

From Symptom to Sinthome, Borromeo to Brunn

Position Paper 2.1. The mathematical basis for linking topics such as the Tiny House to *lalangue* requires an understanding of the three “Borromean” domains, the Symbolic, Imaginary, and Real in more general terms. When Lacan began to theorize the *sinthome*, he moved to a broader interpretation of the Borromeo rings’ variability. This paper lays out a foundation for pursuing the *sinthome* via knot theory developed by Hermann Brunn, in a 1982 article, *Über Verkettung*. The connection of *lalangue* to the discourse, in particular Capitalist Discourse and the Hysteric’s discourse, cannot be understood without this mathematical elaboration of knot topology.

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1- In his 1972 Milan speech, Lacan added a fifth discourse to his 4 former discourses: That of Capitalism

Jacques Lacan (1978) *Lacan in Italia*. 1953-1978. *En Italie Lacan*. Milan: La Salmandra.

2- Sinthome (French: [sɛ̃tom]) is a concept introduced by Jacques Lacan in his seminar *Le sinthome* (1975–1976) (relatively the same time of invention of the capitalism discourse). It redefines the psychoanalytic symptom in terms of the role of the subject outside of analysis, where enjoyment is made possible through creative identification with the symptom.

3- Mathematics always takes the forms and manipulates them like objects. This is the art of mathematics seen at its best, in topology. Lacan used topology and specially the Borromean knot to dig a way to the psyche structure of the psychosis as unanalyzable.

4- Lacan's shift from a lingual psychoanalysis to a topological psychoanalysis concluded with the status of the *sinthome* as unanalyzable. The seminar on the *sinthome* extends the theory of the Borromean knot, which in the *RSI* (Real, Symbolic, Imaginary) seminar had been proposed as the structure of the subject by adding the *sinthome* as the fourth ring to the triad already mentioned, tying together a knot which constantly threatens to come undone. The topic of the seminar was the life and work of [James Joyce](#): "the sign of [Lacan's] entanglement is indeed Joyce, precisely inasmuch as what he puts forth, and in a way that is quite especially that of an artist because he has the know-how to pull it off, is the *sinthome*, and a *sinthome* such that there is nothing to be done to analyze it."²

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² Jacques Lacan (2016). *The Sinthome: The Seminar of Jacques Lacan*, Book XXIII. Polity Books. p. 106. ISBN 978-1-5095-1000-9.

5- Lacan's neologism *lalangue* is a fusion of the signifiers "*langue*" (language/tongue) and "*la*" (the). The term thus merges the article and the noun. Born of a collision of two signifiers, this term was heavily commented on during the course of Lacan's teachings following his first mention of it in November 1971 at a conference at Sainte Anne's Hospital. Among others, Lacan specified it to be the mother tongue which, through its modulations and its musicality (*la la*), names the infant's first objects. *Lalangue* is at least partially outside of language laws (a topic examined by J.C. Milner). Yet, *lalangue* is not a language: Lacan reverts to Dante's love poems and what he sees as a failure to create a new language. Whereas *lalangue* speaks a certain music (harmony?) of love, it remains untamed by the frame of language that speaks otherwise through its laws: rules, limits, and thus castration. The issue of *lalangue* raises questions for psychoanalytic treatment. This concept has been amply studied by psychoanalysts. However, most of their findings are in conflict with regards to its use in treatment. Simonney argues that *lalangue* should be interpreted as an unidentified voice object in psychoanalysis. This unidentified might be related to unanalyzable psyche structure of psychosis and hence to the sinthome: The Borromean knot.³

6- Remember that Lacan's "La Troisième" was also held in relatively the same years (Nov. 1974). In *La Troisième* we are witnessing how the discourses and the Borromean knot appear to be interlaced inside the text which is mainly about an oneiric discourse: *lalangue*.

7- Here we have some common things that relates these seemingly scattered issues together: repetition (*lalangue*), the rotatory nature of the four discourses. The sinthome is the fourth ring placed to keep the Borromean knot from falling apart, etc.

