



VI

CONGRESO INTERNACIONAL DE

sinestesia,
ciencia
y arte

Alcalá la Real
18 - 21 mayo, 2018

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**ACTAS DEL “VI CONGRESO
INTERNACIONAL DE SINESTESIA,
CIENCIA Y ARTE + ACTIVIDADES
PARALELAS 2018”.**
Alcalá la Real, Jaén (España).

*Sedes: Convento de Capuchinos,
Palacio Abacial, Teatro Martínez
Montañés, Alcalá la Real (Jaén) y
Conservatorio Superior de Música
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Versión digital, Abril de 2018. Primera
Edición/First edition: April 2018
E-book ISBN: 978-84-948665-0-0

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Timothy B. Leyden.
Diseño imagen, trípticos de
promoción y cartel: Víctor Parra

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Artecittà.**
Granada. 2018
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**FROM “OBSCURE FEELING” TO “SYNESTHESIA”.
THE DEVELOPMENT OF THE TERM FOR THE CONDITION
WE TODAY NAME ‘SYNESTHESIA’**

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Abstract. The condition we today name synesthesia, an involuntary phenomenon, in which a small percentage of the population reports extraordinary additional sensations triggered by reading, listening to music, eating and so on, had different names throughout the history. There was a long process of the development of its name, from “obscure feeling” (1772) to “synesthesia” (1892). This paper tries to unscramble its history.

Keywords: synesthesia, 19th century, terminology, philology, history of science

In this historical overview, we try to unscramble the history of the name for the condition we today name synesthesia, from 1772 until 1892, when the term synesthesia was used for the first time in a way which is ours today. Variants of the term synesthesia (e.g. sunaesthesia) had been used by ancient Greek and Latin scholars in a variety of contexts (including medically) but not to refer to the phenomenon of synesthesia as we understand it today (cf. SCHRADER, 1969, pp. 46–49; LÜHE, 1998, col. 768; ADLER & ZEUCH, 2002; FLAKNE, 2005). We do not consider these earlier usages here. We always cite the term for synesthesia in its original language, and, if the original term is not in English, an English translation is added in squared brackets, for considering smallest discrepancies in language. All translations from other languages into English are our own, unless otherwise marked.

1. FROM *OBSCURE FEELING* (1772) to
PSEUDOCHROMESTHÉSIE (1864)

Although the first documented synesthete in history was the Austrian Georg Tobias Ludwig Sachs (1812;

cf. JEWANSKI, DAY, WARD, 2009, 2012 and 2014), we have a not very concrete quote from the German poet and philosopher Johann Gottfried Herder, taken from his *Treatise on the Origin of Language*:

“Mir ist mehr als Ein Beispiel bekannt, da Personen natürlich, vielleicht aus einem Eindruck der Kindheit nicht anders konnten, als unmittelbar durch eine schnelle Anwandlung mit diesem Schall jene Farbe, mit dieser Erscheinung jenes ganz verschiedene, dunkle Gefühl verbinden, was durch die Vergleichung der langsamen Vernunft mit ihr gar keine Verwandtschaft hat: denn wer kann Schall und Farbe, Erscheinung und Gefühl vergleichen?” (HERDER, 1772, pp. 94–95)

[I am familiar with more than one example in which people, perhaps due to an impression from childhood, by nature could not but through a sudden onset immediately associate with this sound that colour, with this phenomenon that quite different, obscure feeling, which in the light of leisurely reason’s comparison has no relation with it at all – for who can compare sound and colour, phenomenon and feeling?] (English translation in HERDER, 1772/2002, p. 106]

Herder's formulations "could not but" and "immediately" are criteria for synesthesia. And his description "dunkle[s] Gefühl" [obscure feeling]¹ fits with Sachs's description, written 40 years later. Sachs did not give a specific name to the phenomenon in his self-description as a synesthete (inside his medical dissertation about albinism) and wrote, in Latin, about "phenomena" [features], "obscura repraesentatio" [obscure ideas], and "ipsam repraesentationem coloratam videri" [that a colored idea appears to him] (SACHS, 1812, p. 80, 81 and 81).

