Module Map: Who Rules Your Symbols?

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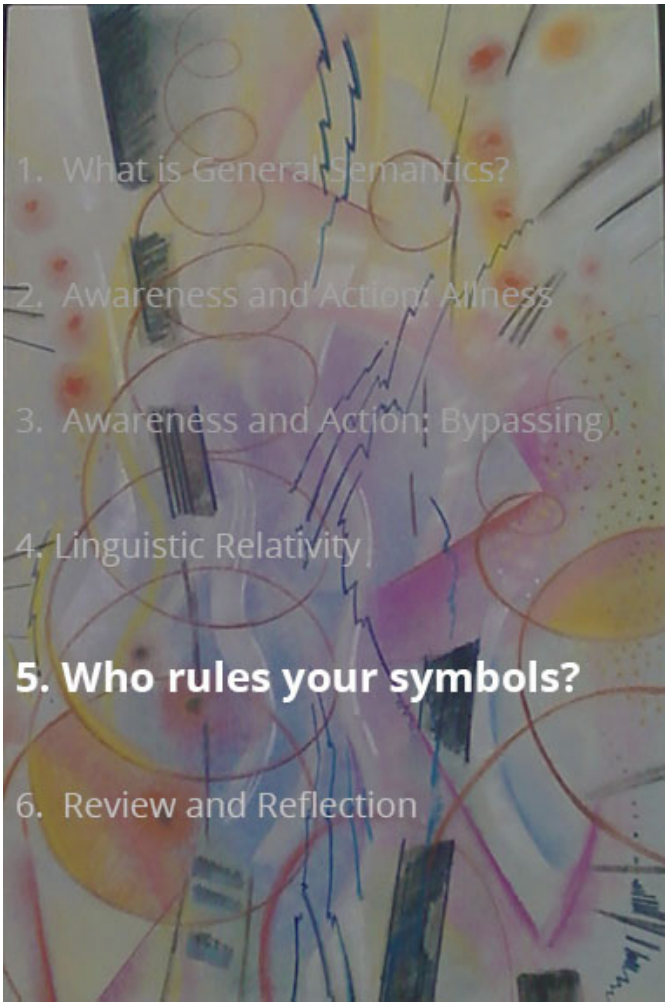


Artwork by Alice Webb Art

Recap

To this point in the course, we've covered:

An introduction to the field of study called General Semantics, formulated by Alfred Korzybski. We discussed Korzybski's motivation and approach to addressing the problem of why human behavior, in the form of societies and cultures, has not progressed or advanced at the pace of engineering, mathematics, and the sciences. We reviewed the foundational premises of GS using the map\territory analogy. We talked about the importance of acknowledging the role of the human nervous system in how we abstract and evaluate our experiences. We learned that in translating, or transforming, our non-verbal experiences into verbal behaviors, we can avoid symptoms that lead to *mis*-evaluations. In other words, we can make better *maps* (our language behaviors) that more appropriately reflect the *territories* of our experiences.

A framework for analyzing language behaviors from a GS perspective, developed by William Haney. Haney's framework is based on recognizing contributing factors and applying correctives that result in more effective language behaviors. Mary Lahman led us through a "deep dive" into the Haney framework by focusing on two major topic areas of GS: allness and bypassing.

Please note that the Haney framework can be applied to other GS topics in addition to *allness* and *bypassing*. In Mary's e-textbook, *Awareness and Action*, she also devotes chapters to **Inference-Observation Confusion** (also referred to as the Fact-Inference distinction) and **Differentiation Failures** (including stereotyping, polarization, and frozen evalutions). If you haven't already, I encourage you to download the pdf of *Awareness and Action* and review the entire book at your leisure.

The topic of the linguistic relativity hypothesis (LRH), as proposed by Edward Sapir and Benjamin Lee Whorf. Greg Thompson invited us to view Lera Boroditsky's video presentation, "How Language Shapes Thought," in which she shared results of her research that revealed surprising and fascinating insights into the language-and-thought habits and behaviors of cultures with which most of us are unfamiliar. From Greg's explanations about LRH and its implications, as well as Bruce Kodish's article on "what we do with language and what language does to us," we got a feel for how similar are the core components of LRH and GS.

> We ought to easily recognize, then, that ancient notions such as objective or absolute reality do not accurately reflect the limitations of our nervous systems as they interact with the outside world. Therefore

> language structures, patterns, or terms that rely on this false-to-fact notion that what I experience (or say) "is" the same as what exists "out there" in the world misrepresent, mislead, and misinform. The fact of the matter is that the 'real world' is to a large extent unconsciously built up on the language habits of the group ... **We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation.** — Edward Sapir (Carroll, 1956, p. 134) *[emphasis added]*

This Week

In this module, **Who Rules Your Symbols?** led by Steve Stockdale, we're going to try and integrate what we've learned so far by discussing the implications of two statements from *Science and Sanity*.

> The analysis of … *living reactions* is the sole object of general semantics … (Korzybski, 1994, p.xli)
>
> The affairs of man are conducted by our own, man-made rules and according to man-made theories. Man's achievements rest upon the use of symbols. For this reason, we must consider ourselves as a symbolic, semantic class of life, and **those who rule the symbols, rule us**. (Korzybski, 1994, p. 76) *[emphasis added]*

- First, I'll present the results of the **Point of View (or Orientation) Survey** that some of you completed in Module 1 and explain its significance. Then you will discuss your reactions to the survey results.
- Next we'll talk about how these orientations, or points of view, are related to our **environments** and shape (or are shaped by?) our **evaluations, meanings, and values**.
- Then we'll address factors related to how you **evaluate your own evaluations**.
- To address the second quote on **symbol-rulers**, you'll watch the online documentary, "**The Persuaders**" and consider the "tension" between the would-be symbol-rulers and you as an individual symbol-evaluator.
- We'll conclude the module with a **Discussion assignment** and a **short essay assignment**.

Objectives

The objectives for Module 5 include:

1. Gain an appreciation of the complex *neuro*-semantic and *neuro*-linguistic environments that envelope your daily living.
2. Understand the inter-related influences and implications of your orientation-environments, and evaluations-meanings-values.
3. Recognize the extent to which others may attempt to "rule your symbols" and what defenses you may employ against such attempts.

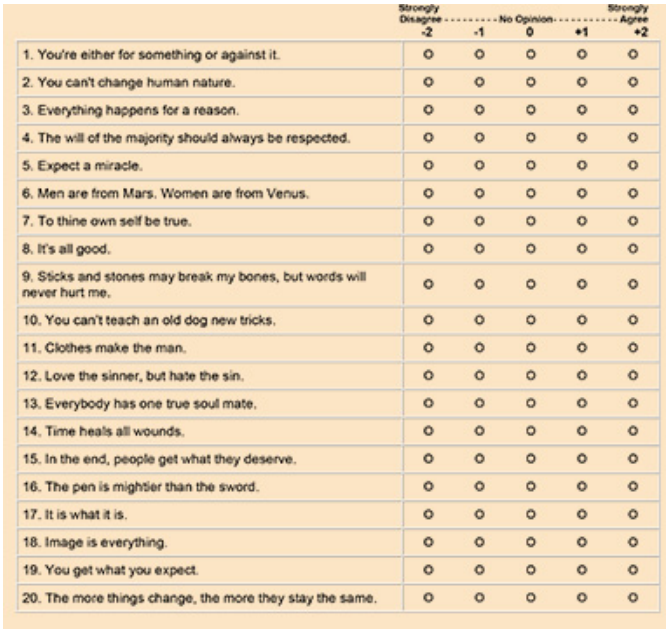
Point of View Survey Results and Interpretations

Listen to the audio version of this page

A Point of View (or Orientation) Survey

Before you read about the results of the Point of View (POV) Survey you completed in Module 1, please:

1. Download and print this blank version of the survey.
2. Mark your responses on this paper version by filling in the bubbles, then sequentially connect your responses with a line between each dot. (See the examples below.)
3. Return to the Module 1 Point of View Survey you submitted and compare your responses. Did any of your responses change between the two versions?



	Strongly Disagree -2	-1	No Opinion 0	+1	Strongly Agree +2
1. You're either for something or against it.	o	o	o	o	o
2. You can't change human nature.	o	o	o	o	o
3. Everything happens for a reason.	o	o	o	o	o
4. The will of the majority should always be respected.	o	o	o	o	o
5. Expect a miracle.	o	o	o	o	o
6. Men are from Mars. Women are from Venus.	o	o	o	o	o
7. To thine own self be true.	o	o	o	o	o
8. It's all good.	o	o	o	o	o
9. Sticks and stones may break my bones, but words will never hurt me.	o	o	o	o	o
10. You can't teach an old dog new tricks.	o	o	o	o	o
11. Clothes make the man.	o	o	o	o	o
12. Love the sinner, but hate the sin.	o	o	o	o	o
13. Everybody has one true soul mate.	o	o	o	o	o
14. Time heals all wounds.	o	o	o	o	o
15. In the end, people get what they deserve.	o	o	o	o	o
16. The pen is mightier than the sword.	o	o	o	o	o
17. It is what it is.	o	o	o	o	o
18. Image is everything.	o	o	o	o	o
19. You get what you expect.	o	o	o	o	o
20. The more things change, the more they stay the same.	o	o	o	o	o

Purpose of the POV Survey

I have used similar versions of this survey (which I've also called a **General Orientation Survey** or **Personal Orientation Survey**) in General Semantics seminars and courses for the past ten years.

The original purpose of the survey was to simply provide a basis for discussion among the rather 'homogenous' class of college students I taught. The students in these classes were overwhelmingly white, 18-22 years old, from (on average) middle-to-upper class Texas families, studying journalism or advertising/public relations. From all outward appearances, these classes did not represent much demographic diversity.

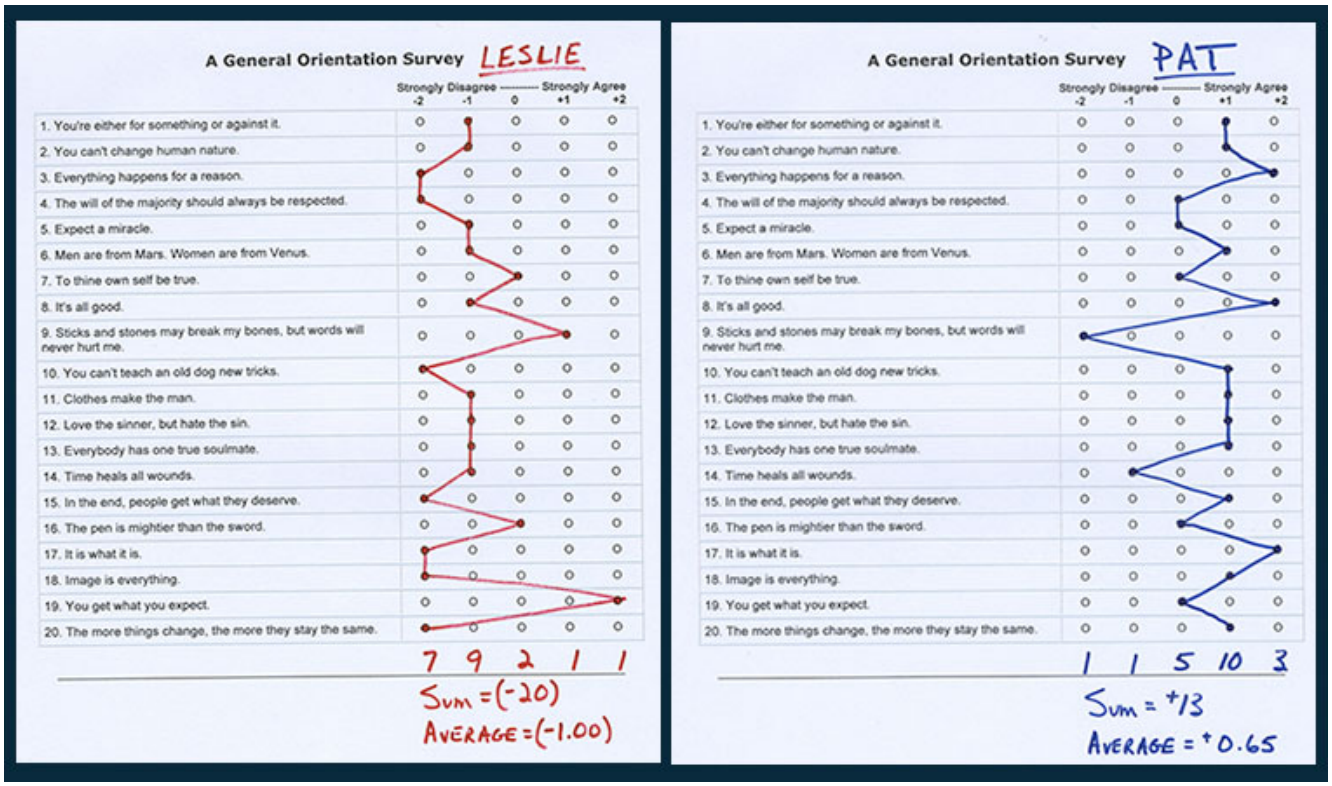
Despite this apparent lack of diversity, however, when we discussed the results of this survey, we invariably discovered that the homogenous *appearances* did not yield homogenous *attitudes*.

So the first purpose of the survey is to point out that differences (of attitudes) may lurk below the apparent similarities (of appearances).

A second purpose of the survey is to point out that, in a very notional and unscientific way, we could consider the results of this little 20-question survey as a depiction of a personal *point of view*, or *orientation*.

