

**Kraskin Invitational
Skeffington Symposium
on Vision**

January 13-15, 2024

Adventures in Lenses

Occam's Lenses

Steve Gallop, OD

William of Occam



His razor...

is the problem-solving principle that recommends searching for explanations constructed with the smallest possible set of elements – the simplest solution.

Which is likely to cause more problems
or prove less helpful?

Asymmetric acuities...

or asymmetric lenses?

Why do we prescribe lenses?

- To compensate for undesirable refractive states
 - Nearsightedness
 - Adverse farsightedness
 - Adverse astigmatism
- To compensate for poor eye alignment
- To compensate for presbyopic changes

Are there other reasons to prescribe lenses?

- To prevent undesirable refractive states
 - Nearsightedness
 - Adverse farsightedness
 - Adverse astigmatism
- To remediate undesirable refractive states
- To prevent or remediate strabismus
- To prevent or reduce visual stress
- To enhance visual performance
- To protect, stimulate, guide and enhance visual development

“Lenses change the orders to the system.”

A.M. Skeffington, OD

“It’s not what a lens does to a person, but what a person does with a lens that matters.”

Robert A. Kraskin, OD

Lenses are medicine.

Medicine n. 1. any substance, drug, or means used to cure disease or *improve health*.

"We feel that our vision is like a camera, but that is utterly wrong. Our brains aren't just seeing, they're actively constructing the visual scene and making decisions about it."

Dobromir Rahnev, psychologist Georgia Institute of Technology

Basic Prescribing Concepts

- Prescribe for the person, not the measurements or the eye.
- Prioritize prescribing for comfort, performance and development, not acuity
- Start at near and work from there.
- Use balanced lenses whenever possible.
- Consider a lens that allows the person to observe the natural fluctuations in acuity.
- Avoid prescribing, or at least reduce cylinder whenever possible.

Basic Prescribing Concepts

- One Rx is rarely good for all tasks.
 - Avoid prescribing only one Rx unless it's strictly therapeutic and therefore intended as a task-specific device.
- Compensating lenses should not be a first resort.
- Most doctors prescribe lenses based only on distance acuity.
- Lenses derived strictly on distance acuity “needs” are likely to have undesired consequences.
- If a person needs to adapt to the lenses it might be best to reconsider the Rx.

“The optimal lens is not covariant with the refractive status of the eye but is determined by the clinical understanding of the problem.”

A.M. Skeffington, OD

Prescribing lenses based solely on acuity often has less to do with the person who will be wearing the lenses than with the doctor prescribing them.

“The value of the lens to the wearer is the change made in the output. True, there is a change in the input. However, this change brings about altered responses within the organism and so affects changes in the output. These output changes are the ones that lend significance to the use of lenses.”

A.M. Skeffington, OD

It is often helpful to think of a prescription as a means to an end and not an end unto itself.

Kim

February 2023

- 45 y.o. psychotherapist
- First Rx age 30 or so
- Cc: asthenopia, headaches, poor spatial awareness/constantly bumping into things
- Hx: six concussions
- Motion sickness

All testing done with PL

Current Rx

OD PL – 2.00 x 10

OS -0.50 – 2.25 x 175

20/30 OU

DVA (Plano)

OU 20/50 OD 20/80 OS 20/70

NVA w/Rx: 1.0M 15-18"

Stereo

(-) GF 200" Randot

All testing done with PL

Pursuits: 100%

Saccades: 100% big blinks in H mvt
Z-axis: fair

Retinoscopy: (w/ PL)
Distance & Near: +1.00 w/r cyl OU

Subjective: PL -1.00 OU 20/30

All testing done with PL

Maddox Rod (near)

V = Ortho H = 1 xo
alt, int central fade

Prism Bar Ranges

Distance: BI 4/6/4 BO x/4/2

Near: BO x/25/20 BI x/8/2

New Rx OU PL -1.00 x 180

May 2023

- Decreased frequency H/a
- Decreased intensity H/a
- Takes longer to reach asthenopia
- Hardly using Rx
- Less bumping into things

September 2023

Current Rx

OU PL -1.00 x 180

20/25 OU

DVA (Plano)

OU 20/30 OD 20/60 OS 20/40

NVA w/Rx: 1.0M 15-18"

Stereo

(+) GF (boxes only) 200" Randot

Pursuits: 100%

Saccades: 100% small blinks in H mvt

Z-axis: good

Retinoscopy: (w/ PL)

Distance: +1.00 w/r cyl OU

Near: PL -1.00 OU

Maddox Rod (near)

V = Ortho H = 1 xo

alt, int central sup OS > OD

Prism Bar Ranges

Distance: BI x/6/2 BO x/4/1

Near: BO x/30/12 BI x/8/6

November 2023

DVA (Plano)
OU 20/25

(was OU 20/50 Feb 2023)

Something to think about...

