

## Part II

# Conclusion

In Part II, we have investigated three levels of frames through which we humans see and understand the world around us and our place in that world:

1. The nation-state frame
2. The group frame
3. The individual frame based on the episode

The frame levels provide the categorization interface through which what is outside the individual in the world is channeled inside the individual. The power of the 3-frame levels resides in their central role in making sense of the chaotic stream of data coming at humans from the outside world. They determine how and what we think about. They determine our human consciousness.

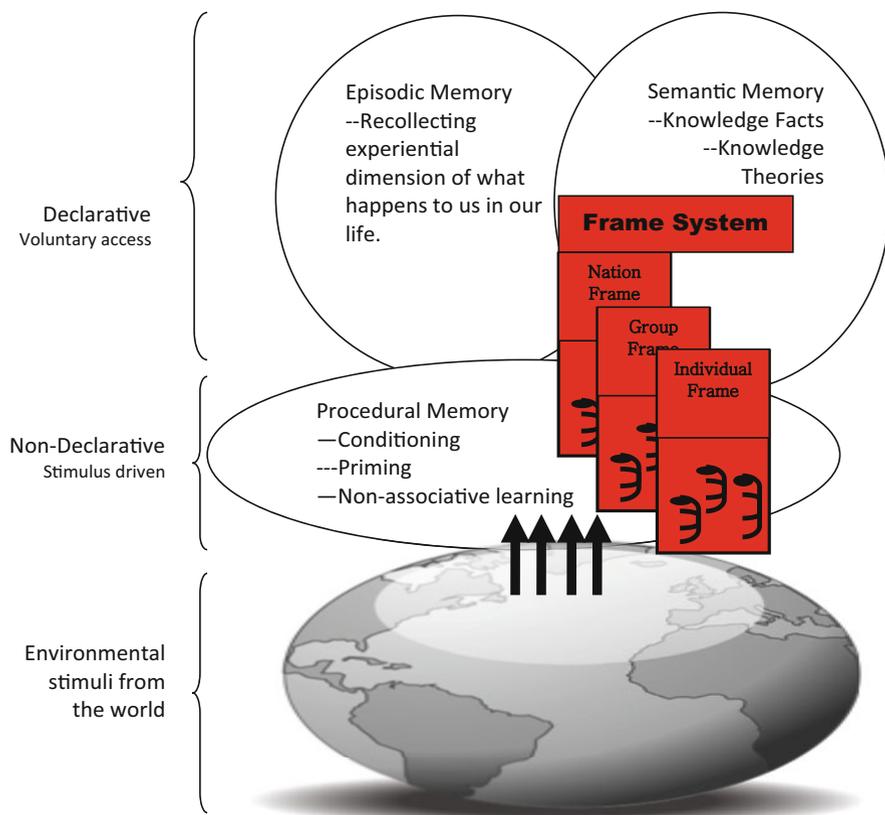
The frames are categorization schemes directly connected to human action. That is, we recall these frames from memory before the same or a similar experience is expected or predicted to occur. They anticipate or predict the future—thus our term “predicted future frames.” The selected predicted future frame then determines and guides the individual through his or her real-time experience of the same or similar episode.

The frame network is extremely precise and exceptionally flexible in its predictions of the future because not only is each feature in the lower level of the selected frame set to a default assignment, giving the individual an immediate course of action, but each feature also has alternative slot assignments. These alternative assignments are available to the frame if the default is not the right one for the real-time experience, giving the individual numerous other guidance options for the real-time experience. In addition, one frame can quickly switch to another in the frame network, through immediate interframe connections built into the feature assignments. In this way, the individual has almost immediate access to all his or her experience, categorized for immediate action. A hostile parent sitting beside an individual at a child’s birthday party can immediately be accommodated by another interconnected frame in the first person’s network—let’s call it: “what to do in case of a hostile parent” frame—which is linked to a feature in the lower level of the “going to a child’s birthday party” frame. In this way, the most unexpected