> **** Let me explain here that in no way do I present this survey as anything other than a class activity for discussion. For my Educational Psychology graduate degree I took a course in assessment and make no claims as to the validity or reliability of this "instrument."*

For example, consider the hypothetical results of Leslie and Pat below. Based solely on this unscientific exercise, one could say that based on their responses to the statements on the survey, Pat exhibits an orientation that is generally more *in agreement* with the statements than Leslie, as Pat's blue lines fall generally to the right of Leslie's red lines.



Beyond comparing the placement and shape of the two vertical lines (Pat's and Leslie's *personal orientations* or *points of view*), let's look at some of their responses to the statements. Since I made up Pat and Leslie, and their responses, I can tell you that the only statement on which they agreed is **#16, "The pen is mightier than the sword."**

On statements #3 and #17, however, their responses were complete opposites.

#3. Everything happens for a reason. (Pat strongly agreed, Leslie strongly disagreed.)

#17. It is what it is. (Again, Pat strongly agreed, Leslie strongly disagreed.)

I hope you can see how, in the hands of a skilled classroom facilitator (*ahem*), a discussion of these differences might yield robust class participation.

And then the third purpose of survey, after discussing the class norms and averages, differences and similarities, is to consider questions such as these:

1. Accepting that the crooked lines of one's responses represents a notional, wholly unscientific depiction of one (among many possible) way to illustrate one's point of view, how has one acquired this particular point of view (or orientation)?
2. How has Pat learned or acquired a belief that *everything happens for a reason*, while Leslie has not learned or acquired that belief?
3. Does the sum or totality of one's orientation "hang together"? In other words, are the responses consistent and non-contradictory? For example, if one agreed with #10 (*You can't teach an old dog new tricks*), it's reasonable to expect one would also agree with #20 (*The more things change, they more they stay the same*) given that both reflect an attitude toward change.
4. In reviewing the orientations of Leslie and Pat, can you infer that you might prefer the company of one or the other based on their responses? Can you think of anyone you know who might exhibit a similar point of view to either Pat or Leslie?
5. And finally, referring back to the first question, do you think the 20 responses are the logical consequence of a

purposeful and deliberate *world view* (or *point of view* or *orientation*), or are they merely a mish-mash of random top-of-the-head reactions?

We'll come back to these questions later. But now let's look at your Point of View Survey results.

Your Point of View Survey Results

Based on 434 survey submittals as of 28 January, the following slides portray several different types of analysis.

1. Percentage of all responses by statement and response

Note: Percentages do not total 100 due to non-responses and rounding.

% of Responses as of 28 Jan (x = 434)

Fewest Responses
Most Responses

	-2	-1	0	1	2
1. You're either for something or against it.	20	44	8	23	2
2. You can't change human nature.	14	48	11	20	4
3. Everything happens for a reason.	13	22	11	35	17
4. The will of the majority should always be respected.	24	44	9	18	2
5. Expect a miracle.	25	24	24	20	4
6. Men are from Mars. Women are from Venus.	21	25	21	26	4
7. To thine own self be true.	1	3	16	42	34
8. It's all good.	9	25	29	28	5
9. Sticks and stones may break my bones, but words will never hurt me.	43	44	2	6	2
10. You can't teach an old dog new tricks.	31	52	2	9	3
11. Clothes make the man.	22	35	16	23	1
12. Love the sinner, but hate the sin.	6	23	26	33	9
13. Everybody has one true soul mate.	24	37	19	13	4
14. Time heals all wounds.	7	38	8	39	6
15. In the end, people get what they deserve.	17	38	15	20	8
16. The pen is mightier than the sword.	0	11	17	52	17
17. It is what it is.	8	19	23	35	13
18. Image is everything.	18	49	12	16	2
19. You get what you expect.	8	37	14	33	5
20. The more things change, the more they stay the same.	5	32	25	32	3

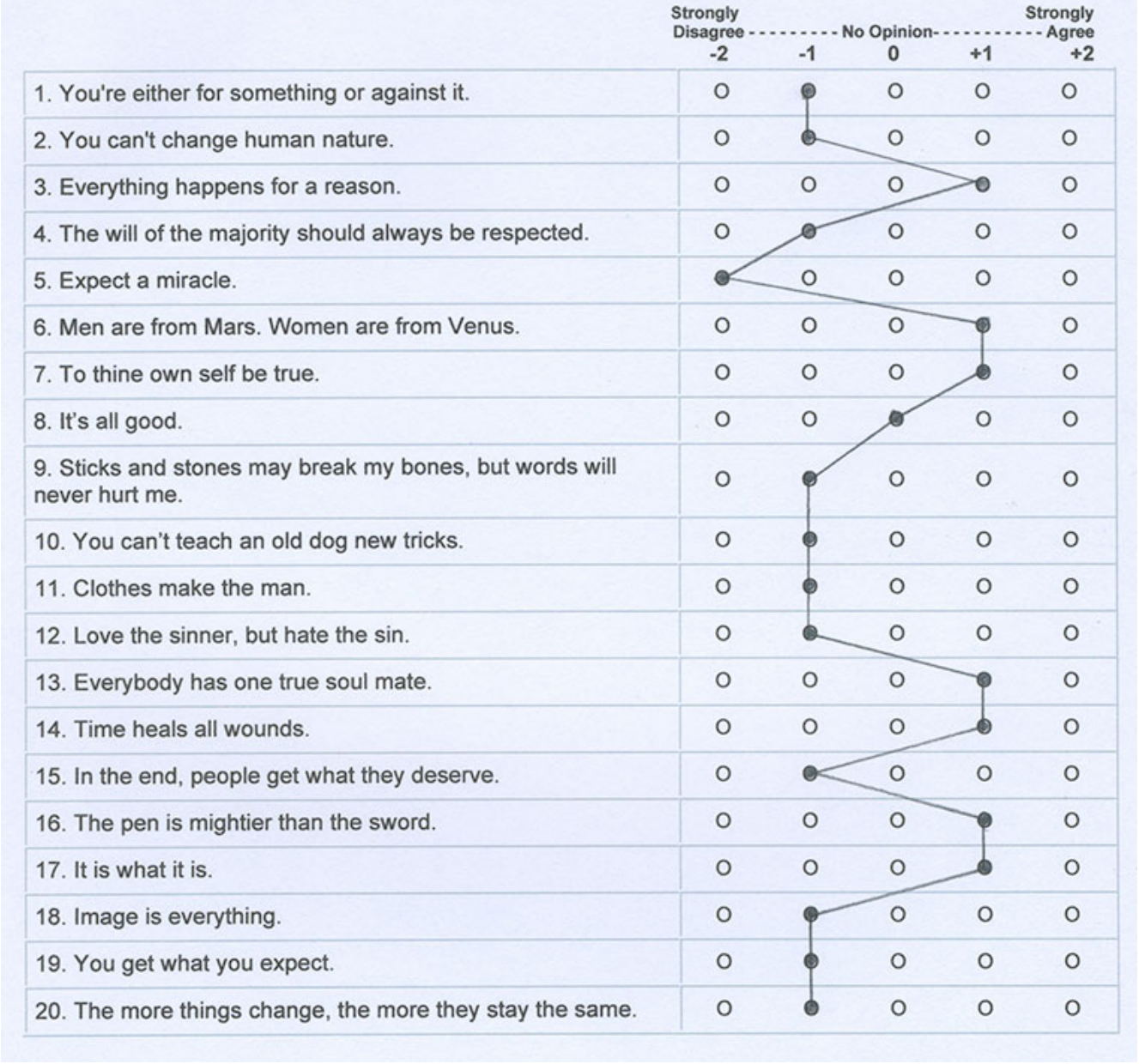
2. Weighted average of responses (approximately plotted)

A General Orientation Survey

	Strongly Disagree -2	-1	No Opinion 0	+1	Strongly Agree +2
1. You're either for something or against it.	O	O	O	O	O
2. You can't change human nature.	O	O	O	O	O
3. Everything happens for a reason.	O	O	O	O	O
4. The will of the majority should always be respected.	O	O	O	O	O
5. Expect a miracle.	O	O	O	O	O
6. Men are from Mars. Women are from Venus.	O	O	O	O	O
7. To thine own self be true.	O	O	O	O	O
8. It's all good.	O	O	O	O	O
9. Sticks and stones may break my bones, but words will never hurt me.	O	O	O	O	O
10. You can't teach an old dog new tricks.	O	O	O	O	O
11. Clothes make the man.	O	O	O	O	O
12. Love the sinner, but hate the sin.	O	O	O	O	O
13. Everybody has one true soul mate.	O	O	O	O	O
14. Time heals all wounds.	O	O	O	O	O
15. In the end, people get what they deserve.	O	O	O	O	O
16. The pen is mightier than the sword.	O	O	O	O	O
17. It is what it is.	O	O	O	O	O
18. Image is everything.	O	O	O	O	O
19. You get what you expect.	O	O	O	O	O
20. The more things change, the more they stay the same.	O	O	O	O	O

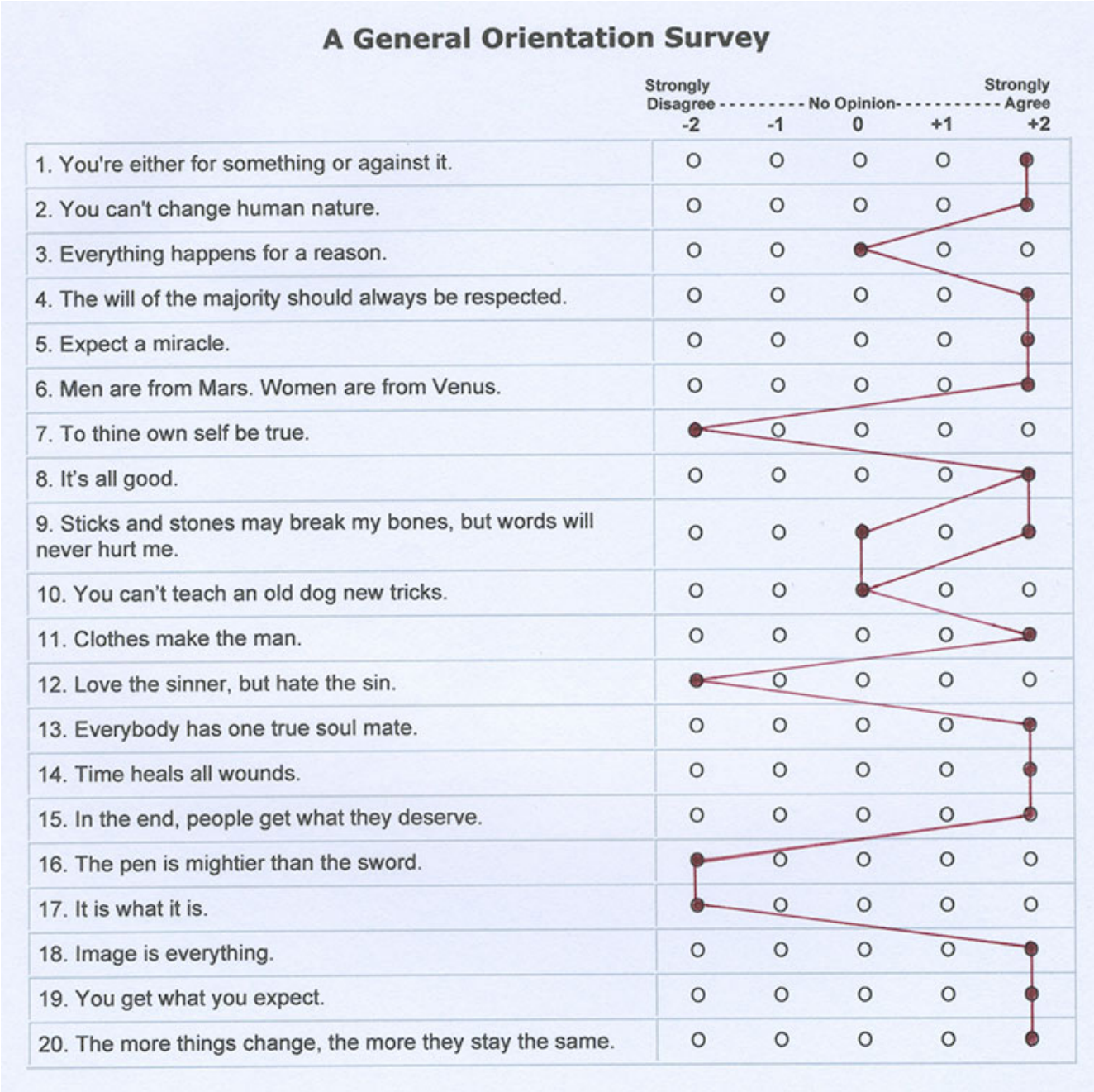
3. Most responses

A General Orientation Survey



	Strongly Disagree -2	-1	No Opinion 0	+1	Strongly Agree +2
1. You're either for something or against it.	O	O	O	O	O
2. You can't change human nature.	O	O	O	O	O
3. Everything happens for a reason.	O	O	O	O	O
4. The will of the majority should always be respected.	O	O	O	O	O
5. Expect a miracle.	O	O	O	O	O
6. Men are from Mars. Women are from Venus.	O	O	O	O	O
7. To thine own self be true.	O	O	O	O	O
8. It's all good.	O	O	O	O	O
9. Sticks and stones may break my bones, but words will never hurt me.	O	O	O	O	O
10. You can't teach an old dog new tricks.	O	O	O	O	O
11. Clothes make the man.	O	O	O	O	O
12. Love the sinner, but hate the sin.	O	O	O	O	O
13. Everybody has one true soul mate.	O	O	O	O	O
14. Time heals all wounds.	O	O	O	O	O
15. In the end, people get what they deserve.	O	O	O	O	O
16. The pen is mightier than the sword.	O	O	O	O	O
17. It is what it is.	O	O	O	O	O
18. Image is everything.	O	O	O	O	O
19. You get what you expect.	O	O	O	O	O
20. The more things change, the more they stay the same.	O	O	O	O	O

