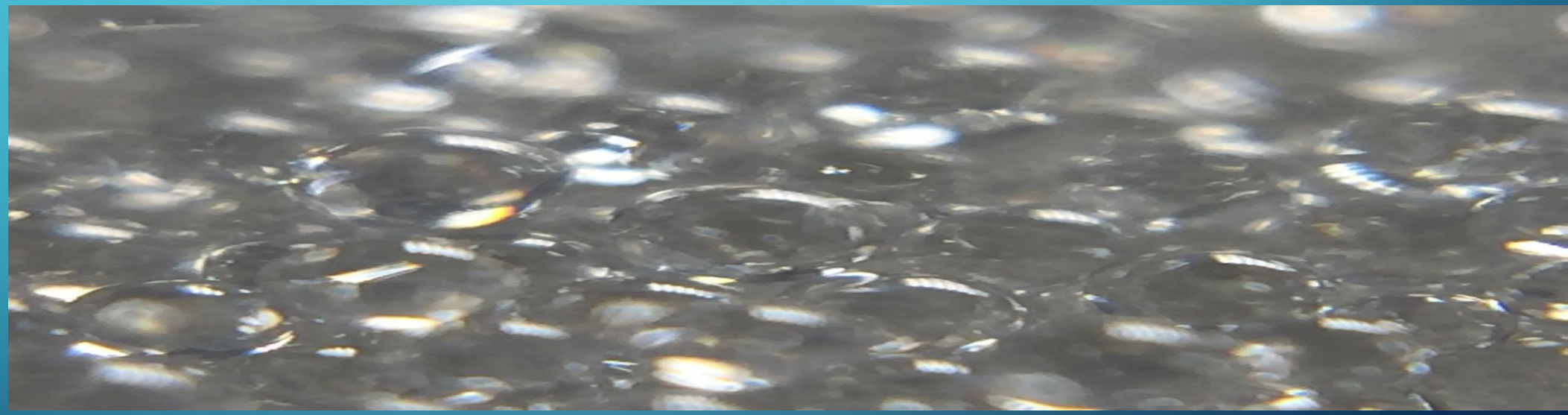
NOVALIS, HESSE, AND THE FUTURE OF KNOWING IN AN AI WORLD