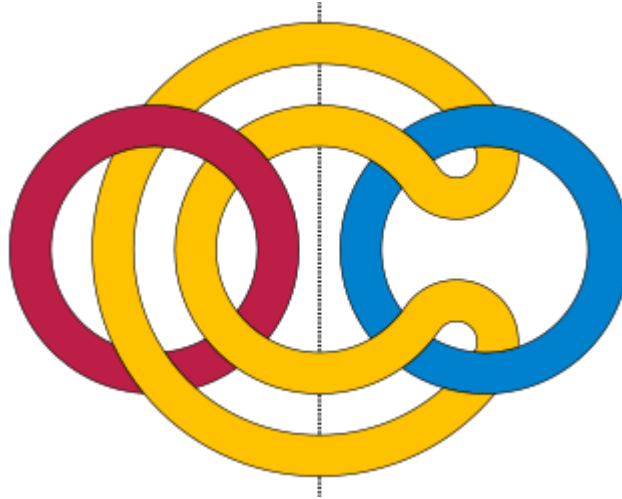
8- Now remembering the third point about mathematics we let our discovery of the model of human psyche to enjoy a little bit of exaptation: We manipulate it a bit further to see better the ghost that hovers all around these years and texts and lectures and — voilà! We might bump into a new model through a minute manipulation.

9- This manipulation is the change of Borromean knot into a more general one: a Brunnian link.

In knot theory, the Borromean rings are a simple example of a Brunnian link, a link that cannot be separated but that falls apart into separate unknotted loops as soon as any one of its components is removed. There are infinitely many Brunnian links, and infinitely many three-curve Brunnian links, of which the Borromean rings are the simplest.⁴

³ Simonney, Dominique. « *Lalangue* en questions », *Essaim* 29, no. 2 (2012): 7-16.

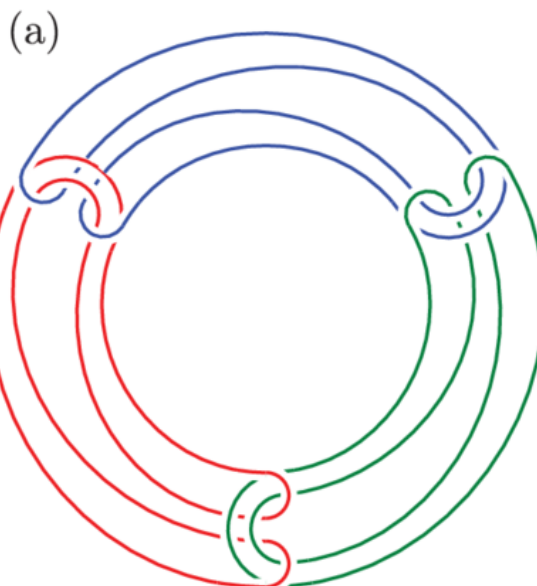
⁴ Jablan, Slavik V. (1999), "Are Borromean links so rare?", *Proceedings of the 2nd International Katachi U Symmetry Symposium*, Part 1 (Tsukuba, 1999), *Forma*, 14 (4): 269–277, MR 1770213



[Algebraic link](#) diagram for the Borromean rings. The vertical dotted black midline is a [Conway sphere](#) separating the diagram into [2-tangles](#).

10- In the picture above the blue and yellow bands can alternatively change their place. In other words we can have RED-BLUE-YELLOW as well as RED-YELLOW-BLUE concatenations. Moreover, if Blue falls out the Two others will also fall out. The same is true for Yellow. The same is not true for the red.

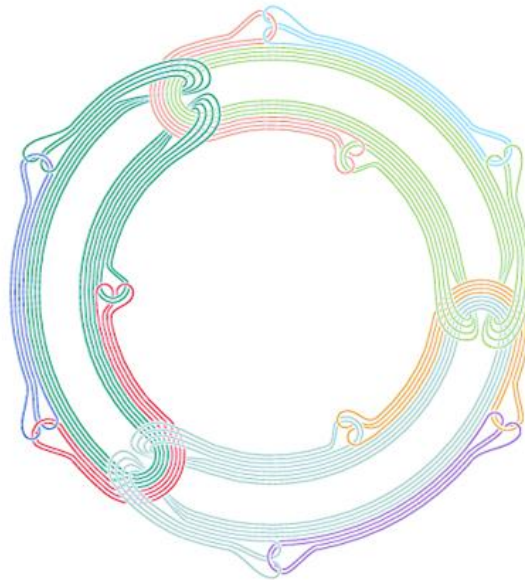
11- In the following picture there is no difference between the links and they all will fall apart if any of the colors disconnected:



Baas, Nils. (2019). "On the mathematics of higher structures." *International Journal of General Systems*. 48. 1-22. 10.1080/03081079.2019.1615906.

