

# PSYCHOLOGICAL PROJECTIONS IN THE EMERGENCE OF HIVE MIND

Carolle Dalley

In the course of evolution, human transformation begins in the psyche and gradually moves out into the environment, where it becomes embodied in technology. The human psyche straddles the visible world of technology and the invisible world of the mind. Our psyche is able to engage the visible as well as the invisible aspects of our world. One means of engagement is the psychological projection. In *A Critical Dictionary of Jungian Analysis*, Andrew Samuels and co-authors define psychological projection in two main ways:

1. A defense against anxiety, where difficult emotions and parts of the personality that are unacceptable to consciousness become attributed to another person or institution or external object to provide relief and a sense of well-being.
2. A means of growth, where contents from the unconscious world are made available to the ego-consciousness. The encounter between the ego and the unconscious contents has the potential for psychological growth. The external world of persons and things serves the internal world by providing “carriers” of the projection.<sup>1</sup>

This study focuses on projection as a means of psychological growth, by offering the idea that a collective Hive Mind is emerging from the human

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<sup>1</sup> Andrew Samuels, Fred Plaut, and Bani Shorter, *A Critical Dictionary of Jungian Analysis* (New York: Routledge, 1986), 113-114.

psyche. That emergence can be seen through the psychological growth that comes about when projections are recognized, retracted, and integrated into consciousness. The carriers in this study are all in the external world of technology. They are technological tools, and include the printing press, the telescope, the computer, the Internet, and mobile devices. These tools serve the purpose of carriers of projections. Unconsciously, we project images onto technology. Our views of technology inflate the capabilities of tools. While the tools do have capabilities in the areas of information processing and communication, they rely on a human substrate in which information processing is a collective attribute of humanity.

### **Definition of Hive Mind**

I propose that humans have a Hive Mind that enables us to act in concert. It has characteristics similar to those that enable bees to build a hive, fish to swim in schools, and birds to fly in formation. The Hive Mind is a collective attribute of humanity. The main characteristics of the Hive Mind are:

1. **Information:** Humans have access to information in a collective substrate and can access that information collectively. An example is crowdsourcing, which uses technology to connect amateurs, experts, novices, and the simply curious. They bring their variety of expertise, common sense, and idiosyncratic insights to bear on the creation of new products and the resolution of problems in the commercial world. Companies like Innocentive, NineSigma, iStockphoto, and Threadless offer their crowdsourcing services via the online marketplace. Crowdsourcing taps into people's collective information to generate innovative products and solutions.
2. **Communication:** Humans have the ability to communicate with each other by oral and written means, unaided by technology. When supported by technology, communication increases dramatically. For example, the introduction of e-mail enabled fast communications among individuals and organizations across all the countries that have Internet access. Technology aided communication supports both the distribution of information and the transmission of feedback in response to that information.
3. **Simultaneous Action:** Humans can act in concert without having established a plan or a leader. We do act in concert without technology, but when supported by technology, the simultaneity of concerted action has phenomenal effect. The use of mobile phones to overturn

political regimes in the Arab Spring of 2011 is an example of our action in concert with the aid of technology.

All of these characteristics of the Hive Mind are demonstrable without technology. However, when they are supported by technology, their effects increase exponentially. It is technology that is revealing our Hive Mind characteristics. The printing press, the telescope, the computer, the Internet, and mobile devices all give us visibility into how our Hive Mind operates. The technology gives us visibility into Hive Mind operations via psychological projections.

### **Projection in the Emergence of Hive Mind**

While writing *The Ever-Present Origin* during the period 1949-1953, Jean Gebser commented on the role of psychological projection in the emergence of consciousness. The 1985 English translation of Gebser's work by Noel Barstead and Algis Michunas states the following:

Yet to the extent that the machine is an objectivation or an externalization of man's own capabilities, it is in psychological terms a projection. We have already spoken of the decisive role of projection in the emergence of consciousness; it is only because of these projections, which render externally visible the powers lying dormant within man, that he is able, or more precisely, that it is possible for him to become aware of this intrinsic potentiality which is capable of being comprehended and directed.

