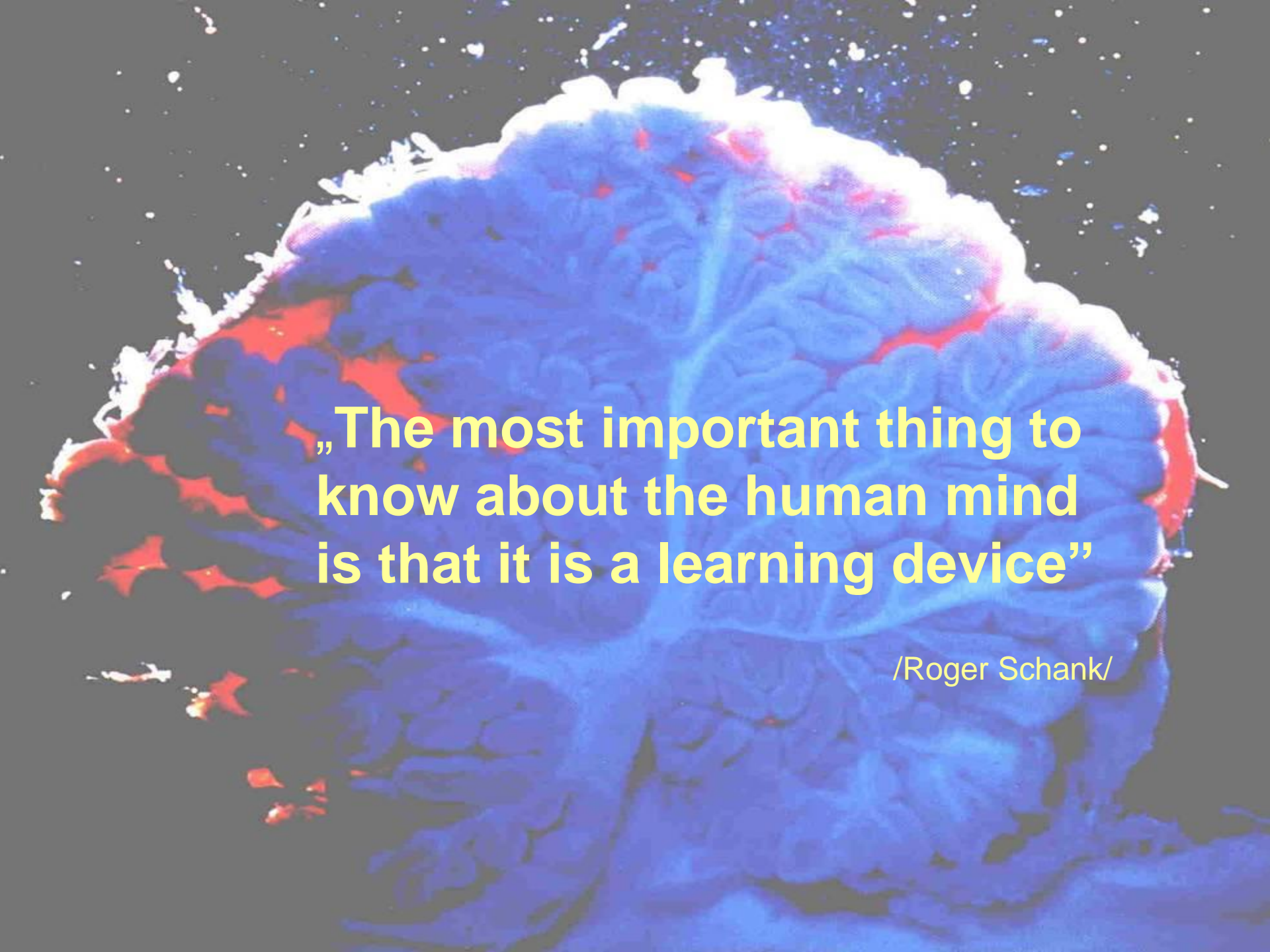




Qualia in constructing knowledge
THEORY OF QUALIA AND EDUCATION

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A stylized, glowing brain rendered in shades of blue and red, set against a dark background with white speckles. The brain is shown from a slightly elevated, lateral perspective, highlighting its complex, folded surface. The lighting creates a sense of depth and texture, with the blue areas appearing more prominent and the red areas providing a contrasting highlight.

„The most important thing to know about the human mind is that it is a learning device”

/Roger Schank/

„ The naked human mind – without paper and pencil, without speaking, exchanging opinions, making sketches – is something no one has ever seen.”

