

**Depends on How You Look at
it.**

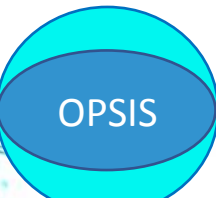
The logo consists of a large cyan circle with a dark blue horizontal oval inside it. The word "OP SIS" is written in white, uppercase letters within the dark blue oval.

OP SIS

The Premise

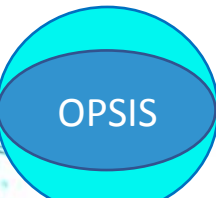
What I have come to realize is that no matter the theory, or no matter the supposed understanding of parts, we must first understand that the organism behaves to act within the environment on the environment.

Anatomy, psychology, etc., must be understood in that context.



The Premise

Any deviation from that ground leads to misunderstandings—often misunderstandings that seem to be, and indeed, may be useful initially, but that eventually, and often quickly, succumb to the physical principle of sensitive dependence on initial conditions.

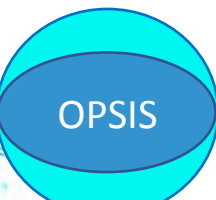


The Premise

Small inaccuracies nearer to the beginning of understandings may lead to enormous, potentially fatal misunderstandings down the road.

For example, the AC/A based understandings that date from Sheard in the 1920s are pervasive throughout visual science.

They are not mere errors of approximation, but potentially fatal errors in our understanding of the visual process leading to distortions whenever applied.

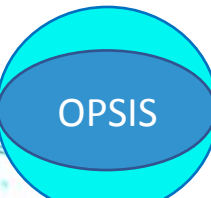


What is Vision?



...characteristically the human being is born with a gene matrix for his physical development. By physical I mean bone, organs, venous system, arterial system, ultimate construction of brain, myelination of nerves, all of which is sheer growth. Beyond that, anything that he does as a human being is acquired as the result of behavior. He starts out, fundamentally, by motion.

From Functional Optometric Philosophy



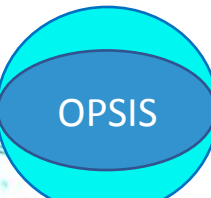
What is Vision?

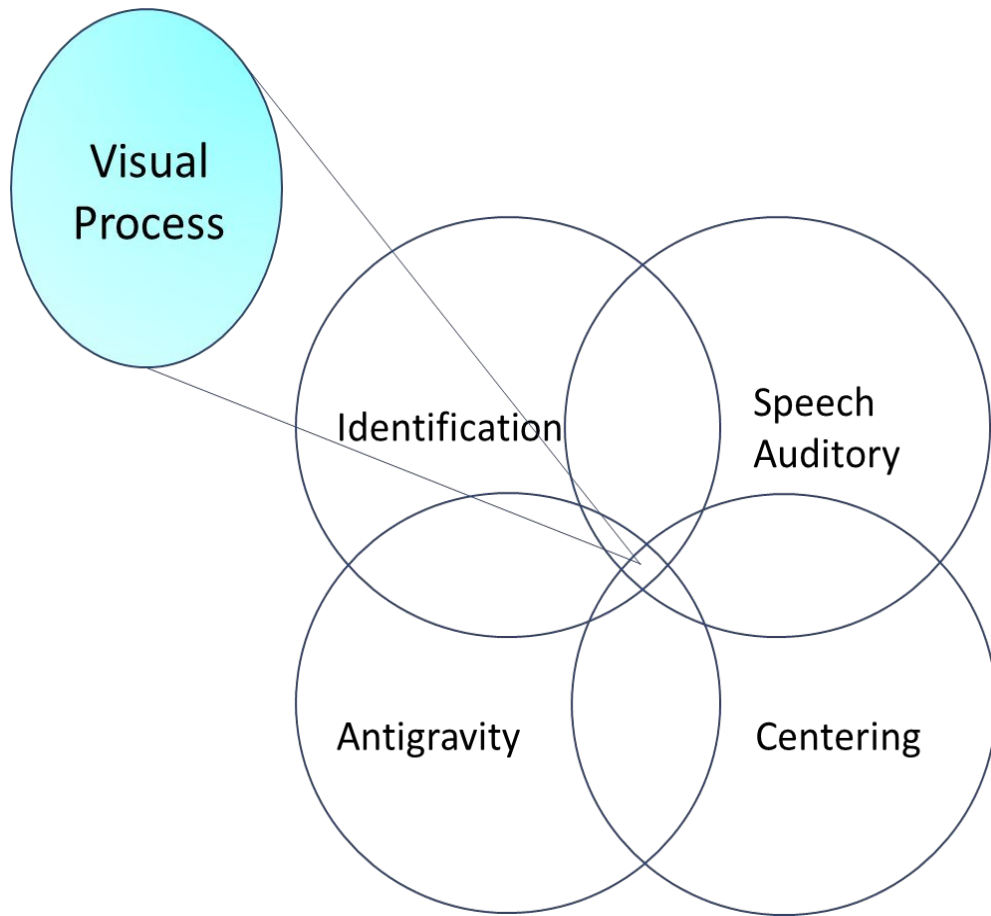


The fundamental reason for having vision is that a person can get meaning out of the world that he must inhabit. He must know what things are, whether they are good for him or not good for him, how he can find them, how he can pursue them, where they are in relationship to himself and everything else.

A.M. Skeffington

From Functional Optometric Philosophy

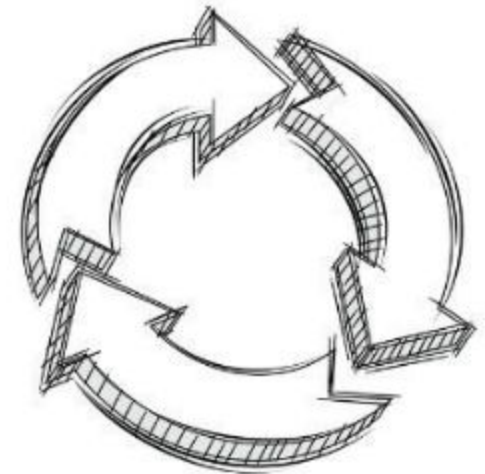




- Anything acquired as a human being is the result of behavior.
- The fundamental reason for having vision is... meaning.
- The human being must know what things are, whether they are good or not good, how to find them, how to pursue them, where they are in relationship to the self and everything else.
- Centering is selection and awareness of the volume of space within which one chooses to act, and an understanding of the relationships between everything within that volume including the self.

Binocularity and Development

- The basis of visual development is the ability to successfully direct movement; and the outcome of movement is the basis for successful visual development.
- In order to move with intention, it is necessary that we develop an understanding of space.
- To understand space we must experience the volume of space through movement.

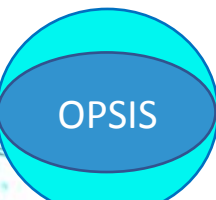


Posture

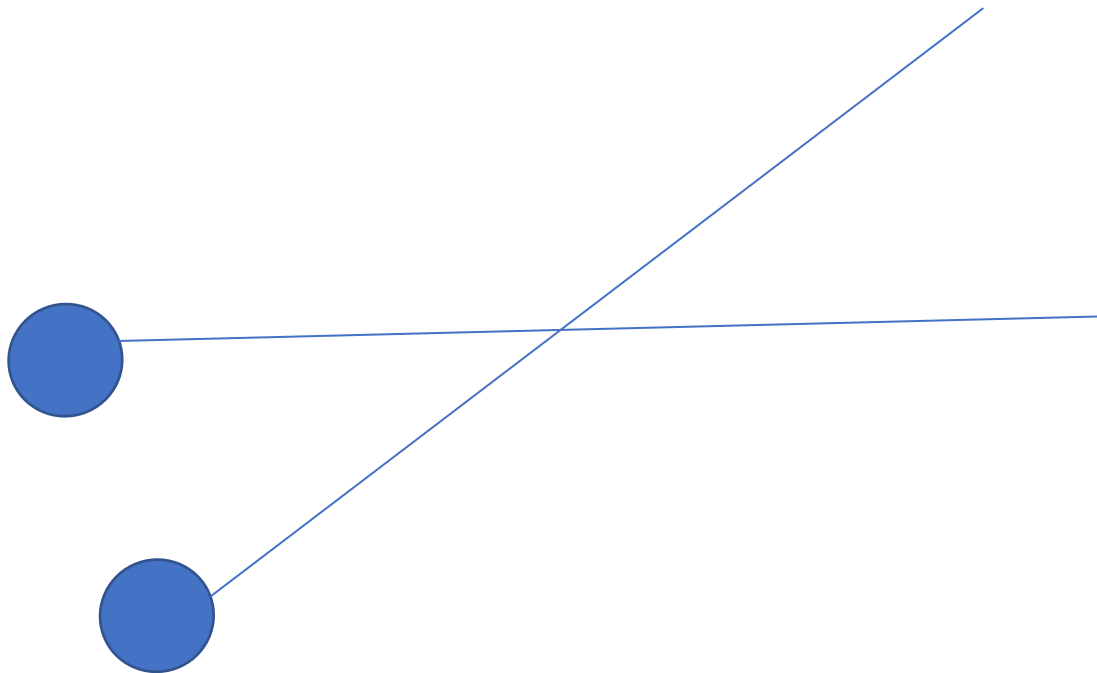
- Posture is a relatively stable configuration (arrangement of parts) from which movements proceed and to which they tend to return.