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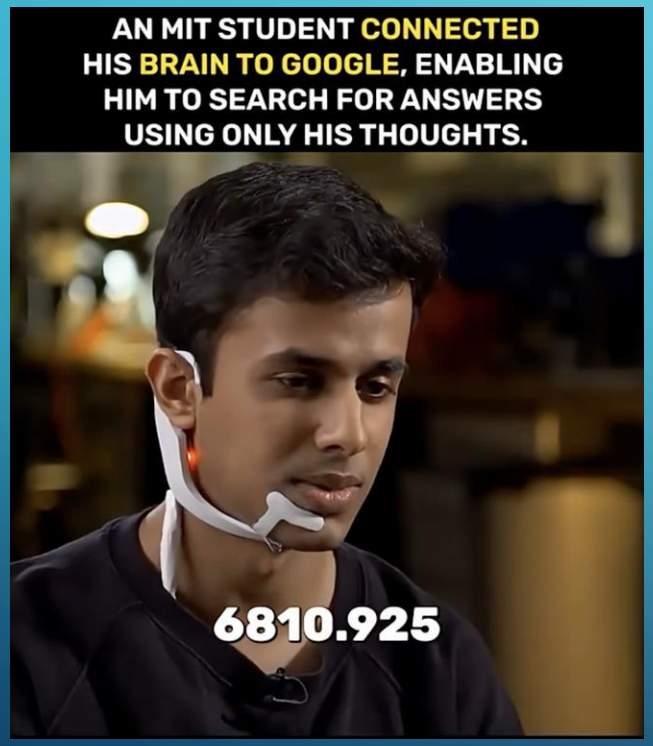
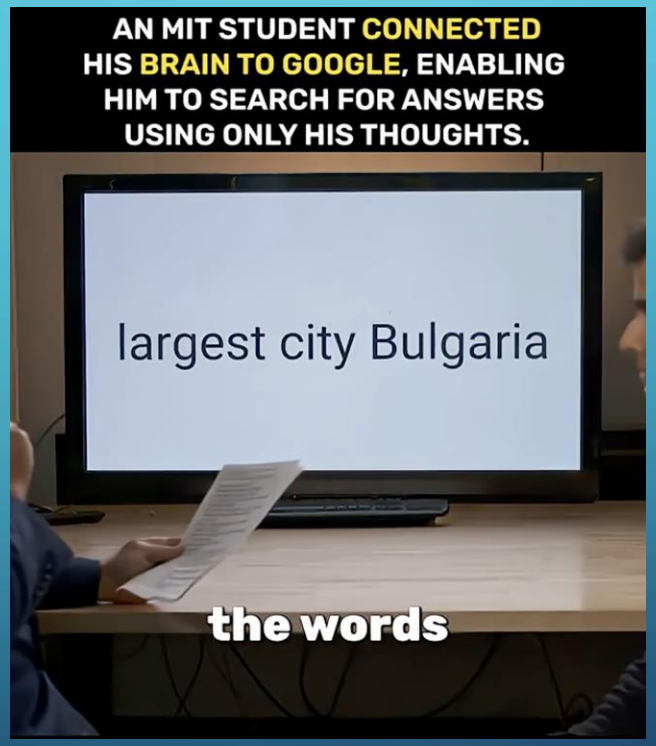
THE TRANSITION TO NEW MEDIA AND THE EMERGENCE OF A NEW AI WORLD

Arnav Kapur, a student in MIT's Media Lab, has developed a system to surf the internet with his mind. He silently Googles questions with his mind and can hear the answers through vibrations transmitted through his skull and into his inner ear.





Anchor: "You could be an expert in any subject. You have the entire internet in your head."

Kapur: "That's the idea."

Future emergence of new symbolic forms? A geometrical language for everything?

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HOW TO PRESERVE WHAT MAKES US HUMAN?

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Research Article

Towards "Glass Bead Games 2.0": Nurturing Global Cultural Memories by Means of New Forms of Art and Knowledge Interaction in the Age of AI

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ABSTRACT

The advent of AI calls for an existential self-redefinition of humanity. It necessitates the establishment of a pluralistic global humanist culture that enables us to coexist in the new world of active media and autopoietic technology. In this paper, related philosophical questions give rise to the proposal of a novel metaculture that elevates human heritages and cultural memories to the plane of a digital AI-based infrastructure. I argue for a balanced and holistic approach to human-to-human and human–AI interactions and metaculture that can be developed in the form of combinatorial "metagames" that reflect the potential of human consciousness, transcend the boundaries between technology, human embodiment and biology, the arts, sciences and humanities, and philosophy, and, finally, include the element of meaningful coincidence and spontaneity "in the second potency." Hermann Hesse's final novel, The Glass Bead Game, offers a key to understanding this basic idea. His vision is extremely relevant today. Based on this, the concept of cultivating global cultural memories through innovative aesthetic-epistemic "Glass Bead Games 2.0" is discussed further from a systematic angle. To complement this, reference is also made to Hesse's own source of inspiration: Novalis's "encyclopedist" approach interlinks aesthetic and epistemic productivity in a way that could become a major starting point to create a new holistic metaculture in the Age of AI.

Keywords: Artificial Intelligence; Cultural Memory; Glass Bead Game; Hermann Hesse; Novalis.

Wo aber Gefahr ist, wächst das Rettende auch.
But where there is danger, the saving powers grow as well.
—Friedrich Hölderlin

THE AGE OF AI: IS AN EXISTENTIAL SELF-REDEFINITION OF HUMANITY NECESSARY?

