

A Genetic Basis for 16 Variations in Consciousness

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ABSTRACT. The brain informs consciousness of interior and exterior events, and in so doing gives the holder of consciousness a sense of being. That sense of being, it is argued, derives from within one or more of four brain-operating systems.

According to Roger Sperry and others, the hemispheres are operated by autonomous systems that complement one another, suggesting a model of consciousness that is informed by two dissimilar systems. And considering the widespread influence of genetic dominance on human design, it seems reasonable to maintain that there are four systems capable of informing

consciousness: When genetic complete dominance regulates the brain's operation, one hemisphere is dominant and the other is recessive, creating left-brain-dominance or right-brain-dominance. When genetic incomplete dominance regulates the system, the two brain-operating systems integrate into a single hybrid system of operation. When genetic codominance regulates brain information-processing behavior, pattern suggests that the two hemispheric systems operate as a team to inform consciousness.

Where that consciousness is concerned, it is argued, often one hemispheric system will default to process incoming data, or perception, and the

complementary system will default to process outgoing data, or response. For example, most right-handed women default to process perception in their right hemisphere and response in their left hemisphere. Four brain-operating systems capable of defaulting to process perception, sequenced with four brain-operating systems capable of defaulting to process a response, suggests the possibility of 16 different brain-operating-system types, each with a unique approach to processing human perception and response, producing 16 variations in consciousness.

BACKGROUND, PROBLEM, AND SOLUTION

How do hemispheric differences affect consciousness and behavior? That's what a group of neuroscientists sought to discover in the second half of the last century. The idea that the left side of the brain informs most men, and the right side informs most women, and that the two sides are radically different in their effect on perception and behavior gained a broad audience. People wanted to know how hemispheric dissimilarities made men and women different. But a fierce and fundamental dispute arose, and despite a significant body of evidence supporting right-hemisphere dominance in women, handedness studies convinced most scientists that most women are left-brain dominant. Subsequently, research that incorporated the idea of right-brain dominance in women was largely discredited, causing an important scientific inquiry to be marginalized, and with it a loss of public interest.

The assumption was—and still is—that people are either right-brain dominant or left-brain dominant. But evidence suggests that most women are both, along with a minority of men. Data flows to and from consciousness in a two-stage process, and each stage is independently subject to the effects of genetic dominance. Thus, stimulus might be processed by one system type, whereas stimulus response might be processed by another system type.

One of four brain-operating system types—left-brain, right-brain, team, or hybrid—attending to stimulus and one of four types attending to stimulus response allow for 16 different default brain-operating system combinations.

SELECTED SYSTEM CHARACTERISTICS

LEFT HEMISPHERE ATTENDS TO THE	RIGHT HEMISPHERE ATTENDS TO THE
Known ¹	New ²
Local ³	Global ⁴
Part ⁵	Whole ⁶
Self ⁷	Other ⁸
Mechanical ⁹	Living ¹⁰
Conservative ¹¹	Liberal ¹²