4. Fewest responses



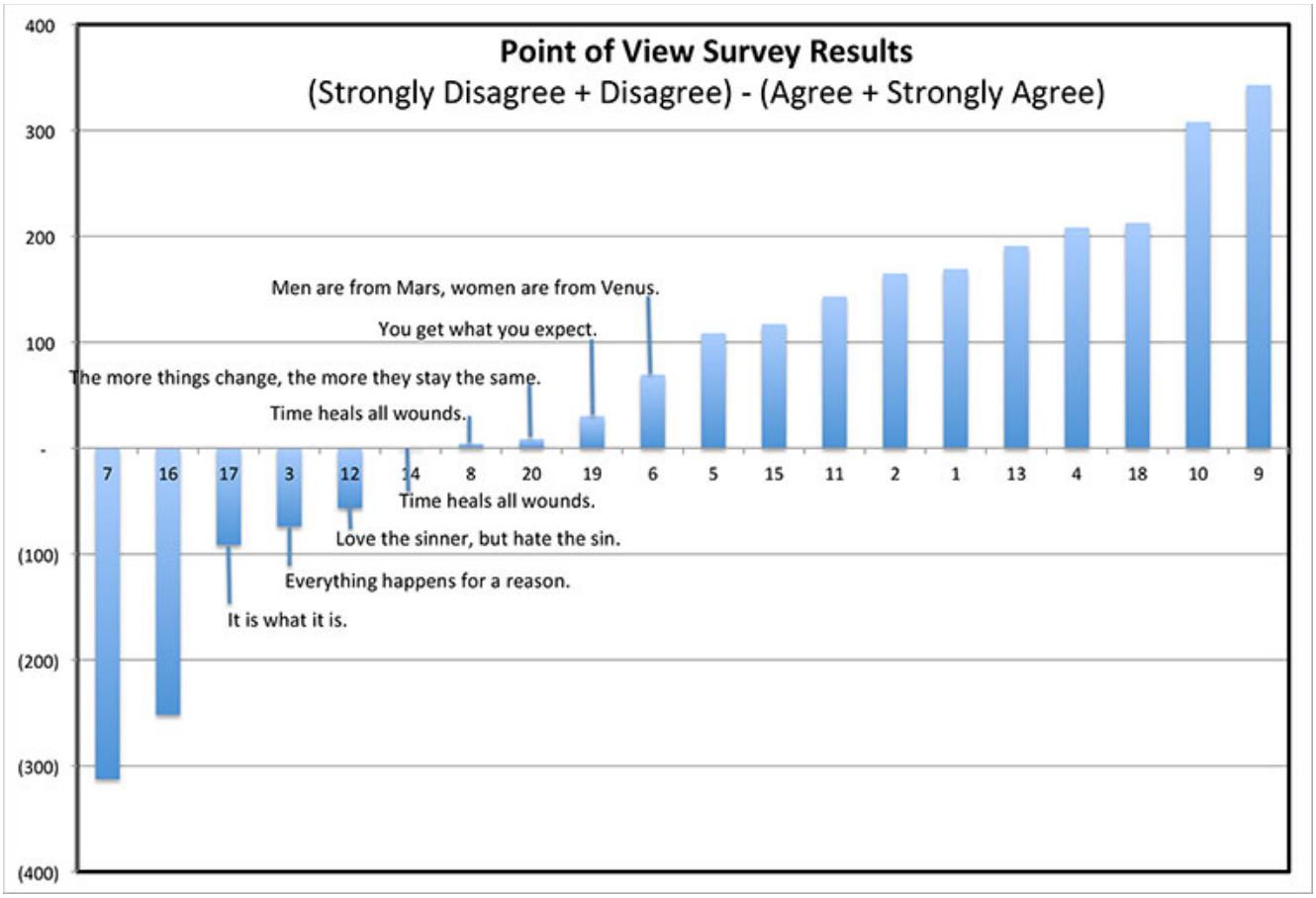
5. Table comparing sum-of-Disagrees with sum-of-Agrees

Note: This ignores all "0 No Opinion" responses.

	Disagree	Agree	Disagree - Agree
7. To thine own self be true.	17	330	(312)
16. The pen is mightier than the sword.	48	299	(252)
17. It is what it is.	117	208	(91)
3. Everything happens for a reason.	152	226	(74)
12. Love the sinner, but hate the sin.	126	182	(56)
14. Time heals all wounds.	195	195	-
8. It's all good.	148	143	4
20. The more things change, the more they stay the same.	161	152	9
19. You get what you expect.	195	165	30
6. Men are from Mars. Women are from Venus.	200	130	69
5. Expect a miracle.	213	104	109
15. In the end, people get what they deserve.	239	122	117
11. Clothes make the man.	247	104	143
2. You can't change human nature.	269	104	165
1. You're either for something or against it.	278	109	169
13. Everybody has one true soul mate.	265	74	191
4. The will of the majority should always be respected.	295	87	208
18. Image is everything.	291	78	213
10. You can't teach an old dog new tricks.	360	52	308
9. Sticks and stones may break my bones, but words will never hurt me.	378	35	343

6. Chart showing sum of differences (Disagrees - Agrees)

Note: Statements with differences less than [+/- 100] are annotated on the chart as they can be considered the most "equal" and therefore most polarized. Or â€¦ do the statements at either end of the chart depict more polarization?



What are your reactions to your Point of View results?

Share your reactions with the class in the Discussion that follows. If you'd like to view the data used to generate these slides, you can download the Excel file.

Share your reactions to the results of the Point of View Survey, both the composite results of the class as well as your own results.

You may want to respond to the questions asked on the results page:

1. Accepting that the crooked lines of your responses represents a notional, wholly unscientific depiction of one (among many possible) way to illustrate your point of view, how have you acquired this particular point of view (or orientation)?
2. Select one of the statements that you strongly agreed or disagreed with. How do you suppose that you learned or acquired this belief, while others have not learned or acquired that belief?
3. Does the sum or totality of your point of view "hang together"? In other words, are your responses consistent and non-contradictory?

A Point of View (or Orientation) Survey

	Strongly Disagree -2	-1	No Opinion 0	+1	Strongly Agree +2
1. You're either for something or against it.	o	o	o	o	o
2. You can't change human nature.	o	o	o	o	o
3. Everything happens for a reason.	o	o	o	o	o
4. The will of the majority should always be respected.	o	o	o	o	o
5. Expect a miracle.	o	o	o	o	o
6. Men are from Mars. Women are from Venus.	o	o	o	o	o
7. To thine own self be true.	o	o	o	o	o
8. It's all good.	o	o	o	o	o
9. Sticks and stones may break my bones, but words will never hurt me.	o	o	o	o	o
10. You can't teach an old dog new tricks.	o	o	o	o	o
11. Clothes make the man.	o	o	o	o	o
12. Love the sinner, but hate the sin.	o	o	o	o	o
13. Everybody has one true soul mate.	o	o	o	o	o
14. Time heals all wounds.	o	o	o	o	o
15. In the end, people get what they deserve.	o	o	o	o	o
16. The pen is mightier than the sword.	o	o	o	o	o
17. It is what it is.	o	o	o	o	o
18. Image is everything.	o	o	o	o	o
19. You get what you expect.	o	o	o	o	o
20. The more things change, the more they stay the same.	o	o	o	o	o

4. In reviewing the hypothetical orientations of Leslie and Pat, or the composite results of the class, can you infer that you might prefer the company of one or the other based on their responses?
5. Would you say that your 20 responses are the logical consequence of a purposeful and deliberate *world view* (or *point of view* or *orientation*), or are they merely a mish-mash of random top-of-the-head reactions?

Or, feel free to share whatever evaluations you like.

Orientations and Environments

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> The analysis of ... *living reactions* is the sole object of general semantics ... (Korzybski, 1994, p.xli)

I'd like to return to one of the questions posed in the Point of View Survey explanation: *how has one acquired this point of view (or orientation)?*

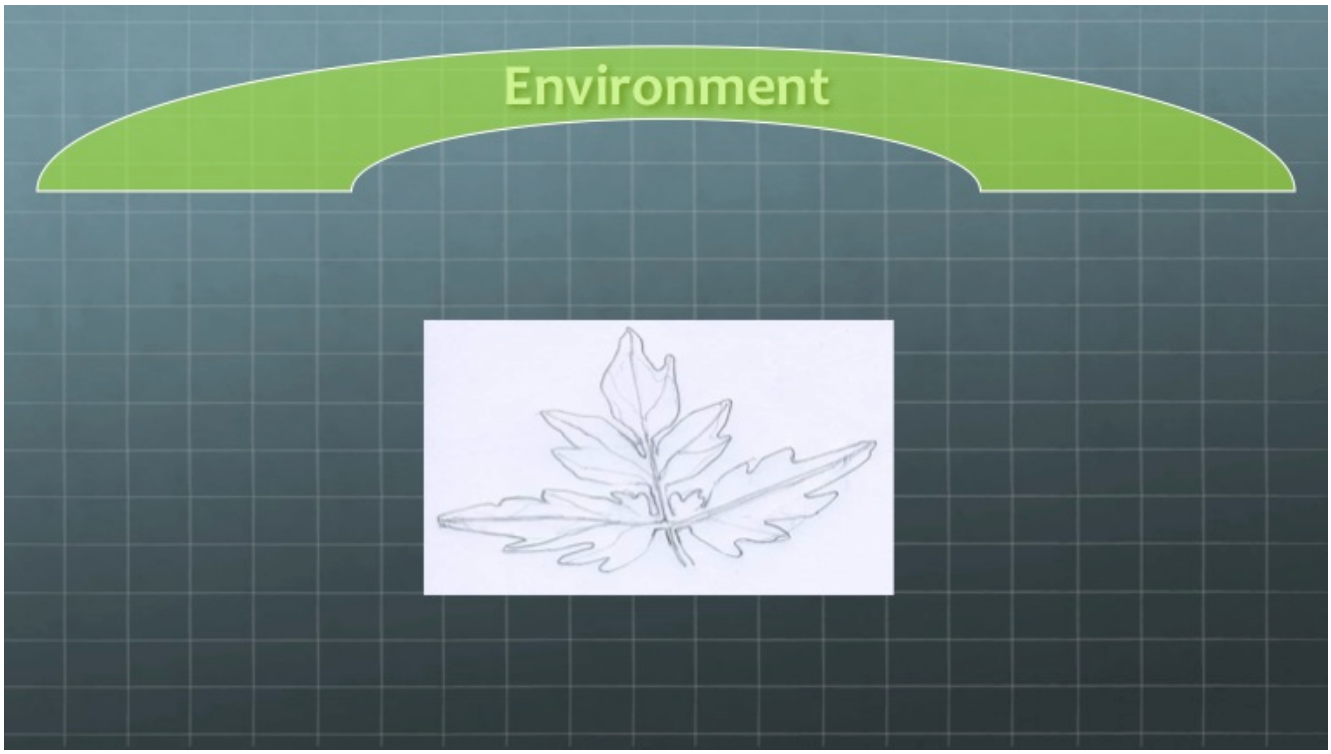
Let's consider that your general orientation (or point of view) constitutes a *living reaction* and is therefore worthy of analysis.

Here's how I would analyze this question.

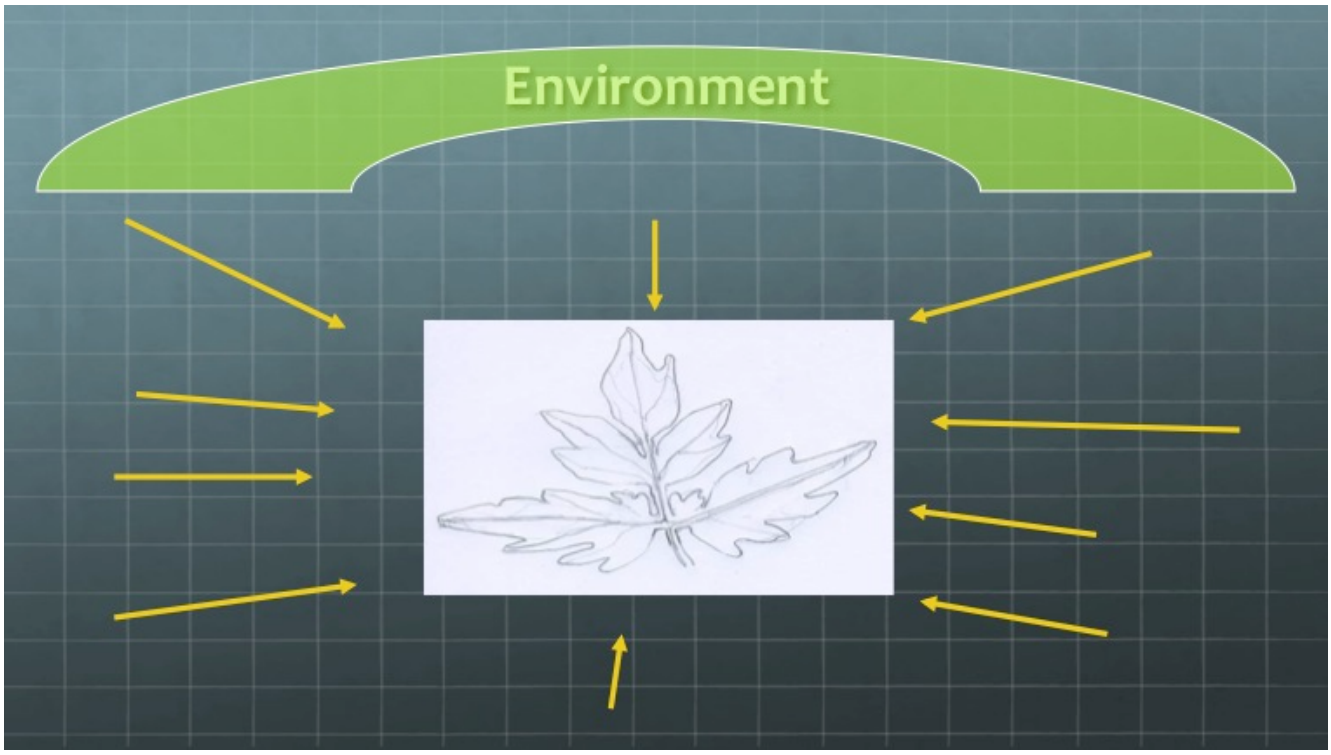
Environment and Orientation of a Plant

First, let's take it out of the human realm and look at a plant.

