A Potpourri -
Attention, Analogy, & Action

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Attention - The Issue(?)

- In previous presentations, I have questioned the usefulness of some terms in common use.
- I have suggested that using nouns like "VISION" and "INTELLIGENCE" can be problematic.
- In general, rather than being things onto themselves, these work better as modifiers. That is:
  - Adjectives such as visual or intelligent, or
  - Adverbs such as visually or intelligently.
- Today I would like to consider ATTENTION

Attention

- When someone asks you to give them your attention, there are a number of questions you might consider asking before complying. For example, you might ask:
  - "What are you going to do with it?" or
  - "What am I going to do without it?" or even
  - "Will you give it back?

Attention

- Sam Levenson
- "Growing up, we were so poor we couldn't even pay attention."

The word play exploits difficulties similar to those presented by "vision" and "intelligence," but the case of "attention" may also help illustrate that there are practical consequences.

Attention

- I am curious about what people here think about "Attention" and ideas connected with it.

- For example:
  - **Attention Deficit**
    - Do we have any way to locate or quantify the 'deficit' that this phrase posits?

Attention

- I am curious about what people here think about Attention and ideas connected with it.

- For example:
  - Attention Deficit
  - **Training Attention**
    - **Effect of Attention Therapy on Reading Comprehension**

      Harold A. Solan; John Shelley-Tremblay; Anthony Ficarra; Michael Silverman; St...Journal of Learning Disabilities; Nov/Dec 2003; 36, 6; ProQuest Medical Library pg. 556

"Effect of Attention Therapy on Reading Comprehension."

- Here is the opening sentence of the article

- "Research on attention has been voluminous, nevertheless, there is no universal agreement on how to define attention or its characteristics." Solan et al., Ibid

Attention

- I am curious about what people here think about Attention and ideas connected with it.

- For example:
  - Attention Deficit
  - Training Visual Attention
  - **Medicating Attention Deficit**
    - How do you feel about this?
    - What is (are) your objection(s)?

Attention

- William James, the pioneering psychologist, wrote in his 1890 opus, *The Principles of Psychology,* that "everyone knows what attention is."

- Despite the fact that everyone knows what it is and that it is generally considered an important element of human behavior, very little progress has been made in actually understanding what attention is.

"There Is No Such Thing as Attention."

- Frontiers in Psychology 2011 – Britt Anderson

- *From <https://psycnet.apa.org/record/2017-40876-001 - Accessed Jan 11, 2020*

- "I argue that our slow progress in understanding attention can be attributed to three sources, two general and one specific."

Attention

- "The fact that many uses of the term *(attention)* are vacuous can be demonstrated by simply deleting the term and seeing whether the explanatory content is significantly reduced."

Example

- "For example, when Treisman (1985) writes: 'Some discriminations appear to be made automatically, without attention and spatially in parallel across the visual field. Other visual operations require focused attention and can be performed only serially.'"

- 'Some discriminations appear to be made automatically, ~~without attention~~ and spatially in parallel across the visual field. Other visual operations ~~require focused attention and~~ can be performed only serially.'"

- Some discriminations appear to be made automatically and spatially in parallel across the visual field. Other visual operations can be performed only serially."

Attention

- "…the references to attention can be struck out without losing any understanding of the empirical results, and their inclusion doesn't deepen our theoretical understanding; clearly something explains the empirical differences, but the word "attention" as used here is just a place holder for that "something.""

False Dichotomies

- "A general fault of psychology is its predilection to binarize empirical phenomena; we try and shoehorn everything into being either this or that. As a result we construct and pursue false dichotomies.

- I was struck by this comment because it seems familiar and similar to a tendency in optometry.

Dichotomies - Psychology

Top-down	Bottom-up
Exogenous	Endogenous
Divided	Focused
Feature	Object
Local	Global
Automatic	Controlled
Voluntary	Involuntary
Non-conscious	Conscious
Peripheral	Central
Intraperceptual	Extraperceptual
Passive	Active
Pre-attentive	Attentive

Optometric Dichotomies (?)

I was struck by this comment because it seems familiar and similar to a tendency in optometry.

- Ventral Stream
- Magno
- Accommodation
- Monocular
- Suppression
- Ambient
- Sight

- Dorsal Stream
- Parvo
- Convergence
- Binocular
- Antisuppression
- Focal
- Vision

False Dichotomies

- "We have a natural impulse to subdivide our observations into binary states. When this designation is done prematurely, we spend time investigating the classification instead of the underlying phenomenon. Further, it hinders us from considering alternatives where a continuous, graded, or fuzzy description would be more accurate."