Greg Kitchener 2022

- It is also useful to think of posture as the mental set or expectation accompanying the biological arrangement of parts.



Fredrick Brock



“Binocular posture is the ability to maintain such relative eye positions in anticipation of a certain visual task that both eyes directly fixate a single object of special regard...”

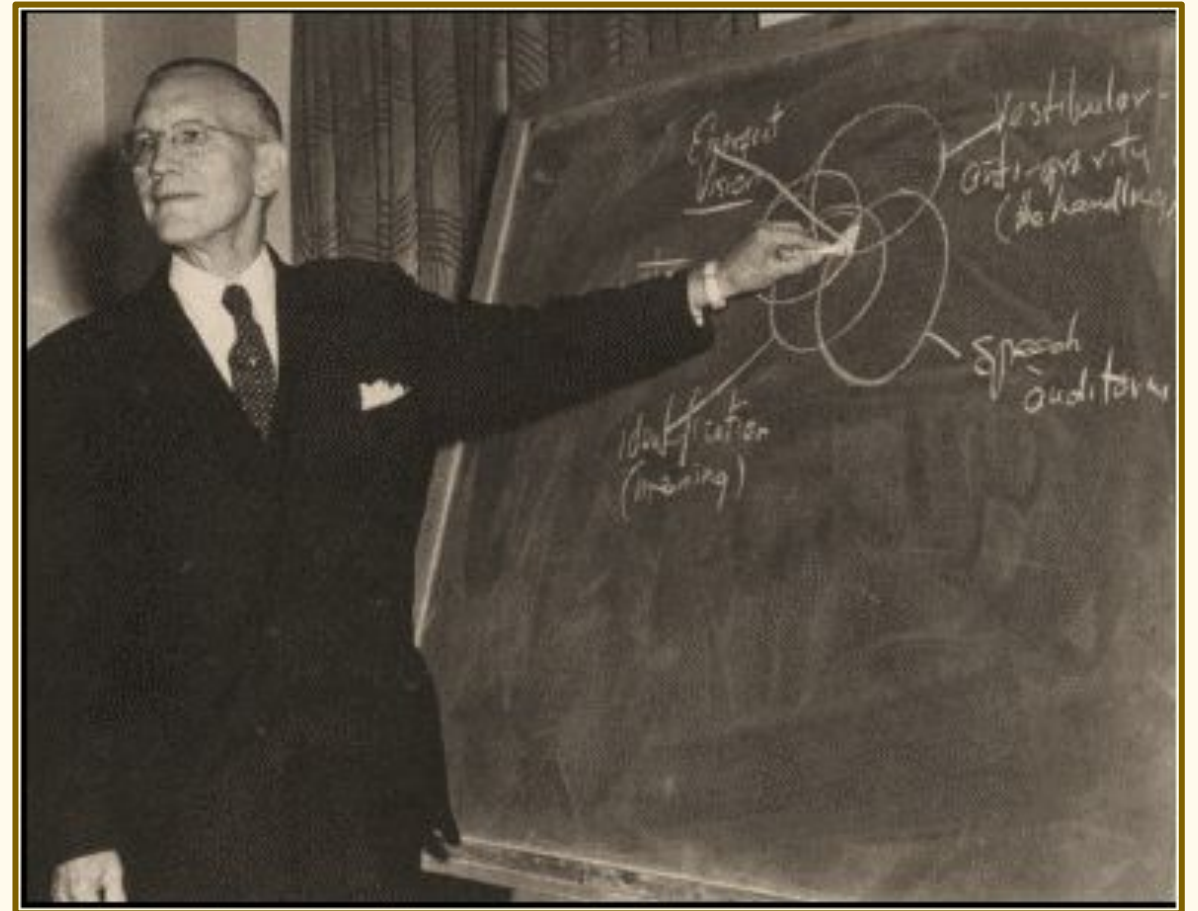
Brock, Fredrick; Lecture notes from which he taught.

Skeffington

- We believe that every part of the visual mechanism is accessible to change.
- We believe that the fundamental value of a convex [plus] lens is how it relocalizes in space.
- We believe the lenses we put on people are to enable the organism in space.

A.M. Skeffington Functional Optometric Philosophy

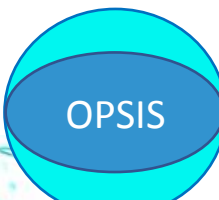
We believe that when the stress is taken off by giving him additional degrees of freedom, if not already too deeply embedded in change in structure, the organism will do as any organism will do, which is tend to revert to the normal [balanced posture].



A.M. Skeffington Functional Optometric Philosophy

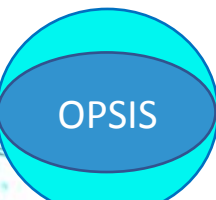
Seeing space

- We tend to think of eyes being aligned at a single point in space; and the lines of sight are, indeed, aligned at one place at a time.
 - We like to think of the eyes as being focused in the same place where they are pointed, and this provides for clear single vision.
 - We are trained to think of this alignment being in a habitual ratio called the AC/A.
-
- The problem is that we don't really see that way.



Seeing space

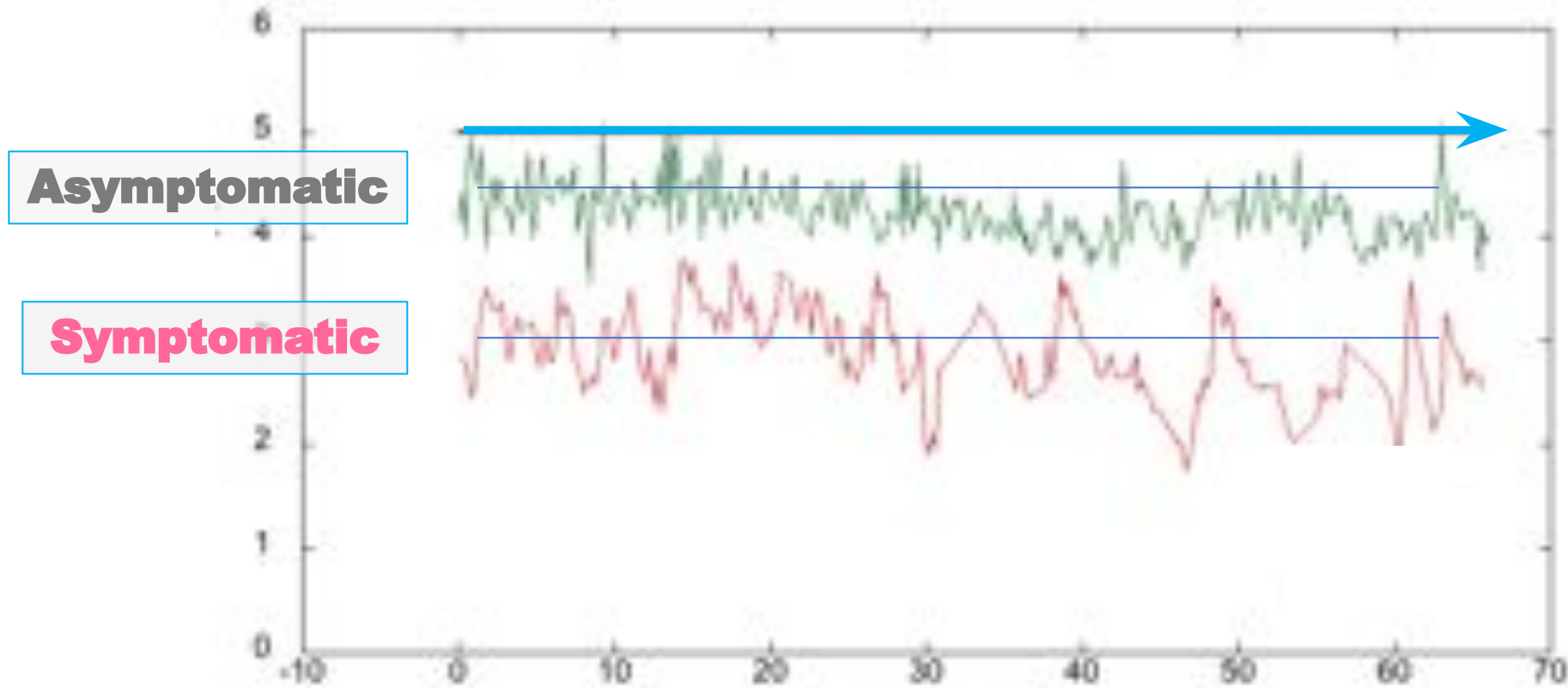
- Focus, or accommodation, does not result in a single point or plane of focus.
- What we tend to think of as a focal plane has a depth of focus—a Z axis dimension that is other than zero.
- What we have is a visual volume that we can manage along the Z axis using accommodation.
- The placement of that volume is based on the utility of the focal volume rather than on clarity only.