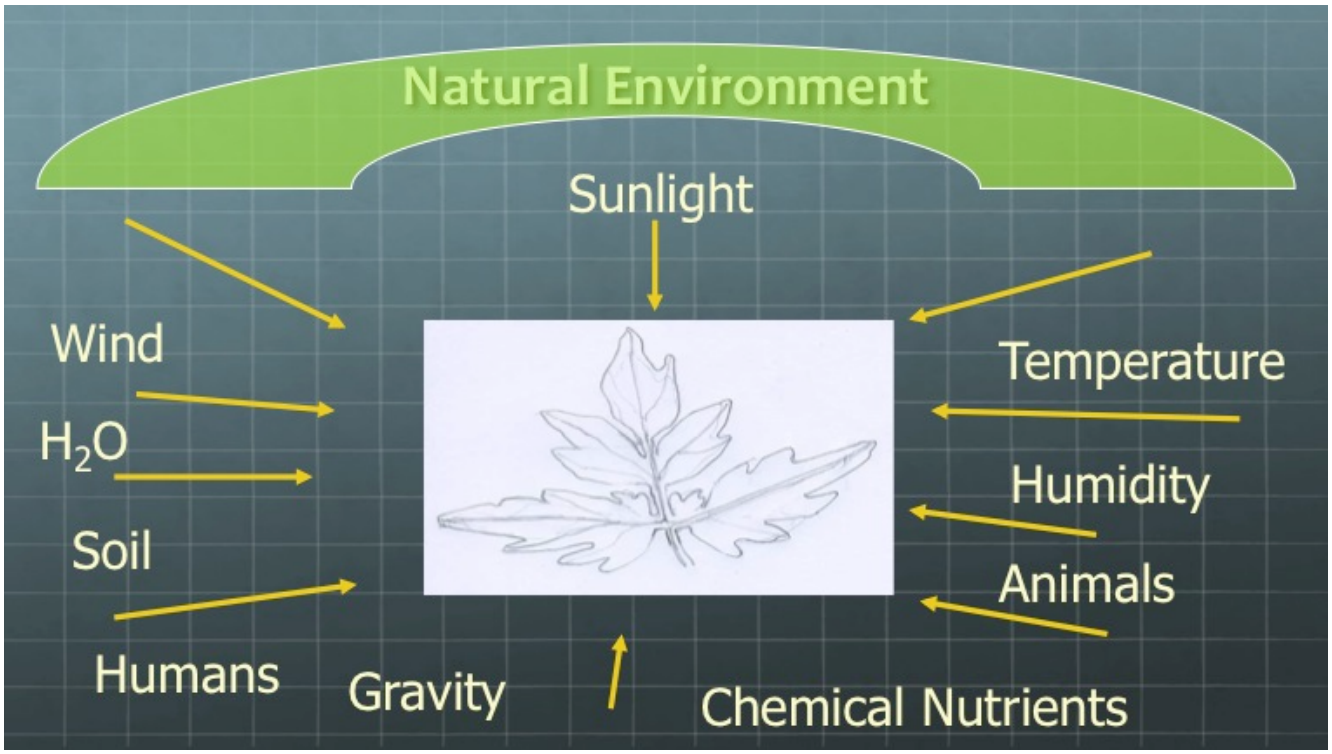
[Aside: We seem better able to scientifically analyze plants and animals than we do ourselves or our fellow humans.]



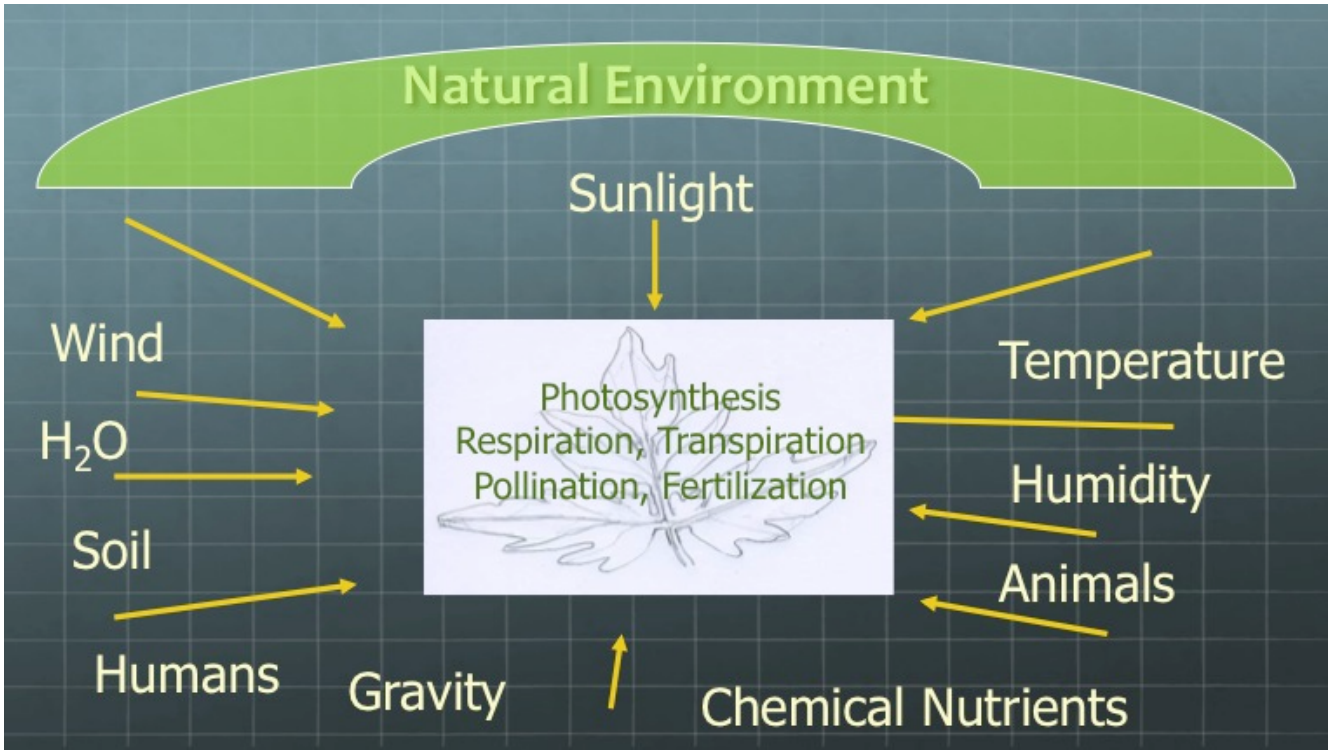
A plant lives within a defined environment.



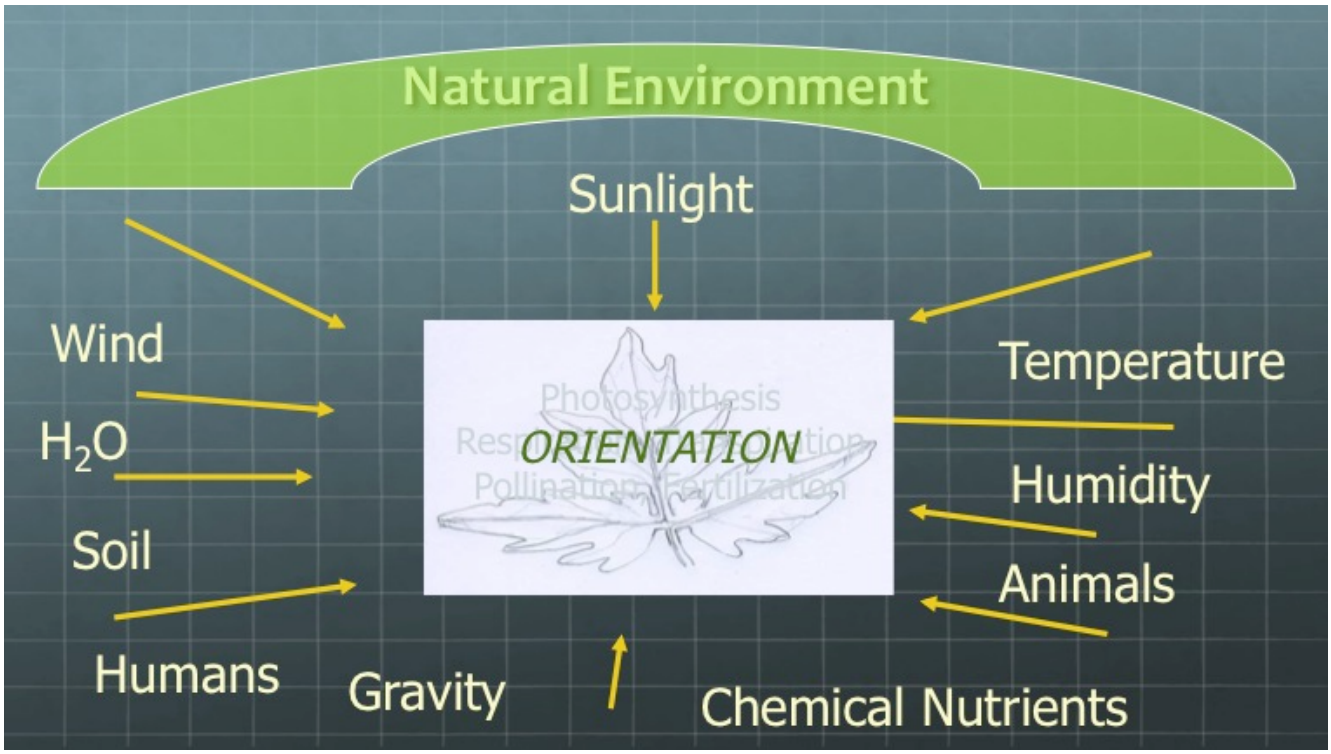
A plant grows as a function of different environmental factors or influences.



A plant grows as the result of internal processes that absorb or react to the environmental influences.



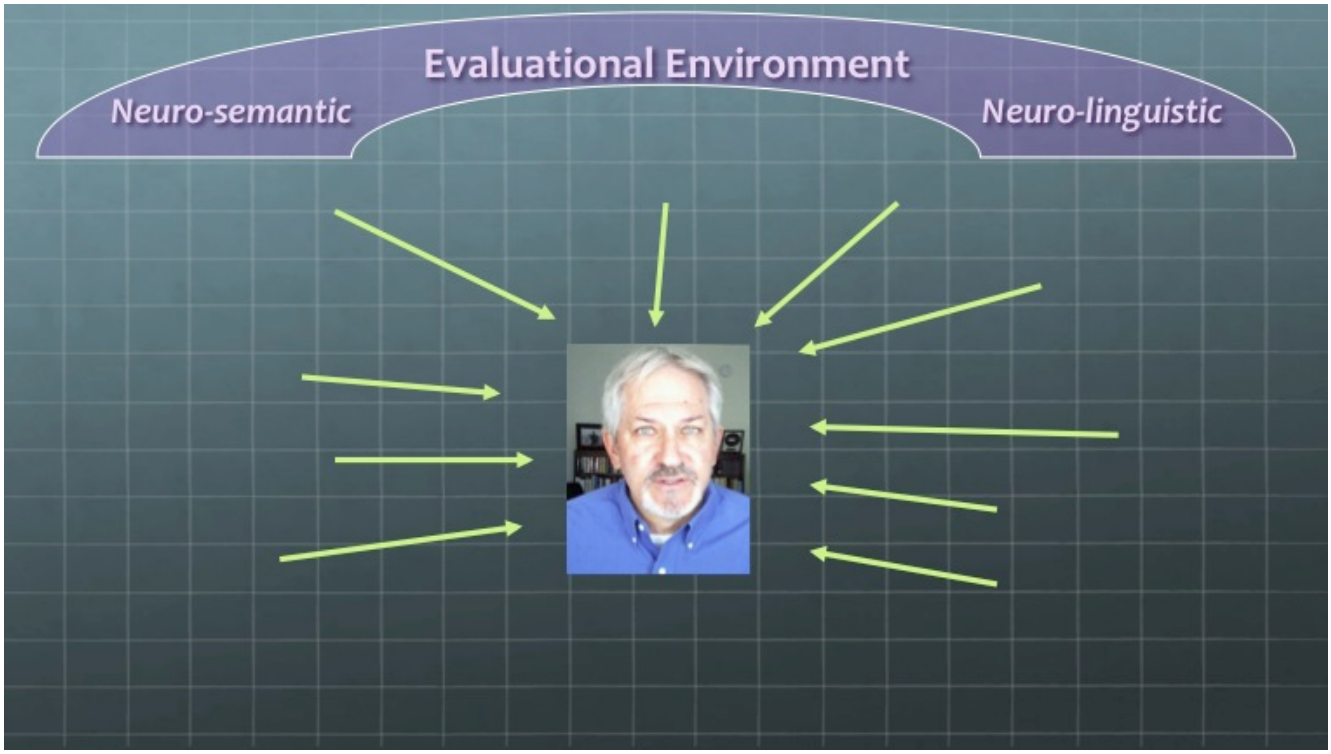
Tropism is a term that's used to refer to the tendency of plants to respond according to the different types of environmental stimuli, such as water, gravity, wind, sunlight, etc. For the purposes of this explanation, we can say that a plant orients itself as a result of the sum total of all these environmental factors (*tropisms*).



