

# A Tale of Two Hemis – One Right, One Left.

Gregory Kitchener, O.D.

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# Left Hemianopsia

- **Matt**

- Surgical removal of right temporal lobe tumor.
- Right optic nerve cut resulting in Left Hemianopsia
- Condition is long-standing. Patient complains of various spatial difficulties.
- Reluctantly decided to try VT

# Right Hemianopsia

- **Walt**

- Suffered a stroke and surgery for a fistula resulting in a right hemianopsia
- Variety of complaints regarding walking, balance, and reading.
- VT suggested as a possibility when he had “plateaued” in OT, PT, and S/LT.

# Current Situation

- Both men come in for weekly VT.
- Limited number of procedures.
  - Matt because he talks too much
  - Walt because he tends to move too slowly
- Procedures
  - Rotations and Fixations
  - Stick and Straw
  - Form Tach
  - Number Tach
  - Walking Rail (with yoked prisms)

# Goals of This Presentation

- Consider the unique circumstances these patients present in typical VT activities.
- Consider approaches to these VT activities.
- Describe interesting patterns of responses manifest by these two hemianopic patients in their VT procedures.

# Rotations and Fixations

- Full range of movement.
- Tracking is pretty good.
- Matt can start to converge in down gaze. Walt does much better.
- Locating the fixation target in the blind field is interesting.
  - I try to be pretty consistent so that they have at least some idea (some predictability) of where the target will be.
  - Still, looking into the blindfield is almost always at least two moves.
- They do get doubling with the vertical dissociating prisms and they are now often asking me to slow down to be sure that they see both.

# Stick and Straw

- This can really try everyone's patience.
- Initially, hitting the straw was pretty much a chance event, especially for Matt. (He could miss the straw by four to five inches, and could manage to stab my hand with the stick.)
- Walt was always closer and is doing much better now.
- Matt is doing better, but it is very difficult, It is better in downgaze where he gets some convergence now.

# Walking Rail (w. Yoked Prisms)

- Look where you are going!
- Matt always talks about “cheating.” I find his descriptions of “cheating” humorous. Mostly, they are about getting on the rail. He will talk about about how it is cheating to look in the mirror when getting on the rail.
- So, I will tell him to go ahead and cheat. What is interesting is that he will ignore the information available in the mirror and, with the lateral prisms on, align himself to the side of the rail.
- I have to get him to slow down and see that his mirror image is not aligned with the mirror image of the rail.



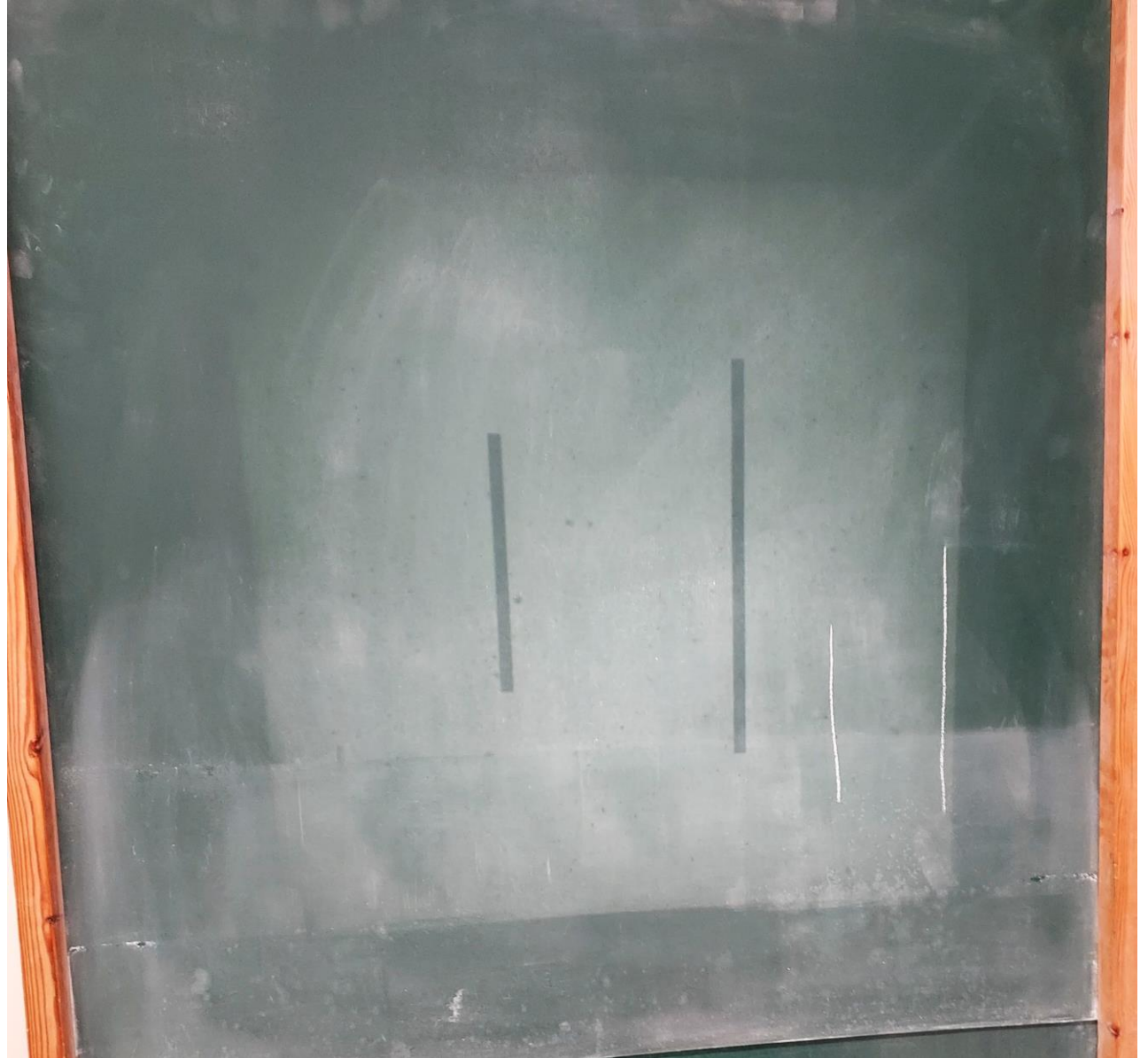
# Walking Rail (w. Yoked Prisms)

