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1. The Odyssey of Stoppages

1a. *Three Standard Stoppages*

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Figure 1
Marcel Duchamp,
Three Standard Stoppages, 1913-14

Scholars have already carefully underlined that the operative procedure described by Duchamp for the execution of *Three Standard Stoppages* (1913-14) (Fig. 1) seems to be unreliable. By means of experimental proofs we have the evidence that it is seemingly “unobtainable,” somewhat like Duchamp’s *Stoppages*. Furthermore, an inspection of the work at MoMA (Museum of Modern Art in New York City) shows two tacks at the opposite extremities of the thread on the backside of each canvas. These tacks seem to exclude what the famous note contained in the *Green Box*, (also entitled *The Bride Stripped Bare by Her Bachelors Even*, as the project it accompanies), definitively describes. Rhonda R. Shearer and Stephen J. Gould have already thoroughly documented these findings (1999), but even they highlight Duchamp’s insistence about the truthfulness of the note when directly and explicitly asked about this subject. In the following paragraph I present some

considerations on this topic.

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Figure 2
Marcel Duchamp,
Tu m', 1918

A simple measurement shows that the distance (as a straight line) between the visible extremities of each Stoppage is constant. Indeed, in *Tu m'* (Fig. 2) (description in a successive paragraph) the *Stoppages* appear carefully coupled, end against end. However, it is absolutely improbable that three threads, when freely dropped, dispose themselves showing, three consecutive times, the same distance between their extremities. This seems to confirm once more the practical impossibility to obtain the result shown by Duchamp in *Three Standard Stoppages* according to the instructions contained in the note of the *Green Box*.

However, if Duchamp claims obstinately that he followed that operative protocol, this insistence induces some reflections. His work is intentionally marked with misleading traps and ambiguities; however, Duchamp usually operates in such a manner that our own sense deceives us, not his words per se. His challenge to the observer is fair and correct—the traces are intentionally ambiguous, but they are upfront with the observer in their objectivity—and the cleverness and analytical thinking involved in the interpretation of them is left to the reader.

Interestingly, we note that in the *Stoppages*, Duchamp carefully masked the equality of the lengths (in straight lines) of the three threads and their wooden templates.

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Figure 3
Marcel Duchamp,
Miniature version of *Three Standard Stoppages*,
in *Boîte-en-valise*, 1941

So, let us observe Duchamp's "traps" that occur when the work is vertically displayed (as the orientation of the text labels of each thread suggests). For this aim I shall consider the miniaturized reproduction of *Three Standard Stoppages* in the *Boîte-en-valise* (1941) (Fig. 3), where all the six components of the work (3 threads and 3 wooden templates) are surely disposed by Duchamp himself. But similar considerations can be done for all the different dispositions I know, including that at MoMA.

The labels, placed near the bottom side of the canvases, are carefully lined up to each other, whereas the threads are glued starting from different distances from the top, which prevents us from comparing at a glance the lengths and the lining up of the extremities of the threads. One may impute this displacement to the randomness of each drop of the threads. Remember, however, that Duchamp cut the canvas strips (where the threads are glued) after the drop, successively, several years later. Duchamp could pay the same attention that he paid to the alignment of the labels to the alignment of the starting points of the threads. He used deceiving techniques analogous to these thread alignments for the presentation of the three wood templates. First, the order of the presentation

of the threads (T) is, to say, T_A , T_B , and T_C , whereas the wooden templates (W) are presented in the order W_C , W_A , W_B . Second, the templates are rotated by 180° relative to the corresponding threads, which once more makes the comparison at a glance difficult. Third, in order to overlap the template on the correspondent thread, we have to mentally reverse the wooden templates W_C and W_A , because their outline shows a mirror symmetry with respect to the correspondent threads T_C and T_A , which presents new difficulties if one is looking for constant landmarks in the vision. The resulting scheme follows.

