas Huxley (1766-1834). Huxley's formulation of natural selection was expected to be counteracted in the writings of Benjamin Franklin. Few today credit Franklin with the theory of natural selection.

Euclid, the famous mathematician (300-275 B.C.) did little truly novel work during his lifetime. He did, however, become famous by proving the ideas developed years before by his predecessors. Leonardo da Vinci (1452-1519) is well known for his artistic genius; however, he also provided the embryonic ideas for later developments in aviation, mechanics, anatomy, geology, and astronomy. James Maxwell (1831-1979) physicist/astronomer theorized that electromagnetic waves are longer than light waves. His theory published in 1873 was ignored until 1888 when Hertz empirically corroborated his hypotheses. Several other ideas on light waves developed by Maxwell were also ignored until Ludwig Boltzmann revitalized them some forty years later.

These examples highlight several important aspects of dormant ideas and theory revitalization. First, they suggest that dormant ideas may be a rich source for theory creation and conceptual development. Second, the revitalization of dormant ideas can have great scientific import. Third, the nature of theory revitalization may take several forms. Sometimes dormant theories are revitalized. Theories are revitalized when the ideas are recovered and utilized in a way that maintains the theoretical structure intended by the originator. At other times dormant ideas, those which constitute the embryonic seeds for later creative development, are revived. Fourth, gaining access to revitalized ideas may not be of major concern since they exist in a readily available source—the academic literature. Fifth, revitalization depends on the insatiable curiosity of scholars and their willingness to mine the past.

Why is it the case that theories that never gained prominence become relevant at a later point in time? What environmental, scientific, and social factors hinder or facilitate the acceptance of dormant ideas or make them useful in another historical context? Although there are no simple responses to these questions, several potential reasons are explored below.

WHY MIGHT DORMANT IDEAS BE USEFUL

One reason why dormant ideas may gain current favor is that the ideas are meaningful in light of the current state of conceptual development. In other words, the conceptual knowledge necessary to make the idea useful is currently available. For example, Watson and Crick, in their famous discovery of the structure of DNA, needed the conceptual knowledge of helical structures in order to complete their theory. Insights into the interactive processes of family decision making were not developed until research on the importance of family decision making was established. Theories about the treatment of schizophrenia have changed because knowledge about the behavioral, psychological, and chemical complexities of schizophrenia has altered ways of thinking about the disease. Conceptual developments in purchase motives, from functional to symbolic and hedonic, have changed our views of purchase behavior. These examples do not necessarily reflect cases in which elderly theories have been revived, but they suggest why dormant ideas may be suddenly relevant. It is quite likely that the ideas others developed some time ago suddenly make sense in light of what is now known.

Methodological advances constitute another reason why dormant ideas may regain significance. Methodological advances make possible the test of ideas and theories that were empirically disconfirmed or were not empirically tested in earlier times. For example, prior to Duncan's work in the 1960's on path analysis, theories which implicitly relied on the notion of intervening variables were not directly testable. Hence such theories may have gained little support since methods for empirical evaluation were nonexistent.

Another factor contributing to the revitalization of dormant ideas concerns technological advances. Technology clearly facilitates the detection and observation of phenomena we could only speculate about before. Further, technological advances facilitate the discovery of things never conceived of before. Anton van Leeuwenhoek, for example, constructed his own microscope and became the first scientist to investigate the cell. This technological advance allowed him to make numerous discoveries ranging from red blood cells to spermatozoa. Max Planck, the famous physicist, was able to demonstrate theories about quantum mechanics only after developing a quantum measurement. Electron microscopes allowed the first conclusive evidence about the intricacies of the cell, including the structure of genetic material. Such technologies have also proved instrumental in explicating various theories of atomistic particles. In management sciences and decision making protocol techniques have been instrumental in helping to discover processes of decision making.

Another reason why dormant ideas may be viewed favorably to contemporary thinkers is that they are relevant to contemporary concerns, issues, or thoughts. Some dormant ideas may have come before their time. They were not originally accepted because they either anticipated future historical problems or issues were not relevant to problems and issues when first introduced. For example, Bartlett's work in information processing received scant attention from the
psychology literature when first introduced. At the time, psychology was interested in the study of observable phenomena rather than cognitive processes. However, current interest in cognitive processing in artificial intelligence, consumer information processing, and management information systems has placed primary focus on Bartlett’s seminal work in the area. The concept of consumer sovereignty provides a second example. Consumer sovereignty was not a salient issue among marketers when the term was initially introduced in the early 1970’s. However, it did gain prominence in the 1960’s with the advent of the marketing concept.

A dormant idea may also gain relevance because it speaks to "current personal concerns" (Klinger 1977). In this context, an old idea may suddenly provide a new insight into personal problem solving activities. To give an example, we have all had the experience of reading a particular book or paper at one time only to find it has had little effect on us until some time later. After we have accumulated different knowledge from different perspectives or happen to be thinking about something in particular, we find it to be quite relevant and useful. Utilizing dormant ideas to provide different perspectives on a given problem may therefore provide creative insights and consequences that were not anticipated. Several authors have referred to this accidental discovery as serendipity (Zaltman et al., 1982).

Thus far, discussion of why dormant ideas may become relevant has focused on the conceptual, historical, and interpersonal aspects of knowledge. Each factor exists not just in isolation but in an interactive way as well. The potential value of dormant ideas is viewed in a scientific context, in historical time, and from a personal frame of reference. Rowan and Reason (1981) articulate this interaction most clearly:

Understanding can be seen as a fusion of two perspectives; that of the phenomenon itself, and that of the interpreter located in his or her own life, in a larger culture, and in an historical point in time. Being historical creatures, we are unable to separate quite easily they can be seen as the previous perceptions. Each time the kaleidoscope turns different perspectives emerge.

