MIND FOUNDATION

# Colors affect our subjective wellbeing and sense of time

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Color has an impact on our psychological wellbeing. However, we are often not aware of this effect. The *Arousal Theory of Color* posits that longer wavelengths, such as red and yellow, are perceived as more activating, whereas colors of shorter wavelengths, such as green and blue, are experienced as more relaxing. For example, when asked to choose a relaxing color, the majority of people opt for blue or green rather than for red or pink, the latter of which have been perceived as energizing, non-relaxing colors. It has been shown that in the extreme, red and yellow colors lead to relatively more nervous, fidgety, and aggressive behavior in man and even in monkeys.1

The Ganzfeld technique consists of exposing a person to an intense homogenous, unstructured sensory field. This type of sensory field can be induced through constant visual and auditory stimulation. For example, through specially designed goggles, one sees a red light and through earphones, one hears “brown” noise, which sounds like a waterfall (see the photo).

A person immersed in the Ganzfeld method. Photo by Marc Wittmann.

Ganzfeld is a German word coined by Gestalt Psychologists at the beginning of the 20th century and means “entire field”.2 We see only red and we hear only a waterfall. The Ganzfeld elicits visual and auditory illusions and it can induce stable—although, in most people, comparably weak—altered states of consciousness. Subjective reports of alterations referring to the visual experience of the Ganzfeld include emerging illusionary percepts, diminishing luminance, the appearance of structures such as moving shapes, and dreamlike imagery with pseudo-hallucinatory quality. Changes in the auditory modality comprise illusionary percepts like sounds of machines, chirping birds or water, and even more complex percepts of voices or music.

One feature of altered states of consciousness during Ganzfeld exposure is an altered sense of time. In general, regardless of the induction method, altered states of consciousness can be characterized by changes in the sense of self and time. Subjective changes in the passage of time during altered states of consciousness have been studied with different induction methods, among which are: hypnosis, meditation, psychedelics, when being absorbed in music or playing video games. In a recent study that used a special Ganzfeld technique where participants sit in an egg-shaped, whole-body perceptual deprivation chamber illuminated with one color, the reported experience of time proved quite distorted.3

In the just-published study with my coworkers Sebastian Kübel and Henrike Fiedler,4 we wanted to compare the experience of time in altered states of consciousness as induced through a 25-minute exposure to a multimodal Ganzfeld with differently colored light (red, green) and brown noise. Sixty-seven participants wore Kasina DeepVision Ganzfeld goggles.

Our results can be summarized in two clusters. On the one hand, we have data on the general effects of the Ganzfeld on states of consciousness; on the other hand, we can interpret our findings in regards to color-specific effects. Relating to the general effects, the more the experience of participants was altered as assessed with a questionnaire, the shorter the participants perceived the duration of the 25-minute Ganzfeld exposure and the faster the subjective passage of time. Such a relative underestimation of duration is a typical sign of altered states of consciousness, e.g., as experienced during deep states of meditation and more generally when people are in flow states while performing activities that they feel positively about. In the green condition, people felt more relaxed after than before the Ganzfeld exposure and this greater relaxation was related to an underestimation of duration and a faster subjective passage of time. In the red condition, in contrast, participants felt more agitated afterward than before. We also found clear effects between the two colors. Participants reported to be significantly more activated in the red condition as compared to the green condition and this greater activation leads to the feeling that the red session had lasted significantly longer than the green session.

Mind-body interventions, such as meditation or yoga, as well as other relaxation techniques, have been introduced into the clinical and health sciences, as I highlighted in a recent blog post at *Psychology Today*.5 It can be said that the core features of altered states of consciousness act positively against psychiatric symptoms. As we were able to show, a Ganzfeld session has mild properties to induce altered states of consciousness. Especially the green stimulation in combination with brown noise definitely showed to have the potential to become the basis for a new type of relaxation-induction technique, if investigated further.

Independent of these applications, we add knowledge to how green (relaxation) and red (activation) have different effects on us, emotionally and related to the judgment of time.

*Note*: *This post was first published at* Psychology Today *on 6 October 2020, and can be found here. All rights reserved by the author. Republished with the author's permission.*

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