Fili (F)			Sagome (S)		
			S_C	S_A	S_B
F_A	F_B	F_C	rotazione a 180° & ribaltamento	rotazione a 180° & ribaltamento	rotazione a 180°

Finally in two templates the starting point for the curvilinear outline is marked by a well-visible dent in the wood (and at the same distance from the upper side), whereas in the third one we observe once more a displacement (forward) for the starting point of the curvilinear outline. With this last template it seems that Duchamp wants to give us a little clue: in this case there isn't a dent at the starting point of the curvilinear outline, a dissimilarity that we perceive immediately.

We do not know whether these displacements in the composition of the elements are fortuitous. (We know, however, that Duchamp was very scrupulous when planning his works.) If not, we can think that what is so carefully hidden must prove extremely important. In the contrary case, we can at least understand why, so far, scholars haven't considered the objective datum I discuss here in relation to the new difficulties it introduces for accepting the operative protocol declared by Duchamp for the *Stoppages*.

Hence, however it turns out, the constant distance between the extremities of each thread seems to be a crucial point.

Now, if Duchamp really let the threads drop down, then there must be some device to hold the distance between the extremities during the drop in such a way that they remain constant. At this point, we can conjecture several different techniques of execution, consistent with three types of evidence: what we can see in the *Stoppages*, what is described in the *Green Box* note, and what Duchamp claimed in several interviews. A few possible examples follow.

The first hypothetical device may be a simple *tutor*, as in the sketch in Fig. 4 (below)– the tutor would drop together with the thread.

click images to enlarge

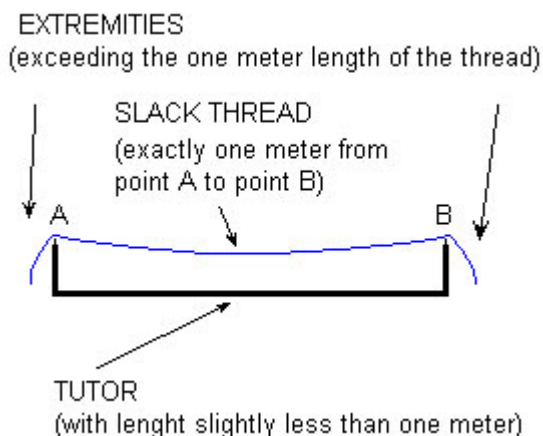


Fig 4
Stoppages Device 1

The surplus of thread relative to the regular length of one meter, visible at the extremities of the device, would make up the stretches necessary for the tacking that we observe on the back side of the canvases. (They could already have the needle necessary for the tacking inserted.)

Two vertical slide bars could form another device, depicted in Fig. 5 (below). Like the first example, in this case, we could have a thread surplus for the tacking at the opposite

extremities of the thread.

click images to enlarge

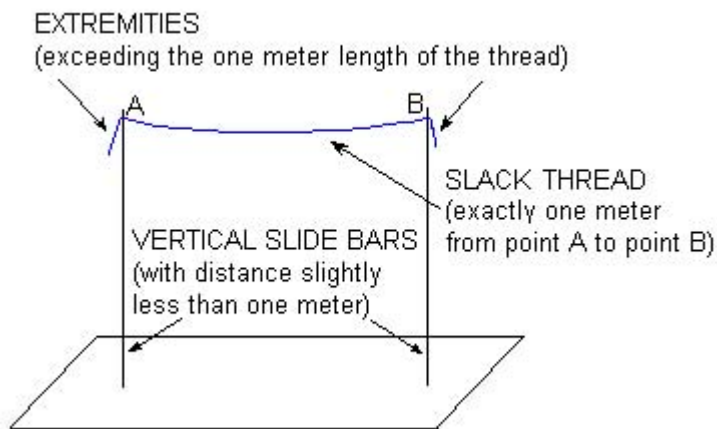


Fig 5
Stoppages Device 2

Although we must look at these devices as *pure conjecture*, we can at least acknowledge that in both cases, during the drop they would permit the thread to twist as it pleases, to keep that smooth linearity that seems impossible to obtain by dropping the thread freely, and to hold the distance between the extremities constant. Furthermore, (save for some mischievous reticence) the procedure described in the *Green Box* would turn out truthful and disprove notions that Duchamp was dishonest during the interviews.