/Daniel C. Dennett/

Mary knows the world
only in black and white



A landscape photograph capturing a sunset over a body of water. The sky is filled with horizontal bands of color, ranging from deep orange and red near the horizon to pale yellow and light blue at the top. A thin, dark wire or cable stretches across the middle of the frame. In the distance, a dark silhouette of a church with a prominent spire is visible against the bright horizon. The foreground shows the dark, silhouetted outlines of trees and grass along the water's edge. The overall mood is serene and contemplative.

... one day he sees colors

QUALIA

The Latin word „*qualis*” means a feature in isolation from things that have that feature.”






Qualia „accompany“:
sensations, emotions,
perceptions and even
thoughts and desires.

Direct activity creates
the opportunity to learn
about qualia, e.g. the
softness of a crayon.

Qualia are only accessible through personal experience.

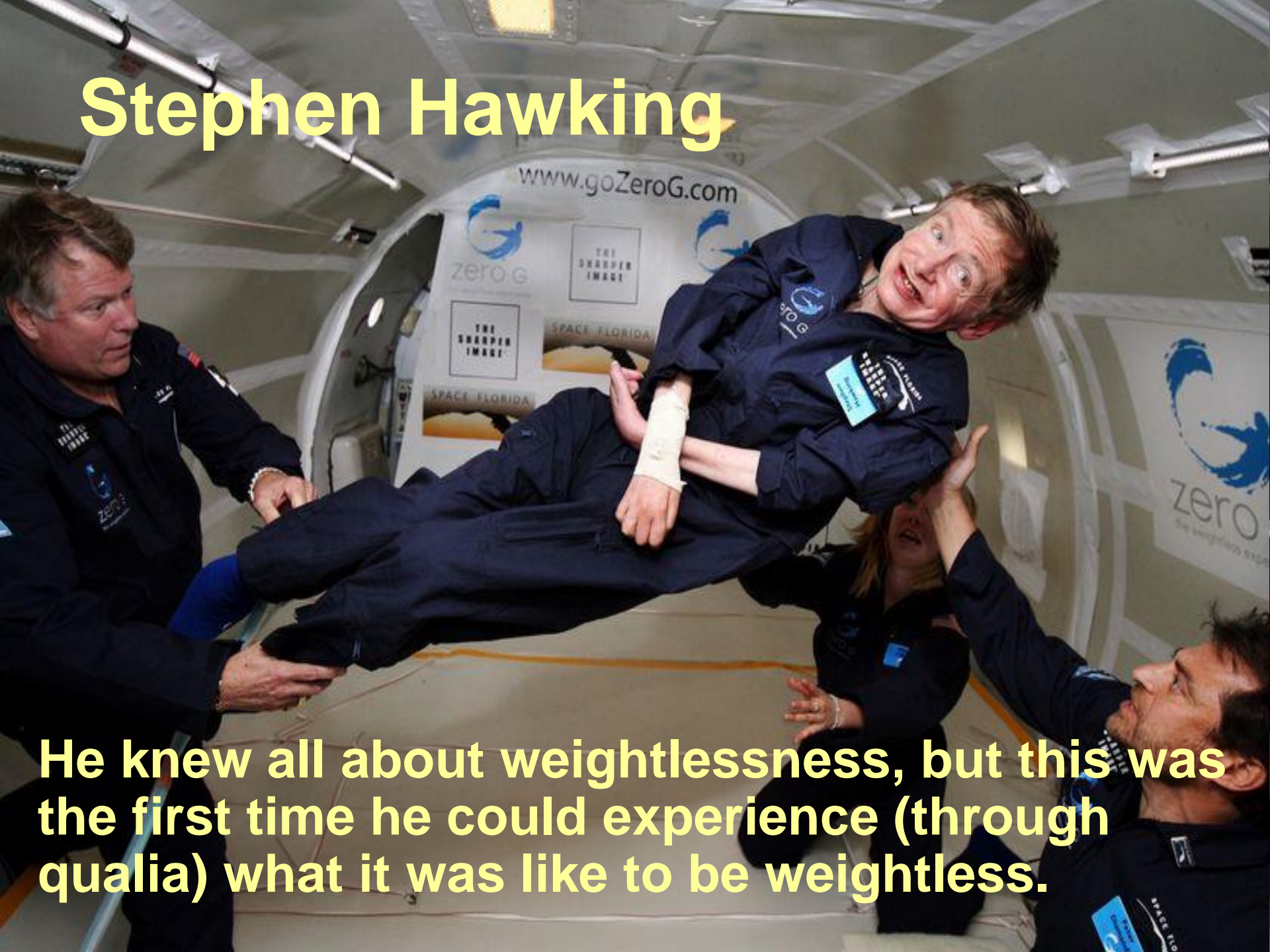




We also experience emotions
through qualia

Vatican, April 2, 2005, 9:01 p.m.