The reviewers of his book used the expression "farbige Erscheinung" [colored appearance] (ANONYMOUS, 1813, p. 236) or wrote that Sachs "gewisse Dinge als farbige Gegenstände auf eigene Weise repräsentirt" [represents special things as colored objects in his own way] (ANONYMOUS, 1814, p. 12). A German translation of Sachs's book from 1824 translated "phenomena" with "Erscheinungen", "obscura repraesentatio" with "dunkle Vorstellung", and "ipsam repraesentationem coloratam videri" with "daß ihm eine gefärbte Vorstellung erscheine" (SACHS, 1812/1824, p. 99).

After these obscure paraphrases, the first terms for synesthesia derived from the word 'color', because all known synesthetes had a stimulus-to-color-synesthesia. The first was given by the Frenchman Charles-Auguste-Édouard Cornaz in his medical dissertation about eye diseases, who named it "hyperchromatopsie (perception de trop de couleurs)" [hyperchromatopsia (perception of too many colors)] (CORNAZ, 1848, p. 150; cf. JEWANSKI, *et al.*, 2012a and 2012b), because for him it was the opposite of "chromatodysopsie" [chromatodysopsia: color-blindness]. Concerning the perception of colors, Cornaz regarded Daltonism as an anaesthesia, and analog "hyperchromatopsie" as a "hyperesthésie du 'sens des couleurs'" [hyperesthesia of the 'color sense'] (CORNAZ, 1848, p. 150). In its first part, this term is very close to our term today "synesthesia" (hyper-esthesia: hyper sensation; syn-esthesia: combined/united sensation).

In 1864, the French physician Chabalier gave the condition a new name, because for him it was a disturbance of vision. Therefore, he named it "pseudochromesthésie" [pseudochromesthesia], because of the perception of false colors (CHABALIER, 1864). From 1864 on, Cornaz's term from 1848 was no longer in use.

2. SYNÉSTHÉSIE (1864), OR: OUR MODERN TERM FOR SOMETHING DIFFERENT

In the year of Chabalier's article, 1864, the first use of the 'term' "synesthesia" during the 19th century can be seen by the famous French physiologist Alfred Vulpian. He inserted it in a public lecture at the end of his 20th *Leçon sur la physiologie*, dated July 21, and published these lectures two years later (1866, p. 465; cf. SCHRADER, 1969, pp. 46–49). But Vulpian's understanding of synesthesia is different from ours today. He used it for phenomena which he related to the tail of the medulla oblongata (in the brainstem), but did not mention "hyperchromatopsie" or "pseudochromesthésie" in this context:

"Mechanical irritation of the external auditory canal gives rise to a special sensation, a tickling in the throat, that makes people cough. The impression on the eyes of a bright light, sunlight for example, causes a particular tickle in the mucus membrane in the nasal cavity and indirectly provokes a fit of sneezing in certain susceptible people. [...] It's via the terms *sympathy* [original: *sympathie*] or *synesthesia* [original: *synesthésie*] that we must designate the phenomena in question. Or even, with Müller, we could use the expression *associated sensations* [original: *sensations associées*]." (VULPIAN, 1866, p. 463 and 465)

Vulpian referred to the German physiologist Johannes Müller who had named these phenomena "Mitempfindungen" [co-sensations] (MÜLLER, 1837, p. 708). Vulpian created the term "synesthésie" probably analogous to the terms "anesthésie", "thermesthésie", and "hyperesthésie" (SCHRADER, 1969, p. 47), which he later used in an article *Moelle (Physiologie)* [spinal cord (physiology)] with a separate chapter *Synesthésies* (Vulpian, 1874, pp. 519–527). In 1864, we have the term "synesthésie" for its first time in the 19th century in our modern spelling, but in a different meaning.

3. FROM SUBJECTIVE FARBEN-EMPFINDUNGEN (1873) TO SECUNDÄREMPFINDUNGEN (1881)

Outside of these discussions, the American poet Hannah Reba Hudson (1873; cf. JEWANSKI, *et al.*, 2011, pp. 301–302) named her own number-to-form-synesthesia "idiosyncrasy". Yet her article was not published in a medical journal but in a magazine for literature, art and politics, and was rarely noticed by others.