All 'making,' whether in the form of spell-casting or of the reasoned technical, construction of a machine, is an externalization of inner powers or conditions and as such their visible, outward form. Every tool, every instrument and machine, is only a practical application (that is, also a perspectival-directed use) of 'inherent' laws, laws of one's own body rediscovered externally. All basic physical and mechanical laws such as leverage, traction, bearing, adhesion, all constructions such as the labyrinth, the vault, etc., all such technical achievements or discoveries are pre-given in us. Every invention is primarily a rediscovery and an imitative construction of the organic and physiological pre-given 'symmetries' or laws in man's structure which can become consciously being externally projected into a tool.<sup>2</sup>

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<sup>2</sup> Jean Gebser, *The Ever-Present Origin, Part One: Foundations of the Aperspectival World and Part Two: Manifestations of the Aperspectival World* (Athens, Ohio: Ohio University Press, 1985), 132.

In Gebser's view, psychological projection plays a decisive role in the emergence of consciousness. Projection makes externally visible the powers lying dormant within our psyche. Projection makes it possible to become aware of the intrinsic potentiality. The creation of technology is the externalization of the inner powers of the psyche. Technology has a history of tools that mirror the evolution of the human psyche.

The introduction of new technology is not just about performing activities with mechanical devices. It is also about altering cognition of those activities. A new technology can create cognitive dissonance or emotional mismatch in users because the new activities violate their frame of reference. We have frames of reference that are constructed from past experiences, present knowledge, and expectations of the future. Where the new technology fits the framework, we embrace it, but if the framework and the technology are an uneasy fit, we will ignore it or misperceive it. In *The Nature of Technology*, W. Brian Arthur quotes psychologists who portray the framework as not easily dismantled. The way that humans see the world is ultimately linked to the manner in which we define our relation to the world. We have a vested interest in maintaining consistency because, otherwise, our identity may be at risk.<sup>3</sup>

Humans do not evolve in quite the same way as technologies and economies. Arthur's combinatorial evolution applies readily to technologies and economies, but only in a limited way to humans. In biology, combinatorial evolution does occur. Each human has a combination of genes from just two parents. We do not select organs from different sources. Arthur's account of the creation of technology gives a sense of ancestry. The creation of the Internet drew from an ancestral repository of technologies. With a similar argument, psychologist Carl Jung uses the word "archetype" to describe human evolution with a sense of ancestry. Arthur proposes an ancestral repository of technologies that have potential use in future technologies. Jung proposes an ancestral repository of human experiences that informs future generations. Arthur's repository is a physical, tangible repository; Jung's repository is non-physical, unconscious, and intangible.

We evolve by projecting unconscious content from our psyche unto the external world. According to Analytical Psychology, there is an ancestral repository of human experience in the unconscious psyche. The content of the unconscious psyche comes to the attention of the ego in the conscious mind by means of a projection. In this article, I offer an explanation of those situations when the unconscious content is projected onto technology. The projection bypasses conscious awareness. An image is unconsciously

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<sup>3</sup> W. Brian Arthur, *The Nature of Technology: What It Is and How It Evolves* (New York: Free Press, 2009), 139-140.

projected onto a carrier in the external world. The carrier is something with which the image finds some resonance. With reflection, the ego comes to recognize the projected content as coming from within. Psychological growth comes from deliberately withdrawing the projection and integrating it into the conscious mind. The following description of the stages of a projection draws on the works of psychologists Carl Jung and Andrew Samuels.<sup>4</sup>

### **Projection—Definitions of the Stages**

Stage 1: Conviction: Humans become convinced that what we see in the external world are truly attributes of the external world.

Stage 2: Recognition: There is a gradual, dawning recognition of a difference between the external world and the attributes we ascribe to it. We recognize that the projected image is different from the external world.

Stage 3: Assessment: Humans engage in an ego-driven assessment of the discrepancy between the projected image and the external world.

Stage 4: Conclusion: There is a conclusion that the attributes ascribed to the external world do not actually belong to the external world. We come to see that appearance was an illusion. The projected image does not belong to the external world.

Stage 5: Search: There is a conscious search for the origin of the projected image. In this search, we take into account our collective awareness of the external world and realize that the projected image originates within us.

Stage 6: Retraction: We withdraw the projected image from the external world. We own and integrate the projection into our collective conscious mind. The net effect of the withdrawal of the projection is that unconscious content is integrated into conscious awareness. This expansion of consciousness is a restructuring that occurs in support of the evolution of humanity.

I will now apply the stages of a projection to the five tools that are technological milestones.

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<sup>4</sup> Carl Jung, *The Archetypes and the Collective Unconscious*, Vol. 9, Pt. 1 in *Collected Works of C. G. Jung*, trans. R. F. C. Hull (Princeton: Princeton University Press, 1981), para. 7; Samuels, *A Critical Dictionary of Jungian Analysis*, 113-114.