HERMANN HESSE'S GLASS BEAD GAME IN VIEW OF TODAY'S DEVELOPMENTS

TOWARDS OPEN AND SELF-EVOLVING GLASS BEAD GAMES 2.0

Challenges and Opportunities of Human–AI Co-Evolution

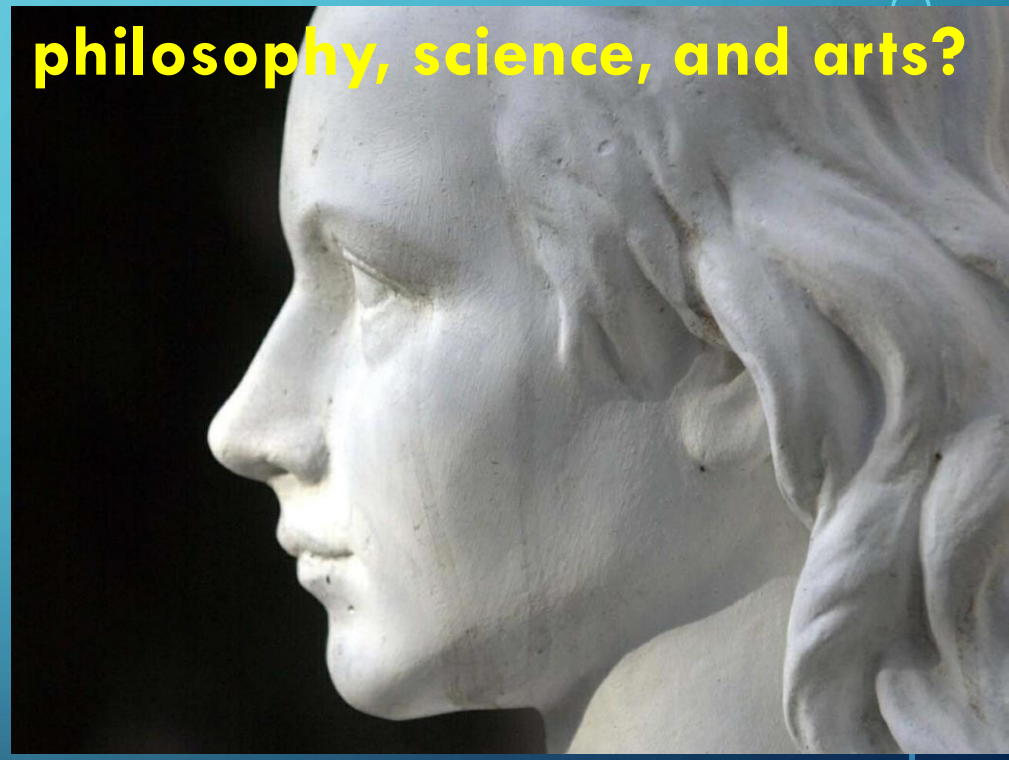
Possible Foundational Layers of Glass Bead Games 2.0

Hesse–Novalis: Open Spaces of Liberating Aporetic Glass Bead Games

NOVALIS (1772–1801):
GEORG PHILIPP FRIEDRICH VON HARDENBERG

- Greatest ***poet*** of Early Romanticism
- Developed his own unique form of Idealist ***philosophy*** (influenced by Plato, Plotinus, Kant, Fichte, Schelling)
- He had studied and worked in several ***scientific fields***: law (with honours), mining science, geology, mineralogy, mathematics and chemistry
- **'Novalis' = 'one who cultivates new land'**

A starting point for the new trans-classical universe of philosophy, science, and arts?



