Part III
The Framing Solution

Introduction to Part III

The exceptional ability of human framing of our experience in the world allows us to see the world, not reactively, but in a seeing-as-understanding process. We understand what our experience will be before the experience, allowing us to predict and control our trajectory through the world, so that we can ignore what is irrelevant to the objective or efficiency of our trajectory-purpose. To us as a species, this ability is advantageous; it makes us exceptional. There is a drawback to the ability, however.

In Part II, we described the framing drawback of our human consciousness. We tend to become too comfortable relying on our future predicting frames, to the point of avoiding new information from the outside world that might contradict the frames. This imprisons our experience in the world inside a closed information loop. We described, in the case of Nazi Germany, the potential disastrous effects of this closed information loop. And there are countless other examples throughout human history. But the problem starts with the individual's openness to recognizing and finding new information.

Part III describes a solution, a way out of the closed information loop, which is in fact built into human consciousness. However, before returning to the solution, in this Introduction we briefly set up our problem-solution structure for information search, specifically for the Google type of information search that has become ubiquitous in modern life. (For greater detail, we refer you to Cole 2012; Cole et al. 2017.)

Information Need and Information Search

Information need is the start state or motivation for conducting an information search. It provides the organizing principle and the driving force throughout the search until the information that will satisfy the need is found. It is an extremely complex and important "trigger" and "drive" mechanism that underlies information

search (Savolainen 2017). The odd thing is that when we conduct a search using Google or some other search engine, we operate as if the information need is easy to define, and easily satisfied or fulfilled. We think, all we have to do is wrap up the need in the right keywords and type them into the engine's search box. The search engines' matching algorithms are so good now, so personalized to the individual searcher with its suggestions that it seems to know what we need before we know it ourselves. But have you ever noticed that when we need information that will produce new knowledge the results list the search engine presents to us at the end of our search matches the keywords we typed in, but the list does not satisfy our information need. Paradoxical isn't it! And this paradox, that we are imprisoned in a closed information loop in the midst of information plenty as we are perusing the results list, is how the framing problem described in Part II inserts itself in the practice of our everyday information searching.

The Problem of the Information Need Frame for Finding New Information

In Fig. 1, we diagram the typical search using a search engine. A searcher begins the search with his frames firmly in place, of which there are three levels: the nation-level frame, the group-level frame, and the individual-level frame. From these three frame levels, the searcher derives his information need for that particular search. The need in turn forms the basis from which the searcher derives his query to the search engine, what keywords he types into the Google search box; and it will form the basis of what he expects to see in the results list at the end of the search.

Let us call this frame the "Information Need Expectation Frame." The searcher's Information Need Expectation Frame determines what he expects to see in the results list; it is the frame through which he views the list. The searcher peruses the results list looking for a citation that will best satisfy his information need.

The Meno Paradox (Part II, Chap. 10) at this point comes into effect. The searcher sees in the results list only what he already knows, what is already in his Information Need Expectation Frame. He is in fact imprisoned inside his frame, inside a closed information loop. This imprisonment actually works well for many information

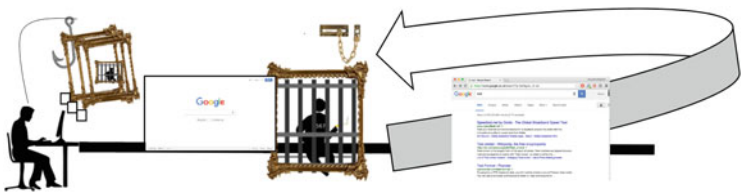

Fig. 1 The searcher imprisoned in his Information Need Expectation Frame, creating a closed information loop and preventing the searcher from seeing new information in the Google results list. (For Google search page and results page: © 2018 Google. Reprinted with Permission)

searches. But not all. There are in fact two different types of information searches: the command search and the questioning search (Taylor 1968). The command search is well taken care of by current search engines but the questioning type of search, whose objective is new knowledge production for the searcher, is not.