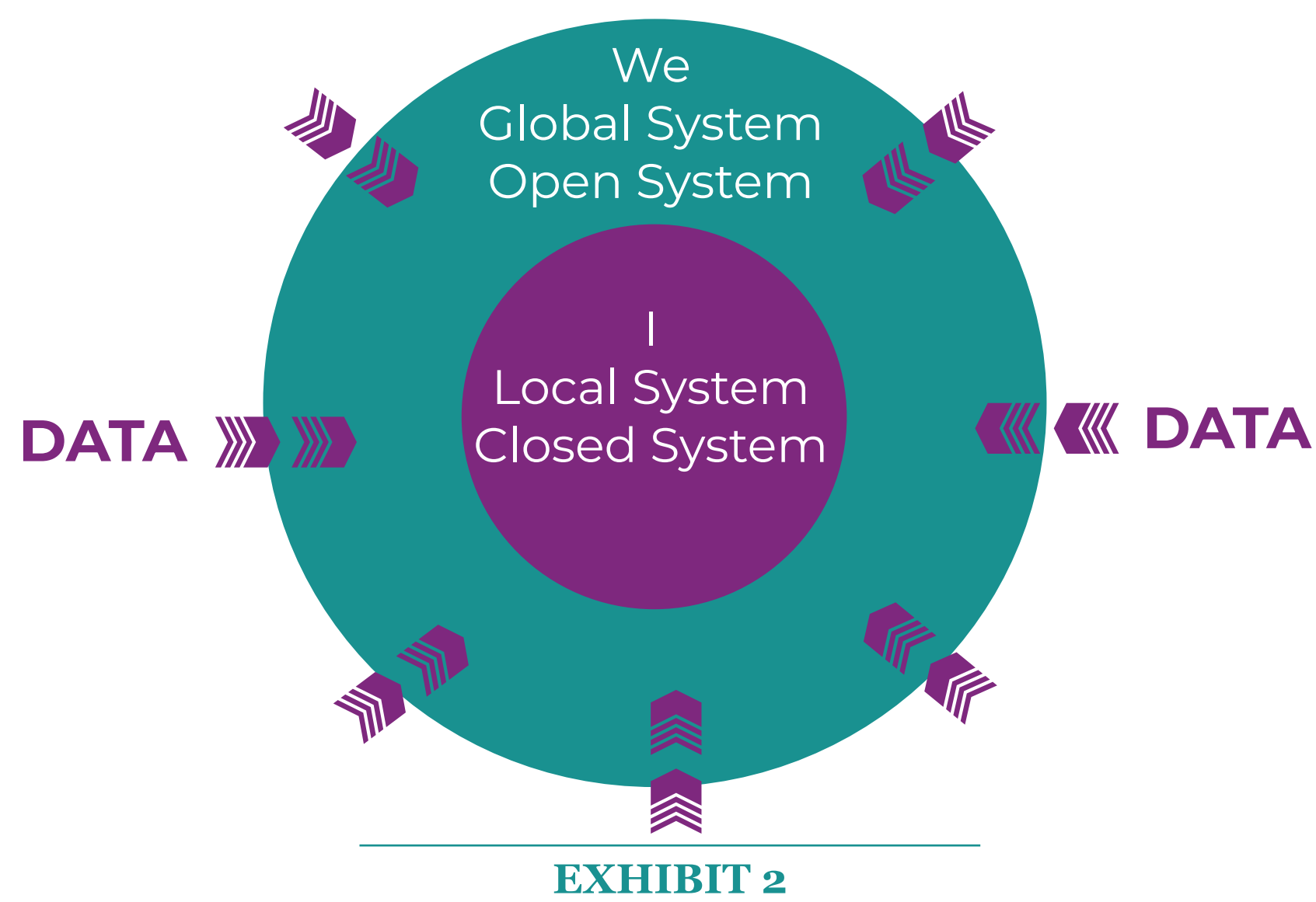
EXHIBIT 1

EXTERNAL DATA FLOW

Research suggests that new information first enters into the globally-oriented right hemisphere, next moves into the locally-oriented left hemisphere, and then returns to the globally-oriented right¹³ (in a few individuals, the local is in the right hemisphere and the global is in the left hemisphere).

Global systems nest local systems, which means that the two are not completely independent. Each of the hemispheric operating systems processes information separately, and at any moment the experience of consciousness is driven by which of the two systems has our attention. The nesting however suggests that there is an imbalance between the two, where the local system is closed off¹⁴ from information from the global view, whereas the awareness of the local view can be brought along into the open system¹⁵ of the global view.