Fritz Schaper (1841-1919), "Novalis"

Chains of associations that go through various fields →

NOVALIS

- A new ***holographic integration*** of cosmology, epistemology, aesthetics, all sciences and cultural practices
- ***Emphasis on the connection*** of different fields
- Develops a new approach to ***comprehensive knowledge association*** which he calls "encyclopaedism" and …
- … which "**is actually more of a *free play of ideas*, an association of different fields of science in the sense in which Novalis writes […] that 'poetry' is based on 'active association of ideas—on an autopoietic [selbstthätiger], intentional, *idealistic production of coincidence*'"** (Séguin 2011, 25)

Anthropology

1571 Menschenlehre: Die Kindheit ist der Erwachsenheit entgegengesetzt: Blüte und Frucht – Frühling und Herbst.

Doctrine of the seasons

1572 Jahreszeitenlehre: Es gibt keinen Sommer. Es gibt nur eine oder zwei oder drei oder vier oder unendlich viel Jahreszeiten. Morgen, Abend und Nacht entspricht dem Frühling, Herbst und Winter, die Einteilung in Tag und Nacht der in Sommer und Winter.

Earth science, philosophical, poetic, historical

1573 Erdenlehre: Einteilungen der Erde. Philosophische und poetische Geographie. Historische Geographie ist die spezielle. Weltgegenden. Fiktionen der Astronomie. Sternbilder. Lichtmeßkunst. Sollte man nicht nach der mittlern Stärke des Lichts die Entfernungen berechnen können?

Compendia of the sciences

1574 *Compendia* der Wissenschaften. Jacobsons „Technologisches Wörterbuch" von Burgsdorf.

Doctrine of history [meta-reflection]

1575 Geschichtslehre: Neu und Jung ist eins. Neu ist das Objekt, Jung das Subjekt. (Bekannt und Alt sind auch nahe verwandt.)

Mathematics

1576 Mathematik: Allgemeiner Begriff der Multiplikation, nicht bloß der mathematischen – so der Division, Addition etc.

Vorzüglich interessant ist diese philosophische Betrachtung der bisher bloß mathematischen Begriffe und Operationen bei den Potenzen, Wurzeln, Differentialen, Integralen, Reihen, Kurven und Direkten, Funktionen. Der Binomialsatz dürfte noch eine weit höhere Bedeutung, eine viel interessantere Anwendung in der Physik in betreff der Polaritäten etc. erhalten.