Reification

- "More importantly, attention has been reified; it is used as a concrete concept that can act in a causal fashion, e.g., "Attention helps optimize the use of our system's limited resources..." (Carrasco, 2009). This logical fallacy leads to misplaced empirical efforts. In fact, attention never causes anything, because there is no such *thing* as attention."

Reification

- The false attribution of causal agency to an abstract concept is known as reification
  - Eg. Love conquers all

- Making qualities into things.
  - Intelligence
  - Vision

Reification

- Attention

  "… more importantly, we have reified attention. The result is research incorrectly focused on explaining attention as a causal agent rather than the more correct conception where attention is seen as a convenient semantic label for a category of experimental result. We need to recognize attention is an effect and not a cause."

Analogies

- Years ago we used a BVP Study Group meeting to discuss some of Douglas Hofstadter's work on analogies from his book <u>Metamagical Themas</u>.

- At the time he was writing, Ronald Reagan was the President of the United States.

- Hofstadter began with asking, "Who is the 'First Lady' of the United States?"

- As the wife of the President of the United States, Nancy Reagan occupied the position of "First Lady."

Analogies

- So, his next question was, "Who is the 'First Lady' of Great Britain?"
- Although they are not exactly the same, the position of Prime Minister of Great Britain might be seen as analogous to the position of President of the United States.
- With Margaret Thatcher as the Prime Minister of Great Britain, the 'First Lady' of Great Britain might be …
- Denis Thatcher – no transgender issues implied

Analogies

- Moving from the specific to something more general, Hofstadter goes on to set up a simple scenario that he could exploit to consider how analogies might slip and stretch.

- The basic scheme is this:

 If *abc changes* to *abd,* what does *pqrs change to*?

- He then begins stretching and slipping this in various ways.

- We don't have the time or the means to go through this in all its permutations, but there are a couple that are germane to some things I see in VT.

Analogies

If	then
•*abc* goes to *abd*	•*pqrs* goes to what? (possibly) ***pqrt***
•abc goes to abe	•*pqrs* goes to what? (possibly) ***pqru***

Analogies

- I think that most people can easily grasp the *rule* that governs the first transformation, and they can take the second transformations in stride, because the transformation in the second example is analogous to the first example, but what if we push it a little further

What about:

If

then

- *abc* goes to *abn*

- *pqrs* goes to ????

Aesthetics

- While the first two examples could be easily accommodated, this third one is more cumbersome. With 10 letters between **C** and **N** there is not the same affinity as between **C** and **D** or E.

- Besides where does an eleven letter jump from **T** take us?

- It might just be more pleasing to follow a new rule that changes the last letter to an **N**

- **pqrn**

What about:

If

•*abc* goes to *abd*

then

•xyz goes to ???

wyz

What about this possibility:

If   then

- *abc* goes to *abd*   - *pqrs* goes to ***dddd***

Survival Value (?)

- Hofstadter makes the point that if someone naturally feels that **dddd** is the best solution that it indicates a difficulty with grasping some basic essence of analogy, and

- that this difficulty will create problems for that individual in dealing with many of the types of problems that life and survival present.

Analogies

- When I project a shape on a chalkboard and ask someone to reproduce it – same size, same shape, and same place – in a sense, I'm really asking them to create a "visual" analogy.

"I have taken this space and structured it with this shape. What does it look like when you try to structure your space in the same way?"

It's important to recognize that in observing the results, I need to be aware of "all" the tools they bring to the task.

