

# Historical Concepts of Disconnection in the Pioneering Works of Bleuler and Wernicke

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## Abstract

The importance of terminology is a long-debated issue in psychiatry, and the original use of a term might give important clues to the following diagnostic notions and classifications. One of the pioneers of the modern psychiatry, Bleuler, has coined the term schizophrenia while in his extensive writings he speaks about several forms of splitting of the mental processes. Another major contemporary author to him, Wernicke, adopted another position but the final concept (sejunction) was another intriguing form of talking about disrupted mental processes. While considering the historical character of the work of both these renowned physicians, we have tried to lend some more perspective into the initial concepts of disconnection, as the modern neuroscience is calling it.

**Keywords:** schizophrenia, splitting, Bleuler, Wernicke, sejunction hypothesis

## 1. Introduction

The notion of disconnectivity and its subtleties must have a longer history from what demonstrated quite recently with tractography, magnetic resonance imaging and other sophisticated techniques. In fact, the intuition of pioneers of the modern psychiatry has coined some predecessors of the terminology.

The elaborated notion that schizophrenia might be a disconnection syndrome has several sources. Not clearly an anatomical injury, but rather a condition with abnormal interaction or integration between cortical areas: this seems to be the theoretical hallmark of a diversity of studies (Friston, 1995; Schmitt, 2011).

The coiner of the term schizophrenia had already meant what the core of the issue was from Greek *skhizein*, 'to split', also been anglicized as *σχίσμα* (*schism*). While using this famous term for a diagnosis as old as humanity itself, Bleuler in 1911 probably forecasted the immensity of research would follow with regard to the fact that the patient with this occurrence has a splitting, but was not the same notion as that of multiple personality (Kyziridis, 2005).

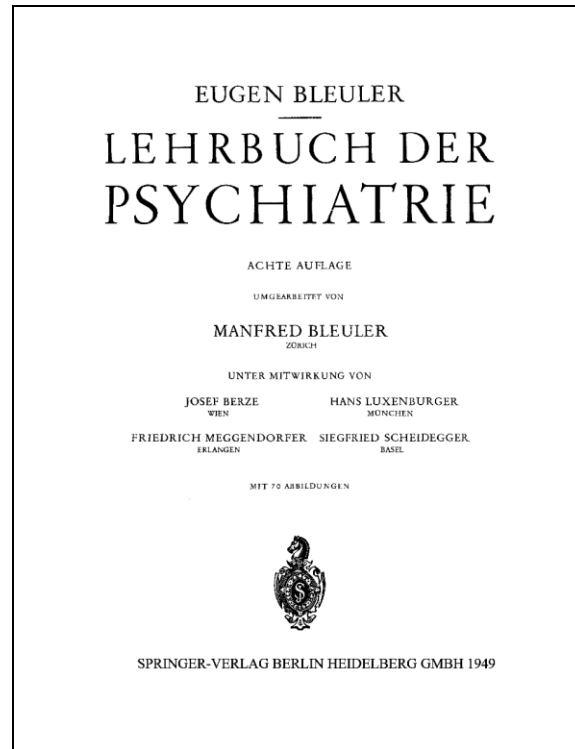
In 1911, Bleuler noted: "*I call dementia praecox schizophrenia because, as I hope to show, the splitting of the different psychic functions is one of its most important features*" (Ashok, 2012). It was just the budding of a very large conceptual work, as we

will try to show below, and as different sources point it out (Ljubičić, 2007).

## 2. Between ‘Spaltung’, ‘Splitting’, and Other Terms

Splitting of psychic functions was designated as

‘*Spaltung*’ right from the initial work of Bleuler. In his *Textbook of Psychiatry* (Lehrbuch der Psychiatrie), he mentioned the term several times, and with different accessions (Bleuler, 1930; Bleuler, 1949).



**Figure 1.** Frontispiece of Bleuler’s *Textbook of Psychiatry* in German, 8<sup>th</sup> edition

Here below in the Table 1, we summarize the original wording of the ‘*Spaltung*’ as a concept,

the respective chapter, and the English translation (Bleuler, 1949).