SYSTEM WITHIN A SYSTEM



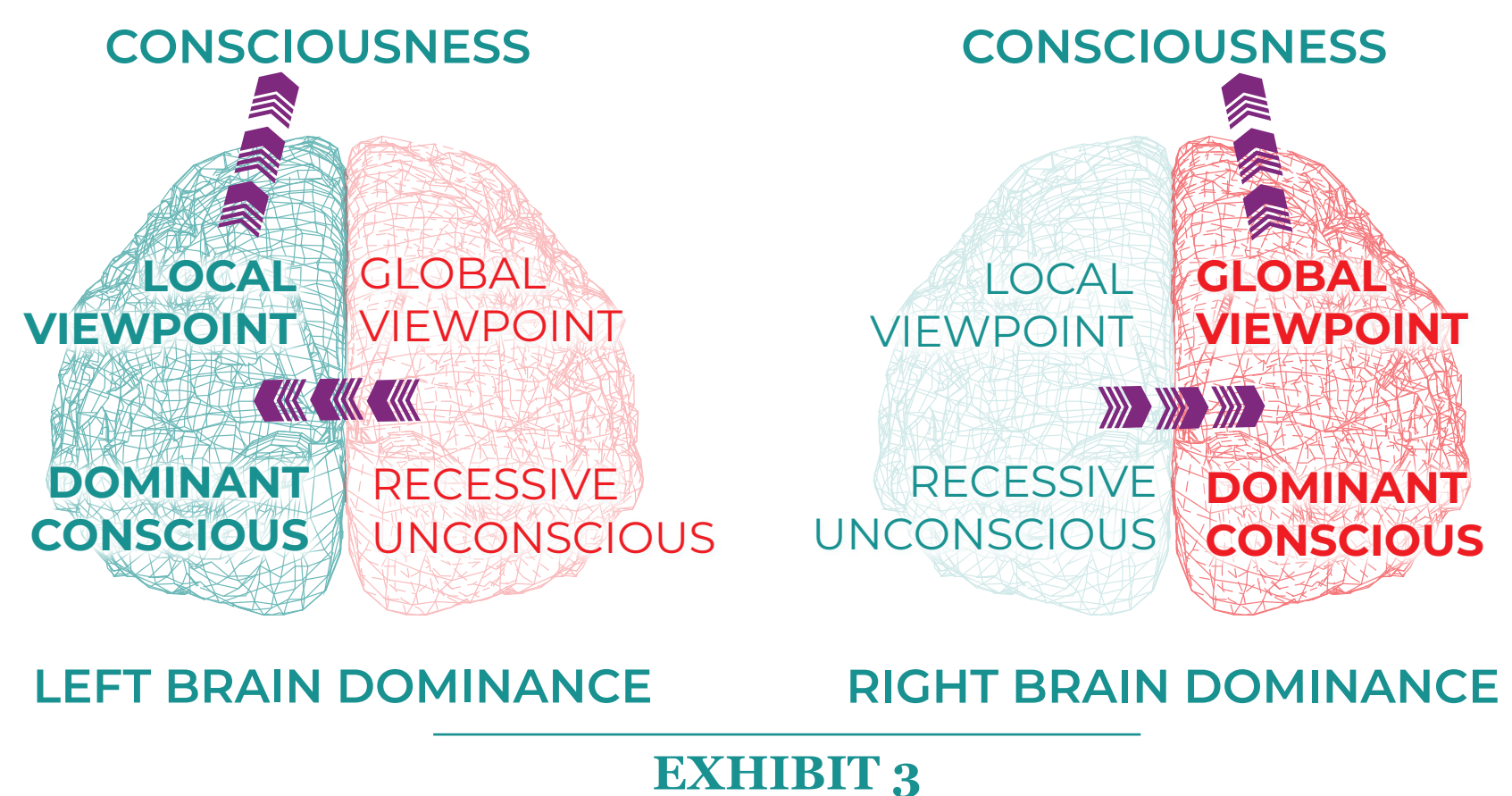
METHODS

Genetic Dominance

Considering the many ways in which the three types of genetic dominance affect the composition of the human body, it seems reasonable to maintain that genetic dominance might affect how the brain organizes to inform consciousness, such as tune its stereo balance.

When genetic complete dominance selects the brain's default operating system, consciousness is fed by a dominant hemisphere that is served by a recessive hemisphere. Genetic complete dominance creates one of two outcomes: local-system dominance or global-system dominance.