Also in 1873, the Austrian synesthete Fidelis Alois Nussbaumer described our phenomenon as "subjective F a r b e n empfindungen" [subjective color sensations] (NUSSBAUMER, 1873a; cf. JEWANSKI, *et al.*, 2013) respectively in different

¹ In an earlier translation (JEWANSKI, DAY, WARD, 2009, p. 297; 2012, p. 58; 2014, p. 74), we used "dark ideas", but "obscure ideas" seems to be more convenient and fits better with Forster's translation "obscure feeling".

spelling “subjective Farben-Empfindungen” (NUSSBAUMER, 1873b). Two months later, in an related article, he gave a suggestion for a new name: “Phonopsie” [phonopsia] for “Töne-Sehen” [seeing sounds] (NUSSBAUMER, 1873b, p. 60). At this point in history, the earlier cases of synesthesia, and with them the different terms, were forgotten, because Nussbaumer regarded himself as being the first synesthete and the first to give it a name. This point of view was adopted by his reviewers from different countries. (The earlier cases and terms were rediscovered no earlier than in 1890 by Suarez de Mendoza.) Nussbaumer’s new term “Phonopsie” was published in an obscure journal – *Mittheilungen des Aerztlichen Vereines in Wien* [Communication of the association of physicians in Vienna] – not more than a newsletter of a local association, and was rarely noticed by others. The British philosopher George Henry Lewes, while discussing Nussbaumer, named the phenomenon “double sensation” (LEWES, 1879, pp. 280–287).

The Swiss Eugen Bleuler and Karl Lehmann, who later became famous scientists, Bleuler as a psychiatrist, Lehmann as a hygienist, were medical students when they discovered six different kinds of synesthesia; five of them belonged to a stimulus-to-light-synesthesia and included colors and forms under the umbrella of “light”, no. 6 was a light-to-sound-synesthesia. The most frequent one was sound-to-light-synesthesia. They refused Nussbaumer’s term “Phonopsie”, because it covered only parts of the issue, as well as “Farben-Empfindungen”, because “light” was more than only “color” (BLEULER & LEHMANN, 1881, p. 4, note). Instead, they named the phenomenon “Secundärempfindungen oder Secundärvorstellungen” [secondary sensations or secondary imaginations] (BLEULER & LEHMANN, 1881, p. 3, note), because they were not sure if the phenomenon dealt with sensations or imaginations, although they were more in favor for the first term. Their book (1881) was titled “Lichtempfindungen” [light sensations], as the most frequent form of synesthesia, and in its second part integrated “verwandte Erscheinungen” [related phenomena]: *Zwangsmässige Lichtempfindungen durch Schall und verwandte Erscheinungen auf dem Gebiete der andern Sinneempfindungen* [Compulsory light sensations through sound and related phenomena in the domain of other sensations].

4. FARBENHÖREN - COLO(U)R HEARING - AUDITION COLORÉE (1881/82) – (1889), OR: THE NAME OF ONE TYPE OF SYNESTHESIA BECOMES THE NAME OF THE WHOLE PHENOMENON

Bleuler and Lehmann’s book was reviewed in July 1881 in the Austrian *Neue Freie Presse* [New Free

Press] in Vienna, a daily appearing overregional newspaper, under the headline *Das Farbenhören* [Color hearing]. Here this term, still used today, an invention (“a new built word”, ANONYMOUS, 1881a, left col.) of the author (the term “Farbenhören” was not used in Bleuler and Lehmann’s book) appears for the first time (ANONYMOUS, 1881a). The term “Farbenhören” means “in Farben hören” [listening in colors] (ANONYMOUS, 1881a, left col.) and was probably chosen, because a sound-to-light-synesthesia (and “light” means “colors” and “forms”) was the most frequent type Bleuler & Lehmann had reported about. In 1881, the term did not mean a stimulus-to-color-synesthesia, but the whole phenomenon we today name synesthesia.