Visual Analogy 1a
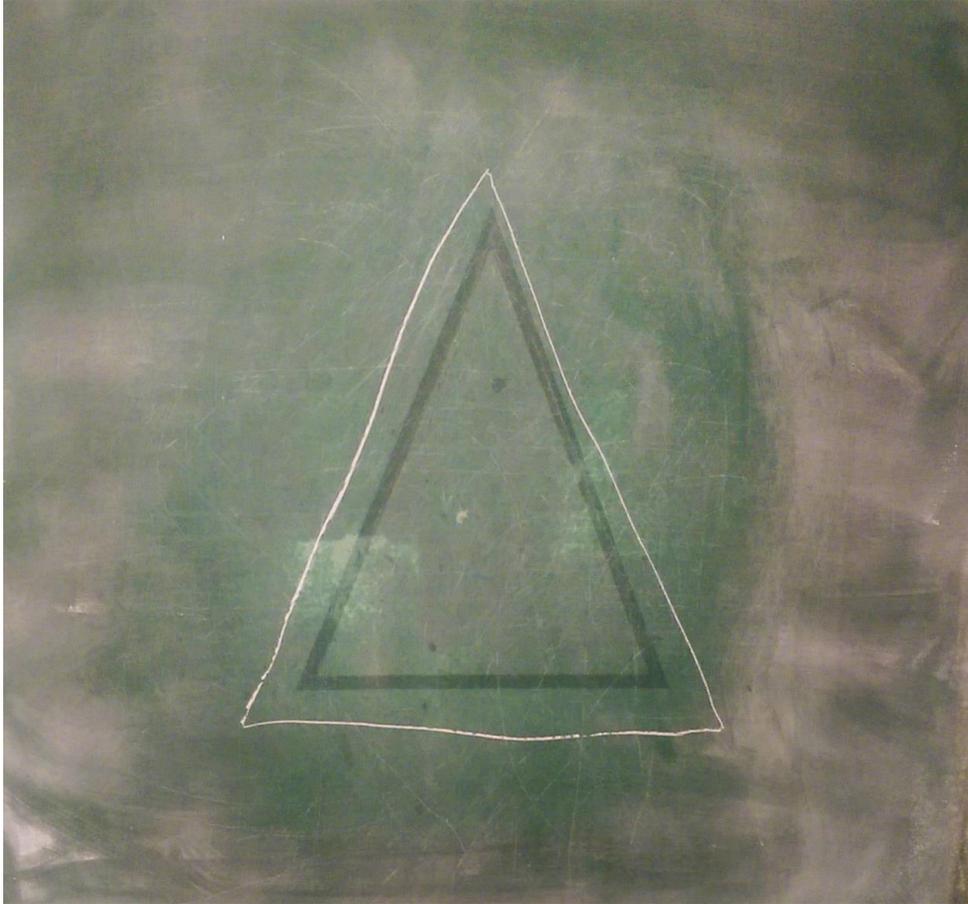
- What do you think about this one?

Visual Analogy 1b
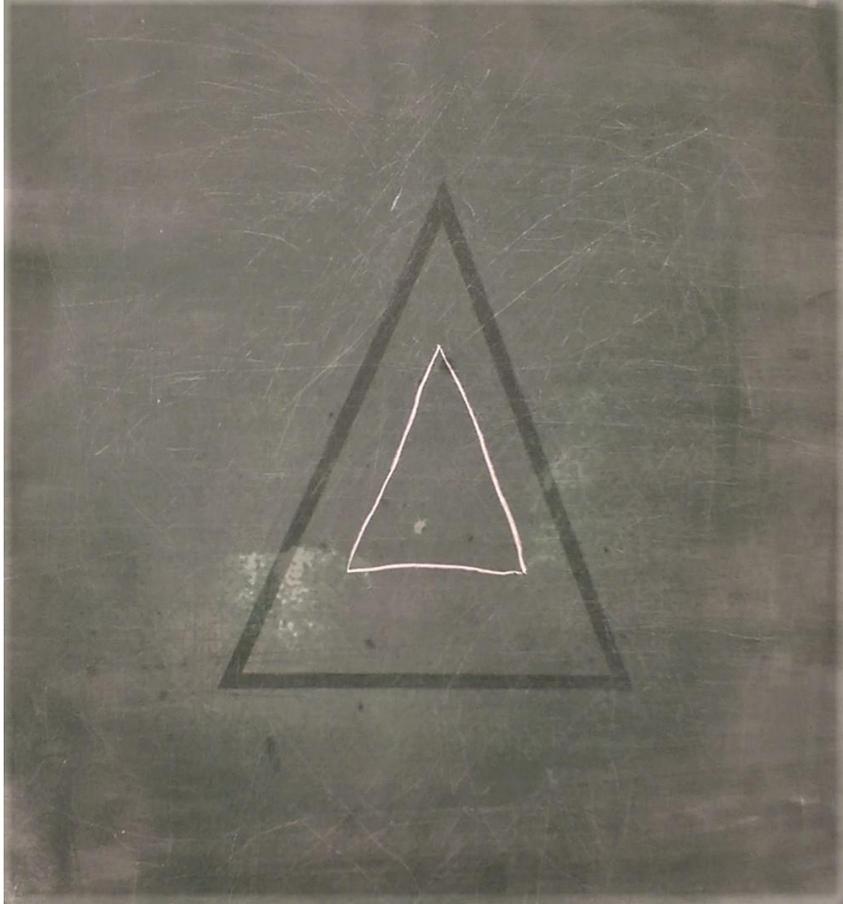
- What is your reaction to this one?

- How do you react to the difference between this one and the previous one? Is one "preferable?"