- Matt would always take an extra large initial step, which would make his balance precarious as he started the second step.
- We have been able to get that initial step to be more normal and the rest starts to follow.
- Walt looks better, but is too constrained, making for a lot of work. He tires himself out.
- I have not seen any particular performance differences between base right and base left prisms that I would attribute to the hemianopsias.

# Form (or Board) Tach Procedure



Left Hemi

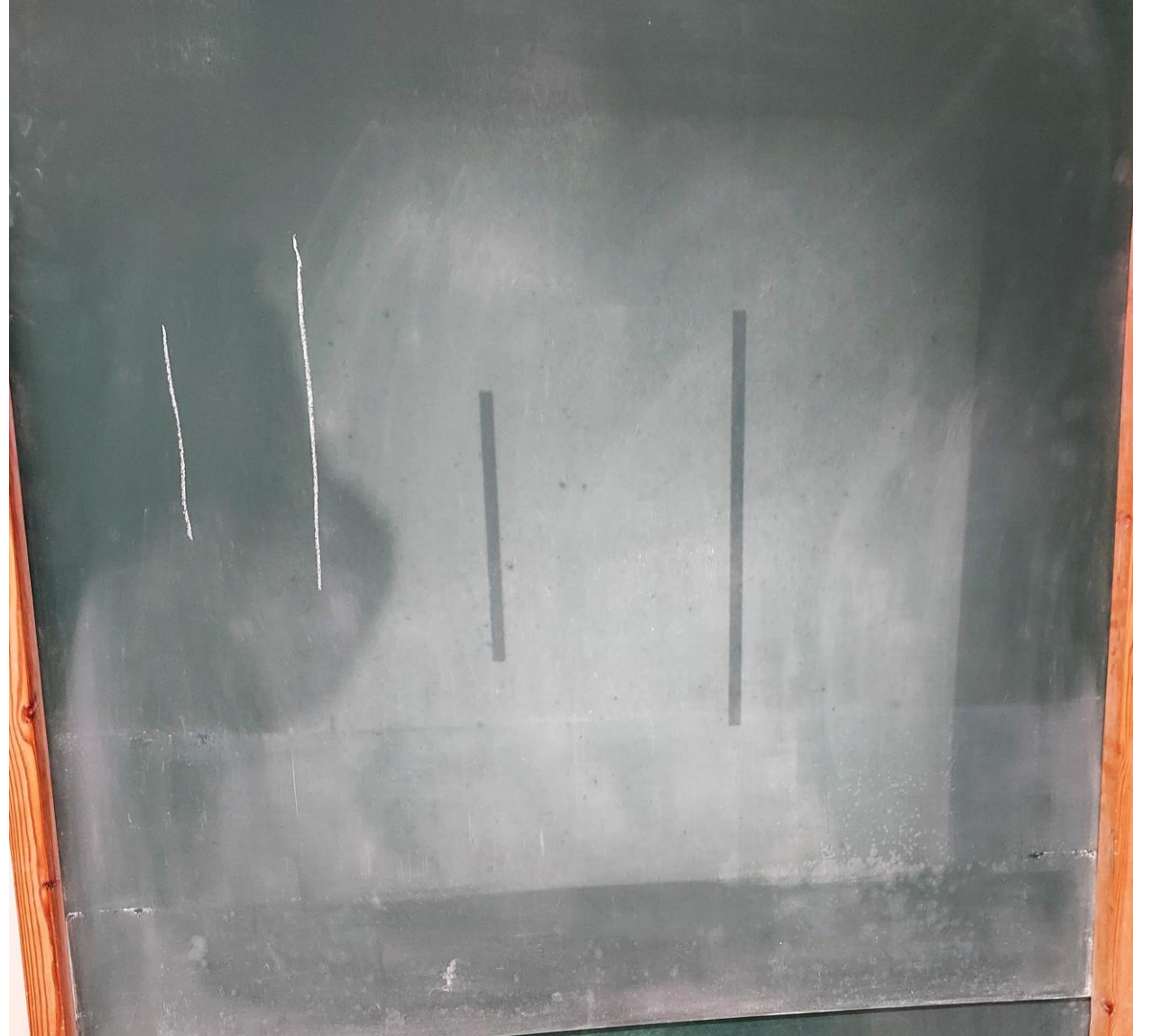


# Left Neglect/Inattention?

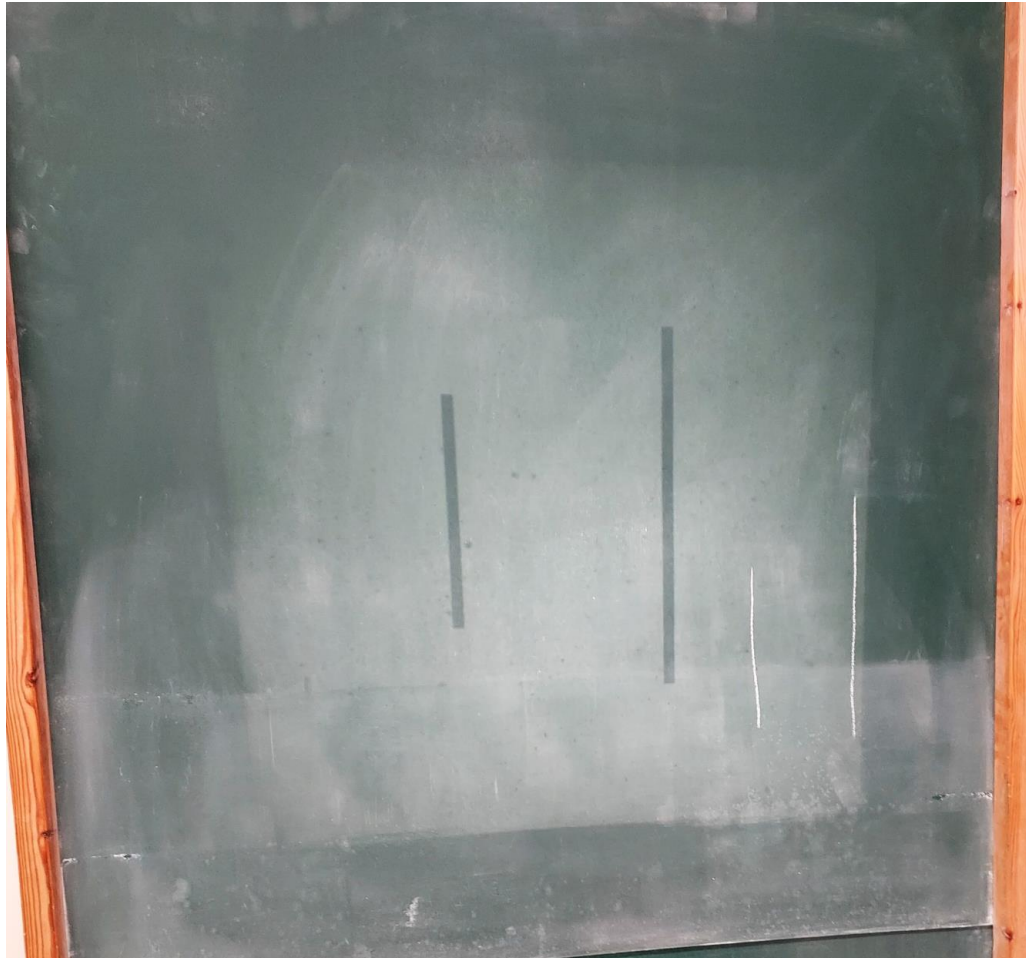
- This seems to me to be a form neglect/inattention
- Left inattention/neglect is a result of a lesion on the right side of the brain causing a left hemianopsia.
- Neglect/inattention is almost always of the left side.
- Right side inattention/neglect is reportedly rare.