In August 1881, this review was reprinted in the German medical journal *Medizinische Neuigkeiten für praktische Ärzte* [Medical news for practitioners] and therefore was presented to physicians (ANONYMOUS, 1881b). (By chance, this journal was published in Erlangen, the city where Sachs has gotten his doctoral degree.) This journal was evaluated in October 1881 in an American medical journal, *The Cincinnati Lancet and Clinic, a Weekly Journal of Medicine & Surgery*. Now the German review was translated and reprinted again, inside the section *Ophthalmology and otology*. Here, the English term “Color hearing“, a translation of the German “Farbenhören“, appeared first time, in American spelling (ANONYMOUS, 1881c). The journey of this review from Vienna to Erlangen to Cincinnati, Ohio, finally ends in London, where the American version of the article again was reprinted in December 1881 in *The London Medical Journal*. Now the title was transferred to “Colour-hearing“, in British English spelling including a hyphen (ANONYMOUS, 1881d). This reprint in *The London Medical Journal* was known to the Frenchman Louis-Marie-Alexis Pédrone, an assistant of an opthalmological clinique who in 1882 published twice an article with the title *De l’audition colorée* (1882a; 1882b), the first French translation of “Colo(u)r-hearing”. With Pédrone, France became the most important nation for research on synesthesia for the next decade.

Summarizing the development of the years 1881/82: One single article (ANONYMOUS, 1881a) led to a new term in German, American English, British English, and French. Important for us: all these terms meant, during the 1880s, what we today name synesthesia, while today the terms from the 1880s are used for a single type of synesthesia: sound-to-color-synesthesia. Up to this date, all scientists dealing with synesthesia were physicians, and, up to Chabaliér, synesthesia was regarded as a medical illness. In 1889, psychologists entered the discussion.

At the *Congrès international de psychologie physiologie*, held in Paris 1889, with a separate section about *audition colorée*, a commission which

included the psychologists Théodore Flournoy from France and Eduard [Édouard] Gruber from Romania decided to use the term *audition colorée* for all kinds of synesthesia (GRUBER, 1890; JEWANSKI, *et al.*, 2015): “The congress expresses the wish that it proceeds to an enquiry on the phenomena named *audition colorée* [colored hearing], taking this term in the most general of constant link between the sensations of diverse senses” (GRUBER, 1890, p. 157). With this goal, it confirmed the development of the 1880s. Initiated by this conference, within three years three books about synaesthesia were published in France (SUAREZ DE MENDOZA, 1890; MILLET, 1892; FLOURNOY, 1893); all of them had the term “*audition colorée*” in the title – and meant, what we today name “synesthesia”. We will come back later to each of the authors.

5. GERMANY: VARIANTS OF “EMPFINDUNGEN” (1880s)

During the 1880s, inside the German discussion, several authors only varied Bleuler and Lehmann’s term and always used the word “sensations” inside their term. While Bleuler and Lehmann had discussed the term “*Mitempfindung*” [co-sensation] (1881, p. 3, note) but avoided it due to possible misunderstandings, the physician Richard Hilbert used it to describe the additional sensation (1884, p. 3). Hermann Steinbrügge (1887) titled his inaugural speech as a professor of medicine with “*secundäre Sinnesempfindungen*” [secondary sensations of senses]. Two German medical dissertations about synesthesia were published in the next two years: Ludwig Deichmann (1889) named it “*secundäre Empfindungen*” [secondary sensations], Albert Ellinger (1889) “*Doppelempfindung (Secundärempfindung)*” [double sensations (secondary sensation)]. These terms are similar to Müller’s term “*Mitempfindung*” [co-sensation].

An exception in finding a term which derives from Beuler and Lehmann’s terms is the physician Arthur Sperling, who was present at the Paris conference 1889 and gave it the name in French “*chromatopsie*” [chromatopsia] (SPERLING, 1890, p. 95). But this term was not noticed by others, because it was only a short remark inside a contribution to a discussion.

6. *SYNESTHÉSIE* VERSUS *SENSATIONS ASSOCIÉES* (1888)

One open question at that time was the relation between “*Mitempfindung*” [co-sensation], used by Müller (1837) and picked up as “*synesthésie*” [synesthesia] by Vulpian (1866) on the one side, and “*Secundärempfindungen*” [secondary sensations] like “*Color hearing*”, used by Bleuler & Lehmann (1881) on the other; the latter is the phenomenon we today

name “synesthesia”. In 1884, Müller’s phenomenon “*Mitempfindung*” was analyzed in Russia (KOVALEVSKII, 1884) and from there received in the West:

The French physician Henry de Fromental regarded “*synesthésie*” as an “(unspecified) double sensation [original: double sensation] that the subject experiences in two distinct points of the body, more or less separated from each other, under the influence of excitation carried by one of these points.” (FROMENTEL, 1888, p. 9) This definition included Müller’s and Kovalevskij’s as well as Bleuler & Lehmann’s phenomena. Fromental took Chabaliér’s term (1864) as an example and regarded it as a “*subdivision des synesthésies*” [subdivision of synesthesias] (FROMENTEL, 1888, p. 172).