Stephen Hawking



He knew all about weightlessness, but this was the first time he could experience (through qualia) what it was like to be weightless.

Rene Magritte – „The treachery of images” (1929)



This is not a pipe

Rene Magritte painted an inscription below the pipe : „Ceci n'est pas une pipe”

(This is not a pipe.) The oil painting is not a pipe, but only a depiction of a pipe.

As Magritte himself commented on it :

"That famous pipe. How many people have reproached me for it. But can you fill that pipe? What if I wrote on my picture: This is a pipe. Then I would be lying!,"

Qualia

In the learning process, the subject can build knowledge by "experiencing the world" directly ("direct" qualia)

or

by "receiving the world" through media representations of objects and phenomena occurring in it ("medial" qualia).

The First Law of Qualia

Ramachandran & Hirstein

Qualia are irrevocable and unquestionable at the input, meaning that you can't say "maybe this is red, but if I wanted to, I could see it as green." There is an unambiguous, direct, and unmodifiable neural representation of red in the mind that is automatically transmitted to "higher brain centers."

You can't "**un-see**" something



IRREVOCABILITY OF QUALIA

Once you have seen a dog, you cannot un-see it

The Second Law of Qualia

Ramachandran & Hirstein

Qualia can be the source of conscious actions. Once a mental representation is generated, it can be used in various and arbitrary ways. We call this openness at the output. For example, if you have a percept (mental representation) of an apple, you can imagine using it to “tempt Adam” or to bake an apple pie. Although at the input the representation appears automatically (at the moment of perception) and is unmodifiable (I cannot see something other than what I see), at the output it can be used in an infinite number of ways. I can use the percept (generated on the basis of qualia) in any imaginations or to take any actions – seeing that I have apples, I can think about baking an apple pie. This does not apply to unconditioned core reflexes that are outside of consciousness.

The Third Law of Qualia

Ramachandran & Hirstein

Qualia are maintained (stored) in short-term memory, in an automatically created representation (they constitute the consciousness of the object – percept), until a free decision is made about its further use. In another case, we are dealing with a spinal reflex (see point two). This applies not only to qualia referring to perceived external objects, but also to internal ones and secondary ones, related to recollection – references to long-term memory resources, requiring copying the necessary data to short-term memory. “Many cognitive psychologists indicate that in such a model, short-term memory functions in the same way as consciousness.”

The Fourth Law of Qualia

Ramachandran & Hirstein

Qualia are directly related to attention (attentional processes).

Focus of attention is necessary so that starting from the percept of the perceived object (point one), one can make an appropriate decision – law two.