## Projection—Printing Press (Preservation of Information)

When the printing press was invented, we held the conviction that it preserves an unlimited collection of all information ever printed. We unconsciously projected onto the tool an ability to preserve information. We believed that the knowledge and experience we acquired during our lifetime were all equally preserved for future generations by the printing press. Literacy broke the projection. As printed materials became available, more people learned to read. The literate chose reading material that appealed to us. We did not want all the information ever stored in printing presses; we were selective. Gradually, we recognized that although the printing press is instrumental in the preservation of information, it is actually humans who determine which information is preserved. After all, some printed material stays in print, while other material falls out of print.

An ego-driven assessment of the discrepancy between the projected image of information preservation and the actual preservation revealed that the printing press does not decide what stays in print; rather, we do. The printing press does have the technological capability to store, preserve, and print information, but the technology is neutral to preservation. The information that stays in print, remains in print, because it resonates with the human psyche. Sacred texts like the Koran, the Bhagavad-Gita, and the Bible have been in print for centuries. We repeatedly reference the sacred texts because they give us inspiration. Year after year, we read books, attend theatrical performances, and view movies about stories that appeal to our emotions: *Les Miserables*, *Moby Dick*, *Wuthering Heights*, etc. Over time, scientists cite those theories that resonate with their concept of the world: Newton's Laws of Motion, Einstein's Theory of Relativity, etc. The inspirational texts, the moving stories, and the cited scientific theories stay in print longer than other materials stored in printing presses. The printing press served its purpose as a carrier of the projection, but it is not wholly responsible for the preservation of information. The conclusion is that although the printing press is indeed capable of technical preservation of information, it does not choose which information is preserved.

There was a conscious search for the origin of the projected image. We took into account our collective awareness of the external world and realized that the projected image originates within our psyche. We cannot see the growth that takes place in the human substrate below our consciousness. This growth becomes known to us when we involuntarily project a new image into the external world. Upon reflection, we recognized the projection as originating in our psyche. We withdrew the projected image from the printing press. We took ownership of the projected image and we integrated the projection into our collective conscious mind. The net effect of the withdrawal of the projection is that previously unconscious content about the preservation of information was integrated into our conscious awareness. The printing press brought

about an increase in literacy. More people learned to read and write. Many took advantage of publications for the purpose of education. The increase in literacy took humanity a step toward Hive Mind. Aided by the technology of the printing press, we determine the preservation of information by selecting what resonates with our psyche.

The printing press brought about a significant shift in communication between generations. Prior to the invention of the printing press, we communicated by storytelling. Information was preserved by one generation telling stories to the next generation. Over time, the stories varied with the memories and interpretations of successive storytellers. The printing press enabled stories to be communicated consistently. The original creation of an author was printed with the same content across generations and readers got the same words with each printing. The stability of the information across generations is one of the attributes that define Hive Mind. However, the sharing of information was not immediate and could not sustain the simultaneous action essential to Hive Mind.

### **Projection—Telescope (Theft of Information)**

When the telescope was invented, there was an assumption that it would capture forbidden information. It was initially termed a spyglass because of its potential for secretly detecting warrior ships approaching on the horizon. Later, it came to be regarded as a tool that humans use to steal information from the universe, considered to be the realm of divinity. So feared was this divinity that astronomers were loathe to make public claims which opposed the prevailing belief that God had placed humans on earth in the center of the universe. Astronomers like Galileo Galilei and Johannes Kepler rendered the telescope a scientific instrument by combining mirrors and optical lenses in configurations that brought planetary movements into view. Later, cameras were added to capture images of the planets. The telescope communicates information about the universe by feeding planetary measurements to astronomers. It extended our frame of reference beyond what the naked eye can see. It collected objective scientific data about the planets in our universe and communicated that information to scientists. Scientific experiments broke the projection. Experiments verified what astronomers had predicted before the invention of the telescope. We gradually recognized that there was no theft of information.

There followed an evaluation of the discrepancy between the image of information theft and the empirical data collection by the telescope. The technology of the telescope is morally neutral. The astronomers' prediction had been made before the invention of the telescope. There was no theft of information. Astronomers drew on the collective intuition and supplemented that with mathematical calculations to predict movements of the planets. The

telescope recorded data in scientific experiments that verified the prediction. The telescope served its purpose as a carrier of the projected image, but it is not an agent of information theft. We concluded that, although the telescope does have the technological capability to collect empirical information about the universe, there was no theft of information. Humans had intuited the nature of the heliocentric system. On the basis of that intuition, astronomers composed hypotheses and later conducted experiments to test the validity of heliocentricity. The discovery of the telescope enabled astronomers to test what astronomers intuited about heliocentricity.