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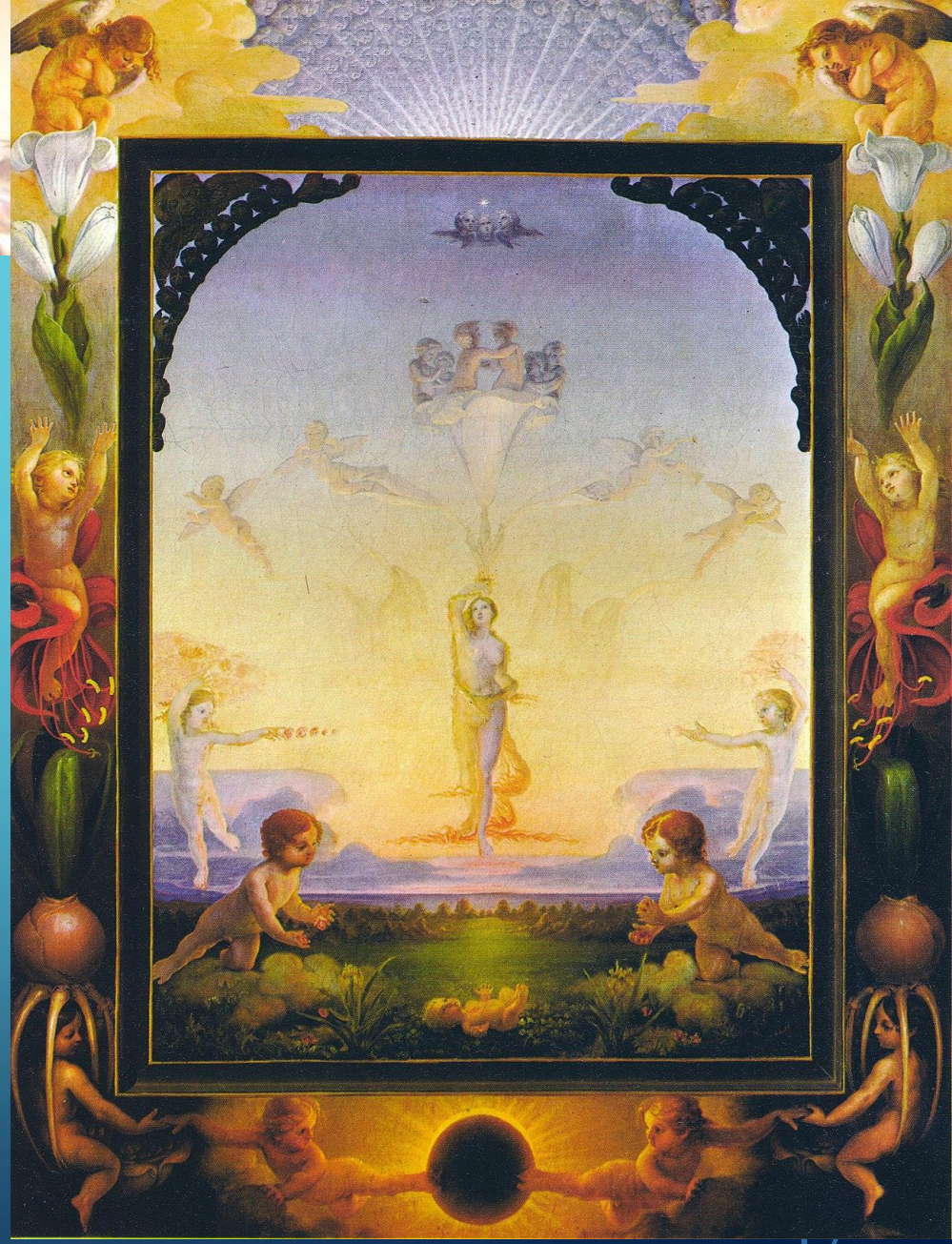
Novalis, *Das allgemeine Brouillon (1798–1799)*

NOVALIS

- Universe as an ***infinite network*** of space-time-independent relationships ***of all things with all other things***
- Every thing is a node and a ***fragment of ONE infinite self-emanating thing (within and without)***
- **"In our psyche, everything is [a priori DB] connected in the most unique, pleasing and liveliest of ways."** (Novalis, "Aphorismen und Fragmente")



Philipp Otto Runge (1777–1810), "The Morning"

NOVALIS

- Aesthetic, rational, somatic, psychological, intellective, and intuitive aspects always occur ***in unique combinations*** in each node (**a posteriori**) and in the sense of ***meaningful coincidence—much like artistic ideas, scientific findings and inventions in general*** **"[…] and one can say that every thought, every manifestation of our mind and soul is the most individual part of a completely singular whole."** (Novalis, *Aphorismen und Fragmente*)

NOVALIS

Nodes as fragments and "seeds" to be unfolded by others and future generations in a game-like fashion

- **"Only the [infinite] whole [of these nodes DB] is real. Only that thing can be absolutely real that is not again a part. In a sense, the unbound whole is grounded in analogy to persons playing a game, who, without chairs, sit in a circle with their [legs] criss-crossed"** (Novalis, "Bruchstücke philosophischer Enzyklopädistik").