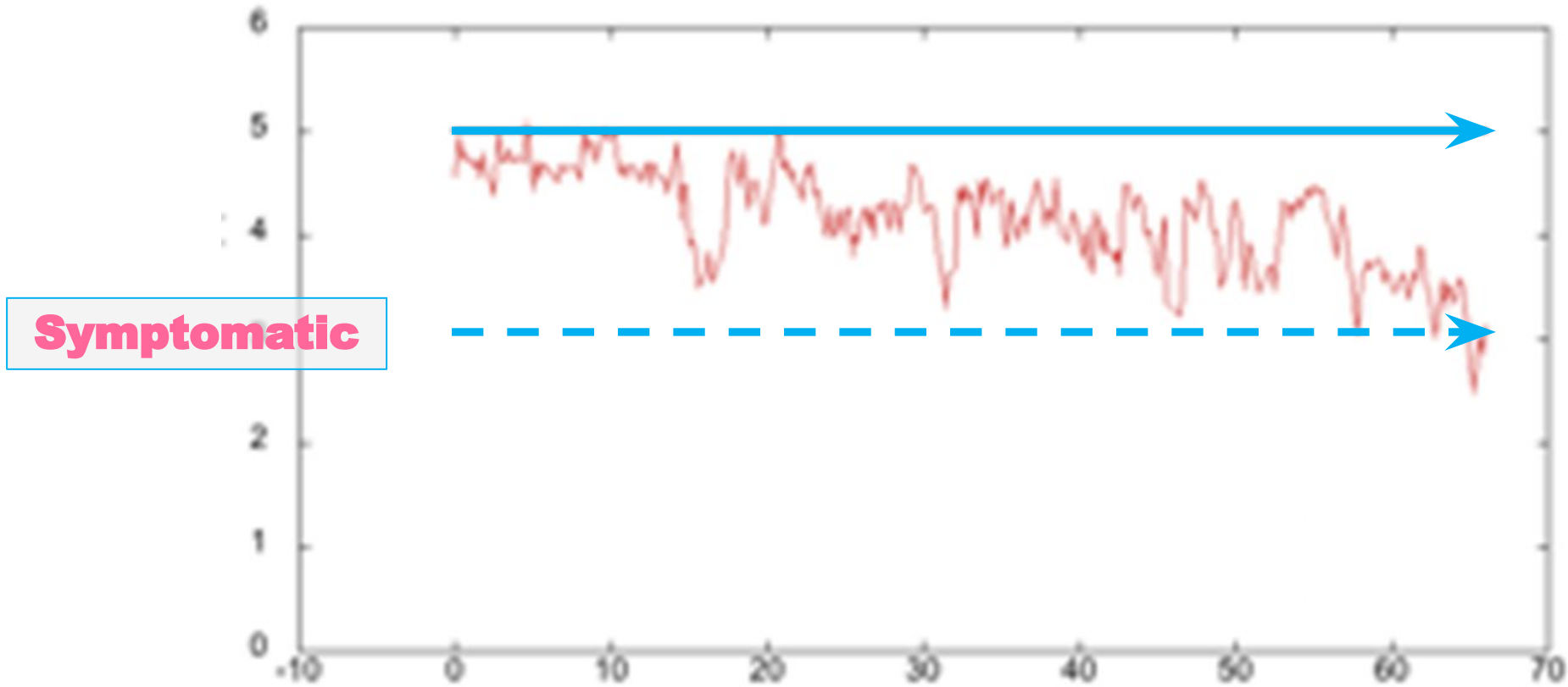
A High Energy Solution

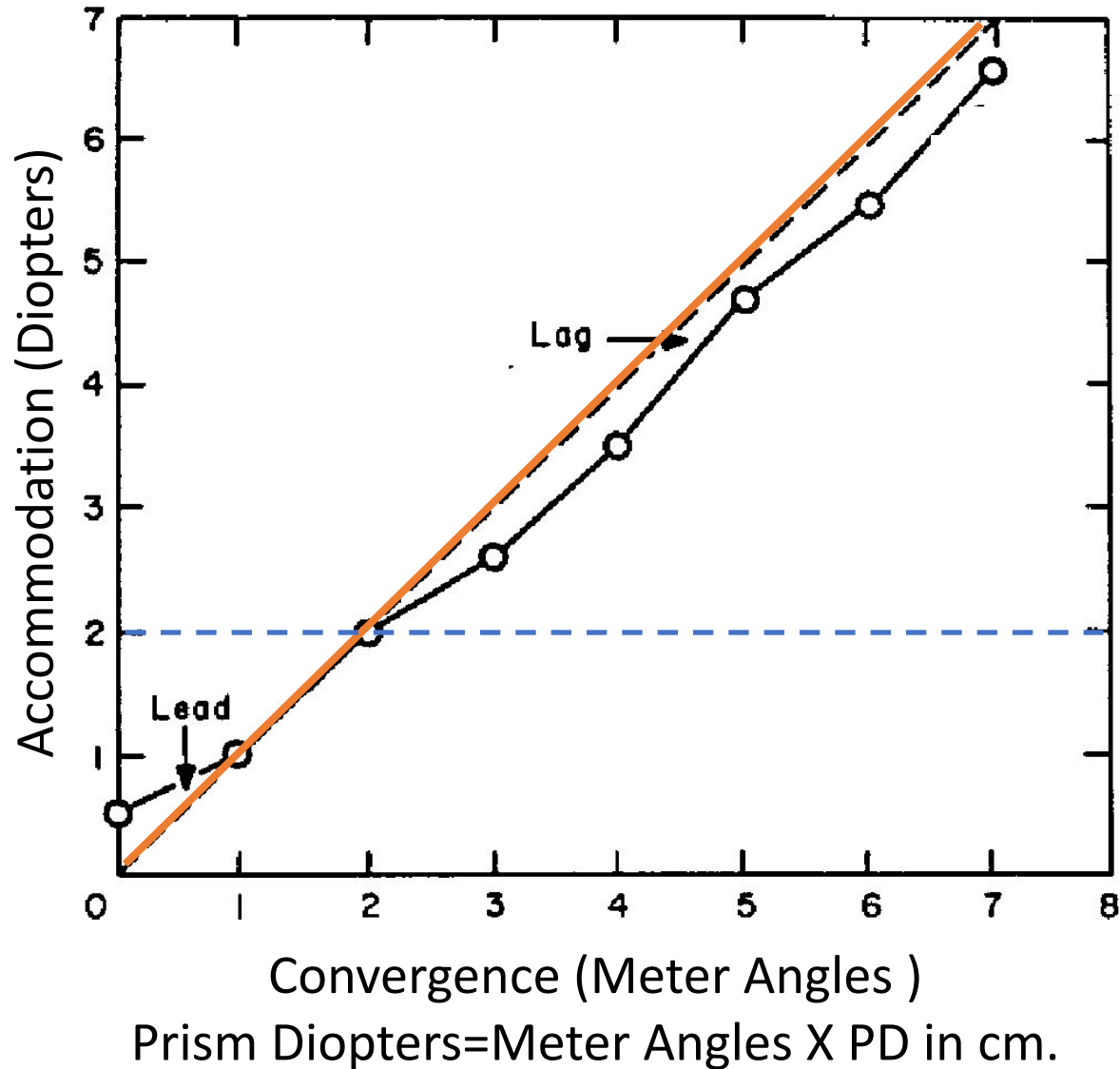
- The average person holds their cell phone at 20-25 cm.
- Including the expected 1.00 lag, that posture requires 3.00-4.00 D of accommodation.
- The expected #20 (positive relative accommodation) is 2.50D under binocular conditions at 40 cm.
- If the person is to remain in contact with the task, something has to change.