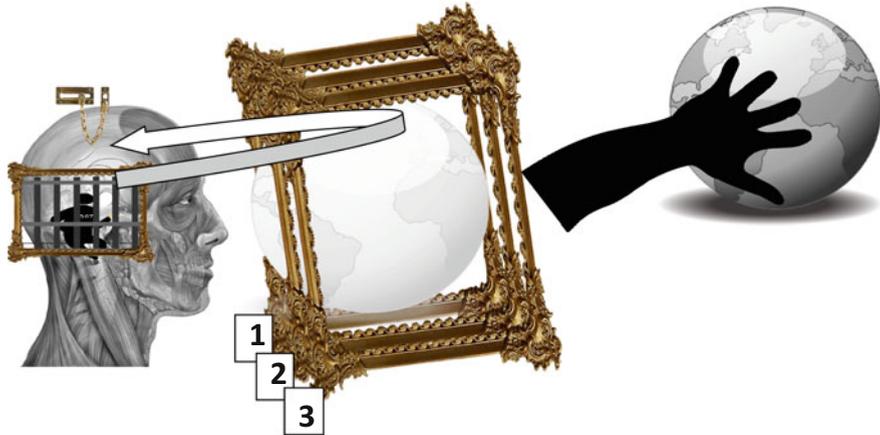
anomaly in the script of behavior the frame provides can be accommodated by the frame network.

But the frame network plays a more important function than a guidance-to-action categorization system that encompasses the individual's total life experience. The group-level and nation-level frames categorize the individual's social episodes of experience into a self-concept that allows the individual to establish a relation with the outside world. Via the conceptualization of the individual's core beliefs and values, which is established through intergroup and inter-nation categorization processes, the individual establishes this relation between a concept of self, a concept of the world, and a concept of her place in that world.

In Fig. 1, we insert the 3-frame levels just described in the last three chapters, in the same generic diagram of the human memory system used earlier in the book (Part I, Chap. 4, Fig. 4.3). The frame system is at the center of human consciousness, linking our semantic knowledge network, and all our procedural knowledge together



**Fig. 1** Three frame levels inserted in the layers and components of the human memory system that constitute our thinking and consciousness (after Suddendorf and Corballis 2007, p. 301; Squire 1992)



**Fig. 2** Three frame levels imprison individuals in closed information loops and new information avoidance: (1) Nation-level frame. (2) Group-level frame and (3) Individual-level frame

into a grand index of who we are in relation to the world and our place in it. The 3-frame system is the channel through which information outside us in the world gets inside us as individual humans. The 3-frame system is directly connected to a database of all we have experienced in that world. The frame system is at the center of how we think and what we think about.

The problem with the frames is that they are so integral to our individual sense of self and our relation with the outside world that humans can cease directly experiencing the chaos and the anomalies of the outside world. Instead, we choose to live our experience of the world once removed, second-hand—through the shadows on the cave wall as Plato describes in his *Allegory of the Cave*. Direct contact with information in the real world that may contradict the frames and threaten the individual’s equilibrium is avoided, kept at arm’s length as shown in Fig. 2. The pitfall is that the equilibrium provided to the individual by her frames is the first concern, and must be protected at all costs; leading to the individual becoming compliant, even complicit in group or nation-state sponsored acts of terrorism (e.g., the Nazis’ Final Solution). So the individual shuts down information need for new, possibly contradictory-to-the frame information, and becomes a prisoner in her own closed information loop.

### **The Frame Problem of Closed Information Loops**

The essence of the efficacy of the frame system is that they are invoked to provide expectations of the future that guide future action. When we are about to enter an unknown room, the room frame is then continuously in our mind predicting and