Environment and Orientation of a Human (in this case, me)

Now let's jump to the human realm and consider the environments that influence us, specifically in the context of the orientation question ... how has one (in this case, me) acquired his (my) orientation or world view?

Similar to plants, we live in environments that include a number of factors that can influence our growth and development. But different from plants, human growth and development depend on more than just our physical environment. Alfred Korzybski recognized the environments that are unique to humans and therefore critical to the human time-binding capacity — the *neuro-semantic and neuro-linguistic environments*.

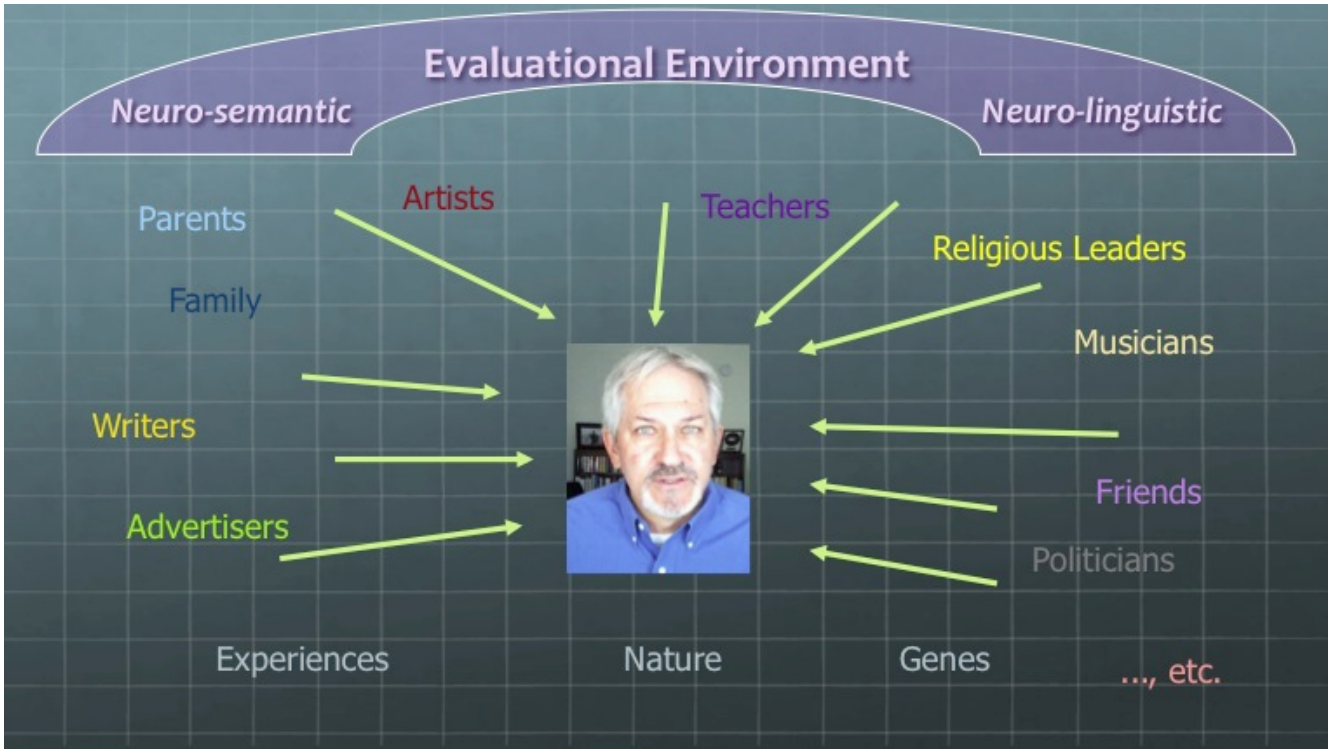


[General Semantics] recognizes *neuro*-linguistic and *neuro*-semantic environments as unavoidable conditioning environments, and considers 'mental' illness, science and mathematics as types of human reactions. We discover that all forms of human reactions involve some common mechanisms which work automatically for the benefit or detriment of humanity. (p. 297, CW, General Semantics, Psychiatry, Psychotherapy and Prevention, 1940)

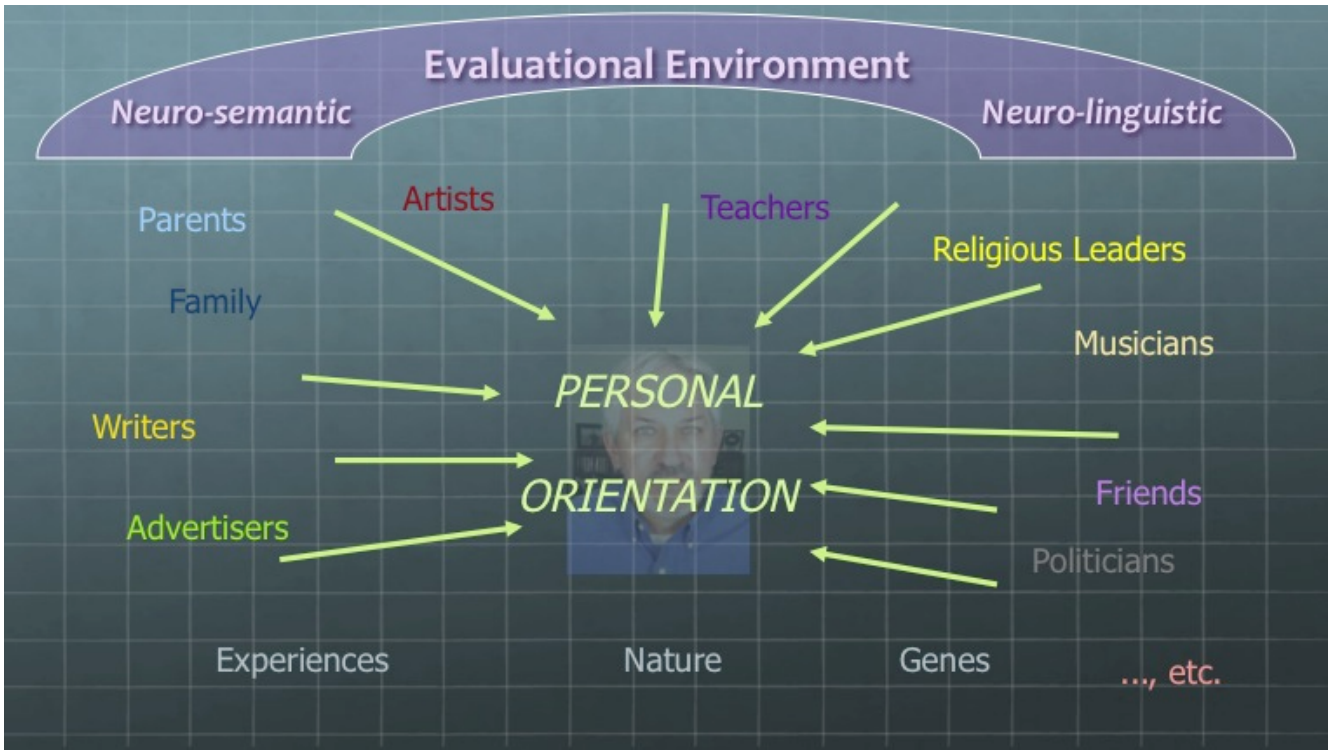
If we stop to reflect, we must face the fact that every human being is born into a *neuro*-linguistic and *neuro*-semantic environment from which there is no escape. At present sciences are taking care of deadly environmental dangers such as plagues, epidemics, factory conditions where harmful chemicals are used which slowly kill off the workers, etc. But the academic linguists in their detachment and interest in abstract verbiage somehow disregard our *neuro*-linguistic and *neuro*-semantic environments as *environment*, and therefore do not (and, perhaps, could not) produce any constructive practical results in building up sanity in education, and so ultimately in human living. It is true that these academicians and verbalists would have to know more about *living* human reactions. They would have to study not only neurology, psychiatry, general semantics, verbalisms written or spoken in hospitals for the "mentally" ill, etc., but also the pathological reactions found in politicians, journalists, etc., and even in educators and scientists. (p. 365, CW, Foreward to LHIHA, 1941)

[Listing errors of omission] The disregard of the *neuro*-linguistic and *neuro*-semantic environments as an environment unique for our symbolic class of life. These are no more avoidable factors than air or water. They may have disastrous effects on us, and we know enough about environmental factors, for instance, in occupational diseases to understand the gravity of such disregard. (p. 379, CW, Foreward with M. Kendig to A Theory of Meaning Analyzed, GS Monographs, Number III, 1942, pp. vii-xvi.)

You can see that the number of potential *neuro*-semantic and *neuro*-linguistic factors or influences are indefinitely-many.



While this slide emphasizes the *symbolic* influences, it's important to not overlook the *biological* influences that certainly affect our *neuro*-semantic *neuro*-linguistic environments — specifically, our past **experiences** and **genetic expressions**. The sum total of these *neuro*-semantic and *neuro*-linguistic influences, comparable to the plant's *tropism* effects, can be considered as our (or in this case, **my**) *personal orientation*.



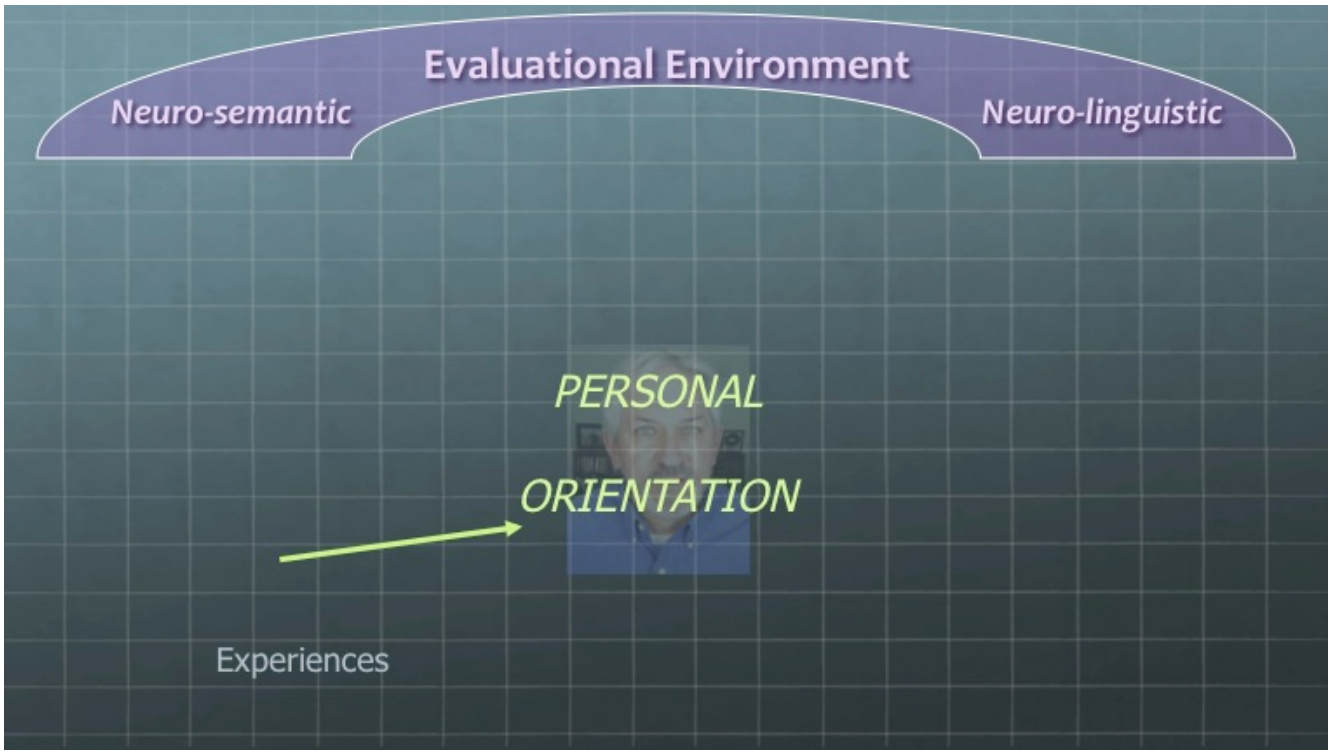
And from this orientation, I evaluate, react, and behave, as reflected in my responses (or you could say my *evaluations*) to the statements on the Point of View survey.

But there's more going on, especially if we look more closely at the influences of our **Experiences** as we'll see on the next page.

Evaluations-Meanings-Values

Listen to the audio version of this page

Picking up from the previous page, let's look more closely at the influence of our ***Experiences***.



"Theories" in General Semantics

Throughout Korzybski's writings, he refers to five "theories" related to General Semantics.

1. **Time-binding**, or as he titled two early papers, *TIME-BINDING: The General Theory*.
2. General Semantics as a general theory of **evaluation**.
3. General Semantics as a general theory of **values**.
4. General Semantics as establishing a theory of **meanings**.
5. General Semantics as establishing a theory of **sanity**.

We addressed time-binding in Module 1. We also mentioned that the title of the "source book" for General Semantics is *Science and Sanity*; that the methods and applications of *science* are the foundation for human *sanity*.