There was a deliberate search for the origin of the projected image. In this search, we took into account the astronomers' prediction of heliocentricity and realized that the projected image of information theft originated within us. Dava Sobel, author of *A More Perfect Heaven*, informs us that Nicolaus Copernicus had reached his sun-centered conclusion about the universe by way of intuition and mathematics, but he did not decide to publish until near the end of his life. Why did Copernicus delay the publication of his work on heliocentricity until late in his life? Would he have risked the loss of his clerical profession, for which the Roman Church compensated him? Was he fearful of excommunication because heliocentricity conflicted with the prevailing religious beliefs? Did he hesitate to publish because of possible ridicule from fellow astronomers and the public? Or had heliocentricity become less of a priority for him? Whatever the answers may be, *On the Revolutions* was published in 1543, the year Copernicus died.<sup>5</sup> It was not until 1610, when Galileo Galilei built a scientific telescope, that astronomers had a tool to begin to test the hypothesis about heliocentricity. The verification of heliocentricity came much later in the wake of scientific advances in the observation of planetary movements. We withdrew the projected image of information theft from the telescope. The outcome of withdrawal of the projection is that unconscious content about our ability to see our place in the universe was integrated into conscious awareness. Following the invention of the telescope, there was a heightened interest in empirical data collection about the universe. The telescope brought humanity another step closer to the Hive Mind, by ushering humanity into the scientific revolution, where information untangled itself from religious beliefs. The telescope created images of the planets that were shared by astronomers. Mathematics, the universal scientific language, mediated the transformation of planetary images into ideas, and then transformed the ideas into shared rational concepts. The telescope contributed to the development of the scientific revolution, that is, a foundation of shared scientific rules and laws that applied globally. The scientific revolution enlarged the pool of information shared by humanity, but there was still not enough communication to support Hive Mind.

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5 Dava Sobel, *A More Perfect Heaven: How Copernicus Revolutionized the Cosmos* (New York: Walker and Company, 2011).



## **Projection—Computer (Processing of Information)**

When the computer was invented, we believed that intelligent information processing was an attribute of the computer. The availability of the computer enabled translating human operations into machine language that can be executed by a computer. Operations that used to be performed exclusively by humans could now be coded into computer programs, which are executed without human intervention. Professionals and amateurs developed software that gave computers prominence in the information processing sciences. We offloaded cognitive operations to computers and we were in awe of the computer's ability to model complex matters such as the national economy and weather forecasting. Slowly, we came to recognize a difference between the computer's actual capabilities and those we ascribe to it. The projection was broken by the failure of Artificial Intelligence to replicate a human mind.

We pursued a deliberate assessment of the discrepancy between the projected image and the observed intelligent capabilities of the computer. The technology of the computer is neutral. It is humans who create software that embodies knowledge, instructions, searches, and the ability to make new rules based on performance of old rules. In the TV series "Jeopardy," IBM's computer Watson was invited to play the game against human players. Watson outperformed human players in areas like the retrieval of stored data and the performance of logical operations. However, Watson could not match his human counterparts in areas that involved interpretation of idiomatic expressions, metaphors, and emotional intelligence. The computer served its purpose as a carrier, but it has not replicated the human mind. We concluded that while computers are capable of intelligent information processing, they rely on a human substrate in which information processing is a collective attribute of humanity.

We then engaged in a deliberate search for the origin of the projected image. In this search, we looked into our collective awareness of the external world and realized that the projected image originated within us. A computer is capable of intelligent information processing. The computer was instrumental in helping us realize that we had projected our intelligence onto the external world. We realized that the projected image originates in our psyche. We recognized that the projected image of intelligent information processing upon the computer is really an offloading of human knowledge encoded in software that can be executed on hardware without human intervention. We withdrew the projection and integrated it into our collective consciousness. The computer brought humanity one step closer to the Hive Mind. Software embodies information processing that steered humanity into the digital revolution, where technology and humanity evolve along parallel paths.