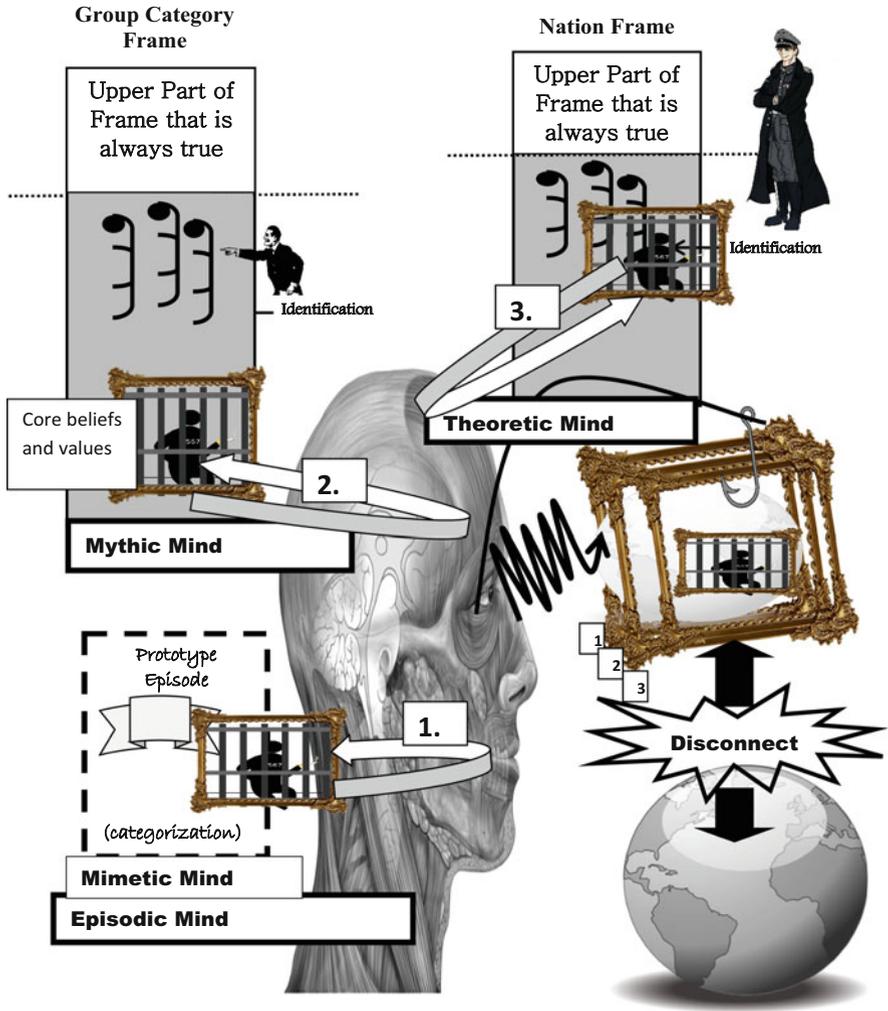
guiding us through our time in that room. Thus our term: predicted future frame. Theoretically, we are supposed to constantly be checking our frame against the reality we are experiencing. But it is more comfortable operating within our default slots. And we can be persuaded, even frightened into doing so.

The Nazi-created nation frame investigated in Chap. 12 is the most egregious example of the imprisonment effect of a closed information loop created by a frame. The Nazi state took advantage of the core values and beliefs of the Germans as a group, manipulating and exaggerating them for its own ends, but with the compliance and complicity of the Germans in this manipulation. The nation frame is perhaps the most powerful frame because of its power to effectuate its objectives, in terms of marshalling manpower and resources in bureaucratic systems. It has legal authority over the state police, army, and the national communication channels. The bureaucratic systems devised by the Nazis became their own driving force that served to dehumanize the individual act.

The group frame level investigated in Chap. 11 actualizes and strengthens the core beliefs and values of the individual, through the intergroup categorization process. We define our self-concept through the ingroup in comparison to outsider groups. We cannot define these core values and beliefs in isolation. "I think therefore I am" becomes "I think as a member of a group, therefore I am." At least, this is the statement we make at this point in our book. (We step somewhat back from the statement in Part III.)

The individual frame investigated in Chaps. 9 and 10 categorizes the individual's intersection experience with the world, as we are traveling through space and time, in the unit of the episode. As we continue to experience the world, these episodes harden into categories of experience called episode prototypes. It is these prototype episodes we recall from memory when we anticipate we are just about to commence a similar episode experience. The predicted future prototype episode frame is intimately connected to the group-level frames of the individual, of which there may be more than one, as well as the nation-state level frame for that individual. The frame levels provide a solid front in guiding us through our real-time experiencing of each intersection we have with the world.