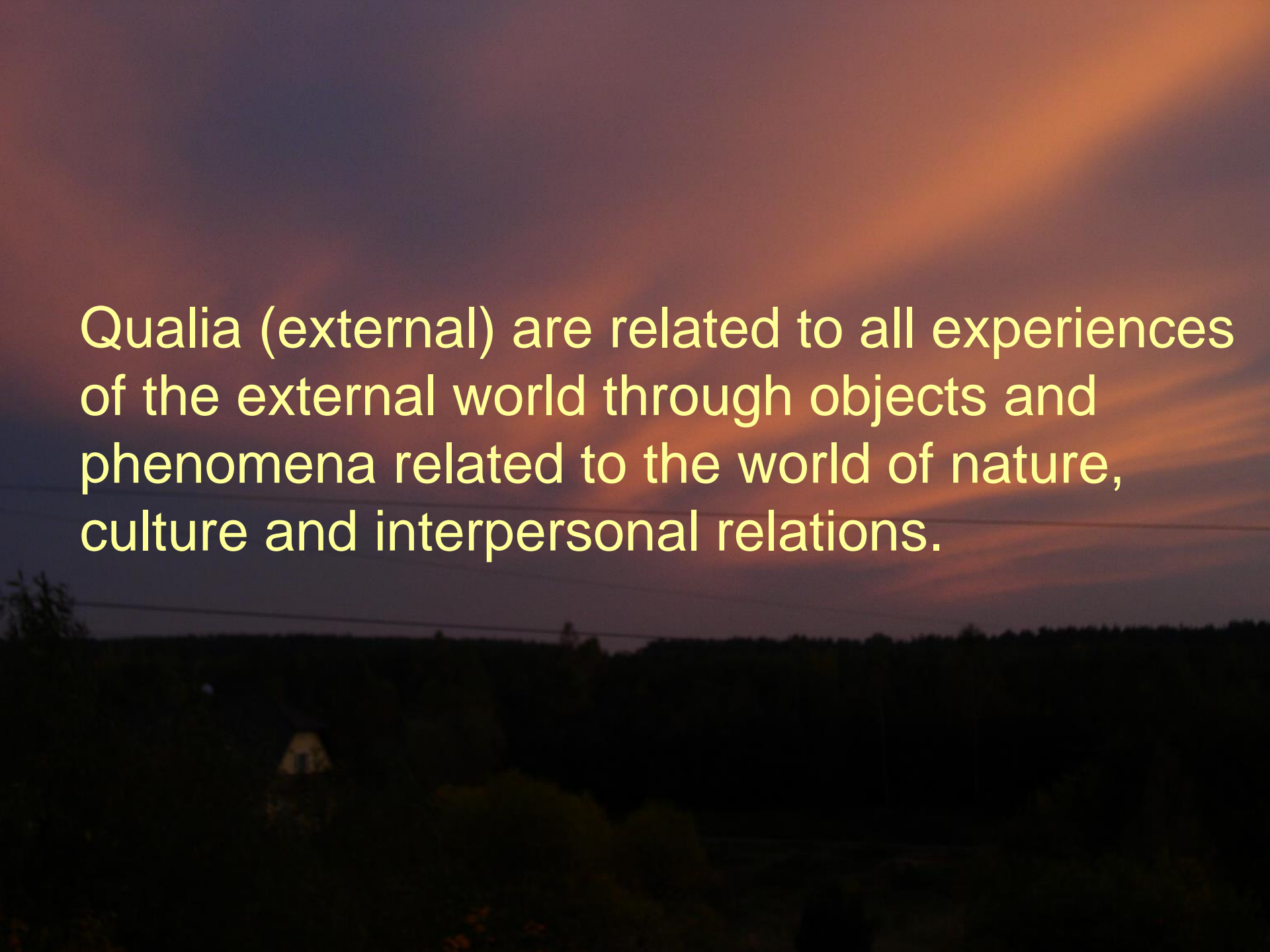
Qualia in cognitive processes

- Qualia are an important component of cognitive schemas
- Qualia are related to experiencing emotions accompanying cognitive activity
- Qualia are related to the circumstances and environment of cognitive activity
- Qualia are related to cooperation / collaboration in cognitive activity


HYPOTHESES of the theory of qualia in learning

Qualia are higher-order distinctions that constitute consciousness. The differences between qualia refer to differences in the connections and activity of different parts of the nervous system.