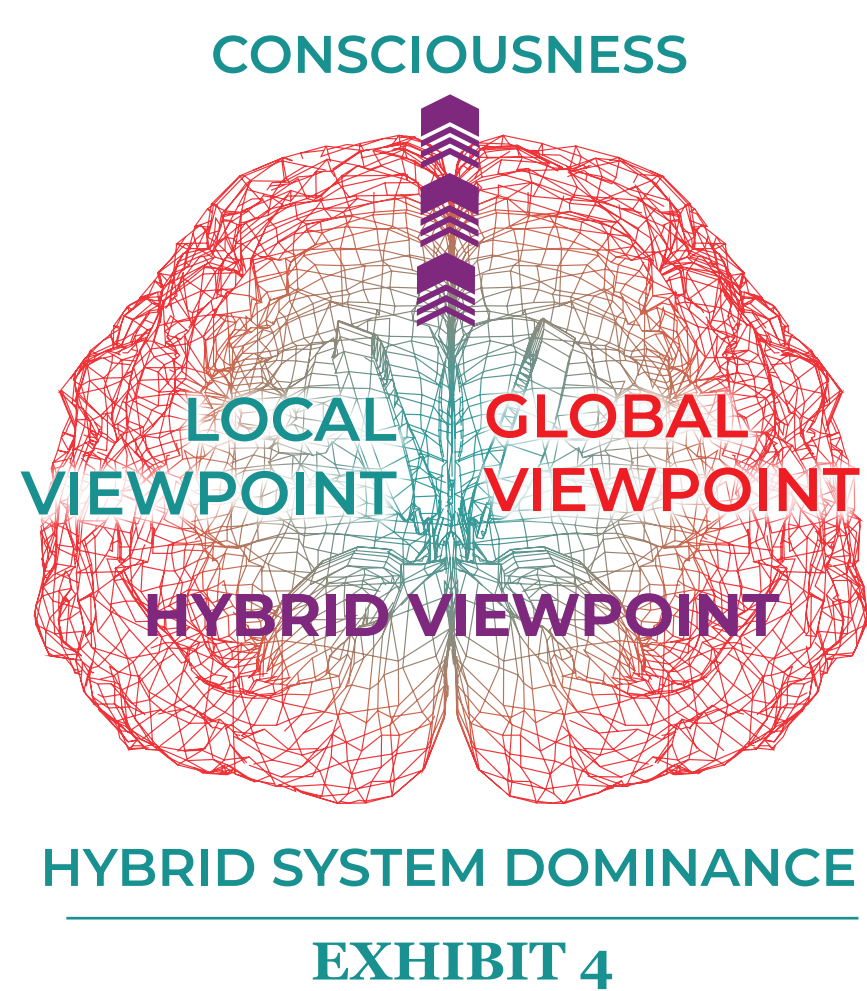
COMPLETE DOMINANCE



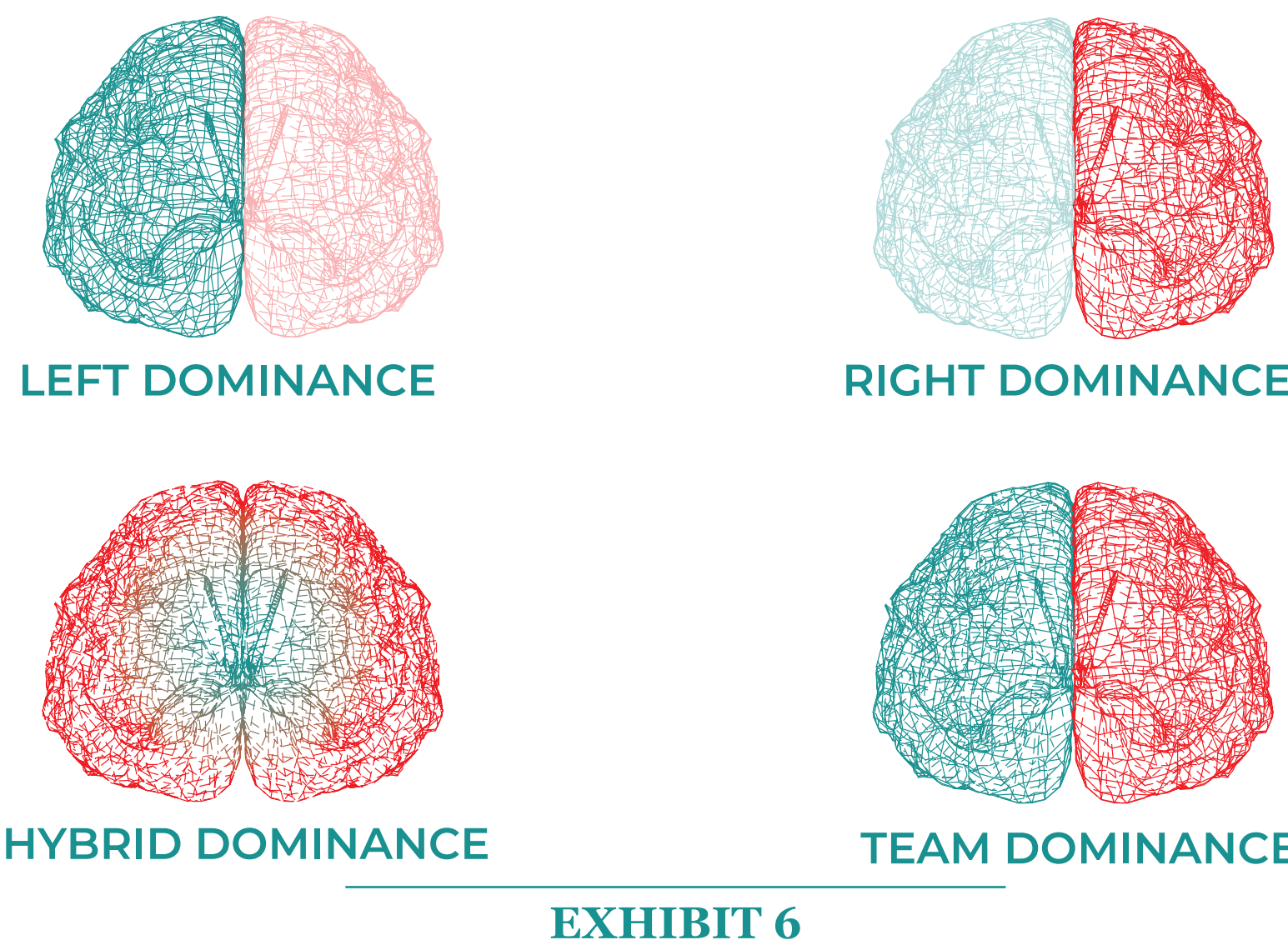
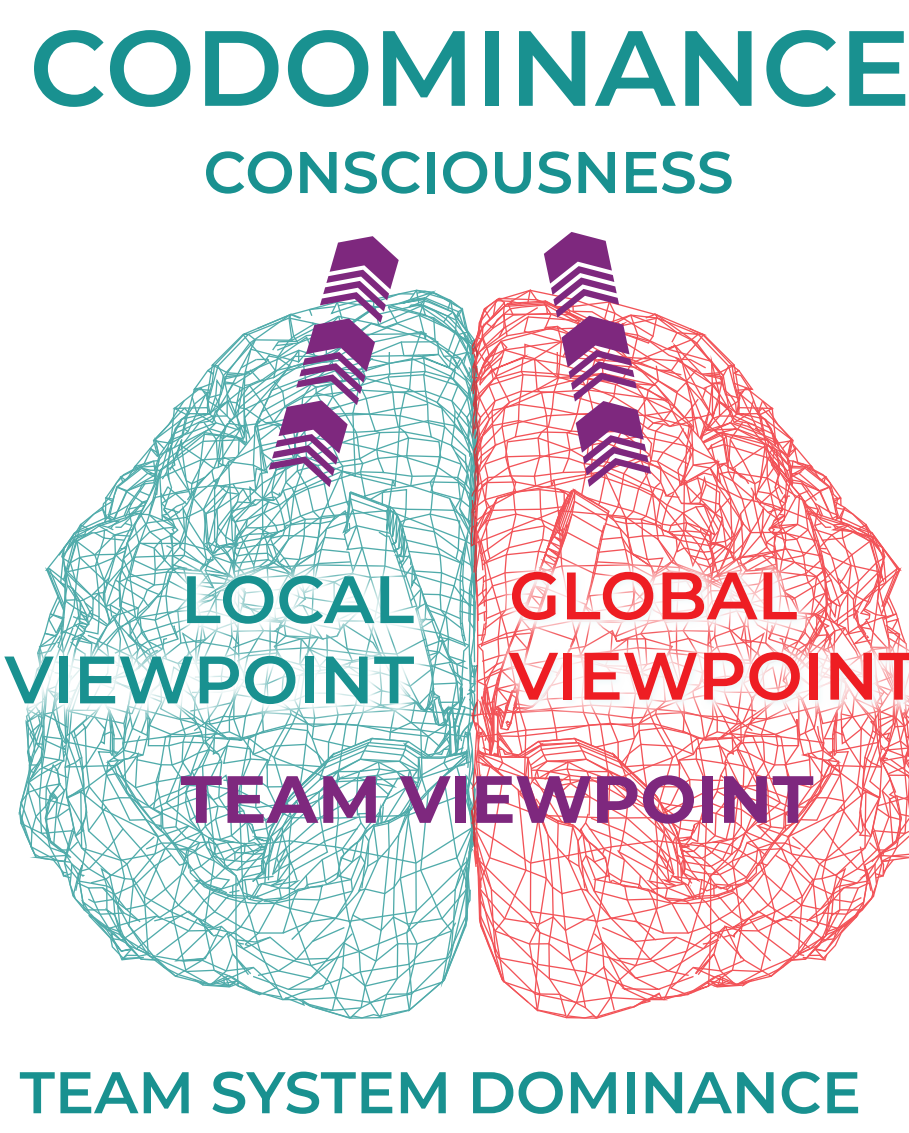
METHODS (CONTINUED)

Incomplete dominance combines the brain's local and global systems into a single operating system, a local-global hybrid.