The Command Search

For many of our Google searches, we don't know the exact answer but we know the type of answer we will find in the Google results list. These are command-type searches. Many of these types of searches are for factual information:

- What are the flights to Paris next week and what do they cost?
- How tall is Milos Raonic?
- What is the capital of Poland?

For the command type of information search, the individual's Information Need Expectation Frame works well for both formulating the query from the information need and perusing the search engine's output for the citation in the results list that best satisfies the information need. The searcher knows exactly what he needs and exactly what he is looking for.

Current search engines answer these types of command searches beautifully. In fact, for famous people or common factual questions, they often provide the answer in a box at the top of the results list.

The Questioning Search

The second type of search is the questioning search where we have an information need but we don't know what information we need and we want the search engine to help us identify it. Most of our questions of this second type of information need are murky, involving multiple possible alternative answers and interpretation:

- Should I get a divorce?
- Why did the Roman Empire collapse?
- Was Julius Caesar good or bad for Rome?
- Why do some people believe in Climate Change and some people do not?

This is where Meno's Paradox applies. Confronted with the engine's search box, we must make a leap from what we know to what we don't know (but need to know) and somehow come up with a query that will bridge this gap (Dervin 1998; see also, Belkin et al. 1982). But it is in the results list that it gets really tough! We peruse the results list looking for our keywords. We see them there but paradoxically they don't satisfy our information need.

In these questioning search situations, our Information Need Expectation Frame is not adequate, and does not represent our real information need. It does not enable us to recognize the information we don't know we need in the results list, i.e., even if the information we really needed were there in the results list (despite our inadequate query), we would not recognize it because it is not expected. It is not in our Information Need Expectation Frame so we won't recognize it.

All the real information problems or needs we have in life, the ones that are important and that will change our lives, or at least make or lose us money, that will constitute our substantive contribution to the world, all these type of information needs are motivated by this complex, out-of-frame questioning information need.

Solution

Part III investigates a solution to the framing problem, the way out of the closed information loop we are imprisoned in by our Information Need Expectation Frame. We diagram this solution in Fig. 3.

First of all, we must recognize that the searcher's perusal of the results list during which he identifies his real information need is an episode of experience. In other words, the searcher escaping from his Information Need Expectation Frame when he identifies his real information need is an episode of experience with a beginning, middle, and end.

Let us attempt to diagram this beginning, middle, and end in Fig. 2. As we discussed in Part I, the perusing of the results list in an experience episode that ends

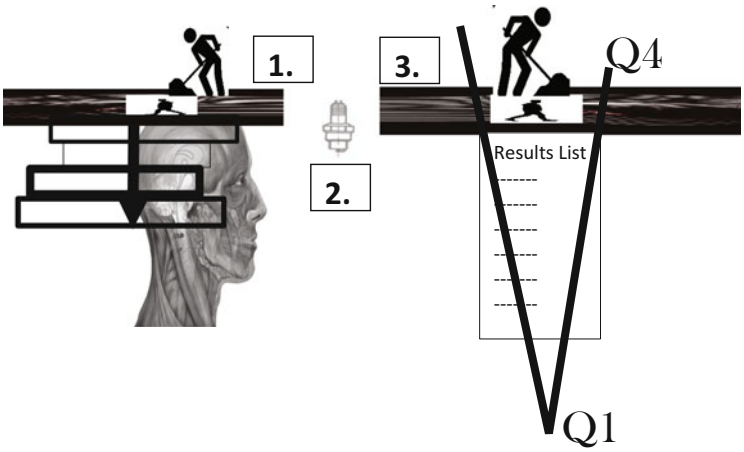

Fig. 2 Results list perusing is an experience episode: (1) Digging operation into consciousness to get at an understanding of real information need. The results page must provide (2) the sparkplug for this to occur, (3) facilitating the digging down from the comprised information need (Q4) into the real information need (Q1) represented as a "V"

with the searcher identifying his real information need is (1) a digging operation inside human consciousness. Shown in Fig. 2, the results list must provide (2) the "sparkplug" to initiate the digging operation. (3) We represent this digging into the information need via perusing the Google results list as a "V." At the top of the "V" is Q4, which represents the compromised information need searchers type into the search box when they don't know their real information need. The real information need, Q1, is at the bottom of the "V" (for the Q4-Q1 theory of information need, see Taylor 1968). The results list must be designed to provide this new digging feature for the searcher as he is questioning the new information provided to him in the results list by the search engine.