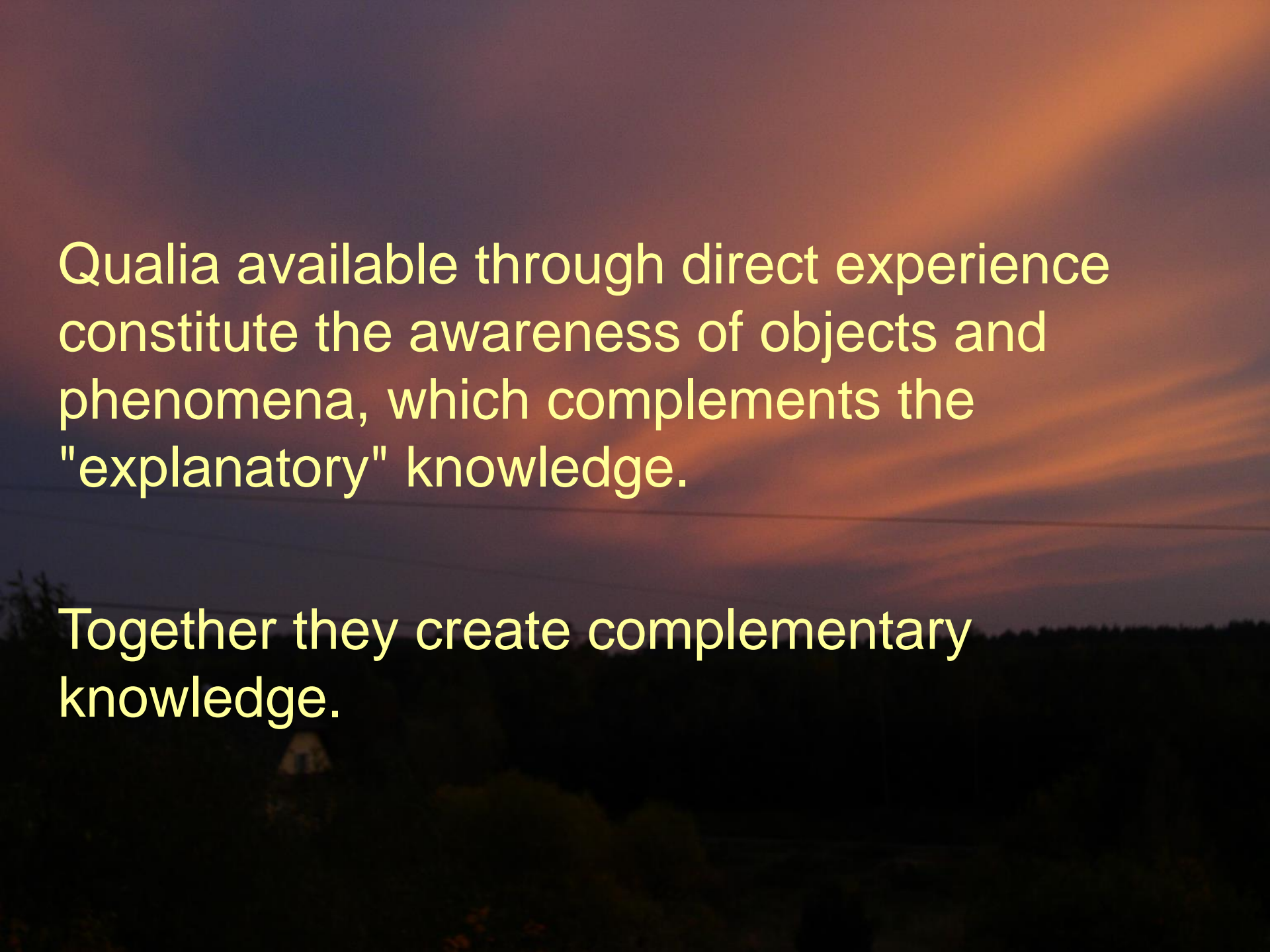
Qualia are always experienced as parts of unified and integrated acts of consciousness [...] they are always included in a complex of qualia, it is not possible to experience a single quale.

The background of the slide is a photograph of a sunset or sunrise. The sky is filled with soft, glowing clouds in shades of orange, yellow, and light purple. The bottom portion of the image is dominated by a dark, silhouetted forest line against the horizon. A few thin, dark lines, possibly power lines, stretch across the middle of the frame.

Qualia (external) are related to all experiences of the external world through objects and phenomena related to the world of nature, culture and interpersonal relations.