Perhaps optimal acuity should be thought of as a result of a well-functioning visual process, not a prerequisite. I have found that vision therapy often leads to improved distance acuity. I think this is because the person becomes able to make better use of the available information as the visual process becomes more sophisticated and effective as a result of vision therapy and/or a more strategic, dynamic use of lenses.

Ted

October 2021

- 55 y.o. IT pro, on computer all day
- First Rx age 8
- Cc: loses place, unsteady focus, and gets drowsy reading, periodic discomfort from computer, motion sickness

All testing done with D & N Rxs

Current Rx

Dist

OD -7.75 -0.75 x 105 20/50

OS -6.50 -0.75 x 75 20/25⁺²

OU 20/25⁺³

Near

OD -6.00 -1.00 x 105

OS -4.75 -0.75 x 80

NVA w/Rx: 1.0M 12"- arm's length+

Stereo

(+) GF 70" Randot

Pursuits: 100%

Saccades: 100%

Z-axis: good

Retinoscopy: (w/ PL)

Distance: +1.00 OU

Near: PL

Subjective: preferred +0.50 over NRx

Maddox Rod (near)

V = Ortho

H = 5 xo MR=OD; 2 xo MR=OS
alt, int central sup

Prism Bar Ranges

Distance: BI x/6/1 BO x/25/12

Near: BO x/35/30 BI x/8/4

New Rx

Dist: OD -7.00

OS -6.50

Near: OD -5.50

OS -5.00

August 2023

Reports having been using old NRx b/c on laptop at work (increased WD)



NVA w/old Rx: 1.0M 15"- arm's length
w/2021 Rx: 9-15"

Maddox Rod (near)

$$V = \frac{3}{4} L \text{ Hypr}$$

H = 6 xo MR=OD; 4 xo MR=OS

alt, int central sup

Prism Bar Ranges

Distance: BI 6/8/6 BO x/12/7

Near: BO x/x/x BI x/10/6

DVA (w/2021 Rx)

OU 20/20 OD 20/25 OS 20/20⁻³

was OU 20/20⁻³ OD 20/50 OS 20/25⁺² w/ old Rx

Gretchen

August 2023

- 62 y.o. RN, now doing a lot of record reviewing
- Wearing PALs*
- Cc: worsening diplopia, “blurred vision” at near, unsteady focus at near, discomfort from computer, motion sickness

*This was *my* chief complaint

All testing done with Rx

Current Rx

Dist

OD +1.50 -0.50 x 120 20/20⁻³

OS +1.50 -0.50 x 40 20/20⁻¹ OU 20/25

+2.00add also 6[^] BI as of 3/23 (written Rx says 4[^] BI)

Old Rx

OD +1.00 -1.00 x 125

OS +1.75 -0.50 x 30 +2.00 add

NVA w/Rx: 1.0M 10"- arm's length

Stereo

(+) GF 70" Randot

Pursuits: 100% (+) head mvt

Saccades: 100%

Z-axis: good w/ dipl @ N

NPC: 2/3 3/5 3/4 Red Lens OD w/ PL 4/28 8/17 8/12
w/Rx 6/10 6/8

Retinoscopy: (w/ PL)

Distance: +1.00 OU

Near: +2.00 OU

“Subjective”: w/ +1.50 OU 20/20 Dist
+3.00 1.0M 13”- arm’s length

Maddox Rod (near)

V = 2 R hypo

H = 3-6 xo MR=OD; 3-4 xo MR=OS

Prism Bar Ranges

Distance: BI x/5/-10 sec BO x/2/-3 sec

Near: BO x/6/12 BI x/4/-1 sec

New Rx

Dist: TBD

Near: +3.00 OU w/ narrow binasal occlusion

as of Jan 2024 (been using loaners since 9/26/23)

August 2023

I had originally suggested using old non-prism Rx if possible at the start of therapy

Has been using this since then, with decreased diplopia

Been trying to get her out of her PALs...not yet.