Accommodation at 20 cm Over 60 Seconds



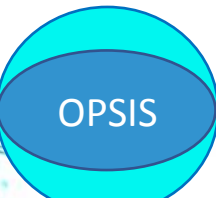
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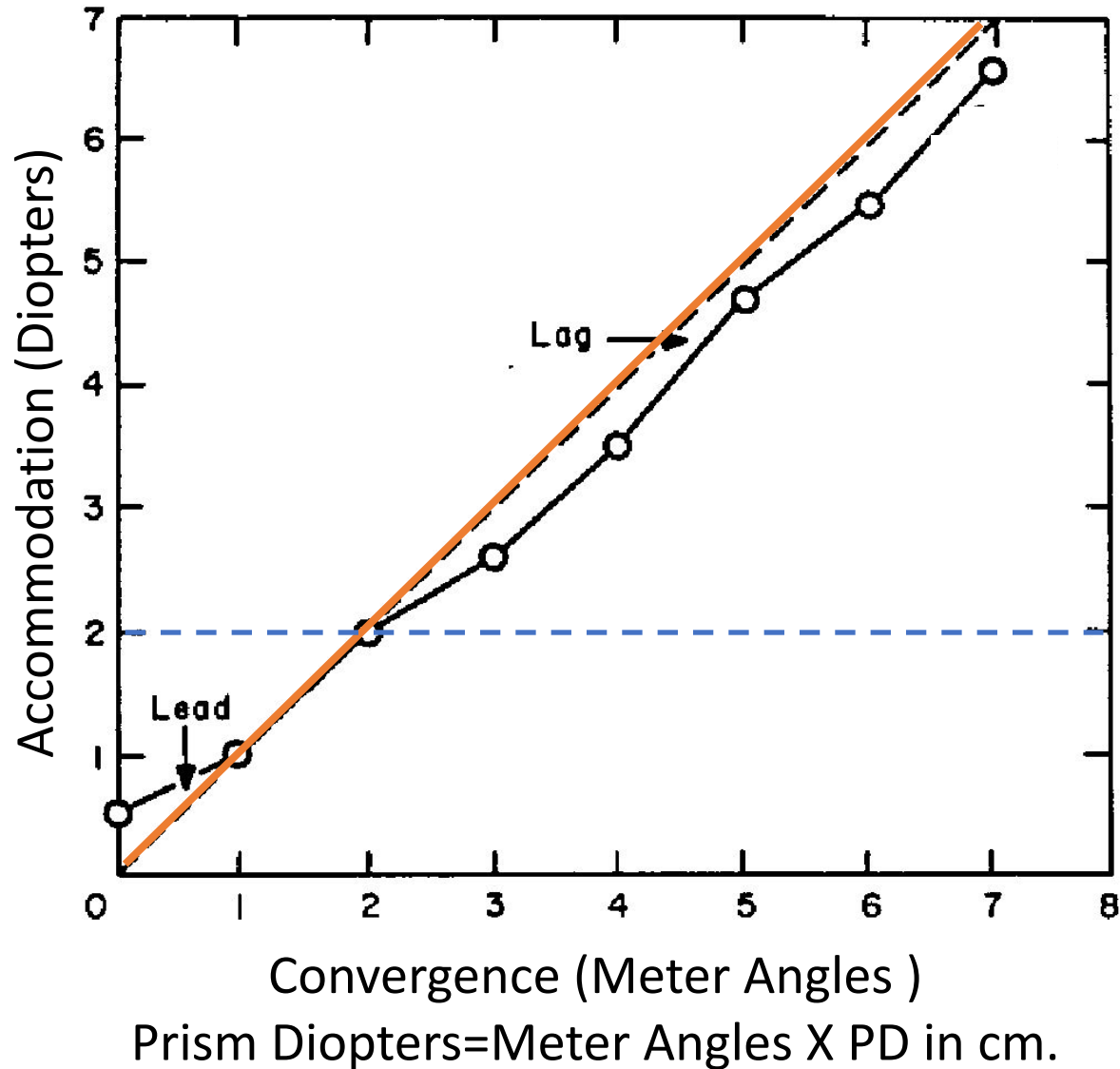




I noticed this diagram of the relationship of accommodation and convergence in “The Dark Focus of the Human Eye and Its Relationship to Age and Visual Defect” written by Nicholas M. Simonelli and published in HUMAN FACTORS, 1983, 25(1), 85-92.

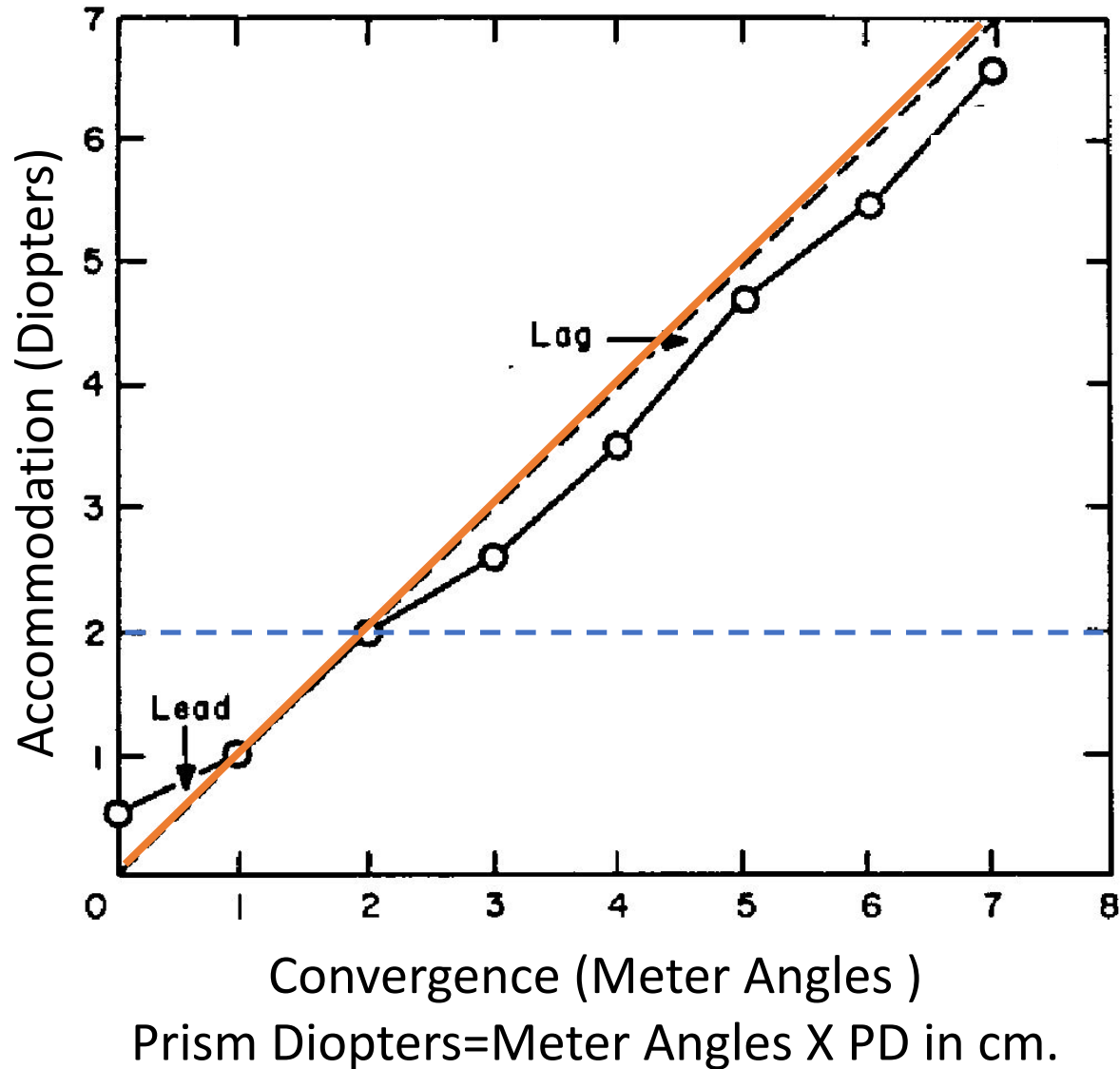
Diagram Adapted from Davson, H. *The Physiology of the Eye*. New York: Academic Press, 1972