Visual Analogy 1c
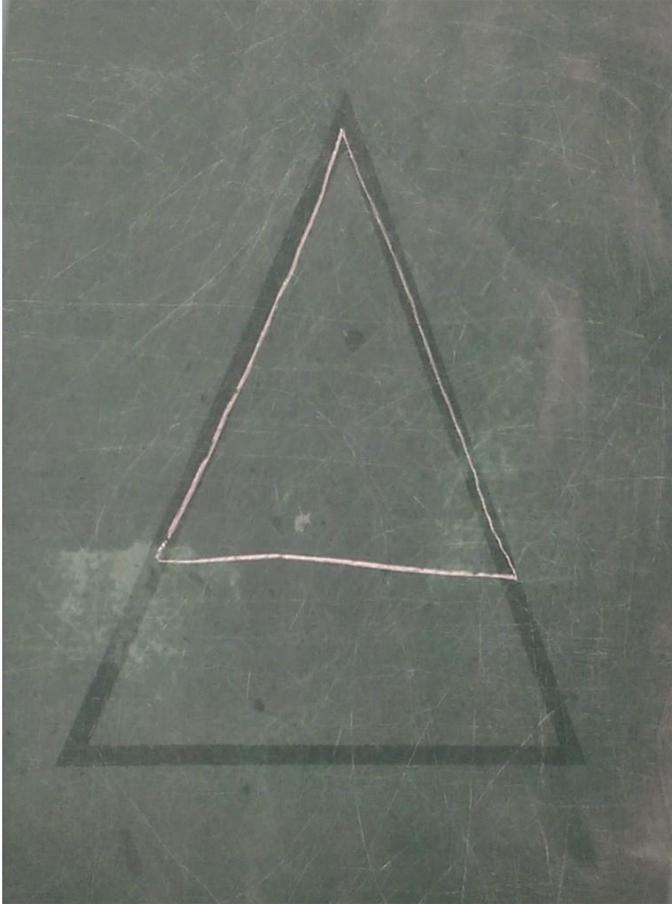
- Here's another.

- Does the "smallness" in this one go in a different direction from the 'smallness" in the previous one?