Ranya

September 26, 2018

Ranya's parents reported the other OD Dx'd int LET and amblyopia

-7 y.o.

-First Rx age 5½

-closes one eye at times

-loses place reading

How would you get from point A to point B?

Point A:

OD +5.75 -2.00 x 175

OS +7.00 -2.00 x 175

Point B:

OU +5.00

You might also be asking yourself, “Why?”

Rx history

January 14, 2017 (1st Rx) MD

OD +5.00 -1.00 x 180

OS +7.25 -0.75 x 180

December 2, 2017 MD

OD +5.25 -1.25 x 180

OS +7.50 -1.25 x 180

May 16, 2018 OD

OD +5.75 -2.00 x 180

OS +7.00 -2.00 x 180

All testing done with SPRx (4 mos old)

K readings: OD -2.50 x 180 OS -2.50 x 180

DVA

PL: OU 20/50⁻¹ OD 20/40⁻² OS 20/70

OD +5.75 -2.00 x 175 20/30⁻¹

OS +7.00 -2.00 x 175 20/50⁻¹⁺¹ 20/30⁻¹⁺² OU*

NVA w/ Rx OU 20/16 @ 8" OD 20/30 @ 16" OS 20/40 @ 16"

*DVA at end of eval OU 20/30⁻¹ w/ **Plano**
OU 20/25⁻¹ w/ Rx

Pursuits: 30% OU, OD, OS

Saccades: 90%; undershoots; Z-axis = messy

Retinoscopy

Distance: OD +1.50

OS Fluctuates

Near: OD +1.00 Fluctuates

OS +1.00 Fluctuates

Cover Test: w/ Rx D/N 4/2 w/ PL D/N 12/12 ET

Stereo: (+) GF 0" 0" Randot (-) Sup

6^ prism @ distance: Sup – except with BUOD

Red Lens NPC: R=OD – sup OS

R=OS – sup OD

Maddox Rod (near)

MR OD 3 R hyper 5eso

MR OS 2 R hyper 1eso

Attempted to modify Rx week 4 of VT – any change reported as worse than Rx

Rx'd at week 6 of VT: OD/OS +5.00 sph

One week later (11/12/18):

DVA w/ +5.00 OU

OU 20/30⁺³ (20/30⁻¹)

OD 20/30⁺³ (20/30⁻¹)

OS 20/50⁺² (20/50⁻¹)

So how did I get from point A to point B?

Point A:

OD +5.75 -2.00 x 175

OS +7.00 -2.00 x 175

Point B:

OU +5.00

Sometimes the answer is "Just do it."

3 weeks after (12/3/18):

DVA w/ +5.00 OU

OU 20/25⁻¹ (20/30⁻¹)

OD 20/25⁻²⁺² (20/30⁻¹)

OS 20/40⁻¹⁺² (20/50⁻¹)

5 weeks later (1/14/19):

DVA w/ +5.00 OU

OU 20/25⁺¹ (20/30⁻¹)

OD 20/25⁻³ (20/30⁻¹)

OS 20/40⁻¹ (20/50⁻¹)