In Fig. 3, the searcher still has his frames, and formulates his search based on his Information Need Expectation Frame. This is his compromised information need (Q4). He types in his search terms based on his compromised information need in the Google search page based on this frame, and Google matches the search terms to websites/pages in its database. The Google results list, in this type of complex information search, must do more than give the searcher an answer he has commanded from the search engine, more than some factual answer. It must somehow change the levers of the searcher's Information Need Expectation Frame so that the searcher can actualize his real information need (Q4). So the results list must somehow do this, provide the spark plug for sparking the searcher's escape, "opening up" his closed information loop.

Search engines certainly do not do this now; they aren't designed to do this. They are designed for the simple information need previously described: the command information search. How do we redesign the search engine to "spark" the searcher

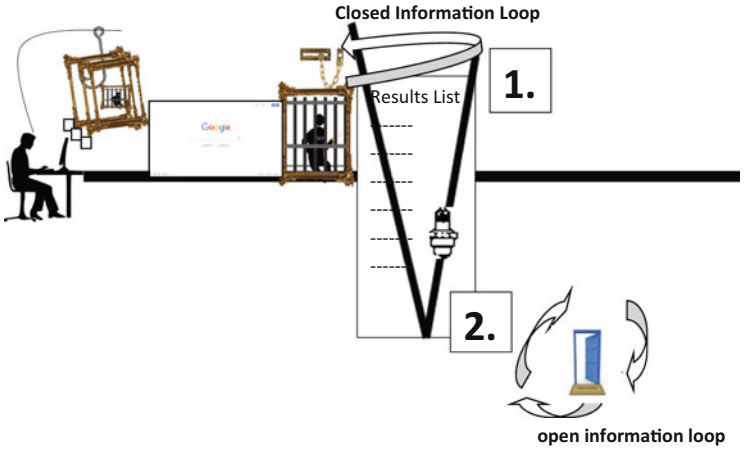

Fig. 3 (1) The searcher is imprisoned in the closed information loop controlled by his Information Need Expectation Frame. We insert a sparkplug into the Google results list, which (2) shifts the searcher's information loop open so that the searcher can see the new information in the results list that will satisfy his real information need (for Google search page: © 2018 Google. Reprinted with Permission)

opening herself up to new information, so that she can identify her real information need while she peruses the results list?

* * *

Part III is devoted to defining and describing the solution to the framing problem of our exceptional human consciousness. In Chap. 13, we give empirical archeological evidence for the solution to the problem of our frames described in Part II. The solution lies in our Mythic Mind layer of human consciousness, centered on the human belief system. We emphasize that "belief" here does not signify religious belief but rather the broader human concern for searching for meaning in our experience.

In Chap. 14, we differentiate belief from knowledge, and begin to model how our belief system opens the information loop between our frames and recognizing and experiencing new information in the outside world, thus begetting new knowledge production. In other words, belief-begets-knowledge. In Chap. 15, we model and describe what a belief-begets knowledge information search looks like in a case study.

In Chap. 16, we propose **The Consciousness' Drive Information Need-Search Model**, with an extensive case study of a student researching a history essay to illustrate the Model. We also illustrate a searching tool that facilitates the student searching Google and other search engines, called **The Real Information Need Finding Device**. The Model and Device conceptualize the book's title: The Consciousness' Drive: Information Need and the Search for Meaning.

The Conclusion (Chap. 17) to the book summarizes our view of the consciousness approach to information need and information search. We present a cautionary tale related to our exceptional framing ability, which can cut off new information by closing the information loop between humans and the world of new information. We compare this negative impact of our frames to AI-equipped robots, which have the potential to imitate human-like thinking based on the frame problem we described in Part II of the book. Our search for meaning intention, however, cannot be imitated, and it is this intention that draws us continuously back to the objective world in search of new knowledge.