Visual Analogy 1d
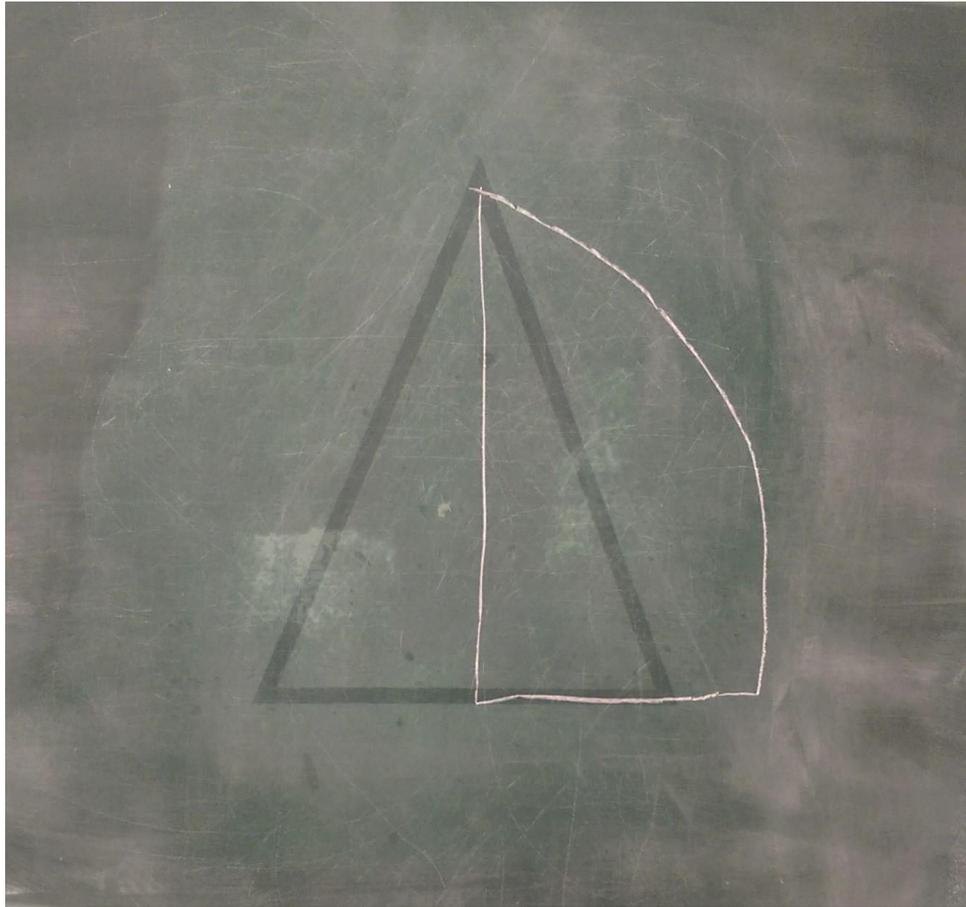
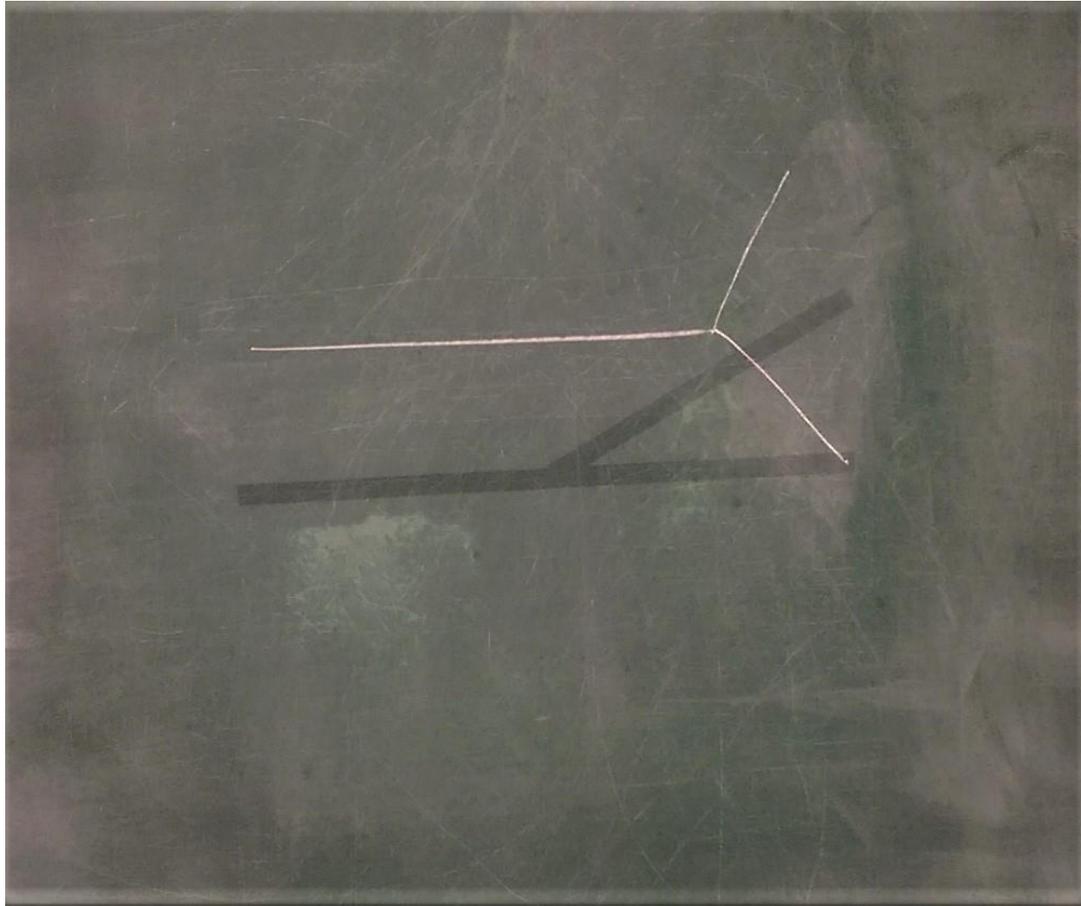- "Good" or "Bad?"

- "So, how does it look?"
- "Good."
- "Why?"