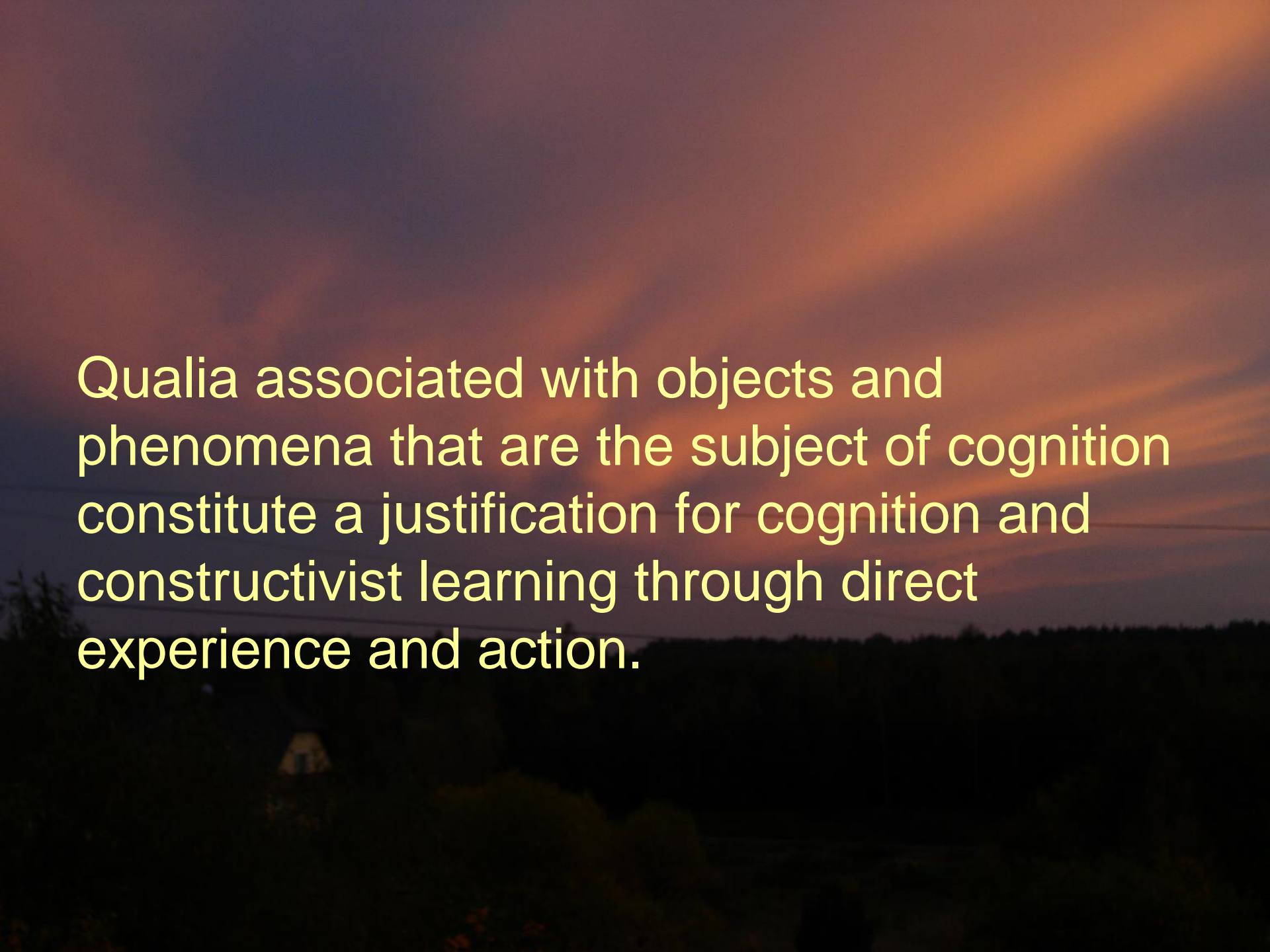
Qualia (internal) are related to experiencing somatic sensations and internal mental states related to, among others, emotions.



Qualia available through direct experience constitute the awareness of objects and phenomena, which complements the "explanatory" knowledge.

Together they create complementary knowledge.

