Opponent Processing

There are three color-representing “channels”

Red-Green: \((-L + M) - S\)

Blue-Yellow: \(-(L + M) + S\)

The middle point represents neutral – a color that is neither red nor green, or neither blue nor yellow.
Opponent-Processing, Con’t.

Yellow is neither reddish nor greenish, so following state represents something yellow:
In equation form, 
\((-L + M) - S = 0 \text{ and } -(L + M) + S < 0\)

Red is neither yellowish nor greenish, so the following state represents something red:
In equation form, 
\((-L + M) - S < 0 \text{ and } -(L + M) + S = 0\)

Orange is a reddish and yellowish, so the state that represents orange must be a conjunction of the states that represent red and yellow:
In equation form, 
\((-L + M) - S < 0 \text{ and } -(L + M) + S < 0\)

In order to represent something reddish-green, a state must be a conjunction of the states that represent red and green:
But that is impossible.