Visual Analogy 1e
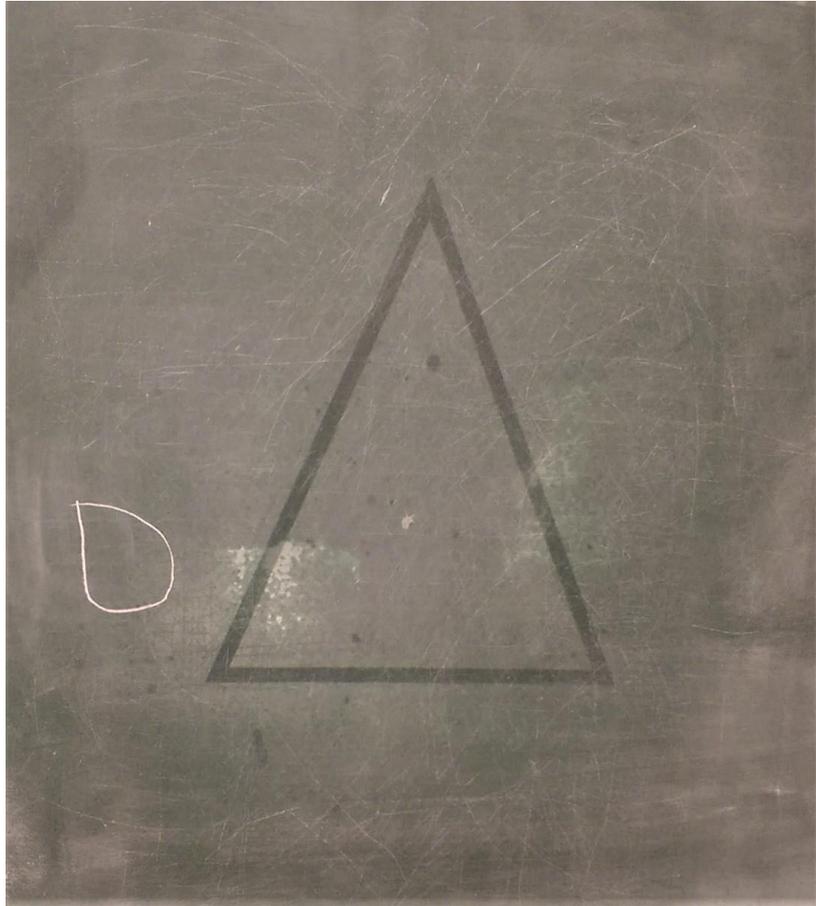
- And another.

- Is this "smallness" the same as the others?
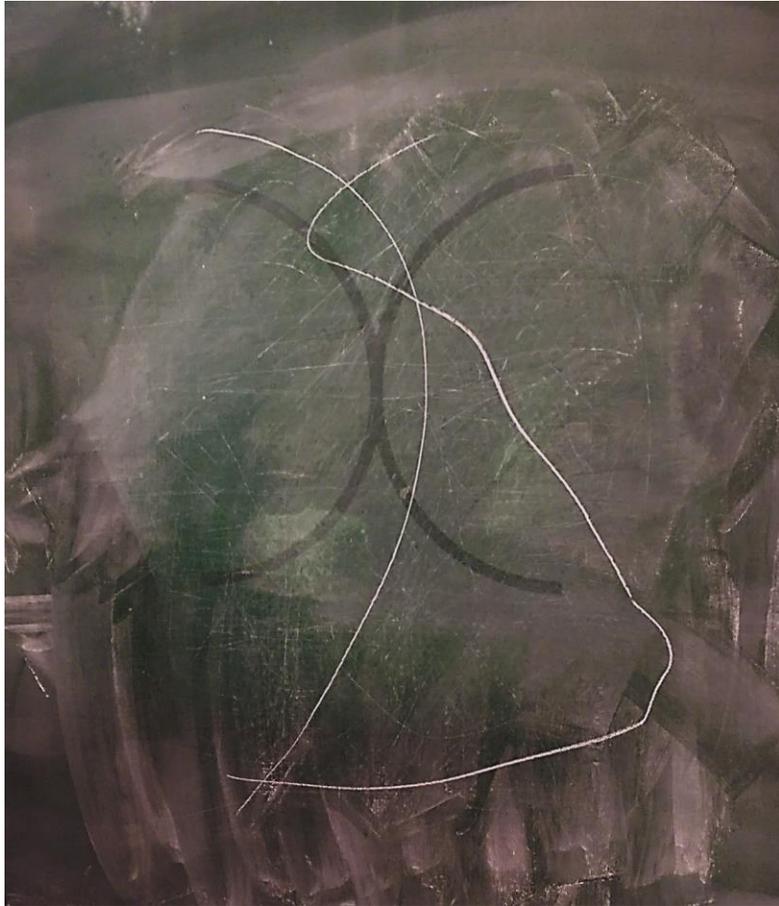
Visual Analogy 2a

- Fairly common attempt.