In Fig. 3, we have linked together all three levels of the frames in a summary diagram of the closed information loops that together or singly prevent us from seeing new information in the outside world, including when we conduct an information search with a new knowledge production objective using the Internet. In Fig. 3, we have associated each frame level with a different evolutionary mind layer of human consciousness. The episode frame level we associate with the Episodic Mind and Mimetic Mind layers of human consciousness. The group frame level we associate with the Mythic Mind. And the nation-state frame level we associate with the Theoretic Mind. All three frame levels are present in the individual's intersection with the world in real time, providing future predicted frames guiding our actions. Individuals are comfortable experiencing the world through these frame system intermediaries or interfaces. We are in equilibrium with ourselves and the outside world when we stick to the frame prediction. As a



**Fig. 3** The closed information loops of the three levels of frames in which we are imprisoned create a disconnect between our framed experience and real experience of the individual’s intersection with the world. The 3-frame levels are: (1) the individual frame closed information loop; (2) the group frame closed information loop; and (3) the nation frame closed information loop

result, we can easily become imprisoned in closed information loops inside the frames, and disconnected from the real world.

For information need during information search of an information system, this places us firmly inside the Meno Paradox:

If we see and recognize in the world only what we already know, what is in our frames, how do we come to know that which we do not already know?

## Modeling the Problem for Information Need and Information Search

We are now at the end of Part II in a position to model the problem posed by our 3-frame levels for information need and information search when our objective is the production of new knowledge. Here, we overlay this problem statement onto the model of information search from the human consciousness perspective, previously illustrated in Part I's Conclusion, Fig. 3.

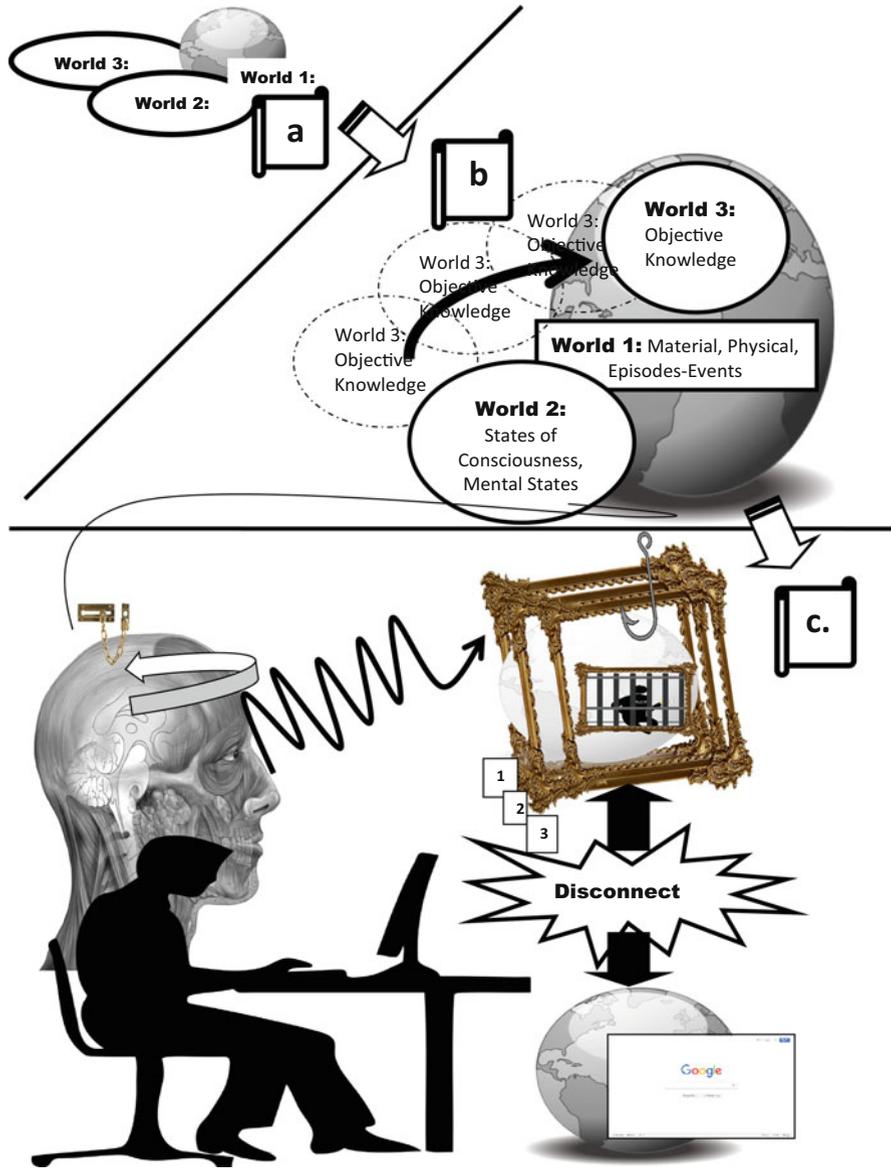
We ended Part I with the conclusion that information search systems and the conceptual basis of information need and information search should take a consciousness-based perspective. This is different from current information search-engine-system design which is transactional—the information searcher is assumed to know what she needs and commands the system for the needed information. This is the problem: our 3-frame levels imprison us in closed information loops that prevent us from knowing our real information need.