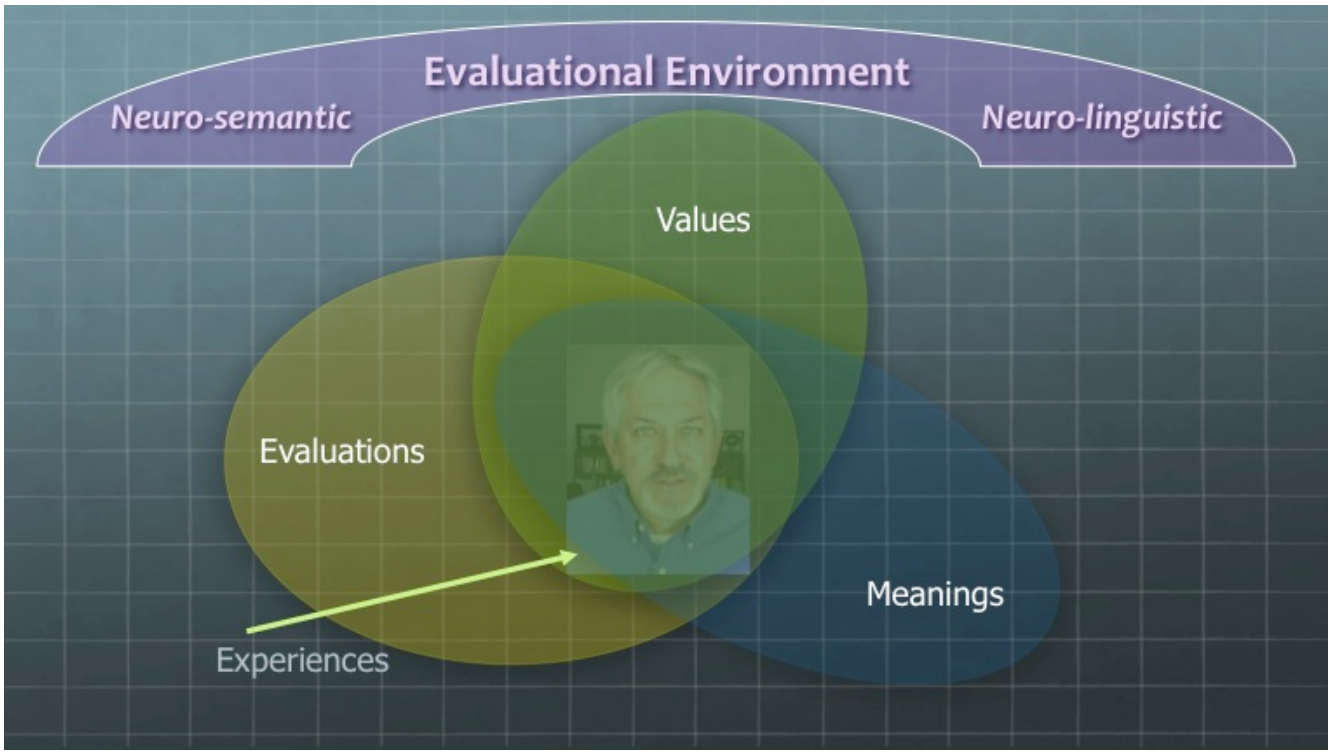
We've covered *evaluation* in the context of the abstracting-evaluating process.

And we talked about *meaning*, especially in Module 3 on bypassing. As attributed to Charles Sanders Peirce, "*you don't get meaning, you respond with meaning*."

But to this point, we haven't really talked about *values*. So here I want to place **evaluation, meanings**, and **values** in a broader environmental context. That is, *evaluations, meanings*, and *values* as inseparable and integral aspects of our life experiences.

Korzybski coined a technical term for such *inseparable-ness* — ***non-elementalistic***. He observed that one of the potential errors in our language behaviors was the ability to divide or separate in our *verbal worlds of language* what cannot be separated in our *non-verbal worlds of experience*. This error of separating in words what cannot be separated in 'reality' he called *elementistic* evaluating, or to nounify the process, an *elementalism*.

In this case, we have three different words, which can be defined in different ways. But on a neurological level ... the level of actual *living reactions* ... what we refer to as *evaluations, meanings,* and *values* are all bound together both as past and present experiences.



To illustrate, let's return to the "you've got cancer" example of J.S. Bois from Module 1 Defining and Describing General Semantics.

> Imagine a scene in a hospital examining room. There's a doctor, a patient, and the patient's wife. A lab technician knocks on the door and enters, carrying a medical folder with the patient's charts. He hands the folder to the doctor, nods to the patient and the wife, and leaves the room. The doctor silently looks through the pages of the chart. She takes a deep breath, gathers herself, and turns to the husband to say, "*The tests confirm that you've got cancer*."

Can you envision in that scenario how different *evaluations, meanings*, and *values* are manifested by each of the participants?

To repeat another excerpt from Module 1 that I hope you might now find a little more *meaningful*:

> In Week 5, we'll address the "big picture" implications of [Korzybski's] theories about the complex inter-relationships among **evaluations, meanings, and values**. Here are some examples that may give you a feel for what Korzybski was getting at:
>
> The European Union is divided over the ongoing financial crises in Greece and other countries. Generalizing and simplifying ... the citizens in Greece **evaluate** the crisis differently than German citizens because the austerity that is being forced on Greece **means** something very different to the Greek than it **means** to the German. The Greek and the German **evaluate** the situation differently because the situation **means** something different because they hold different **values**.

The Tea Party in the United States **evaluates** the significance of U.S. debt and government spending levels differently from other political groups because of the **meaning** that Tea Partiers give to government debt based on their **values**.

People around the world hold different **evaluations** about global warming/climate change based what the phenomenon **means** to them and what **values** they hold. To the citizen of the Maldives, the threat of rising oceans bears **meaningful** consequences because they **value** their way of life (not to mention their actual lives), so they **evaluate** the evidence and forecasts about global warming one way. The owner/operator/customers of a coal-burning electricity plant in the remote southwest U.S. **evalute** the issue differently because their economic and political **values** are affected in different **meaningful** ways.

The ongoing tensions between India and Pakistan can be considered in terms of different **evaluations** based on conflicting **values** and **meanings**.

Can you think of any close-to-home controversies that exhibit the inseparable (or *non-elementalistic*) nature of evalutions, meanings, and values?

Brain-Based Evaluating

As we saw in Module 1, it's important to acknowledge that when we refer to cognitive activities such as *thinking, feeling, imagining, considering*, etc., we are referring to neurological behavior that has a *biological* basis. Therefore if we want to conscientiously improve our language behaviors, we need to understand something about how our brains work — at least according to the current brain science.

On this page we have five short video clips about the brain that relate to our *evaluating*. (Unfortunately, we don't have closed captioning available on these clips.) All of these come from episodes of the Charlie Rose Show.

1. Overview of the cortex (5:01)

From the Charlie Rose Brain Series, Anthony Movshon provides a functional overview of the cerebral cortex and describes the four lobes that comprise the cortex.

CRose-Cortex.mp4

2. The brain as a "piece of meat" (3:17)

Also from the Charlie Rose Brain Series, the panel discusses how the brain is not hard-wired like a computer, and also mentions how dependent we are on our genetics and previous life experiences.

CRose-MeatNotComputer.mp4

3. Paul Allen on the brain's complexity (1:45)

Along with Bill Gates, Paul Allen co-founded Microsoft. He now owns the Super Bowl champion Seattle Seahawks and the Portland Trailblazers National Basketball Association franchise. More importantly for our purposes, he has created the Allen Institute for Brain Science. (Christof Koch from the Module 1 afterimage demonstration is the Institute's Chief Scientific Officer.) Two weeks ago Allen sat down with Charlie Rose to talk primarily about the Super Bowl, but he also discussed his Institute and related this comparison of the brain to a computer.

CR-paulAllenshort.mp4

4. Eric Kandel on the role of the "beholder" (2:59)

During an interview to promote his 2012 book, *The Age of Insight: The Quest to Understand the Unconscious in Art, Mind, and Brain*, Eric Kandel discussed his approach to studying the role of the beholder's response to art — specifically, portraiture.

cr-kandel-beholder.mp4

5. Integration of cortex and amygdala (5:44)

Walter Mischel (of the Marshmallow Experiment in Module 1) and Daniel Kahneman discuss their two schemes for characterizing the integration of the cortex and the amygdala. Mischel uses the metaphor of *hot and cool* systems to compare the two, while Kahneman refers to *fast and slow*.

Note how similar their descriptions are to what Korzybski, in 1941, observed about the interaction of the cortex and what was then referred to as the *thalamus*.

> If we orient ourselves predominantly by intension or verbal definitions, our orientations depend mostly on the cortical region. If we orient ourselves by extension or facts, this type of orientation by necessity follows the natural order of evaluation, and involves thalamic factors, introducing automatically cortically delayed reactions . In other words, orientations by intension tend to train our nervous systems in a split between the functions of the cortical and thalamic regions; orientations by extension involve the integration of cortico-thalamic functions.
>
> Orientations by extension induce an automatic delay of reactions, which automatically stimulates the cortical region and regulates and protects the reactions of the usually over-stimulated thalamic region .
>
> What was said here is elementary from the point of view of neurology. The difficulty is that this little bit of neurological knowledge is not applied in practice. Neurologists, psychiatrists, etc., have treated these problems in an 'abstract', 'academic', detached way only, somehow, entirely unaware that living human reactions depend on the working of the human nervous system, from which dependence there is no escape. No wonder 'philosophers', 'logicians', mathematicians, etc ., disregard the working of their nervous systems if even neurologists and psychiatrists still orient themselves by verbal fictions in the 'abstract'.

CR2-hotCool-sys1-2.mp4

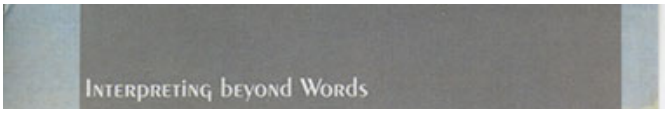
Your "Inner Interpreter"

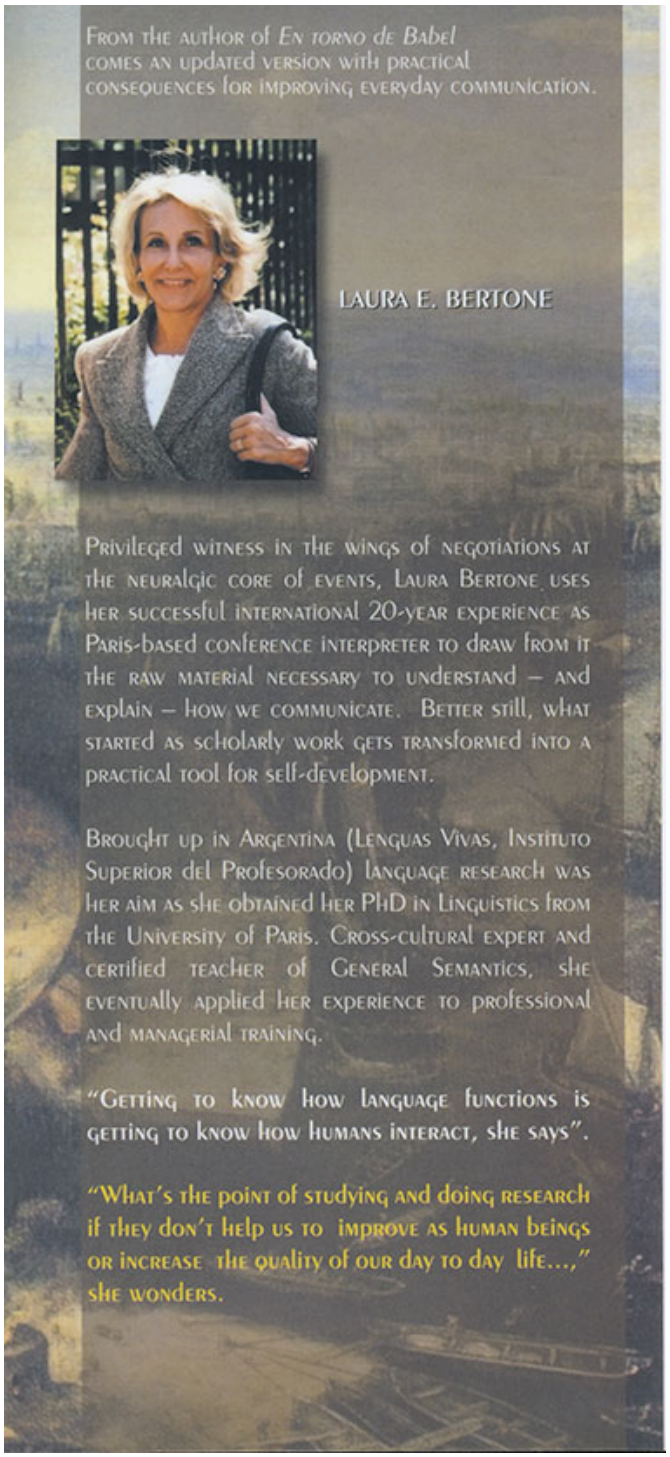
I met Laura Bertone twenty years ago this summer at my first general semantics seminar-workshop at Hofstra University in New York. We served together as trustees for the Institute of General Semantics for several years.

In 2006, Laura published a wonderful book that serves as both a textbook and a memoirs, of sorts, that contains illustrative examples from her career as a "Paris-based conference interpreter." That's how the book jacket describes her profession. I prefer to think of it as "simultaneous translating" which, to my mono-lingual mind, is almost akin to magic.