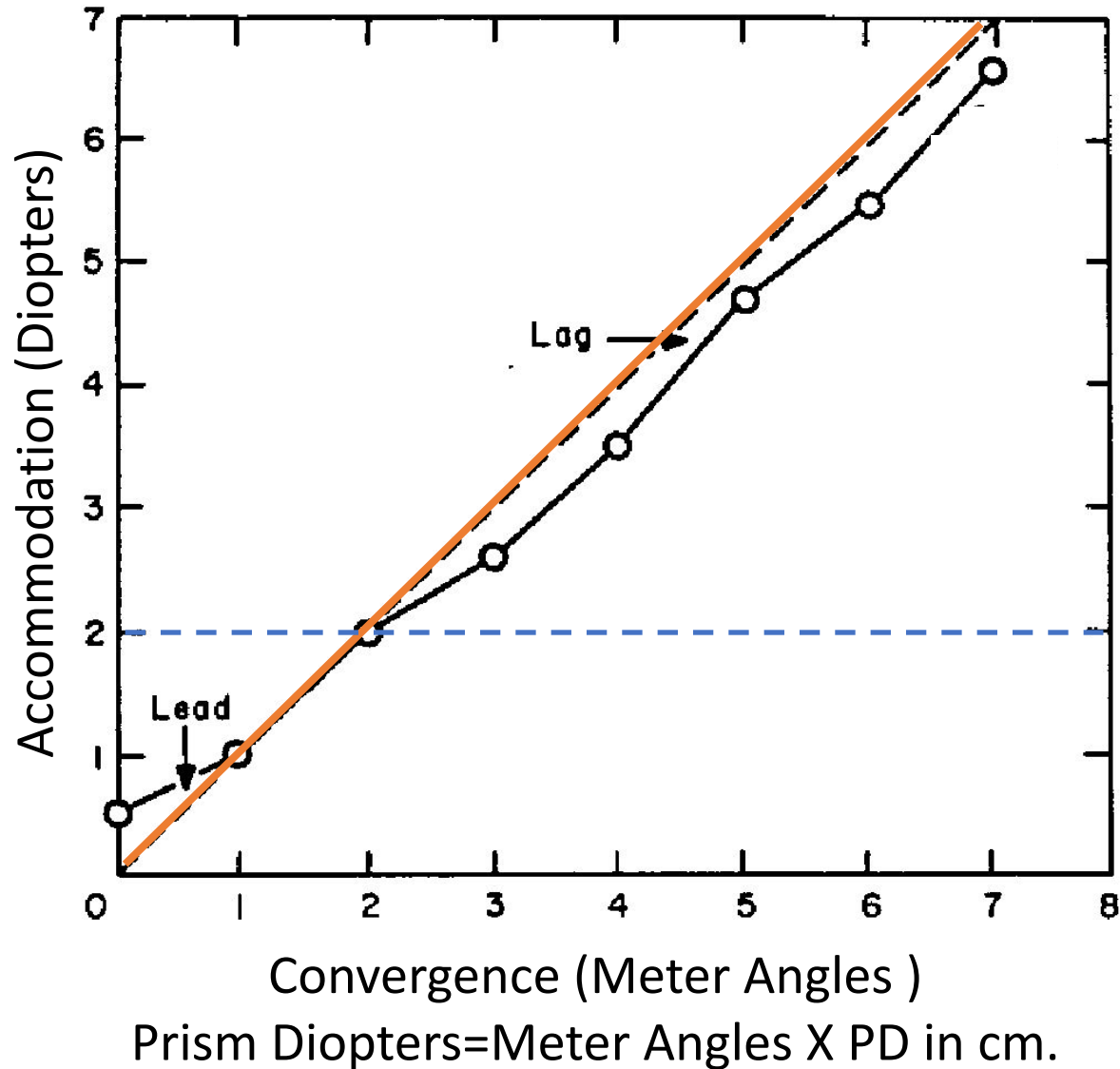
The relationship corresponds to the ideal 1:1 ACA graph where 1 diopter of accommodation is accompanied by 1 Meter Angle of convergence.

The slope of the graph agrees with the ideal relatively closely and it is common to stop looking there.



If we look a bit closer, we see a “lag” of accommodation when the stimulus is greater than 2.00. That is not surprising as we expect to see a lag of accommodation at the reading distance and inwards.

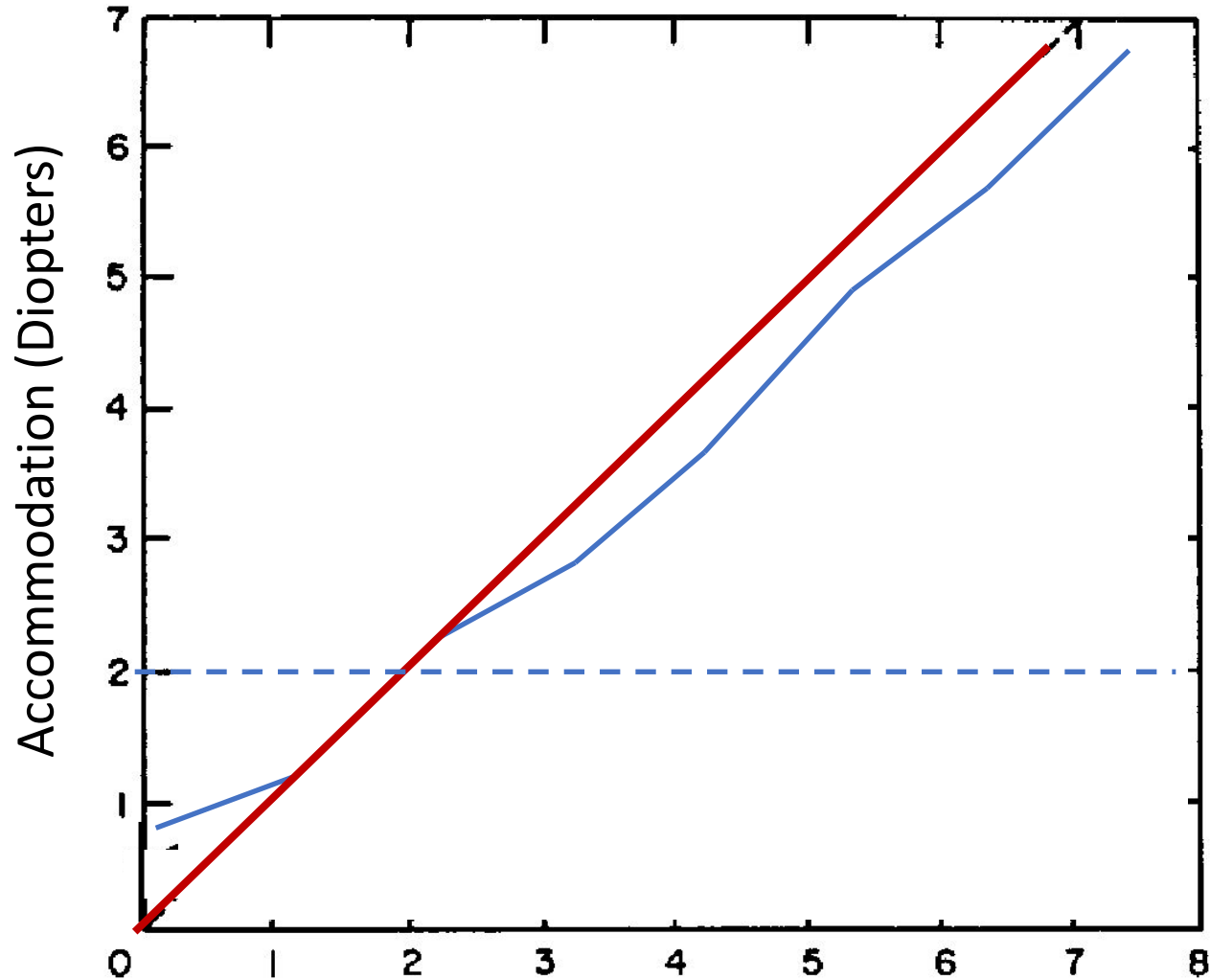
What is surprising is where the system does not move outward to zero accommodative response at distance.



This data was very likely obtained from college age students, who experience a good deal of near-point load.

Data from other groups might be expected to show different profiles, and Simonelli's paper, it does.

In hyperopic and presbyopic populations the accommodative posture is close to the far point and sometimes beyond it.