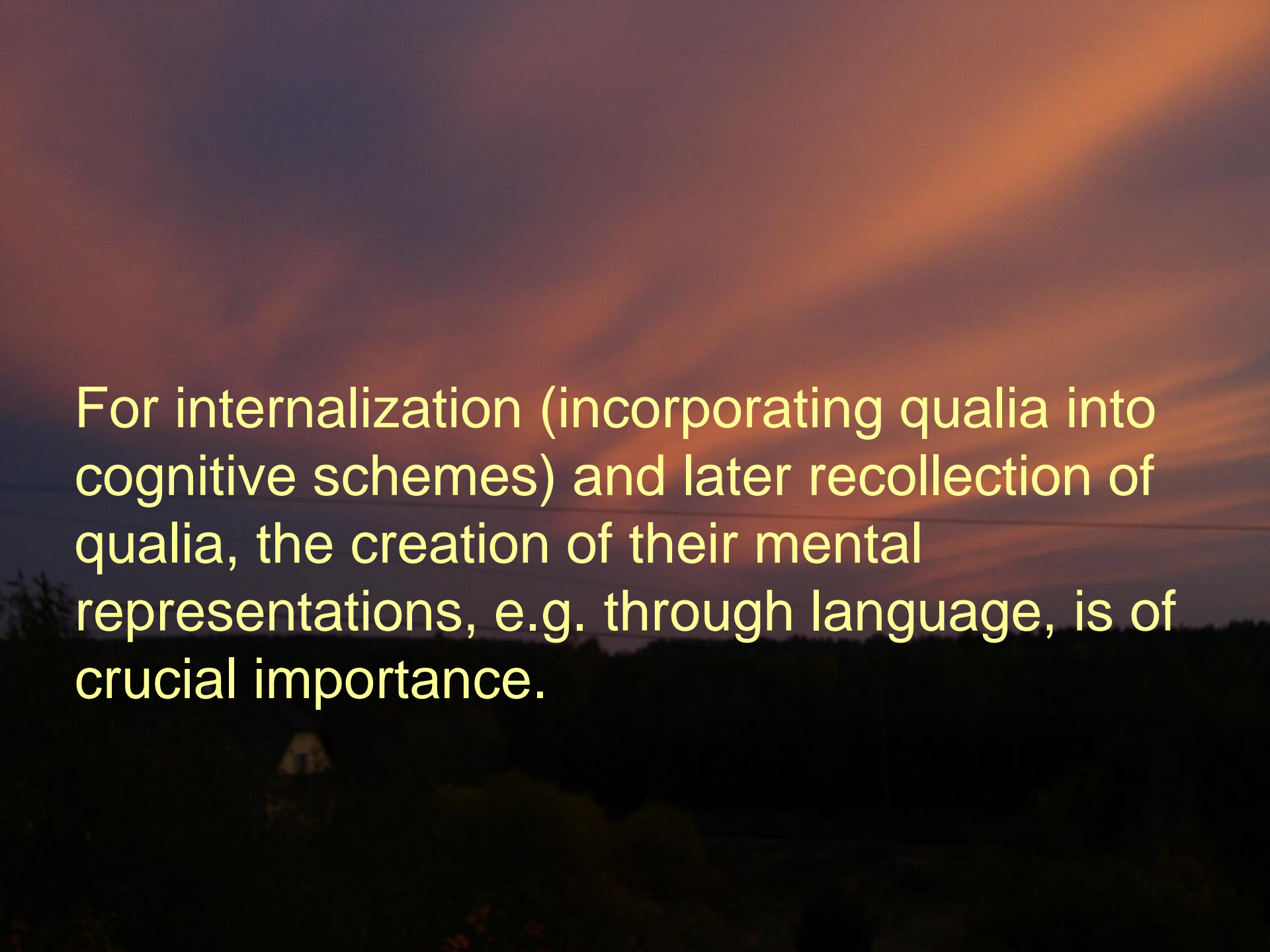
If qualia associated with an object or phenomena were previously experienced and became an element of our conscious knowledge (our cognitive schemes), then we can refer to them, for example, during the perception of a media message. However, if we did not have access to their direct experience, then we are unable to evoke the mental feelings that accompany them.



Qualia associated with objects and phenomena that are the subject of cognition constitute a justification for cognition and constructivist learning through direct experience and action.

The perception of qualia by individuals of a given species (e.g. humans) is similar due to the evolutionarily shaped anatomy of the sense organs and the central nervous system.

Individual differences in the perception and interpretation of qualia result from individual functional differences in the work of the sense organs and the brain, related to, among others, profiles of cognitive styles and intelligence, as well as differences in the level of linguistic knowledge and knowledge about the world



For internalization (incorporating qualia into cognitive schemes) and later recollection of qualia, the creation of their mental representations, e.g. through language, is of crucial importance.

Cognition and learning that takes place exclusively through media messages referring to referents unknown to the learner results in the formation of pretend (incomplete) knowledge.

Pretended knowledge can serve to understand phenomena, but it will always remain incomplete and much more susceptible to forgetting.

Verification of pretended knowledge is possible only through later experiencing objects and phenomena through qualia associated with them.

Qualia also constitute a justification for striving for empirical verification of scientific theories.

Media can trigger the experience (recalling) of qualia known to the subject, related to objects and phenomena presented in the media message.

Different media facilitate the recollection of previously experienced qualia constituting elements of cognitive schemes to a varying degree.



Hot media (e.g. movies), by having a stronger effect on the emotional sphere, facilitate better recollection of qualia.

The technical quality (e.g. resolution) and richness of the form of a media message determine the strength of experiencing and receiving media qualia.