However it turns out, by looking at *Three Standard Stoppages* we can consider two fixed points A and B, and three lines running through them, as showed in (Fig. 6).

click images to enlarge



Fig 6
Axiom of three
lines running through
two fixed points

This can evoke in our mind the Euclidean axiom of existence and unicity of the straight line through two points. It is well known that the *Stoppages'* motif often reappears in Duchamp's other works and acts as a basis for the development of further important conceptual ideas. We can consider that it is not arbitrary to think of this work as a sort of axiom, starting from which Duchamp deduces the construction of the whole building of his work (not exclusively geometric). However, it is important to realize just what exactly this axiom exerts.

In his funny and *seemingly* naive manner, it appears that Duchamp wants to remove from the Euclidean axiom the assumption of the *unicity* of the straight line through two points: the straight lines would be infinite, all of them obtained randomly by dropping the thread, and the three *Stoppages* representative of all of them (after all, we must remember that often in Duchamp's work, "3" stands for multiplicity or infinity.) Indeed, we have known for quite some time that Duchamp was very interested in non-Euclidean geometry. Henderson states that:

For Duchamp, the n-dimensional and non-Euclidean geometries were a stimulus to go beyond traditional oil painting and to explore the interrelationship of dimensions and reexamine the nature of three-dimensional perspective. Like Jarry before him, Duchamp also found something deliciously subversive about the new geometries and their challenge to so many long-standing 'truths.' (341)

In any case, Duchamp's conceptual operation is less naive than it seems at a cursory glance. In geometry, concepts like *point*, *straight line*, *plane* and so on, aren't *defined*: they are *primitive* entities or concepts; they are indirectly defined by their given usage rules, which are axioms and theorems; in other words, in a given geometry, *point*, *straight line*, *plane*...etc. can be *whatever* behaves exactly according to the axioms and theorems of that geometry. For instance, in the

famous Poincaré's model of hyperbolic geometry, the plane is depicted by means of a circle, and the straight line is a particular circumference arc. There seems to be an awareness of this aspect in Duchamp's *Stoppages*; after all we know that Duchamp loved reading geometry texts, and as Shearer points out in *Marcel Duchamp's Impossible Bed and Other 'Not' Readymade Objects...* Duchamp knew some aspects of Poincaré's thought in particular (26 – 62). However, what is interesting in the perspective of this article isn't the possible non-Euclidean content of the *Stoppages'* axiom, but the removal of the assumption of unicity. With this axiom Duchamp seems to claim a new principle: the one of *repetition*, or more precisely, the principle of the *iteration* of the same procedure following scrupulously the *same rule*.

1b. *Network of Stoppages*

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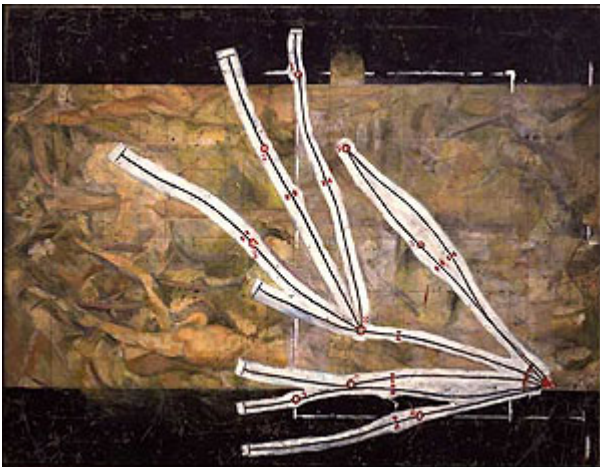