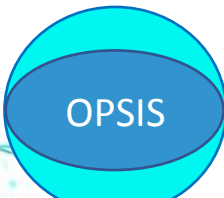


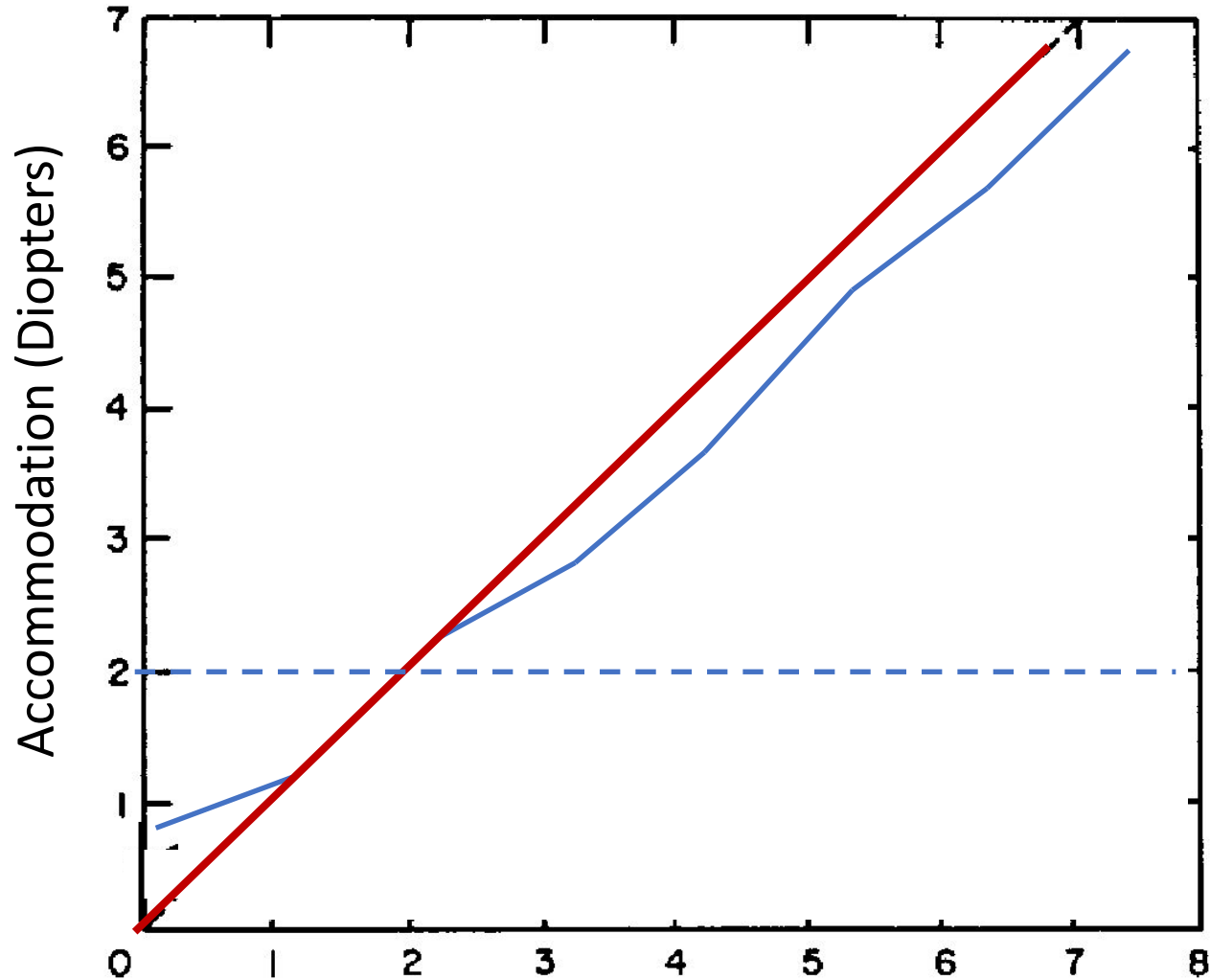
Convergence (Meter Angles)
 Prism Diopters= Meter Angles X PD in cm.

This relationship accounts for several things observed in practice that differ from the theoretical ideal.

In some cases the examiner will see the #4 (static retinoscopy) more minus than the #7 (maximum plus to 20/20).

The two findings are different: Retinoscopy shows the posture of the system, the #7 shows the limit of available hyperopia.

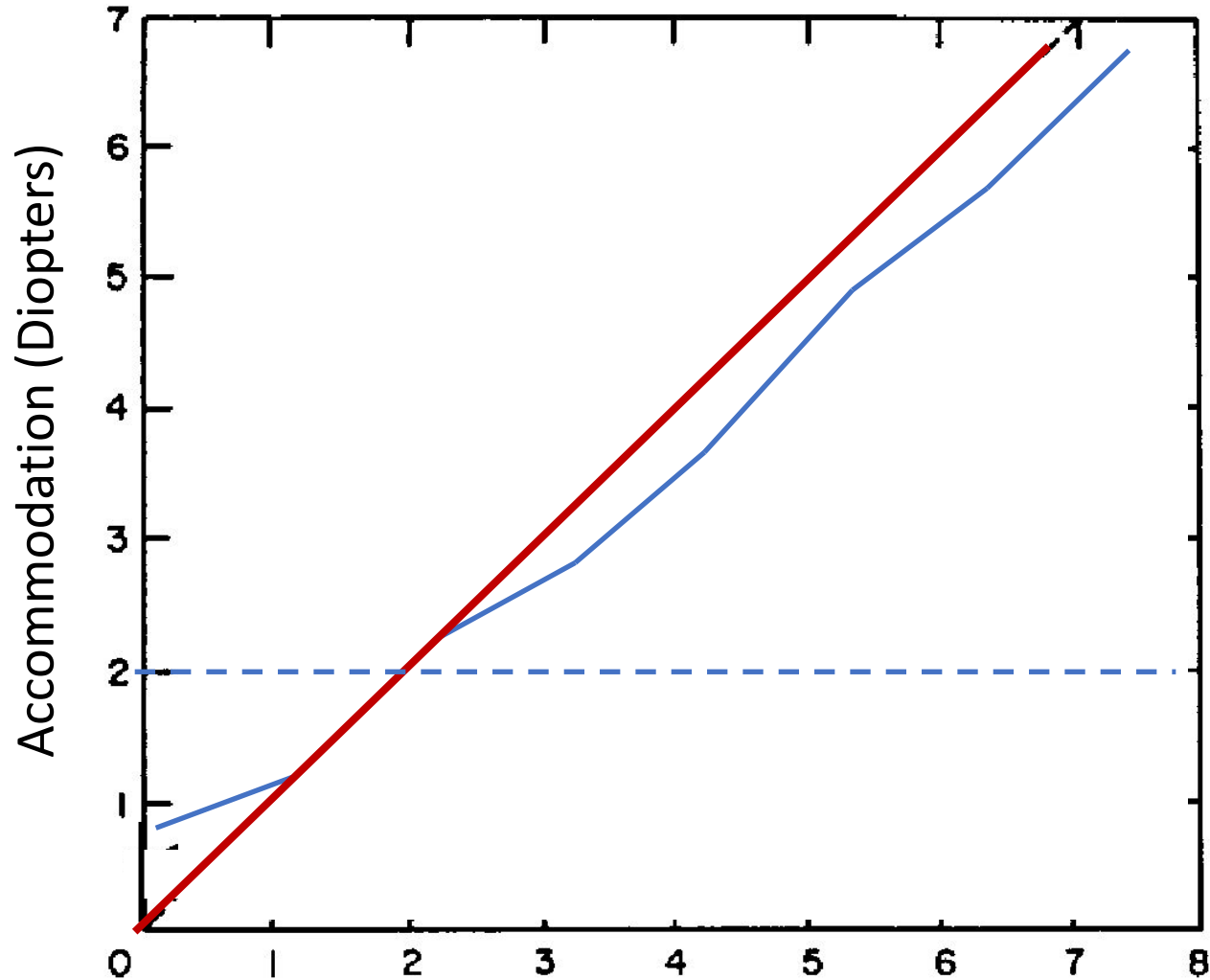




Convergence (Meter Angles)
 Prism Diopters= Meter Angles X PD in cm.

Similarly, the near cross cylinder is often +2.00 or above in presbyopic patients. The accompanying phoria is often significantly exophoric, in the range of 12+D.

The phoria expresses the resting posture of the vergence system that corresponds very nearly with the resting posture of accommodation.

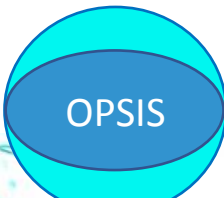


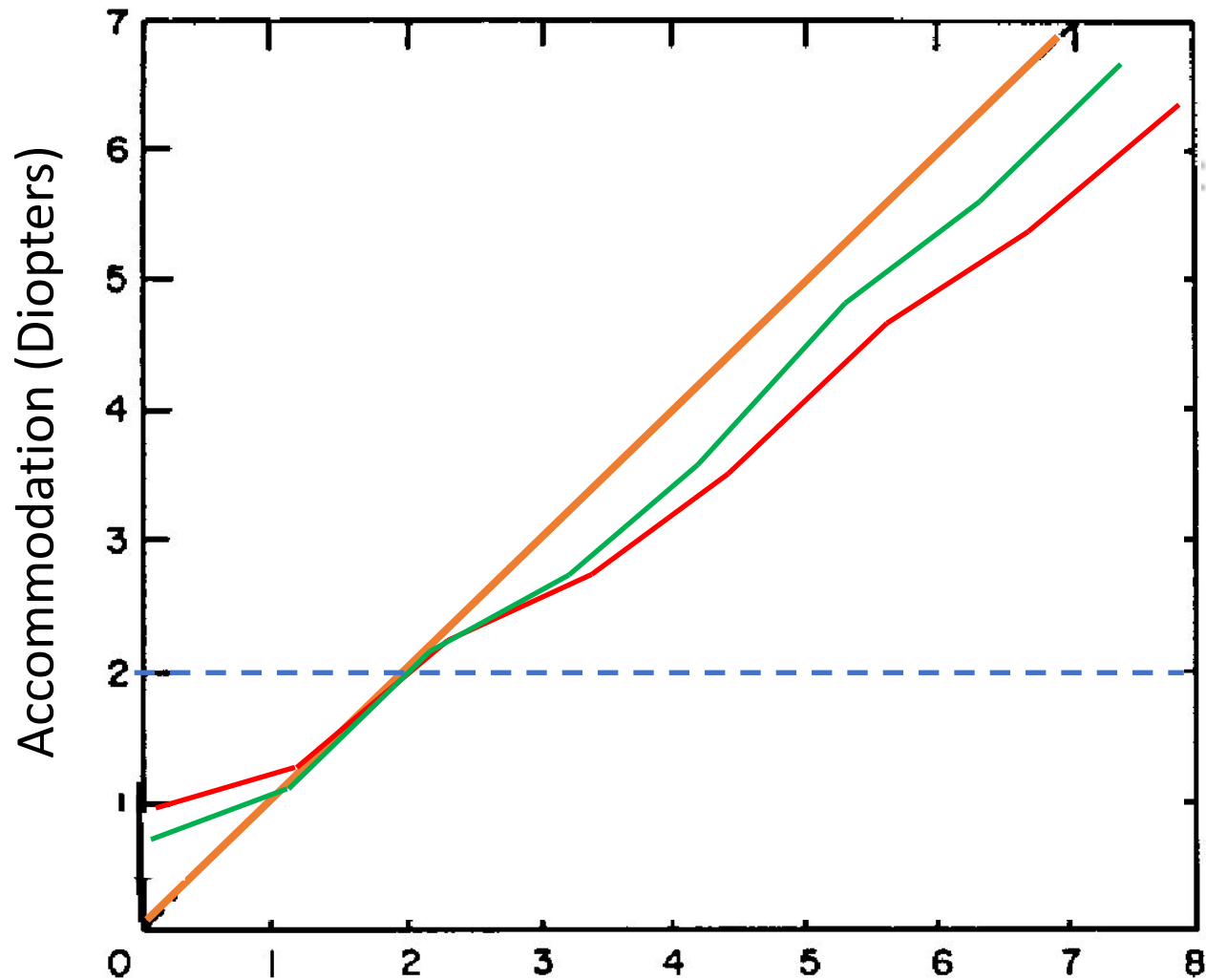
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The near cross cylinder (14B) is a resting point of the accommodative system. It can be thought of as a point of readiness.