# Right neglect/inattention

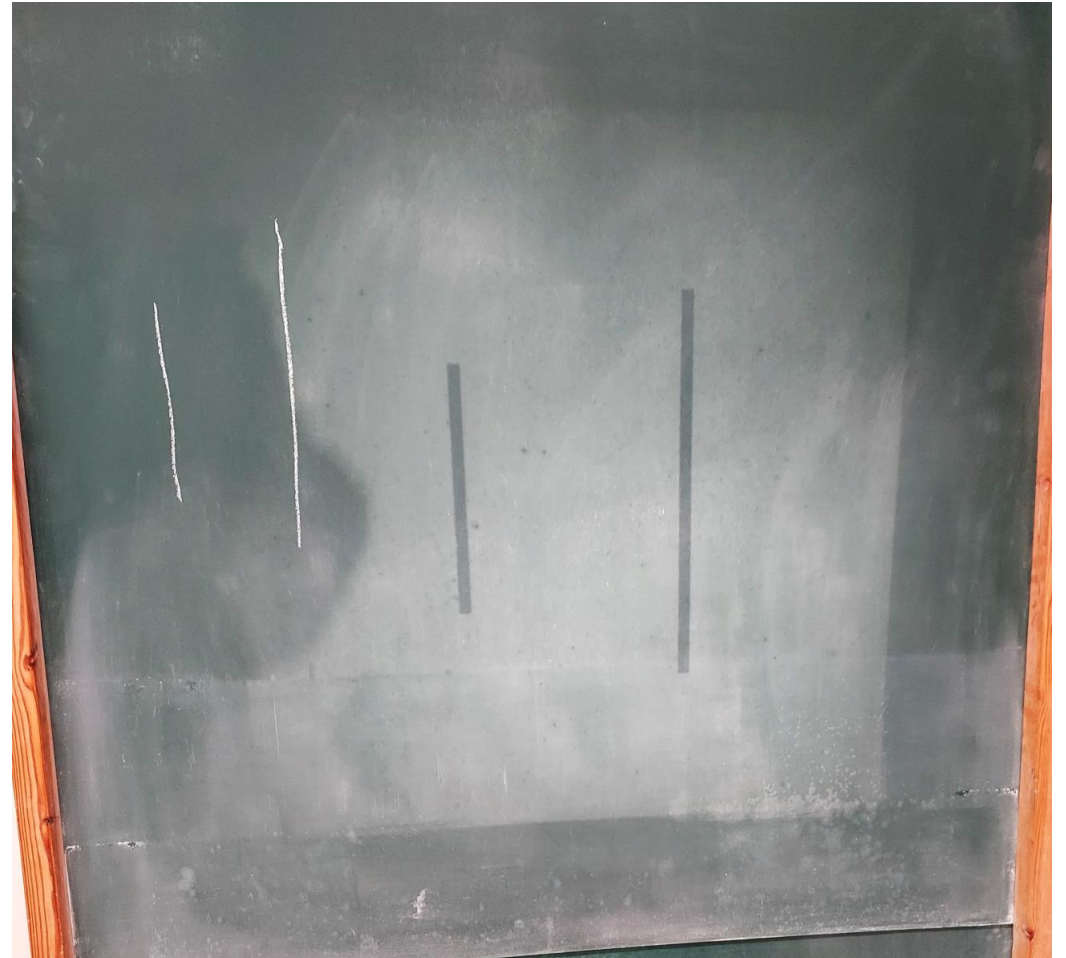
- Rare? Or is it?
- These two are such delightful “mirror images” that it