

Natural versus Adapted DISC Graphs

Prepared by Dr. Ron Bonnstetter

Dec. 1, 2020

TTI SI recently received a request to provide a research supported rationale for TTI SI's use of natural and adapted DISC graphs in our reports. This is a good reminder that some things are so obvious to us internally that we fail to provide the outside world with the documentation needed to understand our decisions. The graphic separation of the DISC data is a great example. This paper will not only explain how these two graphs provide crucial differentiating information, it will also point out how a single averaged DISC graph can be very misleading when trying to understand human behavior.

First of all, it is important to understand the basics of TTI SI's DISC scoring process. The questionnaire contains 96 adjective items, which are framed in 24 blocks of four response items. Each item is aligned with one of the four assessment constructs (D, I, S, or C). The assessment participant rank orders the four choices from "most like me" to "least like me." It is this division between the two items assigned as agreement and the two that end up identifying disagreement that provide the key to the two graphs. Allow me to explain.

Historical Foundation

Bill and Dave Bonnstetter built their original graphs around data published by Clarke and later Cleaver and Geier (1,2,3,4,5). In the process of updating our behavior technical manual history section, I have uncovered a wealth of empirical data to support TTI SI's two graph decision that I previously was unaware. Prior to this discovery I was prepared to explain the neurological underpinnings of decision making that clearly exposes the necessity of two separate data views. But now I am prepared to explain both the historical underpinnings that led to this original decision as well as the latest brain based decision-making pathways understandings that clearly separates our natural and adapted world views.

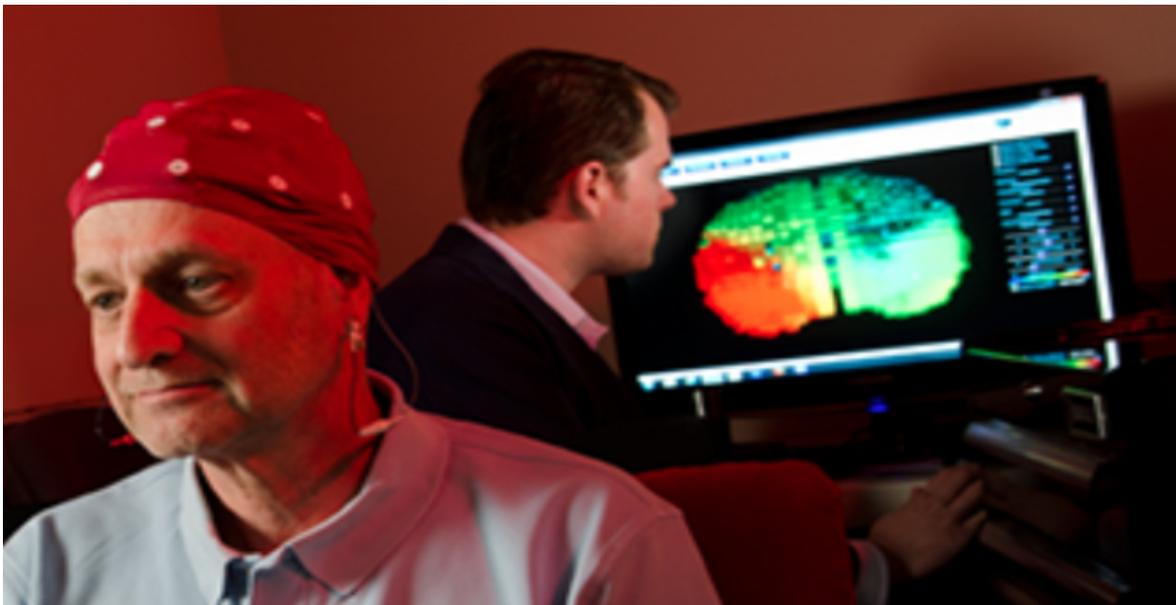
One of the clearest historical references to this need for dual world views is found in an article by Dr. David Warburton, (6), titled: "The Importance of Finding the Real Person at work". Please note that he does not say the importance of finding the "right" person, but the importance of finding the "real" person. Warburton's paper lays the groundwork for these natural and adapted behavioral difference when he states:

"All of us have developed behavioral styles, which are represented as distinct cognitions, emotions and actions. The central core of our behavioral style tends to remain stable because it reflects our individual identities. However, the demands of the work setting often require different responses that evolve into a work behavioral style. In order to help person understand themselves, we need to evaluate this disparity." (P. 2).