The book is *The Hidden Side of Babel: Unveiling cognition, intelligence, and sense* (Amazon link). The excerpt below, which you can read inside this page with preview function, or download as a PDF document, is the chapter titled "The Inner Interpreter." I've selected this excerpt because I believe it reinforces several important points about how, even within one language, we have to *interpret* or *translate* in order to evaluate and understand.

The Inner Interpreter (PDF)

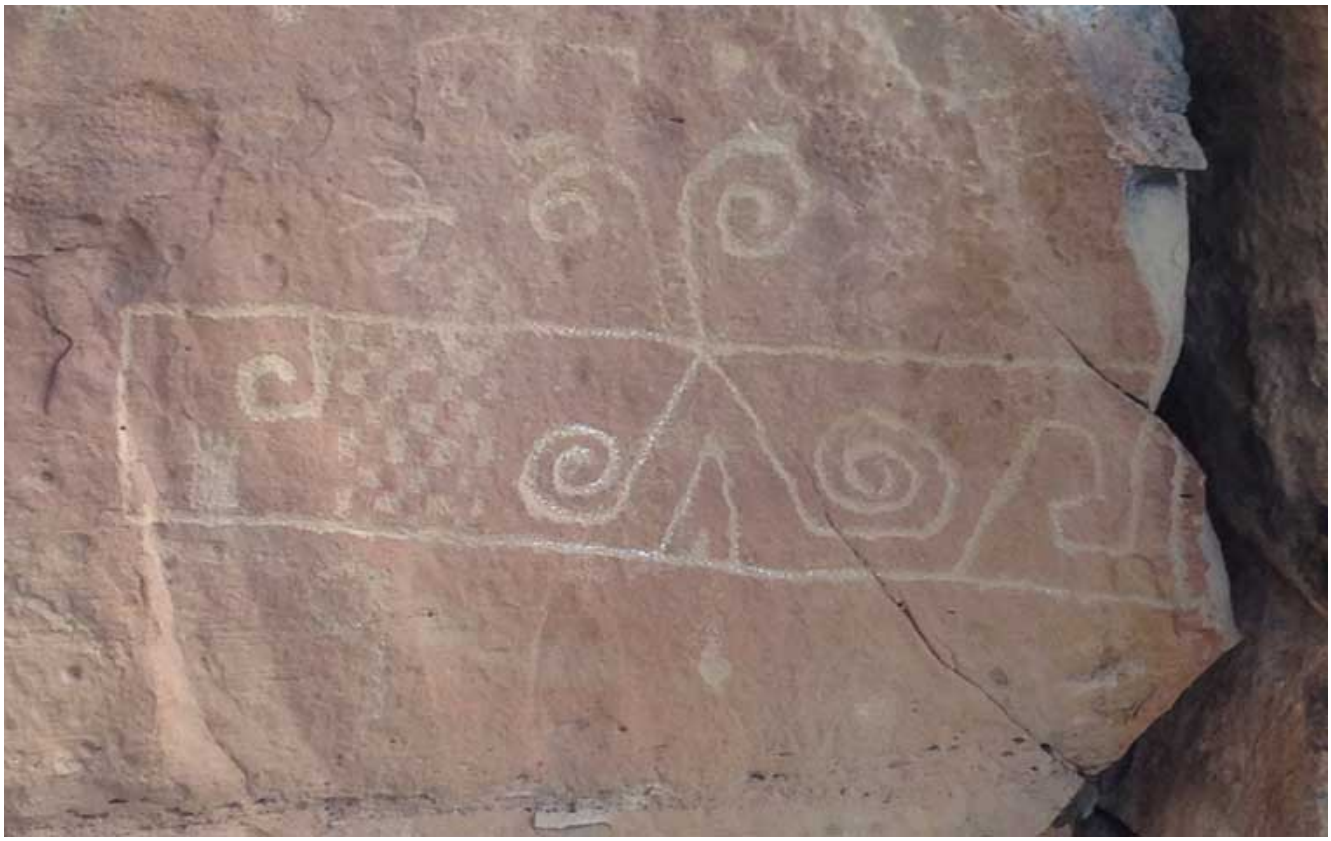




Example: What do these pictures mean?

To illustrate the interplay of evaluations, meanings, and values, consider the following photos in terms of two questions.

1. What do you think they mean?
2. What do they mean to you?



I took these photos this past December about 30 miles from where I live in western New Mexico. These are rock drawings known as *petroglyphs*, carved by the ancient inhabitants of this area.

Let me tell you a little more about the last images that depict the square spiral shape. I took these four photos on the day after the winter solstice, between 11:58 and 12:03.

What does that additional information *mean* in terms of how you evaluate these photos and what they depict?

I think it's reasonable to infer that, in the case of the square spiral, the specific location and size of the spiral serve a deliberate purpose. Combined with the L-shaped shadow of the overhanging rock, this spot marks the highest point of the sun on the shortest day of the year.

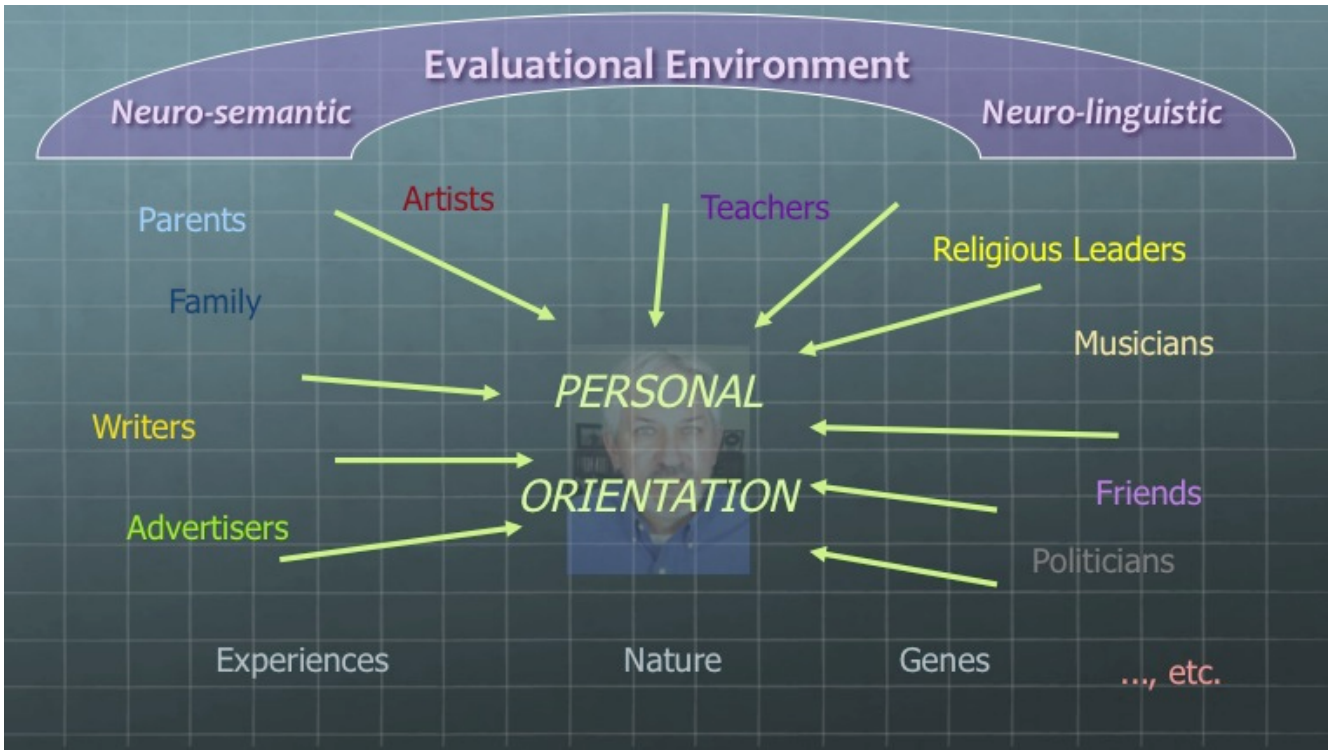
Considering how many years of observations it must have taken to determine where the L-shaped shadow would fall on this once-a-year day, this must have *meant* something special to the engravers. They must have *valued* this specific time.

Does this additional information make any difference in terms of what this *means* to you?

"The Persuaders" as Symbol-Rulers

> The affairs of man are conducted by our own, man-made rules and according to man-made theories. Man's achievements rest upon the use of symbols. For this reason, we must consider ourselves as a symbolic, semantic class of life, and **those who rule the symbols, rule us**. (Korzybski, 1994, p. 76) *[emphasis added]*

To revisit a slide from earlier in this module, consider how much of our *neuro*-semantic and *neuro*-linguistic environments involves various agents who are trying to influence our personal *evaluations* and *living reactions*.



It's worth noting that Korzybski's caution regarding "those who rule the symbols, rule us" was published just months after Hitler was appointed Chancellor of Germany in 1933. He (Korzybski) understood how vulnerable and susceptible humans were to the manipulation of symbols, signs, words, music, etc. He knew the neurological mechanisms of conditioned responses from Pavlov's experiments, consistent with his own formulation of identification whereby individuals did not properly evalute and were unaware of their abstracting processes.

Five years before Korzybski's caution hit the New York City streets in *Science and Sanity*, another New Yorker published his own book that, unintentionally no doubt, reinforced Korzybski's contention.

> The conscious and intelligent manipulation of the organized habits and opinions of the masses is an important element in democratic society. Those who manipulate this unseen mechanism of society constitute an invisible government which is the true ruling power of our country. — Edward Bernays

Edward Bernays was the nephew of Dr. Sigmund Freud. The name of his 1928 book was *Propaganda*. He taught the first university course in public relations, and is generally considered to be one of, if not *the*, father of the American public relations industry.

So there would seem to be a natural tension between what Bernays advocated and what Korzybski warned about. Ironically, however, the history of General Semantics includes several prominent individuals from the the advertising and public relations industries.

"The Persuaders" with Douglas Rushkoff

In November 2004, days after the U.S. presidential election, the Public Broadcasting Series *Frontline* series broadcast

Douglas Rushkoff's 90-minute documentary, "The Persuaders." The film delves into "the persuasion industry" of advertising, marketing, and political campaigns.

The film includes interviews with several major "persuaders," who make no apologies for their objectives to ... *create loyalty beyond reason ... develop cult-like devotion ... appeal to the reptilian brain ... and find words that work*.

You can watch the entire documentary, with transcript, at the PBS website. In particular, pay close attention to segments 4 (The Science of Selling) and 5 (Giving Us What We Want).

Lay Off of My Persuade Shoes

In 2009, I was invited to give a presentation to a trade association group of advertisers. I took it as an opportunity to challenge these "persuaders" to raise their game, and their industry, to higher levels of respect for their clients and their clients' customers.

In the Optional Activities for Module 1 I included one segment of the presentation, A GS Perspective.

Here are the two segments that follow the GS Perspective that specfically address the advertising and PR industries, and my own personal experience with one particular advertising (some might say *propaganda*) campaign.

Public Relations Perspective

The script is available here.

aaf-pr.mp4

Chesapeake Energy and Conclusion

aaf-chk-conclusion.mp4

The script is available here.

Response Side Semantics

One year after viewing "The Persuaders," I was motivated to document my thoughts regarding this tension between those who seek to rule the symbols (the *supply side* of symbol-rulers) and those, like myself, who sought to resist the attempts to be ruled (the *response side*).

This article from the January 2006 issue of *ETC: A Review of General Semantics*, "calls out" those who wish to rule the symbols and issues a metaphorical "call to arms" to those who wish to put up the *response side* resistance.

You can download the PDF link below or view it within this page using the preview feature

Download Response Side Semantics

Module 5 Dicussion

What topic or illustration most resonated with you in this module regarding **Who Rules Your Symbols?** Discuss your evaluations, reactions, responses, etc.

Module 5 Assignment

In this module, we attempted to describe a "tension" that exists between individual evaluators (symbol users) and those who would seek to manipulate, control, or influence (the symbol rulers).

Submit a short essay of approximately 250 words with your evaluation of this "tension." Do you agree with the premise that this is a concern to be concerned with? If so, provide examples in which someone attempted to rule your symbols. If you don't agree that this "tension" exists or represents a serious concern, explain why you feel it isn't.

To submit the assignment, look to the Submit Assignment link to the upper right. You can type your answer into the edit window or copy/paste from another program. You may also submit a media comment or attach a link.

Optional Activities for Module 5

Audio Resources

The National Public Radio (NPR) program, **On the Media**, provides a weekly update on stories related to journalism, advertising, and general interest topics pertinent to all forms of media, including the Internet. These recent segments relate to the Module 5 content.

- Bogus "Blue Monday"
- Do the Motivations of Leakers Matter?
- On Banning the Other N-Word (Nazi)
- What's in a Name? (on the Washington Redskins football mascot)
- TLDR, an offshoot project by On the Media producers, profiled an interesing character who was living with the consequences of being Stereotyped online.

Another NPR program, The Diane Rehm Show, has also produced several programs recently related to journalism, advertising, and the brain.

- An interview with journalist Thomas E. Patterson regarding his book, *Informing the News: The Need for Knowledge-Based Journalism*.
- A discussion about the latest "native" advertising and efforts to promote transparent advertising on the Internet.
- Two interviews with Dr. Francis Collins, Director of the National Institute of Health, on President Obama's BRAIN Initiative from last spring and an interview conducted today, 10 February.

Articles

- New York Times on the Washington Redskins name controversy
- New York Times columnist Maureen Dowd, "Still Mad as Hell"

Paper/Video Presentation

I prepared the following video presentation and paper for a graduate psychology course titled "Biological Basis of Behavior." Our textbook was *Principles of Neural Science* by Eric Kandel, James H. Schwartz, and Thomas M. Jessell.