**Table 1.** ‘*Spaltung*’ and its subtleties in the Bleuler’s *Textbook of Psychiatry*, 8<sup>th</sup> edition

Chapter	Page	Original in German	Translation
Die Störungen der Affektivität (Affective disorders)	64	Der Einfluß der Affekte auf die Assoziationen schafft Wahnideen, systematische <b>Zerspaltungen</b> der Persönlichkeit, hysteriforme Dämmerzustände [...]	The influence of affects over the associations will produce delusions, systematic <u>fragmentation</u> of the personality, hysterical trances [...]
Störungen der zentrifugalen Funktionen (Disorders of the centrifugal functions)	80	Bei den meisten Persönlichkeitsstörungen handelt es sich um <b>Spaltungen</b> nach affektiven Bedürfnissen [...]	The majority of personality disorders has to do with the <u>splitting</u> of the affective needs [...]
Vergiftungen (Intoxications)	243	Mit allerlei schizophrenen Zuständen haben die akuten Episoden des Cocainismus recht viel Ähnlichkeit: Körperhalluzinationen,	As with all kind of schizophrenic conditions, the episodes of acute cocaineism are also very similar: somatic

		Stimmen, Wahnideen, <b>Spaltung</b> des Bewußtseins [...]	hallucinations, voices, delusions, <u>splitting</u> of the consciousness [...]
Vergiftungen (Intoxications)	243	Man kann aber mit den Cocaindeliranten leicht einen guten affektiven Kontakt bekommen; in der <b>Bewußtseinsspaltung</b> fällt unter anderem auf, daß in der Regel eine bestimmte Art Krankheitseinsicht vorhanden ist [...]	However, during the cocaine delirium you may easily get an affective contact; for the <u>splitting</u> of the consciousness is of a certain form that as a rule there is still a certain disease insight [...]
Die Schizophrenien (Dementia praecox) Schizophrenias (Dementia praecox)	277	[...] Bezeichnung "Dementia praecox" als unhaltbar. E. Bleuler hat sie 1911 durch diejenige der <i>Schizophrenie</i> ersetzt, weil ihm die elementarsten Störungen in einer mangelhaften Einheit, in einer Zersplitterung und <b>Aufspaltung</b> des Denkens [...]	[...] The denomination "Dementia praecox" as not sound. E. Bleuler in 1911 replaced it with <i>Schizophrenia</i> , as the elementary disorders are due to a scarce unity, and a split as well as <u>breakdown</u> of the thought [...]
Die Schizophrenien (Dementia praecox) Schizophrenias (Dementia praecox)	283	[...] habe ich einmal eine solche <b>Spaltung</b> des Gefühlsausdruckes gesehen.	[...] I have never seen such a <u>split</u> in the emotional expression.
Die Schizophrenien (Dementia praecox) Schizophrenias (Dementia praecox)	284	Die schizophrene <b>Funktionsspaltung</b> macht es möglich, daß Gegensätze, die sich sonst ausschließen, nebeneinander in der Psyche existieren.	The functional <u>splitting</u> in schizophrenia makes it possible, that opposites, which would exclude each other, might still co-exist in the psyche.
Die Schizophrenien (Dementia praecox) Schizophrenias (Dementia praecox)	285	Am bezeichnendsten aber sind die inneren <b>Spaltungen</b> des Willens. Die Kranken wollen etwas und zugleich das Gegenteil [...]	Most impressive is the internal <u>splitting</u> of the will. The patients want something, and at the same time, the opposite [...]
Die Schizophrenien (Dementia praecox) Schizophrenias (Dementia praecox)	288	[...] dieselbe schizophrene Denkstörung, wenn man \Ton Mangel an Ziel\Torstellung, Überwiegen der Nebenassoziationen, mangelhaftem Zusammenhang oder <b>Spaltung</b> des Denkens [...]	[...] the same thought disorder in schizophrenia, if we consider lack of goal setting, predominance of loose associations, poor coherence or <u>splitting</u> of thought [...]
Die Schizophrenien (Dementia praecox) Schizophrenias (Dementia praecox)	302	Das Gedanken-Hören an Stelle des automatischen Denkens bedeutet einen weiteren Schritt in der Entfremdung und <b>Abspaltung</b> von gewissen Vorstellungen vom Ich.	Hearing thoughts instead of automatic thinking represents a further step in the alienation and <u>detachment</u> of certain ideas from the self.