The computer leveraged human mental ability phenomenally. It enabled us to store and retrieve information in volumes and at speeds never achieved

before. In calculations and simulations, the computer outperformed humans in accuracy, speed, and consistency. By making information available to us faster than we could comprehend or use it, the computer brought out one Hive Mind characteristic more than any previous tool: access to information. Standalone computers created the potential for the second Hive Mind characteristic: communication among humans. Networks of computers would later support the third Hive Mind characteristic of enhancing communications among humans.

### **Projection—Internet (Access to Information)**

When the Internet was invented, we thought that it gave us access to all information. There was enormous interest in access to information: Google became a popular website where people search for information and Facebook clientele grew as more people shared information about themselves online. We are still in awe of the Internet as a limitless source of information about all aspects of life. The Internet makes accessible a growing number of websites. Anyone who has Internet access can find information about any topic in any domain. There was a dawning recognition that information does not just reside in websites connected by the Internet. The projection was broken by crowdsourcing. In the book *Crowdsourcing*, Jeff Howe defines crowdsourcing as harnessing the creative efforts of a diverse collection of people who have a common motivation. Given appropriate conditions, crowdsourcing obtains better results in problem-solving and innovation than subject matter experts.<sup>6</sup> Crowdsourcing revealed that we possess access to a source of collective information that goes beyond that found on the Internet.

We conducted an evaluation of the discrepancy between projected image and actual access to information. We noticed that the technology of the Internet is neutral. While the Internet may have links to most of the literary works, scientific works, and artistic works ever digitized, crowdsourcing demonstrates that collectively, we also have access to a source of information for creating innovative products and solving problems. We see that the Internet served its purpose as a carrier. It enables us to access information, but it is not a source of creativity and innovation. Our conclusion from this assessment is that while the Internet is capable of technical access to constantly growing sources of digitally stored information, it draws from a human substrate in which information access is a collective attribute of humanity. Jeff Howe informs us that the power of the crowd is driving the future of business. He provides examples of companies that call on enthusiastic amateurs to solve

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<sup>6</sup> Jeff Howe, *Crowdsourcing: Why the Power of the Crowd Is Driving the Future of Business* (New York: Three Rivers Press, 2009), 146-169.

scientific and technical challenges. These amateurs often outperform in-house research departments. In addition, these amateur efforts yield millions of dollars in revenue annually.<sup>7</sup>

From a deliberate search for the origin of the projected image, we came to the realization that the projected image of information access originates within us. We withdrew the projected image from the external world. We owned and integrated the projection into our collective consciousness. The Internet brought humanity closer to the Hive Mind, because it enables simultaneous communication of information. By linking websites globally, the Internet supports two Hive Mind characteristics. These are access to information and communication. Communication involves both distribution and a feedback loop. Access, distribution, and feedback enable the simultaneity of action that is the third characteristic of Hive Mind. Although the Internet makes simultaneous action possible locally and globally, we needed to be logged on to the Internet to accomplish such action. Having to go to a desktop or laptop limited the immediacy of action. Pocket-sized mobile devices would later enhance the immediacy of action.

### **Projection—Mobile Devices (Simultaneous Communication of Information)**

Many are convinced that mobile devices bestow on us the capability of simultaneous communication of information. The technology is constantly with us, in our hands or pockets. It enables us to tap into many sources of information, regardless of where we are located geographically. For some, that projection is still in effect. Mobile devices and platforms are viewed as the agents of simultaneous communication of information. That projection is being broken by events like the 2010 Haitian earthquake disaster recovery and the 2011 Arab Spring overturning of political regimes. The mobile device technology appears to give us the ability to act in concert. In their book *The New Digital Age*, Eric Schmidt and Jared Cohen provide a striking example of our action in concert.<sup>8</sup> In the aftermath of the 2010 Haitian earthquake, the Mobile Giving Foundation collected \$34 million in a “text to donate” campaign where mobile users could text “HAITI” to donate \$10 automatically charged to their telephone bill. Just one hour after the earthquake, volunteers in the USA had built a live crisis map to collect from people on the ground in Haiti information about locations of victims, needed medical supplies, and incidence of looting. The live crisis

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<sup>7</sup> Ibid., 30-31, 41-46.

<sup>8</sup> Eric Schmidt and Jared Cohen, *The New Digital Age: Reshaping the Future of People, Nations and Business* (New York: Alfred A. Knopf Publication, 2013), 232-233.

map saved lives and enabled the distribution of supplies. The speed of establishing the live crisis map and the enormous volume of the response appear to support the conviction that the connectivity experienced while using the mobile devices is an attribute of the technology.