In the same year 1888, the French physiologist Henri Beaunis used the term “*sensations associées*” [associated sensations], which was divided into two groups. Phenomena described by Vulpian and Müller belonged to a first group and were named “*synalgies*” and “*synesthésies*”; phenomena described by Bleuler and Lehmann belonged to a second group, which further on was named “*audition colorée*”:

“In a first group, the secondary sensation has the same quality as the primary sensation. So a tactile excitation would evoke a secondary tactile sensation at a point on the organism that was not excited. For example, the touch of an external auditory conduit near the tympanic membrane determines a tickling sensation in the larynx. We can include in this category associated sensations [original: *sensations associées*] called *synalgies* and *synesthesias* [original: *synalgies* and *synesthésies*] of which Fromental and Kovalevskij have furnished the typography. [...] In a second group, the secondary sensation is qualitatively different to the primary sensation. It’s within this category that the very curious fact of *colored hearing* [original: *audition colorée*] belongs.” (BEAUNIS, 1888, pp. 795 and 796)

7. *SYNESTHÉSIE* (1892) – *SYN(A)ESTHESIA* (1895) – *SYNÄSTHESIE* (1896)

In 1890, one year after the Paris conference, the French, ophthalmologist and otologist Ferdinand Suarez de Mendoza, based on Chabaliér’s term “*pseudochromesthésie*” (1864), named the phenomenon “*fausses sensations secondaires*” [false secondary sensations] and expanded it to five different kinds, each based on one sense:

“*La pseudophotesthésie*” [false optic sensations]
“*La pseudo-acouesthésie*” [false aural sensations]
“*La pseudosphrèsthésie*” [false smell sensations]
“*La pseudogouesthésie*” [false taste sensations]

“La pseudo-apsiesthésie” [false tactile sensations] (SUAREZ DE MENDOZA, 1890, p. 8).

In the U.S., research on synesthesia started in 1892. The psychologist William O. Krohn took Chabaliere’s term from 1864 and spelled it in English, including a hyphen: “pseudo-chromesthesia” (1892). The psychologist Mary Whiton Calkins titled her first article on this issue with the same term “pseudo-chromesthesia” (1893a) and published it in the same journal as Krohn’s article.

While scientists in the U.S. in 1893 still adopted the old French term “pseudochromesthésie”, one year earlier, in France, Jules Millet, in his medical doctoral thesis on synesthesia, differentiated “synesthésie” (for all kinds of combined senses) and “audition colorée”:

“The term ‘synesthesia’ [original: synesthésie] carries its meaning within itself; it is equivalent to the expression ‘associated sensations’ [original: sensations associées]; the term ‘color hearing’ [original: audition colorée] indicates neatly that a color sensation attaches itself to the perception of sounds.” (MILLET, 1892, p. 13)

This was different from what the Paris committee 1889 has requested, but this is how we today use these terms. So, Millet used the same term “synesthésie” as Vulpian (1866 and 1874), but changed its meaning to a definition we still use today:

“The term synesthesia isn’t very recent: it has been employed for the first time, we believe, by Vulpian in 1874: Vulpian substituted it for the term ‘reflexive

sensations’ to designate the associated sensations which have their seat in the medulla.” (MILLET, 1892, p. 14)

The reason for using this term was quite simple: “We do not believe in having to give currency to the more or less barbaric terms proposed by M. Suarez de Mendoza, no more to *pseudophotesthésia* than to *pseudosphrèsthesia* and to *pseudo-apsiesthésia*; despite the etymological significance of these words, we don’t want to inflict on our readers the torture of having to often spell them. We’ll use simpler words, especially to translate complicated things.” (MILLET, 1892, p. 14)