Warburton goes on to explain how this separation of perspectives requires an understanding of how people think about themselves. He grounds his comments in the work of Lamiell (7, 8, 9), who points out that human judgements are not framed by contrasting themselves with others, but in fact frame their self-identity by negation (9). This literature states that our identity emerges through a process of articulating what we are not, not what we are. To make this decision-making process even more fascinating, is that much of this mental processing draws upon implicit mental processes for

which we are not even cognitively aware of at the time. As a result, self-assessment ratings that expose what a person is not, provides a more direct path to the person's true view of him/herself (10).

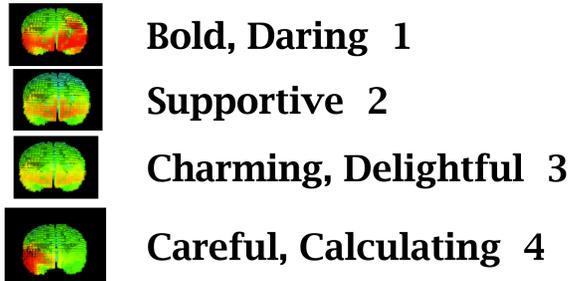
Warburton and Suiter (11), further exposed the value of this distinction between Graph II (Core Behavioral Style) and Graph I (Responses to Environment) in a study of 150 middle managers. At this point, the TTI DISC assessment required the participants to simply select the one item that was most like them and the item that was the least, with the least being assigned to their natural or core style and the most representing their adapted or response to environment. (Notes how once again what one is NOT becomes the natural or core style.) The study found that differences in the two DISC graphs were a predictor of problems at work and at home. Furthermore, the distinction between acceptance and rejection was found to relate to the amount of alcohol use, physical health, mental health, job satisfaction and absenteeism. The paper goes on to point out the immense physical and financial costs of job dissatisfaction that can be exposed when examining these discrepancies. (If you want the complete history of DISC, please read the 2021 Behavioral Technical Manual for more developmental detail.)



Now flash forward to 2011 when Dr. Ron Bonnstetter and Dustin Hebets began collecting real time brain imaging data while participants took TTI SI assessments. To make a long story short, electroencephalogram (EEG) assessment data showed totally different brain activity between accepting a descriptive word compared to rejection of descriptive word or phrases.

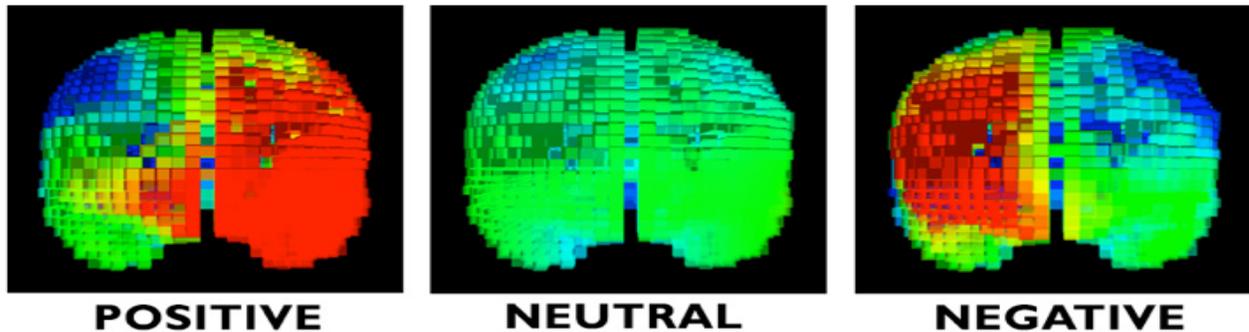
Figure I illustrates three basic different participant responses to a DISC forced-choice assessment cell. As you can see, this individual selected “Bold, Daring” as the most descriptive word or phrase and “Careful, Calculating” as their least descriptive terms. In other words, the person “accepted” item #1 and “rejected” #4. Notice how the red area of the frontal lobes moves from a dominate left side of the brain for their #1 choice and clearly to the right side for their #4 choice. (Point of clarification, these images are showing the brain as it would be looking at you, so the left brain is on the right side.)