A similar event occurred during the 2011 Arab Spring uprising. Digitally equipped citizens of several Arab countries realized, through mobile devices, that they had shared grievances. In *Democracy's Fourth Wave?*, Philip Howard and Muzammil Hussain inform us that their collective protests toppled dictators who had ruled four countries for decades: Tunisia, Libya, Yemen, and Egypt.<sup>9</sup> Through mobile devices, the citizens mobilized action against the dictators. The initial thought was that the Arab Spring uprisings could be attributed to the mobile devices. There is a growing recognition of a difference between the technology and the connectivity of a compelling concern shared by the citizens of a country.

Political analysts are assessing the role that mobile devices played in Arab Springs. They are noticing a discrepancy between the image projected onto the technology and the actual connectivity of compelling concerns shared by the citizens of a country. Many countries have citizens who possess mobile devices, but most of them do not use the devices for uprisings. The technology of mobile devices is neutral. A growing conclusion is that the connectivity ascribed to the mobile devices does not wholly belong to technology. Mobile devices were not causal either in the Haitian disaster recovery or in the Arab Spring uprisings. Mobile devices are suitable carriers of the projected image, but they are not wholly responsible for simultaneous communication of information.

A deliberate search for the origin of the projected image is revealing the neutrality of the technology. We are realizing that the projected image originates within us. The varied uses of the mobile devices are in keeping with varied human motivations, which play out on the neutral technology. In reflecting on simultaneous communication of information, we recognize that it comes into play when there is an external or internal trigger. An earthquake was the external trigger in Haiti. Oppression was the internal trigger in the Arab Spring. I believe that we will come to recognize the connectivity of the Hive Mind in situations such as the Haitian disaster recovery and the Arab Spring uprising. Telephones became our traveling companions as mobile devices with access to any information available on the Internet. We now have information and communication available wherever we go geographically. In our pockets, we have access to information, as well as the ability to communicate and receive feedback. When we withdraw the projected image from the technology, we will recognize that technology provides a lens that brings our Hive Mind into view.

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<sup>9</sup> Philip Howard and Muzammil Hussain, *Democracy's Fourth Wave?: Digital Media and the Arab Spring* (New York: Oxford University Press, 2013), 17-31.

In the following table, I summarize projections from the human psyche onto five tools that stand out in technological history because they give us visibility into our Hive Mind capabilities.

**Table: Projections from the Human Psyche unto Technology**

**Subject of the Projection**

Printing Press	15th Century	We projected the preservation of information onto the printing press. The projected image was broken by the realization that the printing press is neutral to preservation of information. We determine what is preserved by repeat orders for books that resonate with our psyche. We also determine preservation by the volume of our citations of scientific works.
Telescope	17th Century	We projected the theft of information onto the spyglass, which was renamed telescope. The projected image was broken by scientific experiments that demonstrated that humans did not use the telescope to steal information from the domain of the gods. Astronomers used intuition and mathematics to predict heliocentricity before the invention of the telescope.
Computer	19th Century	We projected the processing of information (cognitive and emotional) onto computers. That projected image was broken when Artificial Intelligence failed to replicate a human mind.
Internet	20th Century	We project onto the Internet an unbounded access to information. That projection was broken by crowdsourcing, which revealed that we have access to a collective source of information that surpasses what we can find on the Internet.

## **Table: Projections from the Human Psyche unto Technology**

### **Subject of the Projection**

Mobile Devices	21st Century	We are now projecting simultaneous communication of information onto mobile devices. That projection is currently in vogue. That projection will be broken when the widespread and many-faceted uses of mobile devices reveal that the connectivity is really an attribute of the collective human mental activity.
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These five tools (the printing press, telescope, computer, Internet, and mobile devices) have been instrumental in the trend toward Hive Mind capability in humans. The tools are all related to our use of information. Each tool has added a new dimension to the way that we use information. The tools have paved the way toward Hive Mind. My prediction is that we will act in concert more often in the future. We will function operationally, without needing a hierarchical chain of command, and without individuals needing to know a strategic plan. We have access to the collective information we need to function operationally as a coherent whole. The technology enables us to see that we can function as a Hive Mind because we now have access to information that we can share in real time and this allows us to act in concert.

I appreciate the contribution of Kevin P. Richard, lecturer in Archetypal Pattern Analysis at the Assisi Institute in Brattleboro, Vermont. Kevin reviewed drafts of this paper and engaged in stimulating discussions while providing consultation about archetypal content.