INCOMPLETE DOMINANCE



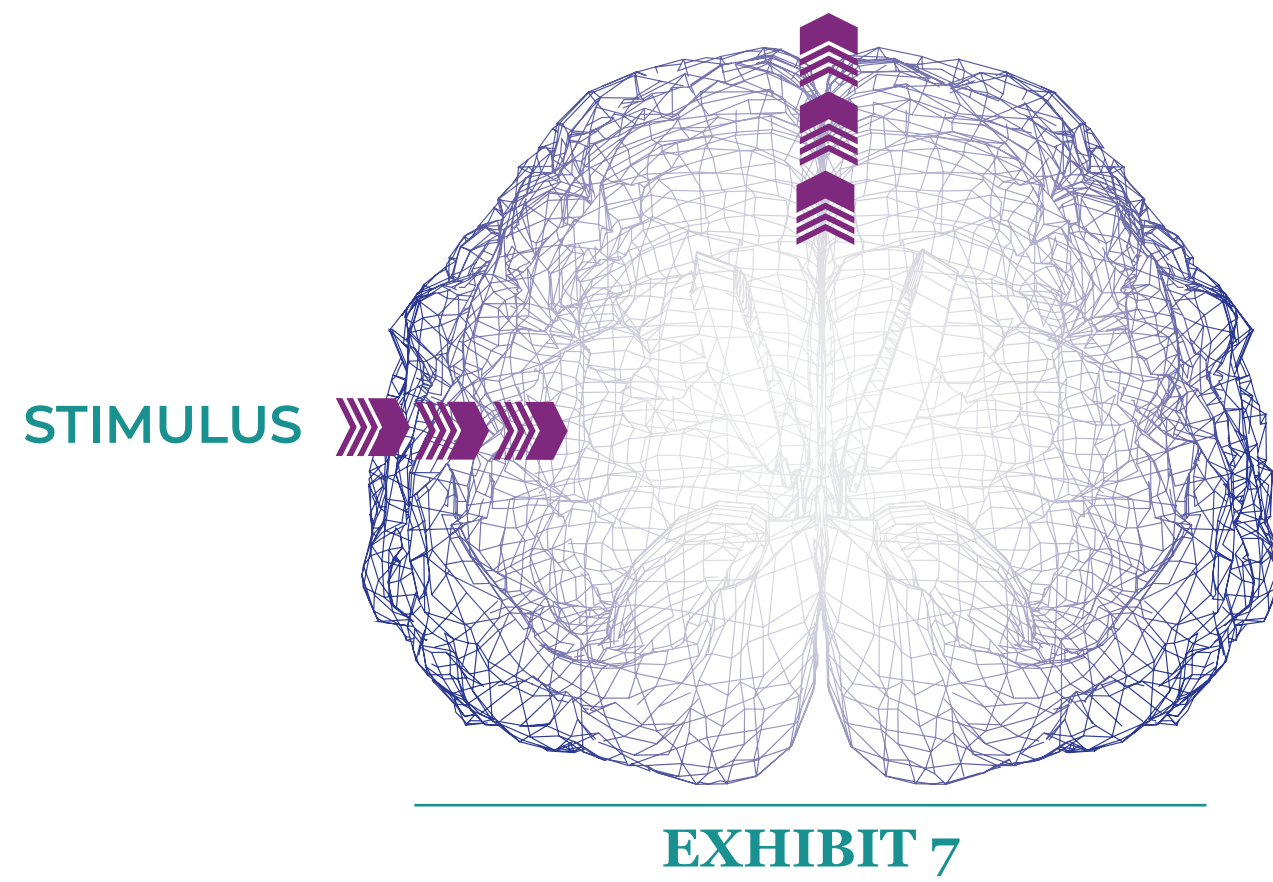
Codominance enables the dominance of both local and global systems. The patterns typically associated with codominance suggest that the two hemispheric systems maintain their independence and operate in some capacity as a team to inform and assist consciousness.



