

## CHOPSTICK FUSION Ray Gottlieb, OD, PhD

The purpose is to train stereoscopic perception as an everyday, real space experience. Most people assume that they are seeing the world in full 3-D. After learning and practicing chopstick fusion, one sees distance in more solid blocks of volume. Even the air between distant objects seems to have volume and weight.

This experience can relax the eyes and make seeing less controlled, more receptive, and more present, as if you are looking without grabbing at the world or straining to find hidden danger or undiscovered treasure. Vision become more “here and now” and one’s eyes feel as if seeing through them along the line of sight.

Psychophysical skills in normal infant development are acquired instinctively via unconscious self-instruction. These become normal and natural functioning, like habits, as automatic and fundamental psychophysical skills. Malfunctioning and strain appear when the conscious "I" interferes with these instinctively acquired habits by trying too hard or feeling rushed and anxious. In building up of psychophysical skills, the conscious "I" must 'give orders', but not too many. The more there is of "I", the less there is of God (Nature).  
*THE ART OF SEEING – ALDUS HUXLEY*

### LEARNING CHOPSTICK FUSION

Materials needed: One can use two chopsticks, straws, dowels, swizzle sticks or (my favorite) 12” long Bamboo Shish Kebab skewers.

#### The Learning:

The two identical sticks are held in a V shape as pictured (A). Hold them about 12” – 14” away from your face. The tops of the sticks at eye level and are separated by about 2 inches. As you work, it’s very important to remember to check that the tops are level to the horizon and are not twisted with one stick closer than the other. If you look directly at the sticks you will see two as pictured (A). If looking at a target far beyond the sticks, the two sticks will appear double and appear as if there are four sticks (B). If you look at a target about 6’ beyond the sticks, you should see three (C). This is because the two middle sticks (in B) overlap and your brain sees them as one. The goal is to see three sticks (C) while looking at various distances beyond the sticks. To achieve this, you must adjust the separation between the top of the two sticks (A) by holding the sticks together at the bottom with one hand and adjusting them with the other hand.

Figure A

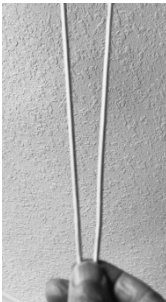


Figure B

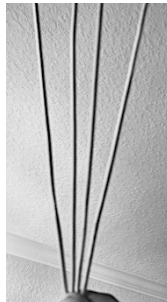


Figure C

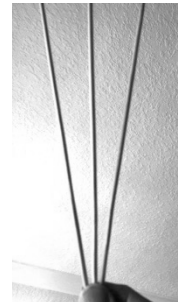
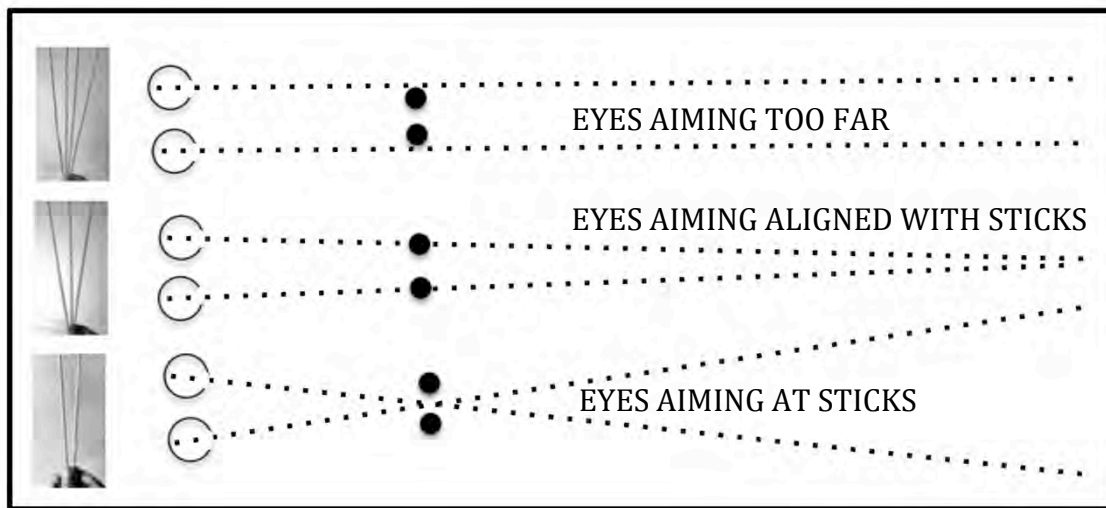


Figure D

FRONT VIEW

TOP VIEW



TO SEE THREE STICKS (as in separate the top of the sticks by 1.5 inches. Hold them about a foot away from your face. Choose an object (the target) that's between one and two yards behind your sticks. The target should have space behind it in order to see depth in front and behind it. The middle stick should be positioned just to the right or left of where you are fixating the target.