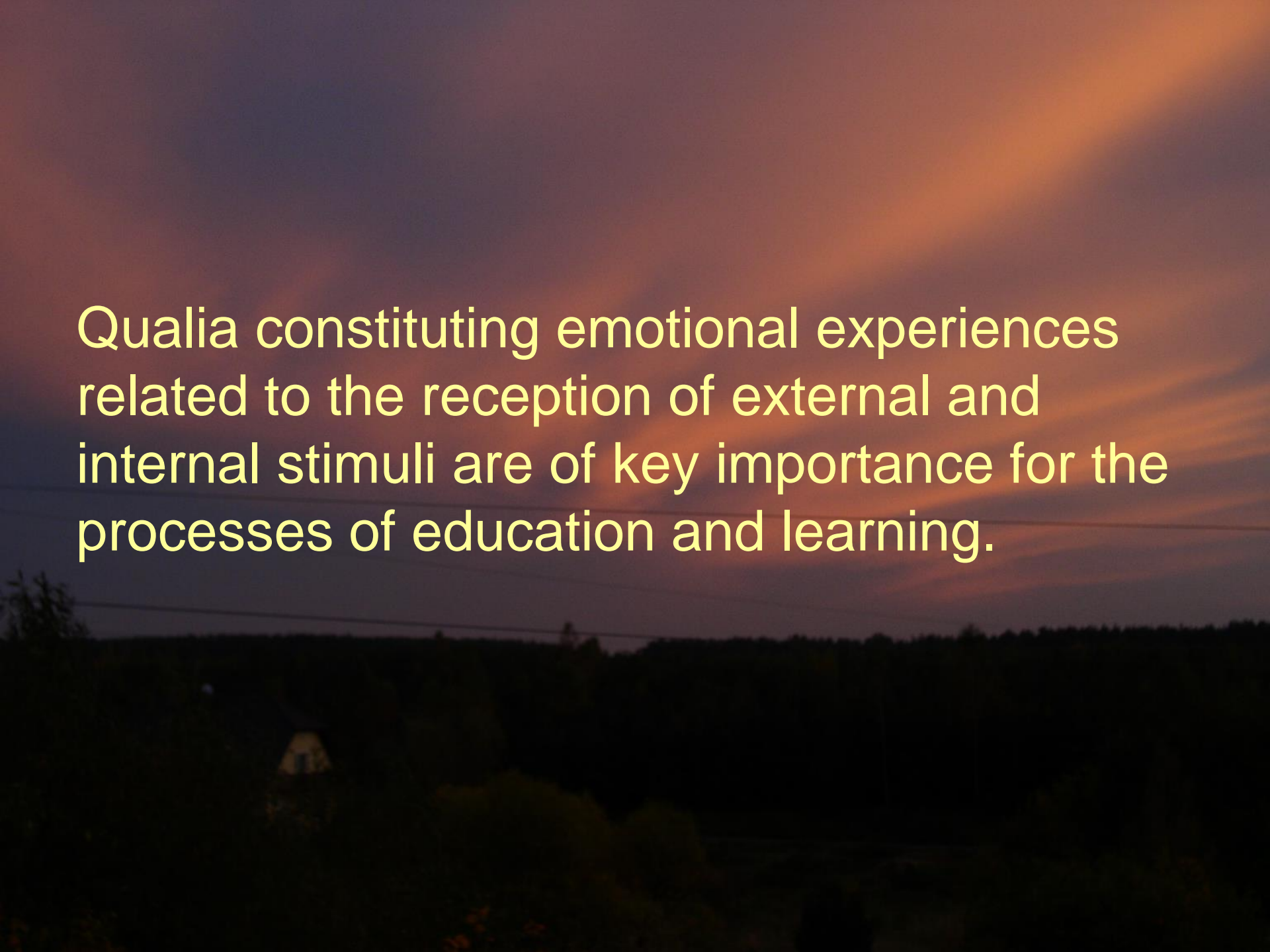
Only the original (object or phenomenon) presented in the media representation has the fullness of qualia.

The simpler the form of the message, the poorer it is in qualia, which are related to the form as a correlate of content.

The "reception" of qualia (object or phenomenon) is stimulated by the process of creating a media message by the learner in connection with cognitive processes.


Independently created messages have the greatest power to support the internalization of qualia and the construction and recollection of complementary knowledge.

Personal creation of multimedia "external representations of knowledge structures" constituting structured hypertext media notes during direct learning through experience stimulates the reception of qualia and the internalization of complementary knowledge and to the greatest extent facilitates the recollection - the activation of memory traces associated with qualia by activating the emotional sphere and chains of associations.

The background of the slide is a photograph of a sunset or sunrise. The sky is filled with soft, warm colors ranging from deep purple and blue at the top to bright orange and yellow near the horizon. Below the horizon, there is a dark, silhouetted line of trees or a forest. The overall mood is serene and contemplative.

Qualia constituting emotional experiences related to the reception of external and internal stimuli are of key importance for the processes of education and learning.

Qualia related to the experience of positive or negative emotions accompanying the learning process and interpersonal relations related to the learning process constitute a factor increasing or decreasing interest and motivation in acquiring knowledge.



More at:
<https://qualia.edu.pl>

Thank you for reaching the end.