really makes me wonder.



**Left Hemi**



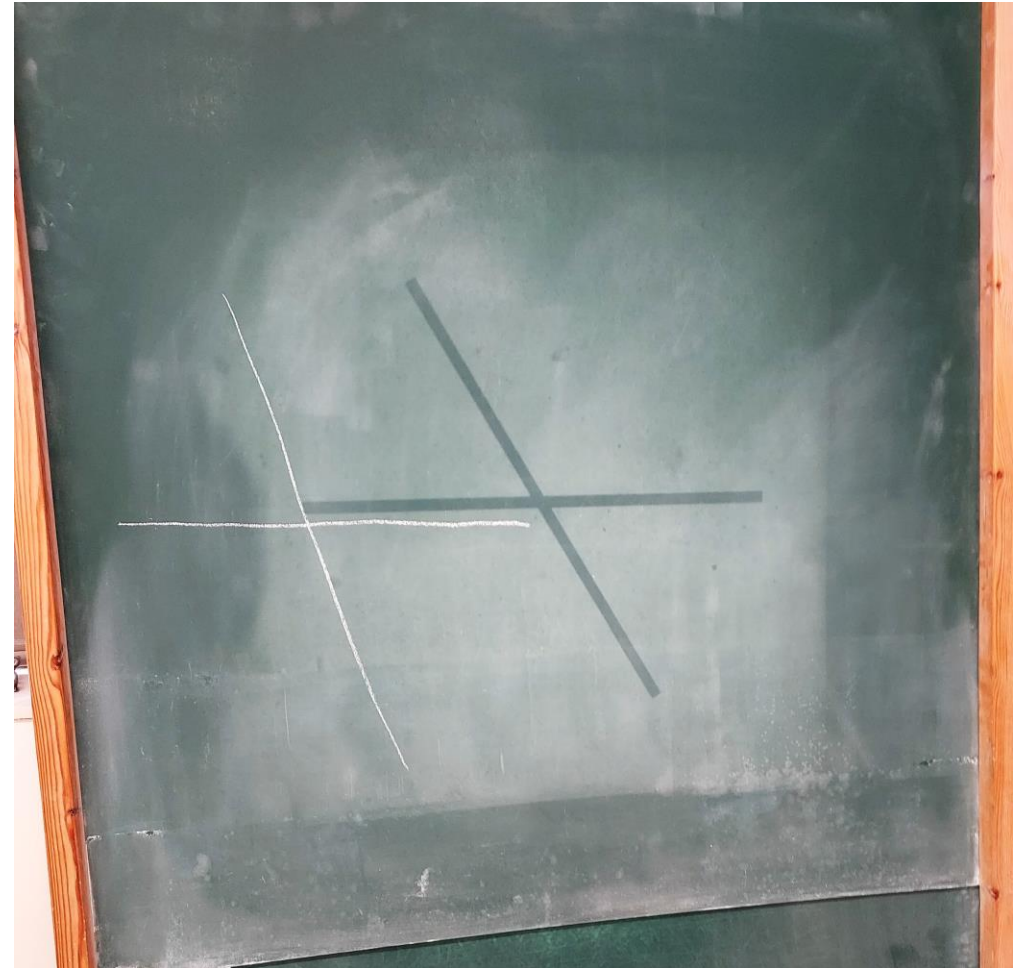
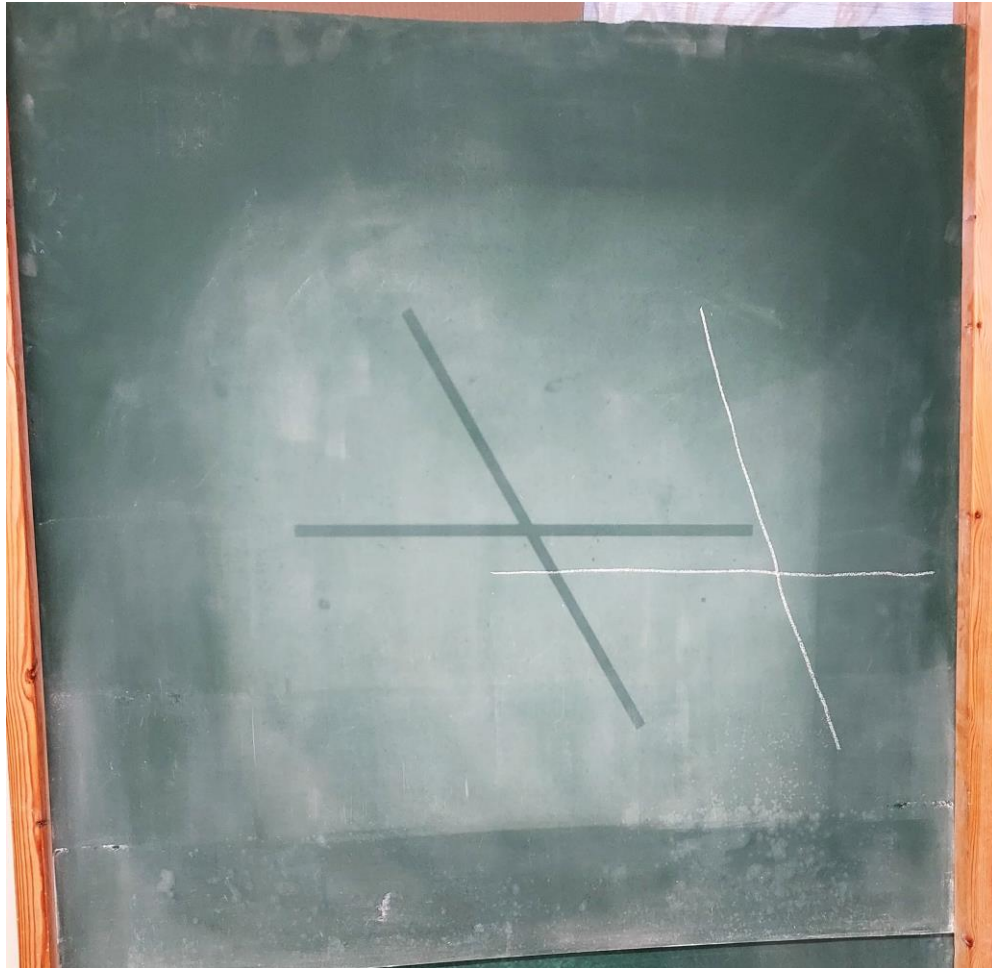
**Right Hemi**



