

# A LINE ON LIFE

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## A Cause of Cause

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How do we determine what causes what? In other words, what causes our perception of causation? There are many factors that lead us to assume that one event causes another. Only one of these factors will be discussed in this article — contiguity.

Another article covered various factors that influence how we organize our perception of the world — closure, interposition, similarity and proximity. The last factor — **proximity** — is part of contiguity. (In case you don't remember, proximity is the tendency to organize objects together, because they are closer in terms of space.)

**Contiguity** refers to *togetherness in time and space*. If two events occur together in time and space, we perceive the first as causing the second. However, if either their temporal (time) or spatial closeness is lost, the assumption of causality vanishes.

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### Contiguity is a key to perceiving causality.

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For example, suppose an opera singer hits a very high note. If a *nearby* window *immediately* breaks, we would assume that the high note *caused* the window to break. However, if the nearby window breaks an hour later, we are unlikely to connect the singing to the window breaking. Temporal closeness has been lost. Likewise, if a window farther away immediately broke, but closer windows remained intact, we would not connect the note to the breakage. In this case, spatial closeness (proximity) has been lost.

Contiguity greatly effects learning. The most efficient learning occurs, when the consequences of an act are contiguous with the act. In other words, people learn much better, if their responses are *immediately* followed by reward or punishment. This is why an immediate compliment for a desired response is so effective. On the other hand, this is one reason why our criminal justice system is *not* very effective. If arrested, the criminal is usually captured long after the crime has been committed. Rather than perceiving the crime as the cause for punishment, the criminal is more likely to perceive the punishment as being caused by "*getting caught*." Rather than stopping crime, the criminal is more likely to think, "*Next time, I'll try harder not to get caught*."

As with other perceptual organizing factors, sometimes contiguity can deceive us. It creates an illusion that fools us. I demonstrate this in my psychology class. In full view of the class, I hit my head with my right fist several times. At the same time — out of sight of the class — I knock on my desk with my left hand. The class laughs, because it sounds like my head is made of wood! Because of the contiguity, the class perceives that hitting my head causes the wooden sound.

I have a great deal of fun creating other illusions with contiguity. I used to have an office near a fountain. Inside my office was a switch that could turn the water pump for the fountain on or off. This means that I could start the water spouting — or stop it — from my unseen position in my office. However, I could clearly see the fountain and the students walking around it.

Especially on hot days, students would run their hands through the spray. I would wait until only one student was there. As she put her hand in the spray, I would shut the water off. After jerking her hand back and trying to find out what had stopped the water, she would put her hand where the spray had been. Just at that time, I would turn the water back on again! By that time, I usually have the student hooked. She will repeatedly pass her hand over the spout. With each pass of her hand, the water goes off...on...off...on. You may be laughing now, but there is more to come!

Usually the student calls a passing friend over, telling him about her amazing "*control*" over the water spouting from the fountain. This time — when she tries to demonstrate her newfound powers to her skeptical friend — I leave the switch alone. The astonished student frantically swishes her hand through the water spray again and again in vain attempts to stop the flow of water. After putting up with this behavior for a while, the friend leaves — probably labeling her as "*weird*." This again leaves the frustrated student alone by the fountain. Just before leaving in disgust, she makes one final swipe at the water with her hand. At that moment, I turn the water off again!

Now you know that contiguity is a cause of perceiving causation. Since you are aware of this, you can ask yourself, "*Is my assumption of causation real — or is it merely an illusion?*"