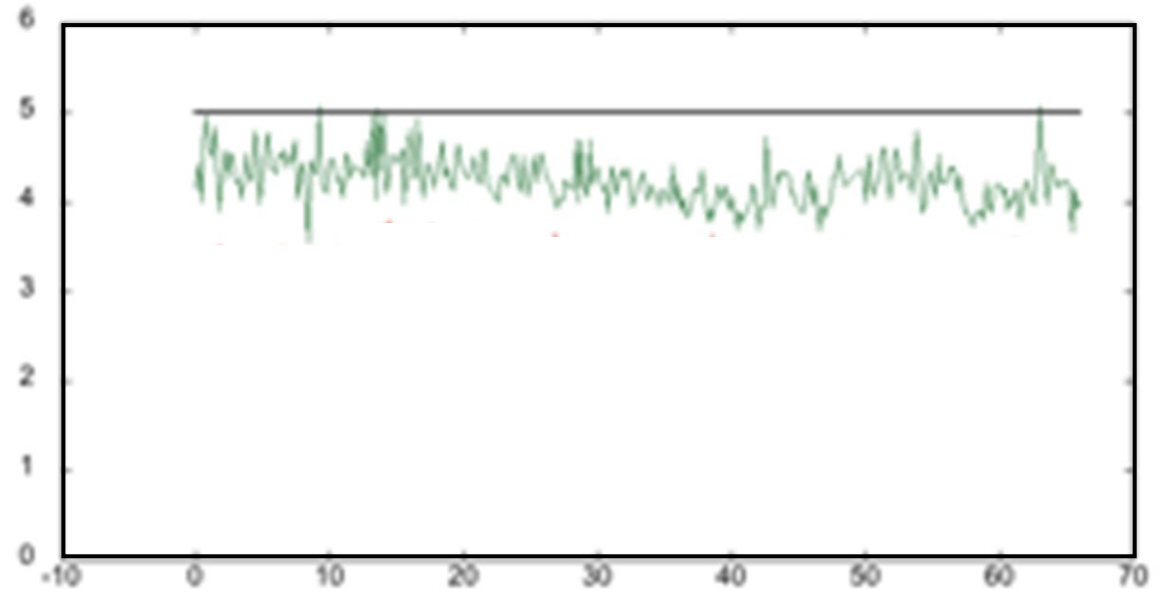
The 14B is not the same as the dynamic response revealed with nearpoint retinoscopy.

The numeric results are similar because the 14B develops to ready the person for the dynamic needs of the visual process at near.