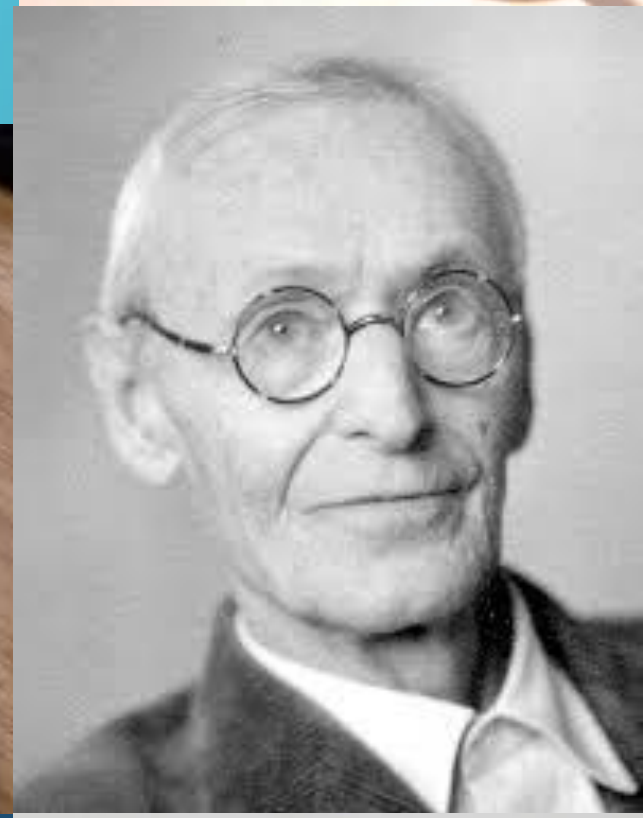
- **"Are not God and nature also playing? Theory of playing. Sacred games. Pure game theory – common and more advanced. Applied game theory."** (Novalis, *Das allgemeine Brouillon (I)*).

NOVALIS

- To participate the cosmic game, we ***constantly*** have to ***train*** our ***productive imagination*** to the limit
- **"The complete representation of the genuine spiritual life, raised to consciousness *through this action*, *is philosophy κατ' εξοχην*. Here a living reflection arises which, if carefully nurtured, will later expand of its own accord into an infinitely formed spiritual universe—the nucleus and germ of an all-embracing organization. It is the beginning of a true self-penetration of the spirit that never ends."** (Novalis, "Bruchstücke philosophischer Enzyklopädistik")
- This means the highest level of philosophy, sciences and arts combined, the ***artist–philosopher*** (Künstlerphilosoph) for Novalis

HERMANN HESSE (1877–1962)
DAS GLASPERLENSPIEL (1943)
THE GLASS BEAD GAME (MAGISTER LUDI)

- Nobel laureate (1946)
- Utopian/Science fiction novel about the ***magistri ludi***, the monastic order of the masters of the holistic Glass Bead Game (worked more than a decade on it)
- Inspired by Novalis' idea, the ***magistri ludi*** are ***artist–philosophers*** in Novalis' sense
- Hesse's game represents infinite creativity, which he also describes as unfolding in (partly fictional, imagined) historical dimensions



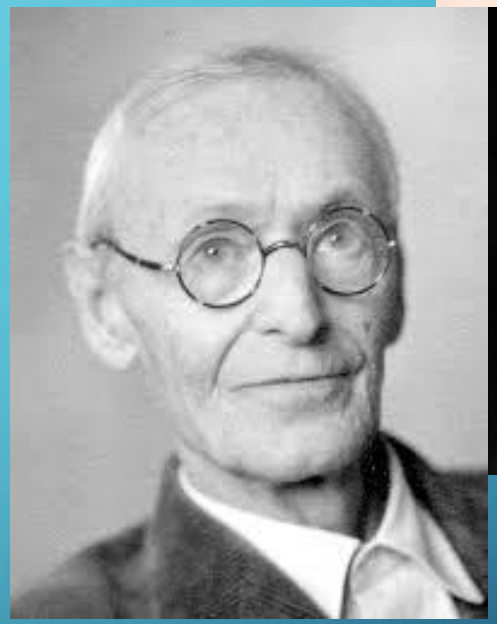
HERMANN HESSE (1877–1962)
MAGISTER LUDI: THE GLASS BEAD GAME
*KEEPING IN **PLAY** ALL **CULTURAL HERITAGES***