Caveats. The perspective we offer has implications not only for the nature of theory development and creation but also for theory elimination. If old ideas have the potential for revitalisation can we ever “eliminate” theories? If so, what are the criteria upon which theory elimination is based? The falsification perspective suggests theories should indeed be eliminated, and that empirical disconfirmation provides the basic elimination criterion. As discussed earlier, however, falsification may not be a completely appropriate method for evaluating theory.

More recently, proponents of a perspective termed the Relative Constructionist (R/C) perspective (Peter and Olson 1983) have suggested that theories are evaluated by their “usefulness” rather than by falsification criteria. Useful theories are those which describe known phenomena differently, those with generative capacity, and those which help to increase social welfare. The R/C perspective implies that dormant ideas may be useful, although the authors are not explicit on this point. Furthermore, unlike the falsificationist perspective, they are unclear about how to deal with theories that are no longer "useful." Should we presume that theories which are not useful today are never useful?

Our perspective merges the falsification and R/C views. Consistent with the R/C perspective we propose that theories be evaluated by the usefulness criterion rather than by falsification terms. We are not abandoning the empirical test of a theory, but propose that empirical tests do not provide the ultimate truth of the value of a theory. Furthermore, we propose that the usefulness criterion represents at least one meaningful avenue by which theoretical merit can be evaluated. However, while the R/C perspective is unclear on the nature of theory “elimination,” we propose that eliminating the theoretical activity. When theories no longer help us organise our world, fail to stimulate novel thought, or serve no socially useful function, they should be “eliminated.” When we speak of eliminating ideas, however, it is not in the context of "forever" or "for eternally." Theories are not eliminated; they are "shelved" or "warehoused." “Ridding” ourselves of a theory at one time does not rule out the possibility for its revitalisation at a more historically relevant or appropriate moment. Theory elimination in this regard may have a real impact to theory development or re-creation. A theory previously eliminated on empirical grounds (falsification), or one never found to be useful may become a source for discovery.

Two additional qualifications need to be addressed. First, we are not suggesting that all old ideas are useful. Clearly many early ideas have been replaced by advances in science. For example, given modern advances in medicine we do not think of treating diseases by blood letting. One aspect of scientific inquiry is obviously developmental, progressing in a building block manner. Clearly recovery of old ideas which have been replaced by more effective and useful methods is not to be undertaken. For those sciences or scientific activities marked by developmental progression in scientific knowledge (e.g. medicine, technology) the revitalization of old ideas may be less fruitful.

Second, we are not recommending recovering theories without a critical analysis of how they may have changed. Some may argue that the approach we advocate does not aid theory development. Instead it constrains the ability to develop new ideas by focusing on old ones. However, the fact that old ideas are explored has a real value in some way new. They may be new to the discipline or they may have different meaning in a different historical context given current knowledge and changing issues. It is our perspective that new theories and ideas will emerge as a result of mixing old and new viewpoints. Dormant theories may serve as a source for re-creation. Through a process of re-examination in a different historical perspective they gain new significance. What we are suggesting here is that like matter, ideas may never be created or destroyed; they are re-created.

Although it is easy to argue that it is necessary and advantageous to "keep an eye on the rearview mirror," the ways in which we do this have yet to be specified. In the final section we offer some preliminary, normative advice on how dormant theories may be uncovered.

**TECHNIQUES TO UNCOVER DORMANT IDEAS**

At least four techniques may be used to uncover dormant ideas. A random search through past literature represents one method of potential idea discovery. This procedure entails selecting a year of a marketing or related journal...
and reviewing articles or abstracts. A second technique, termed purposeful search, involves matching circumstances and/or issues prevalent in the present period with conditions in a previous historical era. For example, if one wanted to study the effects of unemployment on durable goods purchases, or the effects of unemployment on psychological feelings toward work, one starting point might be the economic and sociology journals of the early 1930’s.

The techniques trace the development of classic ideas. Reference tracing follows an idea or theory as far back into the literature as possible. In pursuing these ideas one not only develops a clear and well articulated image of the nature of writings on the topic, but may also pick up interesting historical insights which may lead to new or extended theory.

A fourth method is to re-read classic works. Often what appears in the current literature is a distillation of more fully developed and articulated ideas. In some cases only parts of the main thesis are extracted and survive historical scrutiny. One may find that an author was misinterpreted, incorrectly cited, or had more important or relevant ideas. Language difference and historical changes may also make salient different aspects of classic works.

CONCLUSION

We close this paper by observing that the act of developing new ideas requires that we observe our surrounding context, use our creative powers, and capitalize on the ideas stimulated by colleagues. Our peer network, however, need not be a contemporary one. Although we have a tendency to look knocking at old ideas, and although this tendency is sometimes justifiable, it may be best to think of "shelving" theories no longer providing useful functions. Ideas, no matter when they have been proposed, should not be presumed unavailable for future creative thought. Theories previously rejected as false, or those not seen as useful in prior times, may gain new significance at more appropriate times and in more receptive contexts. Recognizing the potential in dormant theories, however, is as much a function of the regenerative capacity of the initial idea as a function of the open mindedness of the researcher and his/her willingness to accept and access "old" ideas.

REFERENCES


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