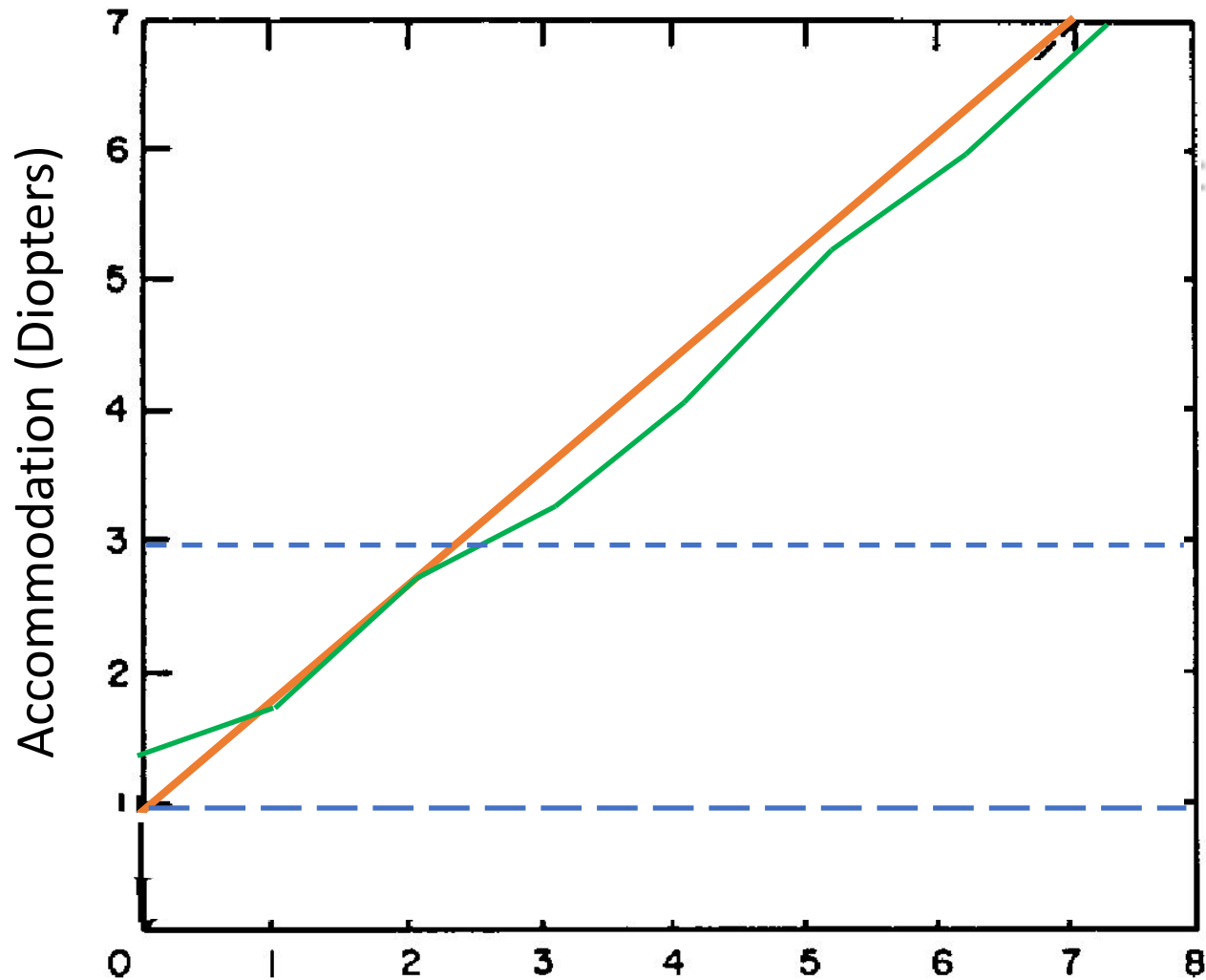




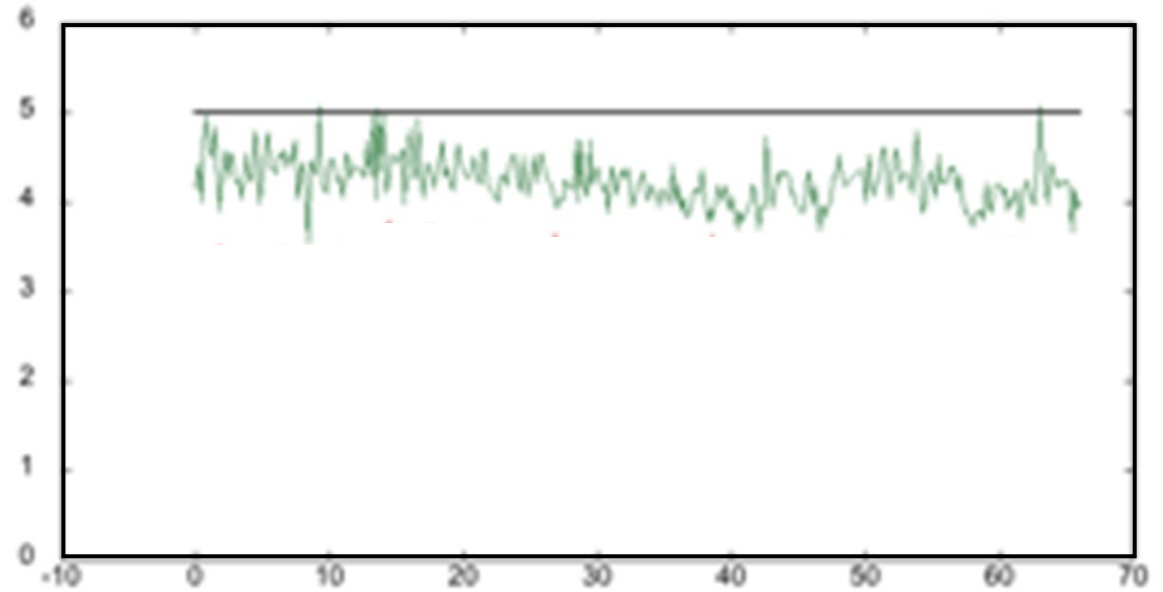
Convergence (Meter Angles)
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Asymptomatic posture of accommodation.
 Asthenopic posture of accommodation.

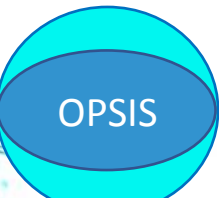


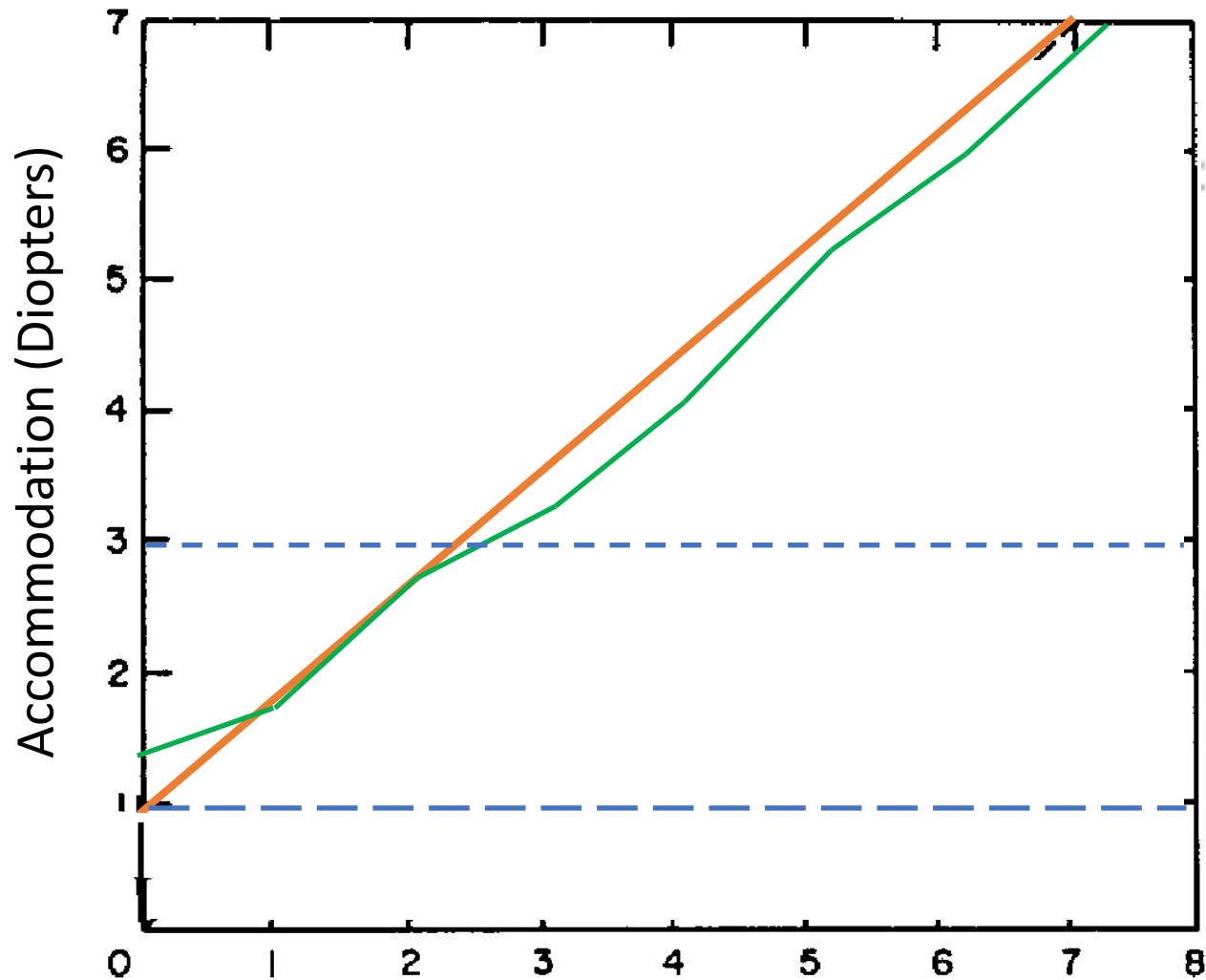
Convergence (Meter Angles)
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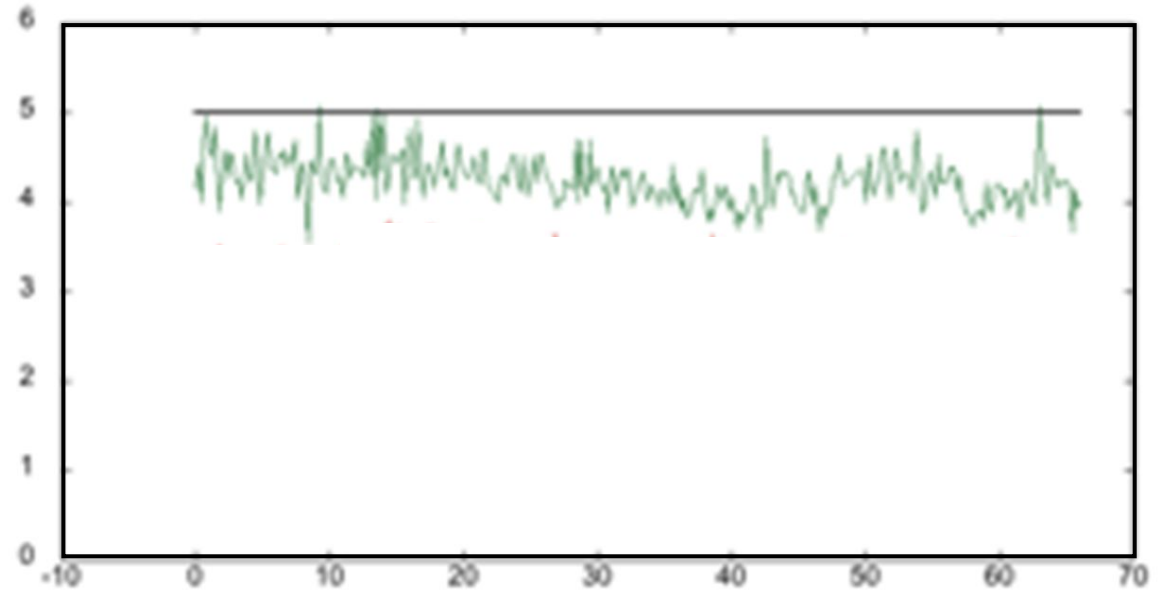
Asymptomatic posture of accommodation.

Refractive posture now centered at -1.00 unless treatment is initiated prior to the need to change.





Convergence (Meter Angles)
 Prism Diopters= Meter Angles X PD in cm.



Asymptomatic posture of accommodation.

Refractive posture now centered at -1.00 unless treatment is initiated prior to the need to change.

For Example

- Graphical analysis and similar philosophies compare the patient's findings to a theoretical ideal. If the findings are different from the ideal, lenses are prescribed to help the person more nearly conform to the ideal. e.g., Sheard's Criterion A lens to help the patient live with the problem.
- Behavioral analysis looks at the posture of the visual process. By coming to understand visual posture, a lens prescription is designed to relieve visual loads that have pushed the visual process towards a less balanced state, establishing a vector toward a less adapted state.