Figure 7
Marcel Duchamp,
Network of Stoppages, 1914

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Figure 8

Marcel Duchamp, *Young Man and Girl in Spring*, 1911

Figure 9

Young Man and Girl in Spring (1911), rotated 90°

The *Stoppages* reappear in a new work executed in the same period: the *Network of Stoppages* (1914) (Fig. 7). The network is painted on the unfinished second version of the earlier *Young Man and Girl in Spring* (1911) (Fig. 8). First, we note that with respect to the original orientation of *Young Man and Girl in Spring* (Fig. 9), the background for the *Network* is rotated by 90°. Many scholars, including Gould and Shearer, have noted that for Duchamp the right-angled rotation has special meaning and importance; this rotation usually denotes a passage from an n -dimensional space to an $n+1$ -dimensional space (because adding a new dimension requires a new Cartesian axis, perpendicular to all the other previous). In the present case we have the passage from the monodimensionality of the single *Stoppage*, to the bidimensionality of the *Network*. But generally for Duchamp a rotation by 90° highlights the presence of a qualitative leap. Let us try to understand what kind of leap we see in the *Network*.

The thesis I assert here is that with this work Duchamp intuitively further focuses a new concept that today we call recursion, a concept that was latently under elaboration for some years, as we shall see.

In fact, in the *Network* Duchamp uses the *Stoppages* recursively: we have three Stoppages repeated three times, and the sets of three are organized in a hierarchical manner expressed by means of a quite abstract tree graph which seems to underline a ramification. The same ramification is the formal unifying motif of the painting *Young Man and Girl in Spring*, although here the ramification has the specific meaning of *doubling*: indeed, the whole composition is based on a Y-shaped motif. According to *La sposa messa a nudo in Marcel Duchamp, anche*, we must trace this motif back to the alchemic symbolism, where Y stands for androgyny (Schwartz, 111). Both the Young Man and the Girl lift their open arms as in a Y; their bodies themselves have an unnatural oblique disposition which, when observed upside-down, shows once more the Y-shaped ramification. At the bottom of the composition we note two branching arcs while at the top we find the ramification of a tree. At the center of the composition we find a circular shape, inside of which we see a little human figure. The tree with its branching starts from this circular shape; hence, if we look at the figures of the Young Man and the Girl as an extension of the tree branches, they constitute the ramification of the small human figure at the center of the composition. (According to Schwarz, the branching arcs at the bottom are buttocks, the circular figure represents Mercury in the ampoule, and the ramification of the tree represents a phallus; finally, the path I described would be followed backward, as the desire of re-conjunction of the youths into the primordial androgyne unity).

Whatever interpretation one gives for the painting, it shows an objective datum: the one of a doubling cascade, at which I look as a formal antecedent of the recursive motif.

Furthermore notice that the spherical shapes, suggested by the arcs at the bottom of the composition, are repeated, by both the ampoule and several flowered shrubs in the background; and, more interesting, inside the spherical shrubs we observe several pink spherical inflorescence (like in the hydrangea). Thus we have a new suggestion of recursion: spherical flowers, inside spherical inflorescence, inside spherical shrubs, among other spherical shapes. Here, in addition, we have a first evidence of that repetition on a lower scale (shrub, inflorescence, flower) we'll discuss later.

The spherical motif is in turn connected with an ulterior important motif: the one of the circularity. Once again, by following the doubling cascade in the painting one notices that the two arcs at the bottom (like fountain jets) sustain the circle containing the small human figure, starting from which the branching tree grows; the branches fall down again, by means of the ramification of the human figures of the youths, which in turn lean their feet just on the starting arcs at the bottom of the composition. In other words, in the painting we can see a sort of convective motion which circularly returns to the starting point.

Hence, executing the *Network of Stoppages* on the (unfinished) replica of *Young Man and Girl in Spring*, Duchamp points out the formal antecedents of the work. We can underline the close continuity between the two works observing that the sole definitive detail of the replica is the bust of the girl with her lifted and opened arms: this human ramification is grafted on the ramification of the *Network* with perfect continuity. This (recursive) graft of a work into another work will be, even in the following years, a distinctive element in Duchamp's activity.

Previously we said that for Duchamp the right-angled rotations are special signals, by means of which our attention is alerted. Let's examine the possible meanings in this case.

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