As one might conclude easily from this summarizing table, the *Spaltung* (splitting) in its initial form was further elaborated from Bleuler into disambiguations as *Zerspaltung*, *Aufspaltung* and *Abspaltung*, respectively fragmentation, breakdown, and detachment. Obviously, it

might be difficult to find the right translation to very similar words that Bleuler, at that time, has been using purposefully to denote differences in clinical symptomatology. Furthermore, authors have synonymized Bleuler's detachment with the autistic withdrawal (Raja, 2010).

With very marginal and subtle differences, however these notions (*Spaltung*, *Zerspaltung*, *Aufspaltung* and *Abspaltung*; namely *splitting*, *fragmentation*, *breakdown* and *detachment*) were not casually used and should have underscored different grades of disconnectivity. Of course, if we stand firm to the synonymy of splitting with a disconnection occurrence.

### 3. Discussion

Historical sources have consistently focused on the disintegration of the psyche as a functional disorder, not an anatomical one: this is as well the pioneering concept of Bleuler's *schisis* (Friston, 2016).

From a different standing point, Wernicke, while representing primarily the neurological school he founded and that his followers were righteously proud of, come close to the notion. *Sejunction* hypothesis and other details from his work might be well only of historical value, but this clearly shed light on very debated and well-advanced neuropsychiatric opinions (Ungvari, 1993).

It is worth mentioning that Bleuler debated relentlessly and his psychiatric position was in fact, substantially different from the Wernicke-Kleist school. Wernicke was neurologically oriented, to him "*sejunction meant disruption in the interconnections between different neural systems, thus giving rise to loss of function, hyperfunction, and parafunction*" (Ungvari, 1993).

Wernicke holds as well the laurels of the association theory, with the idea that "*idea that pathological disorders of the central nervous system (which included mental illness) were caused by interruptions in the continuity of the association pathways*" (Lanczik, 1991). Moreover, "the location of the 'sejunction process' (*Sejunctionsvorganges*) would determine the 'Reizsymptom' (irritation symptoms)" (Lanczik, 1991).

Might be actually difficult to draft conceptual contradictions between the *Spaltung* of Bleuler and the *Sejunction* of Wernicke; however, these two authors seem not to agree with each other. Maybe the professional-positional differences clearly related to the professional background of these two giants of the neuropsychiatry of XIX century:

*The neuropathological explanation of psychotic symptoms Bleuler deemed to be a fruitless endeavor. In contrast, he favored psychological*

*explanations, e.g. of psychomotor disturbances in schizophrenia. In this respect Bleuler drew on his large clinical experience, but he certainly also was influenced by psychoanalysis* (Pillmann, 2004).

Possibly the sejunction of Wernicke was as well a precursor to the actual notion of disconnectivity; if Wernicke based his findings on neuropathology, Bleuler was clearly a highly devoted psychiatrist; thus, the data and concepts he coined were fruit of clinical examination, accuracy and acumen. Both did not live in the era of sophisticated brain imaging, and could not find radiological proof of what their intuition suggested.

Even more, the selection of terms from Bleuler (*Spaltung*, *Zerspaltung*, *Aufspaltung*, and *Abspaltung*) was not merely a wording choice. To him for example, *Zerspaltung* was a systematic fragmentation of personality: thus, probably, a more serious condition leading to a poor prognosis, and a more severe clinical picture. The same must be valid for the other terms, which are not pure synonyms, as could be erroneously considered in a simplified form.

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