"The[..] rules [of the Glass Bead Game DB], the sign language and grammar of the game, represent a kind of highly developed secret language, *in which several sciences and arts, but especially mathematics and music (or musicology) participate* and which is capable of expressing the contents and results of almost all sciences and relating them to each other. The Glass Bead Game is therefore a game with all the contents and values of our culture, it plays with them, just as a painter might have played with the colors of his palette in the heyday of the arts. […]
(Hesse, *Das Glasperlenspiel*)

HERMANN HESSE (1877–1962)
MAGISTER LUDI: THE GLASS BEAD GAME
*KEEPING IN **PLAY** ALL **CULTURAL HERITAGES***

"***What mankind has produced in terms of knowledge, high thoughts, and works of art in its creative ages**, what the subsequent periods of scholarly contemplation on concepts all this immense material of spiritual values is played by the Glass Bead Game player as an organ is played by an organist*, **and this organ is of an almost unimaginable perfection, its manuals and pedals scan the entire world of the mind, its registers are almost innumerable, theoretically the entire spiritual content of the world could be reproduced by playing this instrument.**" (Hesse, *Das Glasperlenspiel*)

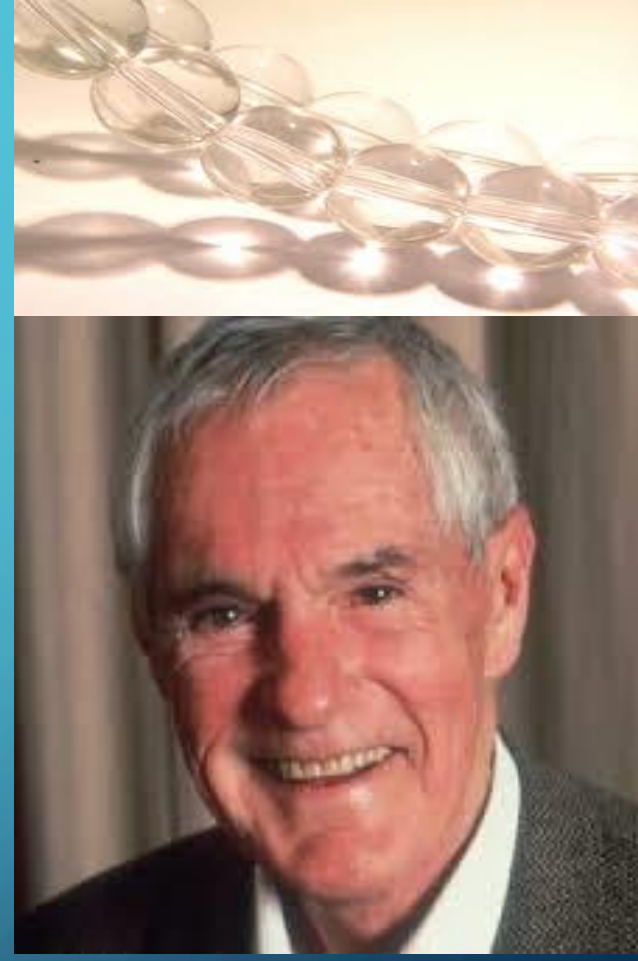
TIMOTHY LEARY (1920–1996) *THE GLASS BEAD GAME AND ARTIFICIAL INTELLIGENCE*



- Difference between Novalis and Hesse:
- Hesse's future vision of the Glass Bead Game is related to a ***technical device***
- ***In Hesse's future world only an aristocracy of players has developed the universal "Game"*** ***to such*** **"[…] a high degree of flexibility and sublimation [that it DB] already gained something like an awareness of itself and its possibilities, and this went parallel with the general development of the cultural consciousness of the time, which had overcome the great crisis." (Hesse, Das Glasperlenspiel, tr. DB)**