# Neglect/Inattention?

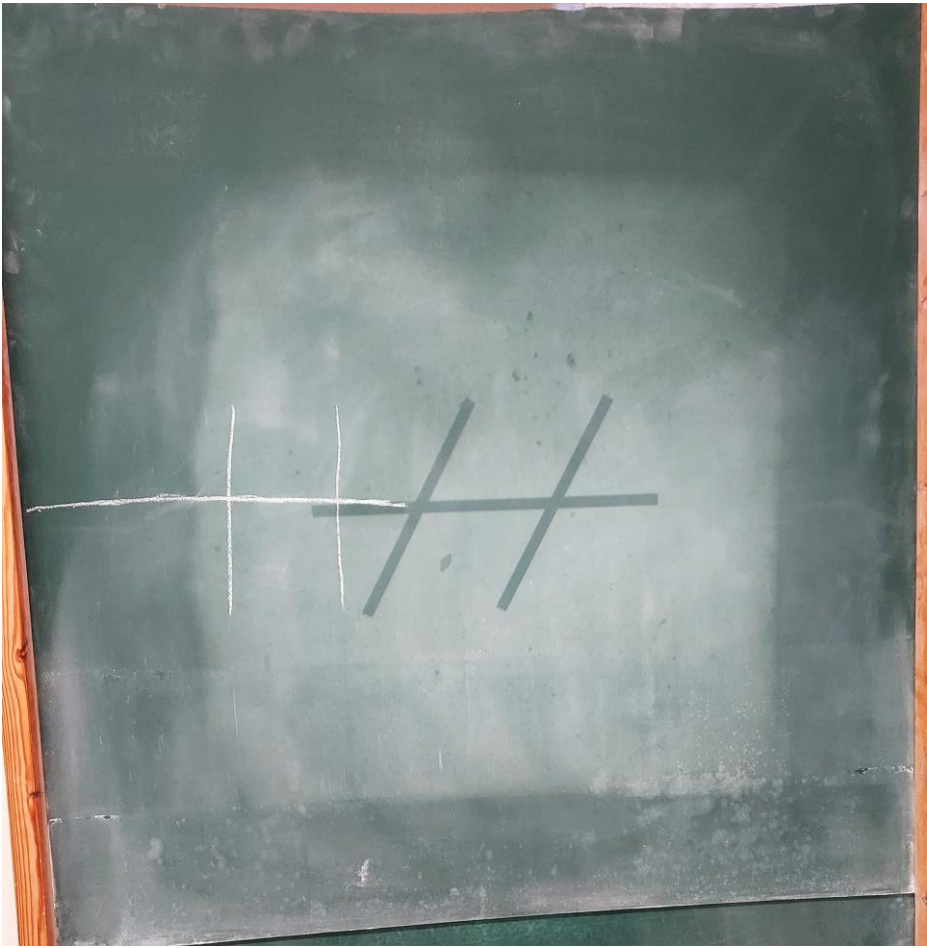
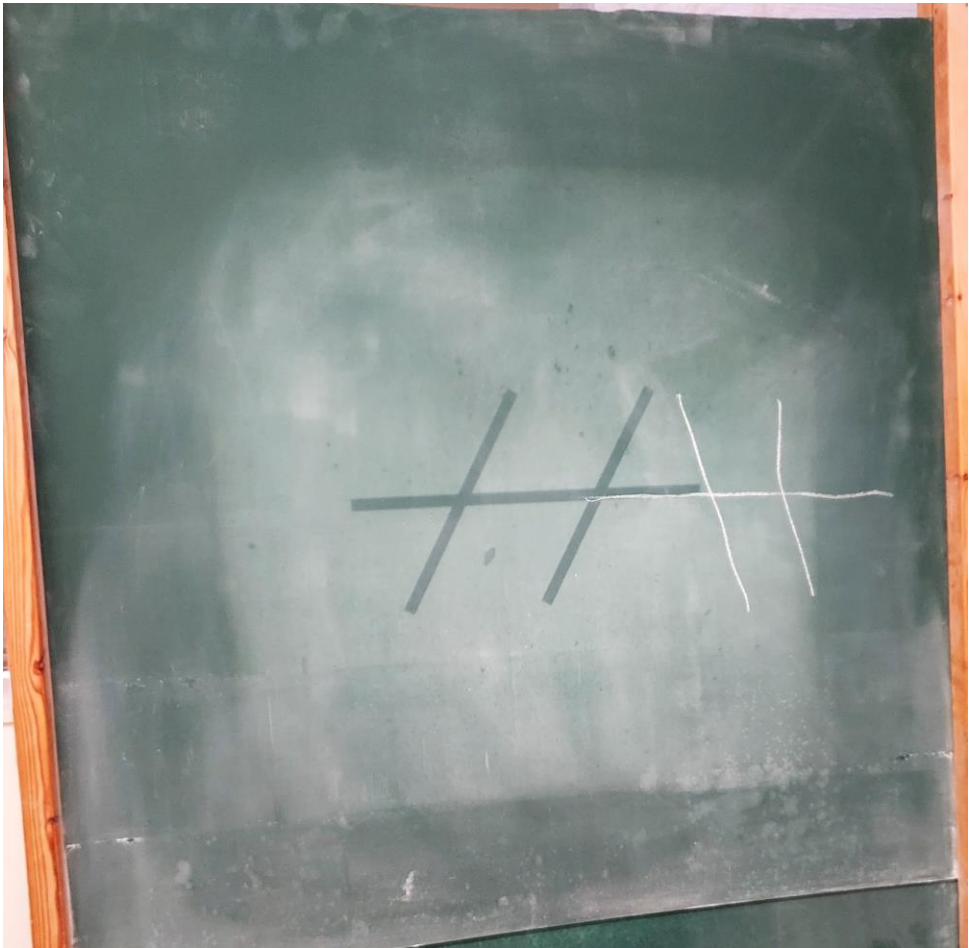
- The task instructions are to reproduce the size, shape, and placement of the form that is presented.
- Both patients did a reasonable job of reproducing the shapes. Both tended to be a little small. Placement was significantly off – away from the lost field.

Here are some more...





And some more...



# What is this?

- It's very persistent.
- Sometimes they are aware of it being off, but mostly, not so much.
- Early on, it seemed like it was much easier for them to assume that I had moved the shape after showing it to them.
- Later on (as trust developed) they would believe that I had not moved it, but
- they were powerless to change it.
- Would you approach this issue? How?

# Some observations that might provide direction.

- Neither one of them stood in the middle of the board when making their drawing.
- Each of them positioned himself toward their sighted field, regardless of which hand they were using.
- When I merely suggested that they stand in the middle of the board, they didn't (couldn't?).
- If I told them that they were not in the middle, they assured me that they were.
- Now what?