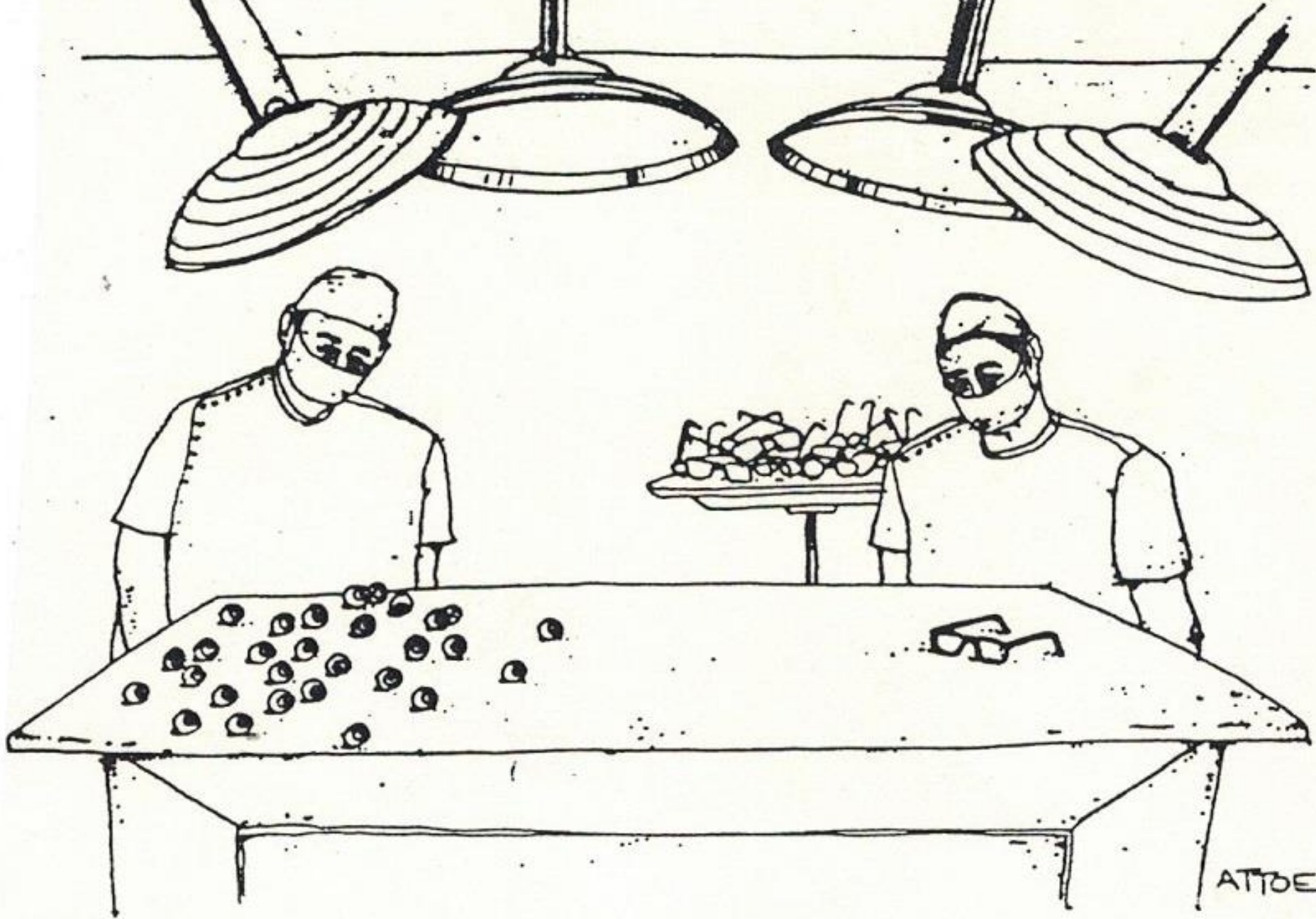
DVA w/ +4.00 OU

OU 20/25⁻¹

Lenses change the instructions to the brain.

- To promote positive change and development
- To reduce stress
- To improve visual efficiency and performance
- To improve spatial/temporal processing
- To improve mobility
- To improve binocularity and accommodation
- And if you have nothing better to do...to improve acuity

Prescribing lenses based solely on acuity often has less to do with the person who will be wearing the lenses than with the doctor prescribing them.



ATTOE

"It's no use, they keep rejecting them."

Something to think about...

Lenses should, whenever possible, be used to help arrange conditions and provide opportunities for the system to change for the better. Lenses are not living up to their potential when all they are intended to do is carry out tasks that the organism is deemed unable to manage on its own.

Always try to provide the greatest benefit with the least amount of interference. Maximize the therapeutic aspects and minimize the compensatory aspects of any lens prescription. Try to impinge on the natural state as little as possible when compensating. Prescribe with an eye to the future, not the past.

"It is by logic that we prove,
but by intuition that we discover."

Henri Poincaré

(French mathematician, theoretical physicist, engineer, and a
philosopher of science - late 1800s to early 1900s)

“[W]e have to remember that what we observe is not nature in itself but nature exposed to our method of questioning.”