We repeat the Part I model diagram (Part I, Conclusion, Fig. 3) here in Fig. 4a and b, extending it (Fig. 4c) to take into account Part II's statement of the problem.

The information science perspective on search engine design is that the search engine should facilitate humans communicating with “accumulated recorded knowledge” (Hjørland 2017, p. 1797). As stated in Part I, this perspective is modeled by Popper's (1975) 3-World model of knowledge construction, shown in Fig. 4a, with the transactional focus on the transfer of information between World 3, the world of objective knowledge available in books, articles, and on websites/pages on the Internet, and World 2, the world of human consciousness and mental states. The current design focus de-emphasizes Popper's World 1, the real world itself and the human experiencing of that world, as the focus of information search.

A consciousness-based search system, on the other hand, considers World 3 part of World 1, as shown in Fig. 4b. With a consciousness-based perspective, World 3 becomes part of World 1, so information need, information search, and information transfer are viewed through the lens of the individual experiencing a new information episode. Information search in this new paradigm is now an episode of the searcher's experiencing of the world. It is now part of how and why we frame the world and our place in that world and the motivational nature of the information need that drives us to search for information in the world.

Shown in Fig. 4c, the problem for information need and information search, and the problem for the design of information search systems in this consciousness-based perspective, is the closed information loops in which the individual searcher is imprisoned during the search. The closed information loops disconnect the searcher from seeing new, contradictory-to-the-frames information in the outside world. In the case of information search using an Internet search engine, the outside world is the results list provided to the searcher by the search engine.



**Fig. 4** Experiential conception of information search: Popper’s (a) 3-Worlds becomes (b) only 2-Worlds. (a) Popper’s focus on the interaction between World 3 and World 2. (b) Merging World 3 into World 1 with the redefinition of information search as the experiencing of an episode. (c) The disconnect problem of our frames’ closed information loops on seeing and experiencing new information in the world and when conducting a Google information search (Google search page: © 2018 Google Reprinted with Permission)

## **Consciousness-Based Information Search**

We have come to the end of Part II where we set out to investigate, describe, and explain the underlying problem for information need and information search caused by our exceptional human ability to intersect with and experience the world through frames of our own making. The 3-frame levels proscribe not only what we future predict we will see and understand in our experience, they proscribe what we don't or can't see in the experience in the outside world. While knowing the future before it happens has many advantages, these various frames imprison us inside the closed information loops of our own making, the making of our group, and the making of the nation-state we belong to.

If we are not able to take in new information, we as a species will not be able to adapt—to climate change, for example—blocking our species' ability to survive, which is the primary directive. But there is a solution to the problem of the disconnect between us and the world caused by our frames. In Part III, we describe the solution.