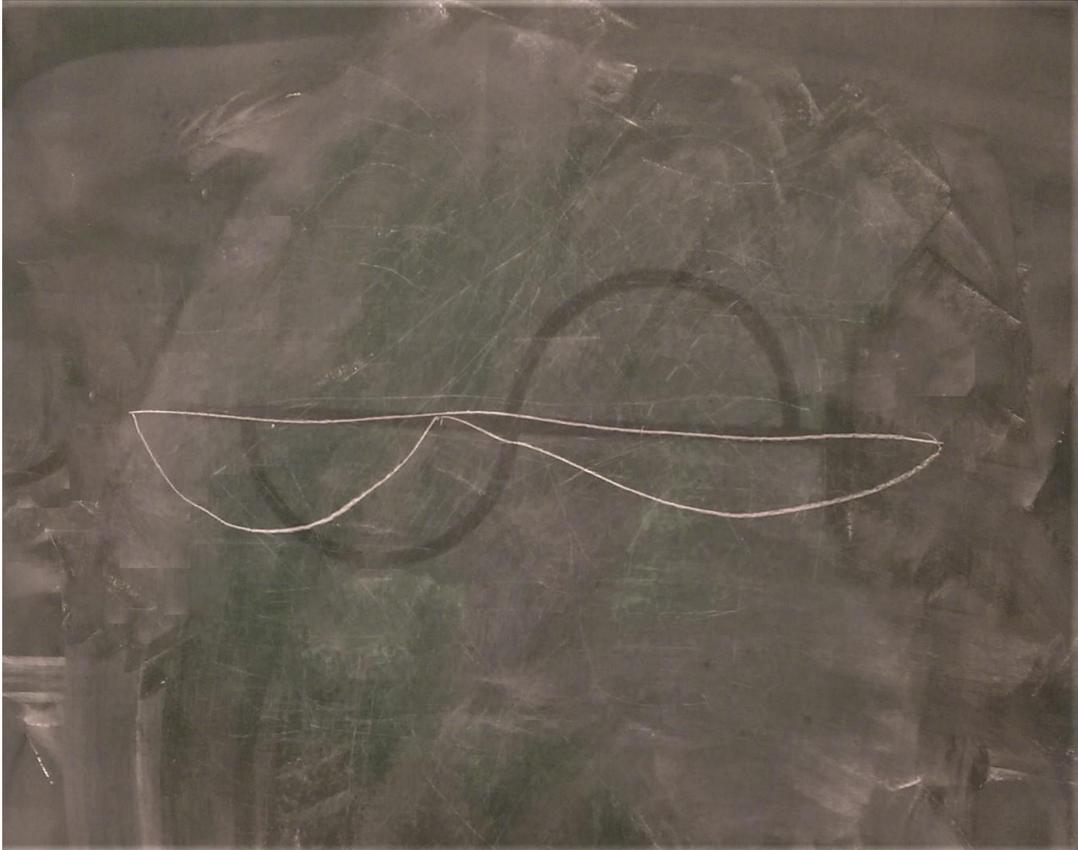- A competition between "weight" and "middle."

Visual Analogy 2b

- Frequently enough.

- Is this difference the same difference as the previous one or does it suggest a different direction?
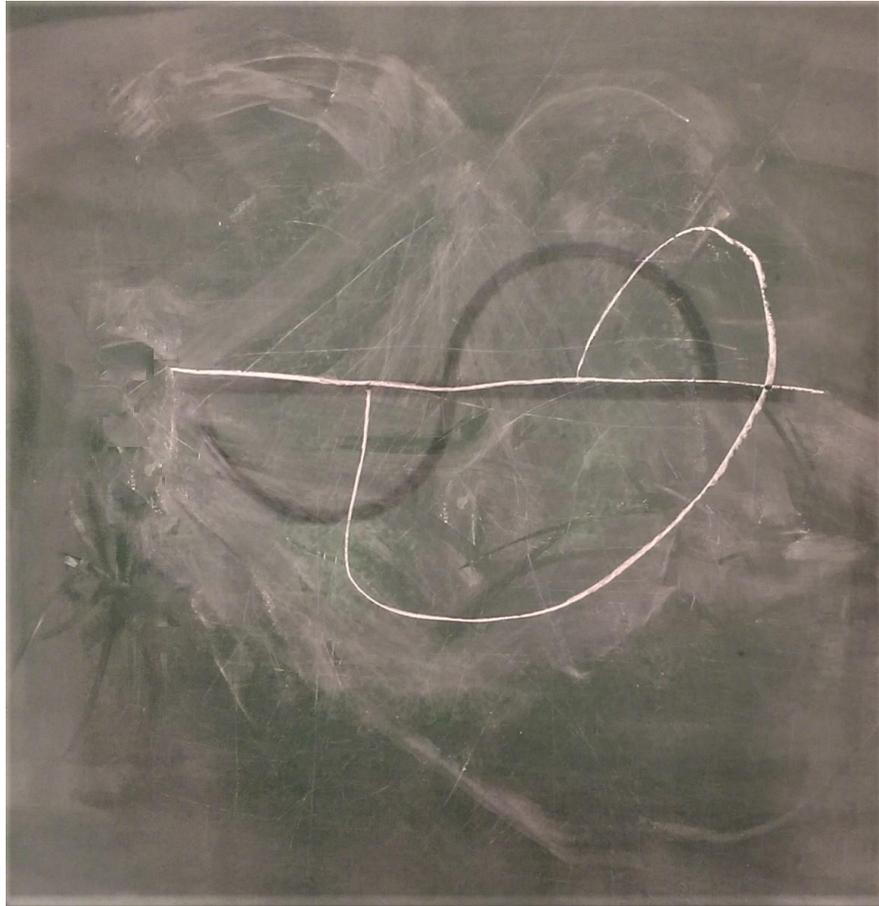
Visual Analogy 3