TIMOTHY LEARY (1920–1996) *THE GLASS BEAD GAME AND ARTIFICIAL INTELLIGENCE*

- According to Timothy Leary in 1986 (!), Hesse has anticipated the idea of human–AI interaction, emphasizing that AI systems of the future will offer the possibility of an ***entirely new mode of thinking***, as "**[n]ew thought technology creates new ideas**" (Leary 1986, 203).
- Leary emphasizes that Hesse depicted a future Golden Age of Mind that is "**based on a tangible mental-device, a thought machine**" (ibid.), adding …



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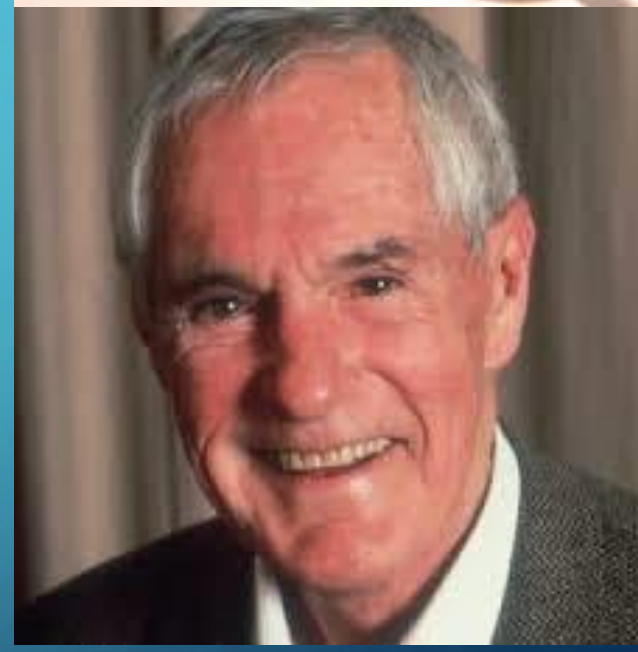
TIMOTHY LEARY (1920–1996) *THE GLASS BEAD GAME AND ARTIFICIAL INTELLIGENCE*

- **"Please do not be faked out by the *toy-like simplicity of this device*. Hesse has *changed the units of meaning, the vocabulary of thought*. This is serious, serious stuff. Once you have defined the units of thought in terms of mathematical [symbolism, representing all possible DB] elements [of all human scientific and artistic productivity past and present DB] you've introduced a major mutation in the intelligence of your culture."** (Leary 1986, 203, italics and insertion DB)



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DEVELOPING NATURAL–ARTIFICIAL INTELLIGENCE

- What is the take-away from Novalis, Hesse and Leary in view of today's AI and cultural heritages, and the dialectics of their practical loss and universal virtual availability?
- Further development of human and artificial intelligence is reciprocal; learn to see the ***difference and the connection*** of human and non-human ***natural and AI intelligence***
- Raising human intelligence (creative imagination, Novalis' **artist–philosopher**, Hesse's **magister ludi**) ***is necessary for AI advancement, too!***

DEVELOPING NATURAL–ARTIFICIAL INTELLIGENCE

- In correlation to AI, human intelligence has to be raised on the basis of ist own conditions: "*Superhumanism*" instead of transhumanist "neo-Gnostic" fallacies**, transference of all cultural practices past and present on the meta-level of the "Glass Bead Game 2.0"**
- Human intelligence has to be raised exponentially by a new mode of creative thinking that includes game-like structures in human–human and human–AI interaction

DEVELOPING NATURAL–ARTIFICIAL INTELLIGENCE

- The Glass Bead Game 2.0 is *not (!)* ***a mere "computer game" and not restricted to thought culture***, but a ***NEW HOLISTIC CULTURE,*** which includes the elements of coincidence ("divination", "rolling dices"), freedom and open developments of structures, including the integration of **human body movements and symbolic gestures, separate human–human practice and AI dominions but also humans–AI inter*ACTION***