12- It is possible to describe the sinthome as a Brunnian link of higher order:

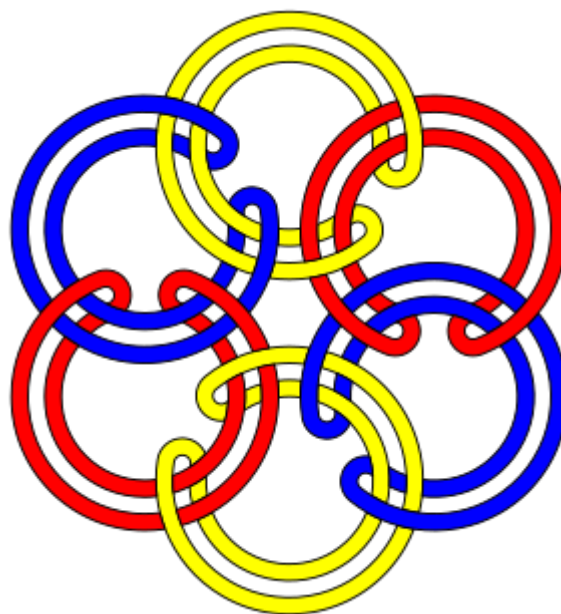
(b)



Baas, Nils. (2019). *ibid.*

13- Why change Borromean knot for the more general model defined by Brunnian links? Because such a change shows the hidden homology between the Lacan's discussions on the Borromean circles and, therefore, discourses as well as their extensions respectively onto *sinthome* and the Capitalism discourse for instance better. With Brunnian links it is possible to bring the whole structure into rotation just like the templates of Agent, Other, Product and truth in the discourses that by their rotation we yield the next discourse.

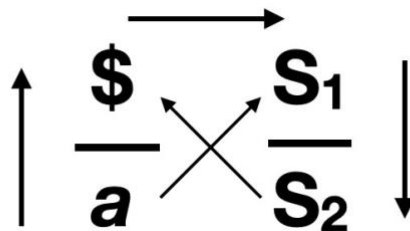
14- In the following figure we have a six-component, "rubberband" Brunnian link. The same construction leads to Brunnian links with arbitrary numbers of components. However imagine a four component version of this and label each of them with the barred S (\bar{S}), S_1 , S_2 and the *object petit a*. What you will see is the most fundamental discourse, hysteria.



14- As you can imagine, every link can be redirected vertically, as if it comes from outside. Like a sinthome, the rings reflect a union without attachment to the whole structure while at the same time they provide, “with their own flesh,” the needed material for a hyperbolic geometry.

15- With this in mind, we can detect S2 in the discourse of the hysteria of this nature: The slave in “this world” but the master in some invisible perpendicular or parallel world. Hence, it could be excluded and at the same time included to the whole structure like the Joyce’s sinthome.

!6- Now we have extracted the traditional Borromean circles out of the discourse of hysteria. Here is a table of correspondences between the Lacanian concepts and the Brunnian examples, constructed with the help of ChatGPT.



Discourse of the Hysteric, with \$ in the position of the Agent, S₁ (the master signifier) in the position of the Other, S₂ (the metonymic signifying chain) as the Product, and the *objet a* in the place of Truth.

LACANIAN CONCEPTS	BRUNNIAN LINK / EXAMPLE
Object <i>petit a</i> / the Real (R)	<p>Represents the elusive object of desire that is unattainable yet drives desire. In the discourse of Hysteria, it manifests as the fundamental aspect of reality that influences subjectivity.</p> <p><i>Example: In Lacanian theory, the object petit a is often symbolized by objects of fascination or obsession that fuel desire.</i></p>
Symbolic (S₁)	<p>Signifies the realm of language, law, and social structures that govern subjectivity. Within the discourse of hysteria, S₁ represents the symbolic order that shapes identity and meaning.</p> <p><i>Example: Language, cultural norms, and societal expectations are all manifestations of the symbolic order that influence individual behavior.</i></p>
Sinthome (S₂)	<p>Refers to the unique mode of <i>jouissance</i> or enjoyment that emerges outside of traditional psychoanalytic frameworks. Within the discourse of hysteria, S₂ embodies the subject's creative identification with symptoms and their transformative potential.</p> <p><i>Example: Artistic expression, creative pursuits, and unconventional forms of enjoyment can be seen as manifestations of the Sinthome.</i></p>
Imaginary (\$)	<p>Represents the realm of fantasy, illusion, and subjective experience detached from reality. In the discourse of hysteria, \$ symbolizes the imaginary dimension where fantasies and illusions shape subjective perceptions.</p> <p><i>Example: Dreams, fantasies, and daydreams are manifestations of the imaginary that influence individual experiences and perceptions.</i></p>