- What do you do with this one?
- Left side done first with the right hand.
- She structures the field and then gets lost on how to do the reverse.
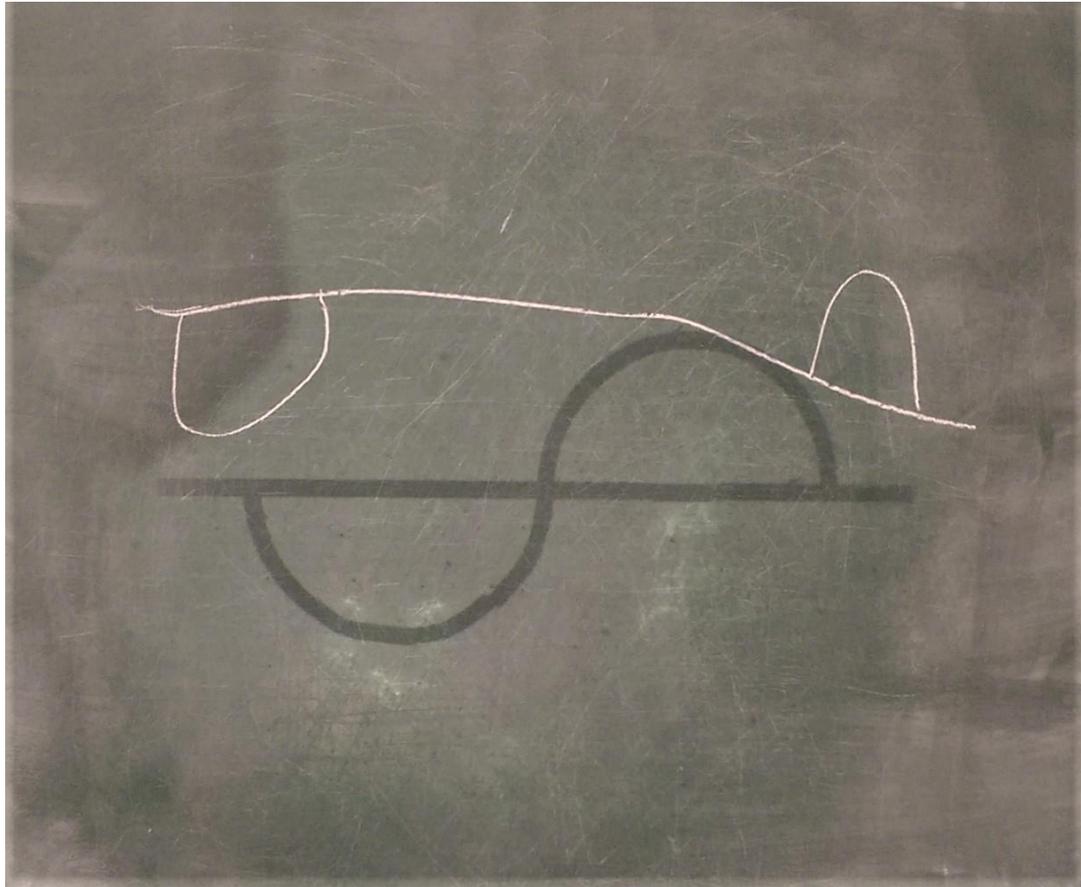- Age?

Visual Analogy 4a

- In process.

- Another reversal problem

Visual Analogy 4b

- "Where do I begin and where do I look?"
- "What kind of volume can I organize?"

Visual Analogy 4c

- What does seeing in pieces look like?

????

- Where do you start?

Analogy (?)

- "How do they look?"
- "Bad."
- "Why?"

Action

- We work too hard at seeing vision in its pieces rather than seeing it expressed in its natural environment - action.

The End

Thank You