#### LOOK AT THE TARGET

Choose something like a floor lamp, chair back, window frame, or a pull chain hanging from a ceiling fan. Look at the target at all times and notice whether you see



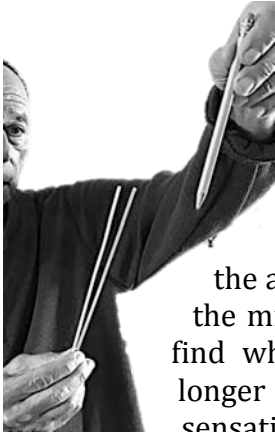
three or four sticks. If you see four sticks, move the tops of sticks closer together or farther apart until the two center sticks appear to touch or overlap each other. Now you should be seeing three sticks. If you start to see two targets and being confused, you have probably switched from looking at the target to looking at the sticks.

Remember to check that the sticks are not twisted or misaligned. Look at the target and adjust the separation until you see three sticks. The middle (third) stick should be positioned just next to the side of but not covering the target.

Look at the target and notice the middle stick. Does it (the stick) appear just beside the target or is it a bit closer to you or farther away than the target? Don't forget to look at the target all the time. See if you can make the middle stick appear slightly farther away by tipping the tops away from you or slightly closer by tipping the stick tops towards you. You can also increase and decrease the separation

between the two sticks in your hand. The sticks don't have to be moved very much, especially when your target is farther away.

At first you may not be able to see this depth. If so, try a closer distance. It's easier to see depth at near because vision has time/space feedback via the hands and fingers. But outside of arm's reach, the eyes are on their own. So it will help to use a target much closer to you.



Hold the sticks in one hand, at eye level and about 6" from your eyes. Bring the tops of sticks closer together to about a half-inch separation. Hold another stick, your finger or a pencil with the point down in the other hand so that it is just above and halfway between your two sticks. Look at the pencil point and slowly move it away from you. When it's a few inches beyond the sticks you should see three sticks. Compare the apparent depth of the middle stick with the pencil point. Look at the middle stick as you move the pencil closer and farther until you find where the sticktops are matched in depth. Some people take longer to learn to see in space as volume air because it's a new sensation for their brain. They need time to notice depth. Once you have learned to see distance using Chopstick Fusion, you are ready for the practice.

#### THE PRACTICE

Spend some time every day (or every hour) looking for targets to match with your sticks. Play with space by making your sticks to appear farther, closer and at target distance. Practice in near space as in the photo above. Look for targets mid-range targets like door and window frames, lamps, chairs, etc. Try to extend your depth awareness at even greater distances: trees out the window, houses across the street, parked cars, street lamps, clouds, mountains, horizon, etc. Far away targets require minute adjustments so it's best to try methods 2) or 3) but not 1) below.

To change the depth of the middle stick:

- 1) Spread the sticks more apart or bring them closer together, or
- 2) Hold them nearer and farther away from your eyes, or
- 3) Tip the top of the sticks away from you, more parallel with the floor.

If your target goes double and your vision gets confused, remember to look right at the target, make it single, readjust to make three sticks, and check that your sticks are straight and not tilted down on one side or twisted with one stick closer. As you practice, you should notice the space around and between the target objects becomes more defined and that the objects become more three-dimensional.

The goal of the practice is to learn to see this stereo even when you take the sticks away. To achieve this, practice with the sticks for about three minutes by matching the projected distance of the middle stick with various targets and by adjusting to move the middle the stick into the space behind and also in front of your targets. Close your eyes now and then to see if you can imagine the feeling of this depth. Then practice without the sticks for the next three minutes or until you lose the sensation of depth. Breathe, relax your eyes and continue to imagine the stereo effect with your eyes closed or to see it with your eyes open. Then repeat the practice with the sticks.

Soon you'll begin to notice that you're seeing this spatial depth without the sticks during your daily activity. Basically you are learning to change your habit of how you see. First you learn a new way of perceiving space. The you must remember to be aware. As you go through your daily activities, notice whether you are seeing the old way or the new way. Just noticing can automatically engage the new stereo awareness. Space opens up and so does your visual field. You may realize that when you see in the old way, you are "in your head", thinking about something unrelated to the present. But when the stereo kicks in your consciousness moves out of your head and into seeing out of your eyes into the present. How long can you stay present in your eyes? Keep practicing the Chopstick Fusion games.

### CONVERGING THE STICKS

Crossing your eyes to look at the two sticks results in seeing the third stick in the middle. Splay the sticks to about ½" apart and hold them in front at about 15" (reading distance). Converge your eyes to see three sticks (you can use your finger as a near target to help you see three sticks. Learn to look at the middle (3<sup>rd</sup>) stick without needing your finger. Does the middle stick look closer, farther or at the same distance as the outer sticks? Use your finger to judge how close to you the middle stick is. Try to touch the middle stick where you see it. Explore near stereo by methods 1), 2), and 3) above.

Tomorrow talk about how to see in 3D