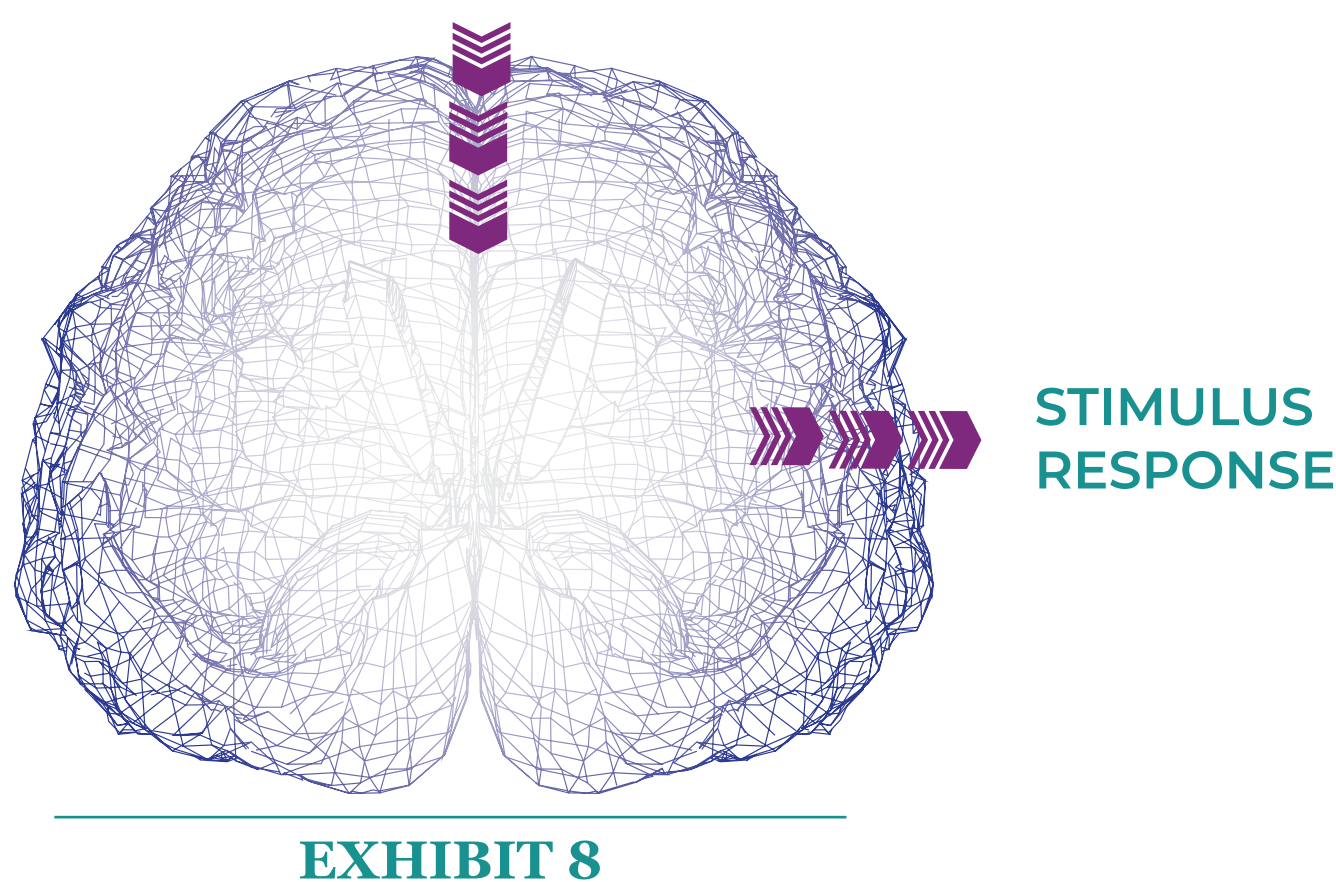
Internal Data Flow

Data is processed in two stages: stimulus and stimulus response. Stimulus is a data input; stimulus response is a data output. Data flows into consciousness, then out.

DATA INFLOW CONSCIOUSNESS



DATA OUTFLOW CONSCIOUSNESS



In some individuals, it is argued, one hemisphere will default to process incoming data, the stimulus, whereas the complementary hemisphere will default to process outgoing data, the stimulus response.

RESULTS

Any one of four systems may default to process incoming data. Any one of four systems may default to help process a response. Most right-handed women are right-brain dominant for data input and left-brain dominant for data output. They are right-brain dominant and left-brain dominant.

Four brain-operating systems defaulting to process stimulus sequenced with four brain-operating systems defaulting to process stimulus response, suggests 16 default operating-system combinations and 16 default viewpoints, each with its own blend of insights and skills for attending to stimulus and stimulus response.

16 OPERATING SYSTEM COMBINATIONS

DATA INPUT	DATA OUTPUT
Local	Local
Local	Global
Local	Team
Local	Hybrid
Global	Local
Global	Global
Global	Team
Global	Hybrid
Team	Local
Team	Global
Team	Team
Team	Hybrid
Hybrid	Local
Hybrid	Global
Hybrid	Team
Hybrid	Hybrid