Théodore Flournoy also used “synesthésie” as an overall term for all kinds of synesthesia and named stimulus-to-color-synesthesia “synesthésie visuelle ou Synopsie” (FLOURNOY, 1893, p. 6). Mary Whiton Calkins reviewed Flournoy’s book (CALKINS, 1893b), adopted his term and was the first to name an article “Synesthesia” (CALKINS, 1895). This English term was used, as a synonym for “associated sensations” and “secondary sensations”, one year before, but not as the title of an article (COLMAN, 1894, p. 795, left col.: “synæsthesiæ”, p. 851, right col.: “synæsthesia”). In German “Synästhesie” was first used by the psychologist Richard Hennig (1896, p. 183), based on Flournoy. Although since 1896 the term “synesthesia” in different spellings in different languages was introduced, it did not become accepted at once. This happened little by little and ended definitely not before the 1920s.

Overview on the development of the various terms for the condition, we today name synesthesia

Year	Language	Original term	Our English translation of the original term	Source
1772	German	schnelle Anwandlung dunkles Gefühl	fast onset obscure feeling	Herder, 1772, p. 94–95
1812	Latin	phenomena obscura repraesentatio ipsam repraesentationem coloratam videri German translation (1824): Erscheinungen dunkle Vorstellung daß ihm eine gefärbte Vorstellung erscheine	features obscure ideas that a colored idea appears to him	Sachs, 1812, p. 80–81 Sachs, 1812/1824, p. 99
1813	German	farbige Erscheinung	colored appearance	Anonymous, 1813, p. 236
1814	German	gewisse Dinge als farbige Gegenstände auf eigene Weise repräsentirt	represents special things as colored objects in his own way	Anonymous, 1814, p. 12
1848	French	hyperchromatopsie (perception de trop de couleurs) hyperesthésie du ‘sens des couleurs’	hyperchromatopsy (perception of too many colors) hyperesthesia of the ‘color sense’	Cornaz, 1848, p. 150
1864	French	pseudochromesthésie	pseudochromesthesia	Chabaliere, 1864

1873	English	idiosyncrasy		Hudson, 1873
1873	German	subjective F a r b e n empfindungen subjective Farben-Empfindungen	subjective c o l o r sensations	Nussbaumer, 1873a Nussbaumer, 1873b
1873	German	Phonopsie	phonopsia	Nussbaumer, 1873b, p. 60
1879	English	double sensation		Lewes, 1879, pp. 280–287
1881	German	Secundärempfindungen Secundärvorstellungen	secondary sensations secondary imaginations	Bleuler & Lehmann, 1881, p. 3, note
1881	German	Farbenhören	color hearing	Anonymous, 1881a
1881	English (US) English (UK)	color hearing colour-hearing		Anonymous, 1881c Anonymous, 1881d
1882	French	audition colorée	color hearing	Pédrono, 1882a and 1882b
1884	German	Mitempfindung	co-sensation	Hilbert 1884, p. 3
1887	German	secundäre Sinnesempfindungen	secondary sensations of senses	Steinbrügge, 1887
1889	German	secundäre Empfindungen	secondary sensations	Deichmann, 1889
1889	German	Doppelempfindung (Secundärempfindung)	double sensations (secondary sensation)	Ellinger, 1889
1889	French	chromatopsie	chromatopsia	Sperling, 1890, p. 95
1890	French	fausse sensation secondaire	false secondary sensations	Suarez de Mendoza, 1890, p. 8
1892	English	pseudo-chromesthesia		Krohn, 1892
1892	French	synésthésie	synesthesia	Millet, 1892, p. 13
1894	English	synæsthesia / synesthesia / synaesthesia		U.K.: Colman, 1894, pp. 795 and 851 U.S.: Calkins, 1895
1896	German	Synästhesie		Hennig, 1896, p. 183

Biography

Initiated by Jamie Ward in 2008, he, Sean A. Day and Jörg Jewanski formed a working group on *Synaesthesia in the 19th century*. Our first article, published in 2009 in the *Journal of the History of the Neurosciences*, was about Georg Tobias Ludwig Sachs (1812), the first known synesthete ever. Several more articles and presentations on conferences followed. Later, Julia Simner and Nicolas Rothen joined. In this combination, we cover several disciplines and are able to translate sources from several languages.

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