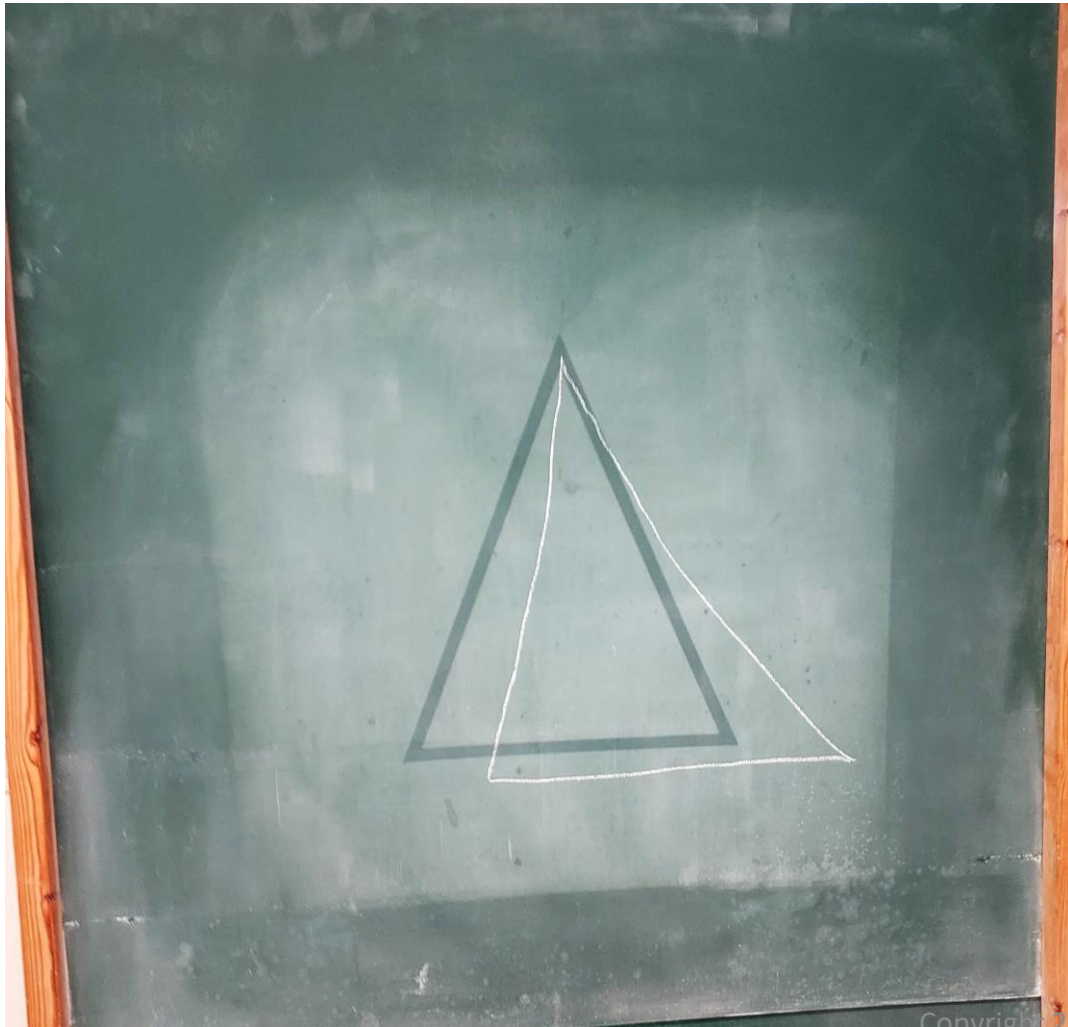
- I began having them extend their arms to the sides and touch the 2 sides of the board at the same time. Luckily, they were able to tell that one side was extended more than the other and able to move their body to the middle so that both arms were extended equally.



# Success?

- No!
  - They still drew the form off to the side.
  - But I was happy that we now had a better starting point. (And they trusted me a little more.)
- Now, I had to get them to look straight ahead – to the middle of the board and then to look where they were going.
- A triangle seemed a reasonable shape to work on it.