What Difference Does it Make? Implications of Neuroscience for Education

What difference does it make?

When I applied to the Educational Psychology graduate program last year, I explained that my academic interests were focused on the question, "Are educational practices consistent with cross-disciplinary knowledge?" As I progressed through the program curriculum, I narrowed the scope of my "cross-disciplinary" objective to consider how the latest findings in neuroscience might inform educational theory and practice. The purpose of this paper is to provide an initial report regarding: 1) underlying attitudes or premises about how we think about the brain; 2) six findings from neuroscience that relate to learning; and 3) the consequences or implications of those findings, or what difference does neuroscience make for education?

How we think about the brain, mind, and all things psychological (constructs, behaviors, motivations, etc.) is dependent upon a critical underlying premise. That premise can be stated as a choice between accepting the notion of *dualism*, which differentiates the substance of "mind" from that of the brain, or rejecting dualism to instead ascribe functions of "mind" to the biological organ of the brain. This paper reflects the point of view of two Nobel laureates, Francis Crick and Eric Kandel, who reject the mind|brain dualistic dichotomy. Each ascribes the behaviors and functions of what are generally attributed to the "mind" to the brain (Crick, 1994; Da Cunha, 2009, Episode 1). In other words, from a scientific orientation, the brain exists as a biological entity whereas what we refer to as "mind" does not exist in a biological sense. The "mind" is more appropriately thought of as "the behavior of our brains" (Crick, 1994, p. 7) or "a series of functions carried out by our brains" (Da Cunha, 2009, Episode 1). Many people who do not consider themselves "scientific" may object to the boldness of this premise and counter with the argument that there *must* be more than just the brain to account for our thoughts, ideas, intuitions, etc. However, if one purports that position, one must be able to offer a competing theory or explanation — *if not in the brain, where?* From a scientific perspective, therefore, the hypothesis that "it's all in the brain" provides a useful and appropriate attitude for understanding these six findings.

1. The brain is continually changing and, in a global sense, learning.

Anytime you engage in what is usually referred to as "learning," you are also engaged in changing your brain. Virtually every experience you have and every behavior you exhibit results in some level of neural activity that causes structural, chemical, and electrical changes in your brain. Kandel notes that this ongoing change activity results in intellectual growth and also accounts for the impressive degree of plasticity exhibited by the brain in recovering from certain types of damage, injury, and disease (Da Cunha, 2009, Episode 1).

2. The brain constructs your sensory experiences of the world.

From a common sensical view point, we can easily lapse into the conventional understanding that we see and hear exactly what's there to be seen and heard. We feel that our senses capture whatever sources may stimulate our attention — our eyes see, our ears hear. We accept easily understood analogies such as our visual system is like a camera and our hearing is like a tape recorder.

However, we now know that such common sensical feelings and analogies are naïve and mistaken. The "seeing" and "hearing" that we attribute to our eyes and ears is really the result of the brain processing sketchy and limited data of the outside world that is sensed, captured, and transmitted to the brain. The brain forms the experiences that you become aware of by taking this incomplete sensory data, looking for patterns that match previous experiences, making inferences to fill in the holes of missing data or unexpected patterns, before integrating the different inputs into a unified awareness.

Jeff Hawkins likens the activity in the brain (specifically the cortex) to a densely-packed network of fiber optic wires with a million points of contact. As incoming sense signals enter the brain to be processed, imagine the activated fiber optic network changing its illuminated patterns every millisecond. The patterns changes in both spatial and temporal dimensions and those changes, according to Hawkins, constitute the "currency of the brain … That's what your brain works on. And believe it or not … your perception of the world is … really a fabrication of your model of the world. You don't really see light or sound. You perceive it because your model says this is how the world is, and those

patterns invoke the model" (J. Robert Oppenheimer Memorial Committee, 2009).

Christof Koch uses a visual demonstration to illustrate the effect known as *afterimage*. After staring for about twenty seconds at four brightly-colored squares (red, green, yellow, and blue) projected onto a screen, the image on the screen is suddenly changed and the viewer sees four different pastel colors — for a few seconds, then the viewer realizes that the image on the screen is actually four identical gray squares. The viewer has experienced an afterimage resulting from the visual system's inability to immediately adjust to new input. Koch makes the point that what you see can be influenced by what you have just seen, and what you have just seen may cause you to not accurately see what is presented before you *now*. He concludes from this demonstration that, " clearly this naive, realistic view that there's a world, there's my head and this simple mapping, it can't be true" (J. Robert Oppenheimer Memorial Committee, 2005).

3. The brain includes a continuously-running simulator that anticipates motor behavior.

Have you ever tried to assist a waiter, burdened with a full tray of food and drinks, by taking your order from the tray, only to be rebuffed by the waiter who insists, "No thanks, I've got it." Daniel Wolpert refers to this situation in a demonstration he calls the "waiter task," which illustrates how the brain directs a simulation capability that operates in anticipation of motor behavior (Da Cunha, 2009, Episode 3). He explains that since the feedback capability in the motor system responds relatively slowly (about 250 milliseconds), for tasks that require much quicker responses (like hitting a tennis ball) the brain simulates the action and anticipates or predicts the response. So the brain anticipates the action of the muscles as well as the feedback returning to the brain in response to the action. When your waiter is holding the full tray, his motor system is controlling his muscles and exerting the proper force to suspend the tray. If you reach out and remove your drink, the waiter's visual system and motor system brain cannot accurately estimate *exactly* when the weight and balance of the tray is going to shift. So depending on the particulars of how the tray is loaded, your good intentions to help may cost you and your fellow diners another thirty-minute wait, and your waiter a tray load of orders. But the waiter's own brain simulation can anticipate *exactly* when his left hand is going to remove your glass from the tray such that the tray remains securely stable on his right hand.

Another brain capability related to both motor and sensory systems was identified by the discovery of *mirror neurons* by Italian neuroscientist Giacomo Rizzolatti. He observed that when an object such as a banana was offered to a laboratory monkey, the monkey reached for it, which triggered the firing of a certain neuron in the monkey's brain. But Rizzolatti also discovered that a second monkey, who simply observed the first monkey reach for the object, also registered the same neuron firing in his brain. Rizzolatti isolated this "mirroring" activity to a particular type of neuron he called "mirror neurons." In humans, these neurons are believed to play a pivotal role in one person being able to feel empathy for another. Rizzolatti also suggests they are necessary for the human ability to imitate others, enabling the perpetuation of rituals, traditions, and ultimately cultures (Da Cunha, 2010). Moreover, Kandel says there is evidence that mirror neurons may allow a child to more rapidly acquire language skills by watching the movement of the mother's mouth as she speaks (Da Cunha, 2010, Episode 4).

4. The brain responds to stimulation, even when the stimulation is artificial.

The phenomenon known as "phantom limb" occurs when a person feels pain in the location of a limb that has been amputated. The patient experiences pain, but the attributed source of the pain is literally not there. This phenomenon manifested in a patient of neuroscientist V.S. Ramachandran, causing the patient excruciating pain in his phantom right hand. Ramachandran suspected that the brain might be trying to communicate through the motor system to the right hand, but in the absence of feedback from the phantom hand, the brain continue to send commands that could not be executed by the missing hand. He wondered if he could trick the patient's brain by providing a visual illusion that provided apparent feedback. To test his hunch, Ramachandran constructed a simple box with an open top and two holes in the side in which the patient could insert his good left hand and the nub of his right arm without the amputated hand. In the center of the box, Ramachandran mounted an upright mirror such that the patient could look down at the mirror and see the reflection of his left hand, as if it were his right hand. The mirror illusion was powerful enough to fool the patient's nervous system and the phantom pain went away, suggesting that "even pain can be a

construct of the mind" (NOVA, 2001).

5. To focus attention on one thing, the brain actively suppresses attention elsewhere.

In researching the ability of the human visual system to track a moving object, neuroscientists have discovered two different types of neurons. One type of neuron focuses attention on the object, while the other works to actively suppress the background surrounding the object in order to further highlight the object. Neuroscience researchers, authors, and amateur magicians Stephen L. Macknic and Susana Martinez-Conde report that this mechanism has been exploited by magicians in the many ways in which they distract and misdirect their subjects' attention in order to accomplish their 'magical' illusions (Macknic, Martinez-Conde, & Blakeslee, 2010).

6. Some language habits, such as grammar, take years to develop.

Using EEG imaging, researcher Helen Neville has shown that both adults and children as young as six years old can listen to a story and detect errors of meaning or words that don't make sense within 200 milliseconds, localized in the posterior of the cortex. When the story narration includes grammatical errors, such as saying words in the wrong sequence or reversing nouns and verbs, adults can detect the errors even more quickly (within approximately 100 milliseconds) in a localized area on the left frontal lobe. However, the response of children to grammatical errors is slower and dispersed over a wide area of the cortex. Neville suggests that it may take 10-15 years for children to fully develop their grammatical recognition capabilities. She notes that this localized area in the left frontal lobe is adjacent to an area that appears to be critical to tool use and sequential planning: "It's possible that one aspect of language is closely tied to tool use, especially this kind of action planning and sequencing that we have to do in order to talk" (THIRTEEN, 2010).

Researchers such as Patricia Kuhl have concluded that early exposure (prior to age 7) to non-native languages is critical for a child to most efficiently develop non-native language proficiency. She also suggests that language learning is strongly dependent upon the development of social learning skills that babies acquire when they are nine to ten months old. Studies indicate that babies of that age who are exposed to non-native phoneme sounds in the presence of others have no trouble discriminating those sounds. However, babies who are exposed to non-native phonemes from a television set do not learn to discriminate (Da Cunha, 2010, Episode 5).

Given these six findings, what difference does knowledge from neuroscience make — or *could* make — in educational theory and practice?

Beginning with the most general implications, two seem foundational for teachers, administrators, and policy makers. The first is that the brain(or *all* brains in the plural) is not a black box. Although neuroscientists would be the first to admit that much remains to be discovered and learned, much *is* known at present. Authority figures within education can no longer be content to cling to theories and practices based solely on speculative theories, observational studies, and "common sense." Secondly, they should consider themselves as *brain changers*. To best teach, they must understand how the brains of children (and adults) change (or learn) in response to myriad environmental stimulations. Educational theory should most fundamentally be based on the fact that the brain naturally seeks to learn. Rather than thinking of education as the dispensing or depositing of "knowledge" into a child's mind, formal education or schooling could be viewed as a socially-desirable means to guide the child's natural brain development (learning) in a direction consistent with cultural and social ideals.

We should also recognize that even though we talk about "the brain" in generalized, or even universal, terms, each individual brain is unique. So while we can appropriately generalize about "the" brain's anatomy, function, capability, and limitations, we should be aware that each brain is different and unique due to effects of genetics, environment, and life experiences.

At the level of the individual, this attitude of difference-within-similarity should become internalized within each child from the beginning of the formal educational process. Each child should develop an informed sense of how he/she is similar to others, but also that he/she is also different from others and unique unto him/herself. Each child

should develop a sense of "to-me-ness" that acknowledges the sensations, feelings, descriptions, and experiences of "the world" he/she is aware of are created by his/her own nervous system. Each person experiences "the world" differently, no matter how similar our descriptions of our experiences of that world are.

Educational practitioners should help the individual exploit the learning capabilities inherent not only in the sensory system, but also the motor system. Combining these capabilities with those of mirror neurons, it seems clear that instructional techniques should not rely exclusively on cognitive activities, but also incorporate the manipulation of tools, instruments, and other aids, as well as watching and imitating behavioral models. While such techniques may be common in grades K-6, there is no reason why they should not continue to be effective even for adult learning. Particularly for learning non-native languages after age seven, watching a speaker may significantly facilitate learning over simply listening to the speaker.

The final implication to be made in this paper, and the most specific, applies to the development of individual language habits. If the conclusions from Helen Neville's research are correct — that it takes years for a child to develop proficient grammatical recognition and localization — it seems logical to devote significant study to determine what kinds of grammatical structure are important to process and evaluate experiences, rather than adherence to grammatical standards that have evolved arbitrarily. Two practical examples of language habits that deserve study in this regard are to reduce reliance on *to be* verbs (*is, am, are, was,* etc.) and absolutistic terms (*all, every, none, perfect*, etc.) Such practices logically result from the "to-me-ness" of individual experience and the limitations of our imperfect nervous systems.

Teller, the normally mute half of the Penn & Teller magic act, makes his living by exploiting the facts, foibles, and limitations of the human nervous system. Like his fellow magicians, his on-stage objective is not merely to entertain the audience, but to lead them to the realization that "it's really hard to understand the world" (Randall, 2011). For educational practitioners, their objective should be to make it easier for their audience to understand the world. Without a fundamental understanding of neuroscience and how "the" brain effects learning change, educators risk propagating misunderstandings of the world and, by extension, the individuals in that world. Therefore, whether or not educators embrace and incorporate the findings of neuroscience is indeed a difference that makes a difference.

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Module Completion Checklist

- [ ] 1. Did you review the Point of View Survey results, compare them to your own survey, and participate in the Discussion? (50 points)
- [ ] 2. Did you read the explanations about Orientations and Environments and Evaluations, Meanings, and Values?
- [ ] 3. Did you *evaluate your evaluating* by reading about Brain Based Evaluating and Your Inner Interpreter?
- [ ] 4. Did you evaluate your would-be symbol rulers by viewing The Persuaders, Persuade Shoes, and reading about Response Side Semantics?
- [ ] 5. Did you contribute to the Module Discussion? (50 points)
- [ ] 5. Did you submit the Module Assignment? (50 points)

You're almost done!

You're ready to move on to the final module in the course **Review and Reflection**.