Figure 1
TTISI Behavior Experiment



Clearly there is a difference in how the brain processes this data and TTI SI has collected an abundance of data to support this difference. Figure 2 is a comparison between acceptance and rejection images that were included in our approved United States patent application. In other words, the patent office has affirmed our ability to differentiate these two ends of the choice spectrum by issuing, Validation Process for Ipsative Assessments, U.S. Patent No. 9,060,702 (12). This original patent was reaffirmed when a similar patent was file and approved by Canada (13).

Figure 2



Since the filing and approval of these original patents, TTI SI has successfully published over a dozen peer reviewed papers that use this neurophenomenological gamma asymmetry to document acceptance versus rejection (14,15,16,17,18,19,20,21,22,13,24).

Conclusion

It is important to note that if responses to the acceptance rankings, (1 and 2) are very similar to the DISC scores derived from the rejection rankings, (3 & 4), then the two graphs would also be very similar. A case can be made that having two graphs that are similar is a strong indicator that the persons core behavior and their adapted behavioral styles are in harmony. Those DISC providers who only offer one averaged graph would find affirmation in this scenario. However, when the two graphs are different, an explanation needs to be explored and both the historical findings and the neurological data clearly make a case for this additional detailing.

Simply put, DISC behaviors cannot accurately be described using one graph when in fact each of us make decisions that are based on an initial, precognitive, neurological asymmetry that draws

upon totally different brain processing of acceptance and rejection. Forced-choice data in a single graph, is analogous to comparing apples and oranges as one thing.

The human brain starts a decision by grouping input along a continuum that is documentable in the frontal lobe asymmetry. In addition, and this is a crucial statement, humans process rejection input faster and with greater intensity than acceptance! This trait has been instrumental in our survival as a species. It also means that when we say we are NOT something is a stronger reaction and a clearer indicator than when we say we ARE something. Therefore, scoring a person's 3rd and 4th choices (least descriptive) actually provided an inverse indicator of who we really are, thus our natural style comes from 3 & 4. Our adapted style then is secondarily processed and provided by scoring our #1 & #2 choices as an indication of our adapted behavior.

It is always rewarding when observed findings by early researchers, such as Warburton, Suiter, and Bill Bonnstetter, are later explained by more recent neurophenomenological findings. I could provide much more about the role of the emotional load of the item and other details, but the references below can provide those exciting details that I am sure you will want to embrace.

References:

1. Clarke, W.V. (1956) The construction of an industrial selection personality test. *The Journal of Psychology*, 1, 379-394.
2. Clarke, W. V. The personality profiles of life insurance agents. *J. Psychol.*, 1956, 42, 295-302
3. Clarke, W.V. (1956). Personality Profile of Self-Made Company Presidents. *Journal of Psychology*, 41, 413-418.
4. Clarke, W.V. (1956). Personality Profile of Loan Office Managers. *Journal of Psychology*, 41, 405-412.
5. Geier, J. G. (1967). A trait approach to the study of leadership in small groups. *Journal of Communication*, Vol. 17, P. 316-323.
6. Warburton, D. (1998). The importance of finding the real person at work. Retrieved November 28, 2008 from <http://www.profilingpro.com/warburton.pdf>
7. Lamiell, J.T. (1980) On the utility of looking in the "wrong" direction. *Journal of Personality*, 48, 82-88.
8. Lamiell, J.T. (1987) *The Psychology of Personality: An Epistemological Inquiry*. New York: Columbia University Press.
9. Lamiell, J.T. (1997) Individuals and the differences between them. In Hogan, R., Johnson, J., and Briggs, S. (Eds.) *Handbook of Personality Psychology*. San Diego: Academic Press.