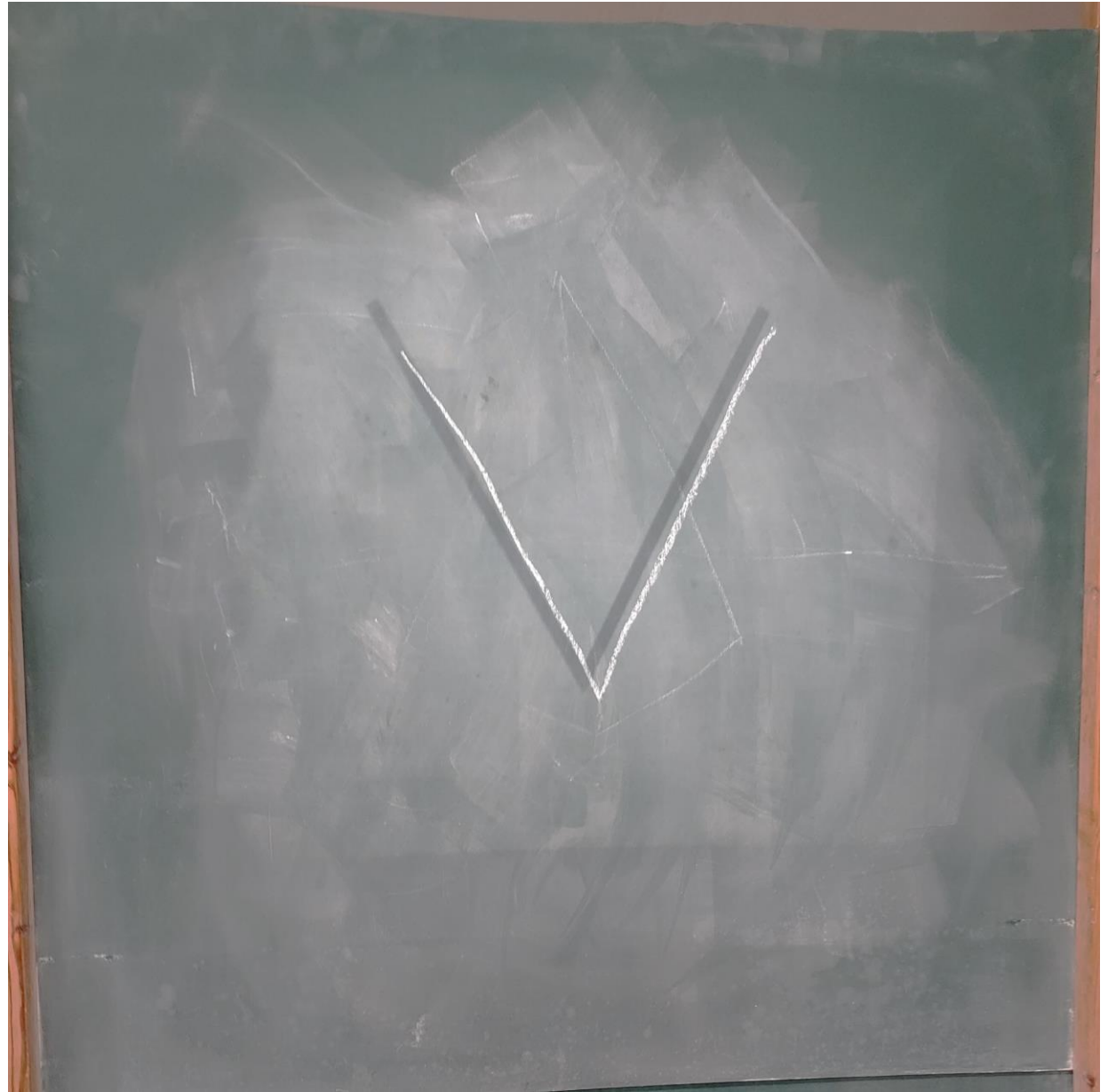
Here are some samples...



# Please understand...

- There has been a lot of “weeping and gnashing of teeth” (figuratively, not literally) to get to this point with each of them.
- This sense of the space out there, their own space, and how the two align has been seriously disrupted by their injuries. A large part of the mechanism that should integrate these has been permanently damaged.
- Walt’s comment.....

Last Tuesday  
Walt –  
without any  
prompting at  
all, totally on  
his own.





# Digit Tach – Right Hemi

- As you might guess, our right hemi, Walt, has some speech difficulties.
- Speech, naming symbols (letters and numbers), and word finding have been issues.
- Conversations were very limited, but he tried.
- Now, I am asking him to report a string of digits he saw only briefly.

# Digit Tach – Left Hemi

- Matt, our left hemi, has no problem talking. You, and his wife, might say that he talks too much and may be a little uninhibited.
- At first, Matt could report 3 digit numbers, but with poor accuracy.
- He did not want to say a number if he wasn't sure.
- He did not want to make a mistake and felt it was another form of cheating if he just said a number of which he wasn't certain.
- Now, Matt is working on 5 digits. It is interesting that even when he is not always accurate, he fairly consistently reacts when I add a number, eg. When I change from 4 to 5 digits.
- Matt's comment...

# Walt (Right Hemi) and Digit Tach

- Walt has struggled with Digit Tach.
- Initially, getting any consistent response was a struggle. He would spend so much time and effort trying to “think” about it that he would forget anything he might have seen.
- He can now report 3 and 4 digits fairly consistently. I said “report.” I did not say “accurately.” I typically have to work hard to find a pattern of correspondence between his report and the numbers he was shown.
- He has taken to drawing the numbers with his finger while he says them. For now, I will let that be.

# Comments

- I like to think that the person functions as a whole, even the damaged individual.
- The VT procedures provide a stage I have organized for the patient to perform.
- That performance helps me to see where they are – a starting point.
- The direction I want to move is toward normal – as best I understand that.
- Even with half the visual field missing, the visual process must still direct action over the whole of the individual's ecology.

# Comments

- The hemianopic patient presents some interesting problems:
  - An altered visual space
  - An altered body space
  - A lack of integration of the two.

# Progress???

- Based on his progress, Walt has qualified for more Occupational and Speech/Language Therapies.
- His conversations are much more facile and purposeful.
- Walking and balance have improved.
- The possibility of reading again is beginning to open.

# Progress???

- Matt is doing better with reading and although he's unlikely to read a book for pleasure, he can read for information.
- He has fewer spatial complaints.
- Matt has lived with his damage for a long time and is very grateful that the tumor has not returned, but his relationship to the damage from the surgery is still uncomfortable.
- He is better able to tolerate errors, but still tries to avoid them rather than use them to learn.
- He is stubborn, but grudgingly doing better.

# The End

Thank you for the privilege of your attention.



# Question

- How would you describe your use of specific principles, derived from your understanding of the visual process, which guide your structuring and interaction within the VT ecology?