EXHIBIT 9

EXTERNAL DATA SOURCES

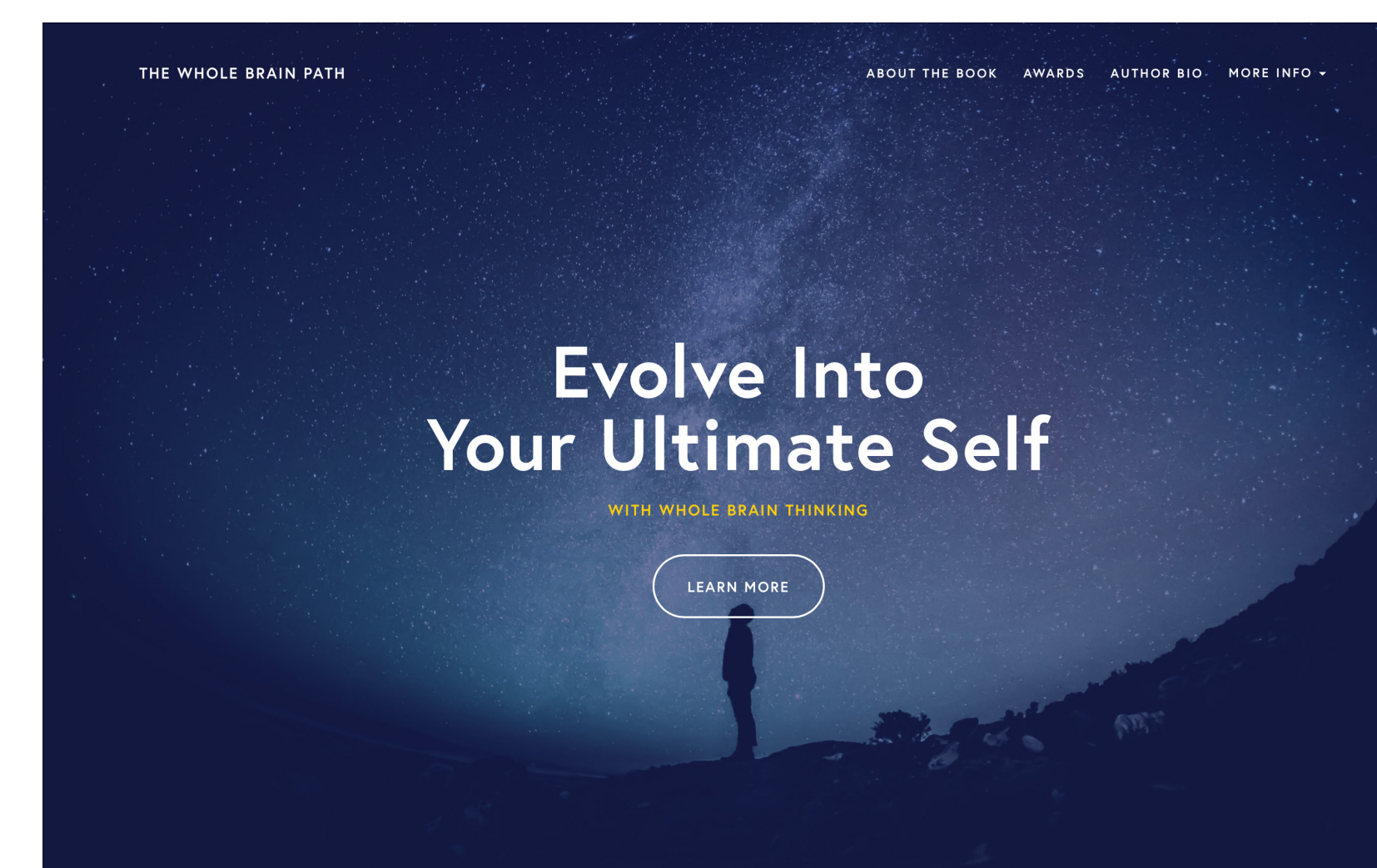
In considering the characteristics of this model, keep in mind that consciousness is also informed by external sources of data, such as by the brain-operating systems of others. Where the holder of consciousness is externally informed, the genetically determined defaults we have considered here are often overridden to a degree, if not entirely, by conscious choice and/or by cultural influences.

ACKNOWLEDGMENTS

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REFERENCES

- Podell, Lovell, Zimmerman, et al., 1995; Phelps & Gazzaniga, 1992.
- Goldberg & Costa, 1981; Goldberg, Podell & Lovell, 1994; Rogers, 2000; Regard & Landis, 1988; Feinstein, Goldin, Stein, et al., 2002; Goldberg, 1990, 2001; Treyer, Buck & Schneider, 2003; Kimura, 1963; Gordon & Carmon, 1976.
- Ivry & Robertson, 1998; Kitterle, Christman & Hellige, 1990; Kitterle & Selig, 1991; Sergent, 1982; Robertson, Lamb & Knight, 1988; Robertson & Lamb 1991; van Kleeck, 1989.
- Ibid.
- McGilchrist, 2009.
- Ibid.
- Ibid.
- Ibid.
- Gainotti, 2002; Perani, Cappa, Bettinardi et al., 1995; Martin, Wiggs, Ungerleider et al., 1996.
- Ibid.
- Inferred.
- Inferred.
- McGilchrist, 2009.
- Ibid.
- Ibid.



A list of YouTube videos that discuss elements of this poster can be found on my website: www.TheWholeBrainPath.com