10. Chaplin, W.F. and Buckner, K.E. (1988) Self-ratings of personality: a naturalistic comparison of normative, ipsative, and idiothetic standards. *Journal of Personality*, 56, 509-530.
11. Warburton, D.M. and Suiter, J.I. (1993) Discovering the person at work. In Bonnstetter, B., Suiter, J.I., and Widrick, R. (1993) *The Universal Language DISC: A Reference Manual*. Scottsdale, AZ: Target Training International.
12. Bonnstetter, B. J., Bonnstetter, R., Hebets, D., Collura, T. F. (2015). Target Training International, Ltd. [*Validation Process for Ipsative Assessments*](#). U.S. Patent No. 9,060,702. Washington, D.C.
13. Bonnstetter, B. J., Bonnstetter, R., Hebets, D., Collura, T. F. (2016). Target Training International, Ltd. [*Validation Process for Ipsative Assessments*](#). Canadian Patent No. 2,808,691. Gatineau, Quebec, Canada: Canadian Intellectual Property Office, Patent Branch.
14. Bonnstetter, R., Hebets, D., Wigton, N. L. (2015). [*Frontal gamma asymmetry in response to soft skills stimuli: A pilot study*](#). *NeuroRegulation*, 2(2), 70-85.
15. Bonnstetter, R., Gehrig, E., Hebets, D. (2018). [*Response Process Validation Protocol Using Neurophenomenological Gamma Asymmetry*](#). *NeuroRegulation*, 5(3), 93-102.
16. Collura, T. F., Bonnstetter, R., Zalaquett, C. (2014). [*Neurocounseling: Bridging Brain and Behavior*](#). *Counseling Today*, 57(6), 24-27.
17. Bonnstetter, R., Collura, T., Hebets, D., Bonnstetter, B. J. (2012). [*Uncovering the Belief Behind the Action*](#). *NeuroConnections*, Winter, 20-23.
18. Collura, T. F., Wigton, N. L., Zalaquett, C., Chatters-Smith, S. S., Bonnstetter, R. (2016). [*The Value of EEG-Based Electromagnetic Tomographic Analysis in Human Performance and Mental Health*](#). *Biofeedback*, 44(2).
19. Collura, T. F., Zalaquett, C.P., Bonnstetter, R., Chatters, S. J. (2014). [*Toward an Operational Model of Decision Making, Emotional Regulation, and Mental Health Impact*](#). *Advances in Mind-Body Medicine*, 28(4), 4-19.
20. Bonnstetter, R. J., & Collura, T. F. (2020). [*Brain Activation Imaging in Emotional Decision Making and Mental Health: A Review—Part 1. Clinical EEG and Neuroscience*](#). <https://doi.org/10.1177/1550059420916636>
21. Collura, T. F., & Bonnstetter, R. J. (2020). [*Brain Activation Imaging in Emotional Decision Making and Mental Health: A Review—Part 2. Clinical EEG and Neuroscience*](#). <https://doi.org/10.1177/1550059420916642>
22. Bonnstetter, R. (2018). [*\[Review of the book Altered Traits: Science Reveals How Meditation Changes Your Mind, Brain, and Body by D. Goleman and R. J. Davidson\]*](#). *NeuroRegulation*, 5(3), 103-104.

23. Bonnsetter, R. (2012). *Native Tongue to Best Communicate*. Unpublished paper, Target Training International, Ltd., Scottsdale, AZ.
24. Bonnsetter, R., Bonnsetter, B. J., Hebets, D. (2015). *Uncovering Training Challenges with Brain Imaging*. Unpublished paper, Target Training International, Ltd., Scottsdale, AZ.