Werner Heisenberg

“[W]e have to remember that what we measure is not the visual process in itself but the visual process exposed to our method of measuring.”

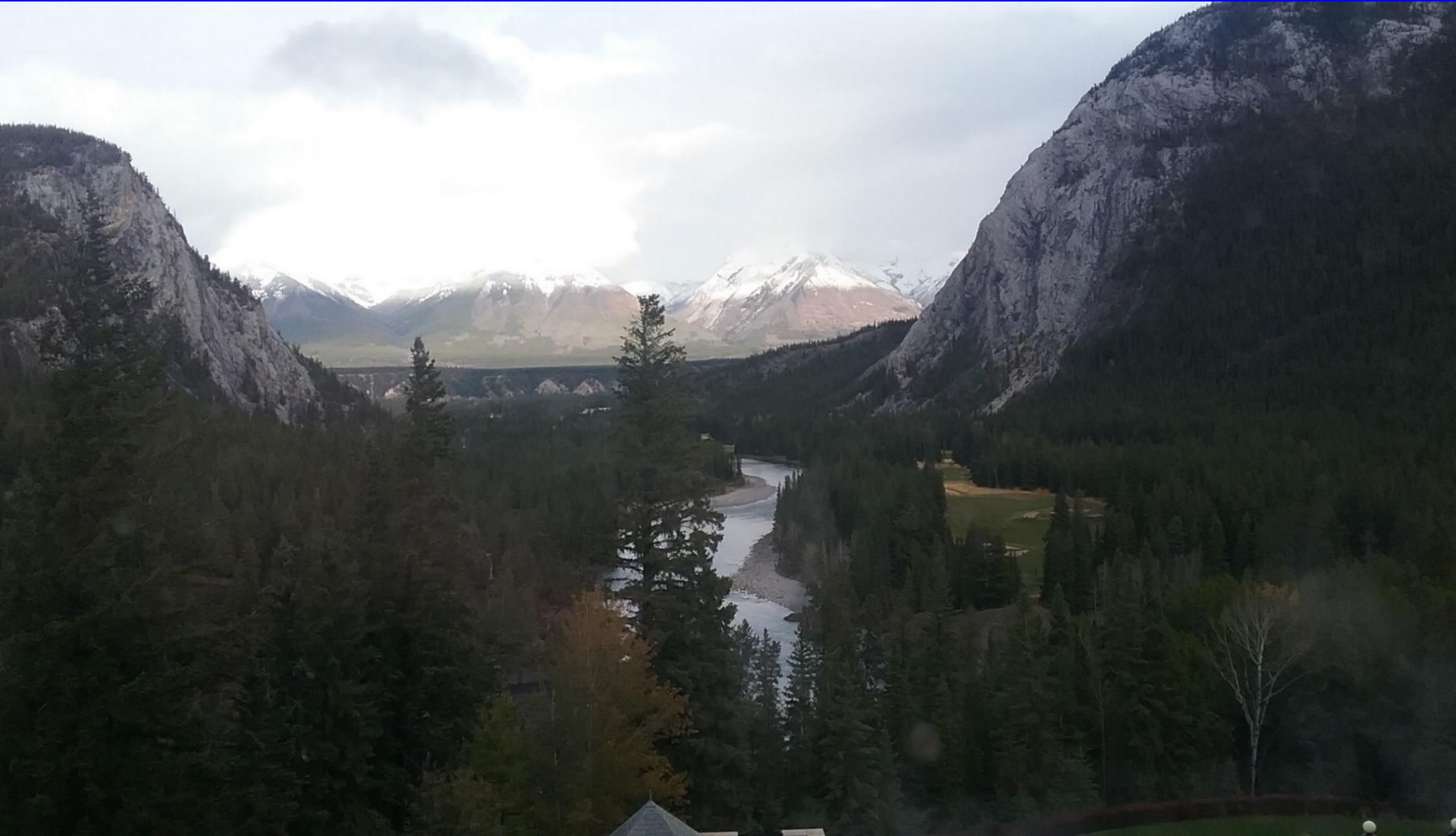
Steve “Uncertain” Gallop

Which is likely to cause more problems
or prove less helpful?

Asymmetric acuities...

or asymmetric lenses?

Thank you



Steve Gallop, OD
Visit us at GallopIntoVision.com