cooperation/convolution

for medium or large instrumental ensemble

Michael Boyd

2009

Performance Instructions

Basic information
This work is for a medium or large instrumental ensemble (a conductor is not necessary for performance but could be useful during rehearsal or for making organizational decisions; the conductor could alternately join the performance as an instrumentalist). A minimum of sixteen players is needed for a performance, though there is no upper limit to the number of performers who may be involved. Players may have any level of experience on their instruments, from beginning and professional. The total duration of this work is performer determined and can be planned prior to or decided spontaneously during a performance.

Individual performance process
Performance pages
Each performer interprets a single score page during a given performance. These pages are the final sixteen pages of this document. For performance scenarios where more than sixteen players are present, the score pages should be duplicated such that there is a roughly equal distribution of all pages (thus for a thirty-two person performance there would be two copies of each page used).

Graphics
The score consists of a variety of graphic images that are interpreted by the performers; these interpretations should not only account for the types of graphics used, but also how they relate to each other (their arrangement on the page). Over the course of the piece, players should attempt to express the "essence" of each page through varied interpretations of each, though repetition may be utilized as part of specific interpretations. Performers should not limit themselves to traditional performance practice; graphics might suggest sounds, visual gestures, or other actions. *Player(s) are encouraged to be creative and explore!*

Transformations
Some pages contain transformation indicators that appear as three different gray letters: I, T, and/or O (standing for "imitate," "transform," and "oppose" respectively). These indicate how one should react to certain players within the ensemble (this is discussed at length in the next section of instructions). The placement of these letters with respect to the score graphics should influence one's interpretation.

Ensemble organization
The ensemble is divided into several sub-ensembles of five or six players. The configuration of these sub-ensembles need not mimic traditional orchestral sections (strings, brass, etc.) and can freely mix instrumentalists of any type.

Each sub-ensemble is associated with a specific type of networked communication. These types are graphically represented as network diagrams in the "Ensemble Interaction Pages" section of this score. White or gray circular nodes in these diagrams represent sub-ensemble members, and lines and arrows represent the manner in which they pass information. The following is a simplified example of this representation:

In this example, each circle represents an instrumentalist within the same sub-ensemble. The line and arrow indicate the way that these performers communicate. In this case because the arrow points from 1 to 2 (and not from 2 to 1), Player 1 disregards the actions/sounds of Player 2, while Player 2 continually responds to what he/she sees and hears Player 1 do. Specifically Player 2 should imitate, transform and oppose the actions and sounds of Player 1 when interpreting the grey letters I, T and O found on their individual performance page (depending on the arrangement of the page, these letters might be associated with certain graphics or portions of certain graphics only, again up to the performer's individual interpretation). As no arrow points to Player 1, he/she should only be concerned with interpreting the graphic images found on his/her page and disregard the letters I, T and O.

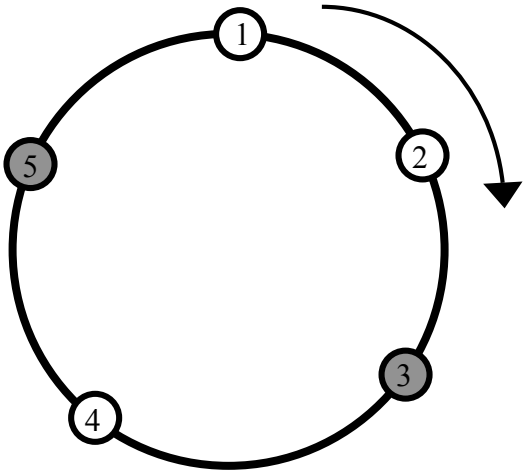
The following example presents a different scenario:

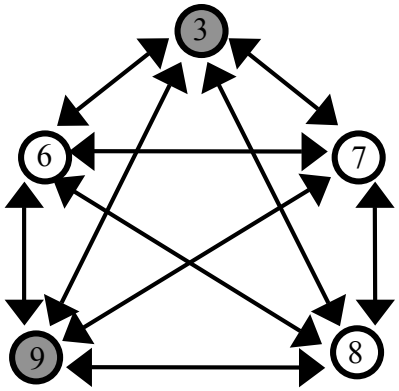
In this case, arrows point from Player 1 to Player 2 and vice versa. Here, both performers continually influence each other in the manner described above. When multiple arrows point to an individual's node, that player should reflect the performances of all of the performers from whom the arrows come. These various sources of influence can be reflected simultaneously, sequentially, or in some combination of these two approaches.

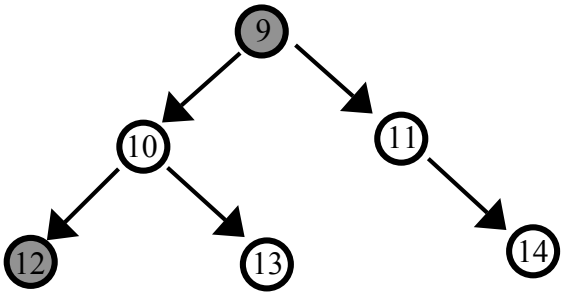
The grey nodes indicate performers who are part of two networks. Each network diagram features two such nodes; thus two members of each sub-ensemble are also members of other sub-ensembles. These performers with "dual membership" have a more challenging performance situation in that they must consider their role in both sub-

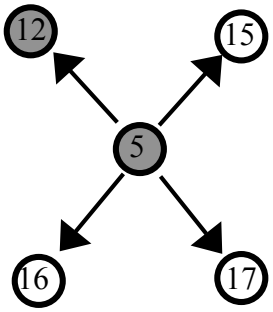
ensembles and attend to the design and members of each. In a sub-ensemble, the two performers who belong to other networks, those with "dual membership," should not share the same external sub-ensemble. In this way, the sub-ensembles can communicate with each other and the entire ensemble is linked together.

There are four different network topologies that can describe sub-ensemble communication: ring, mesh, hierarchical, and star. Diagrams of each topology are provided for both five and six player sub-ensembles. All four topologies should be used for each performance. If the five-player network of each type is used, a total of sixteen performers are necessary (in this case there would be a total of twenty nodes, but eight of these, the grey nodes, would be associated with only four performers who are members of two networks and thus each represented by two nodes). When more than sixteen performers are present, the ensemble may duplicate networks and/or use the six player networks as necessary. The only limit to this duplication is that there should be a roughly even distribution of topologies (the number of ring, mesh, hierarchical and star networks should differ by no more than one). Below is an example of how a total ensemble might be organized to accommodate seventeen performers (each node is numbered one through seventeen to identify discrete performers):

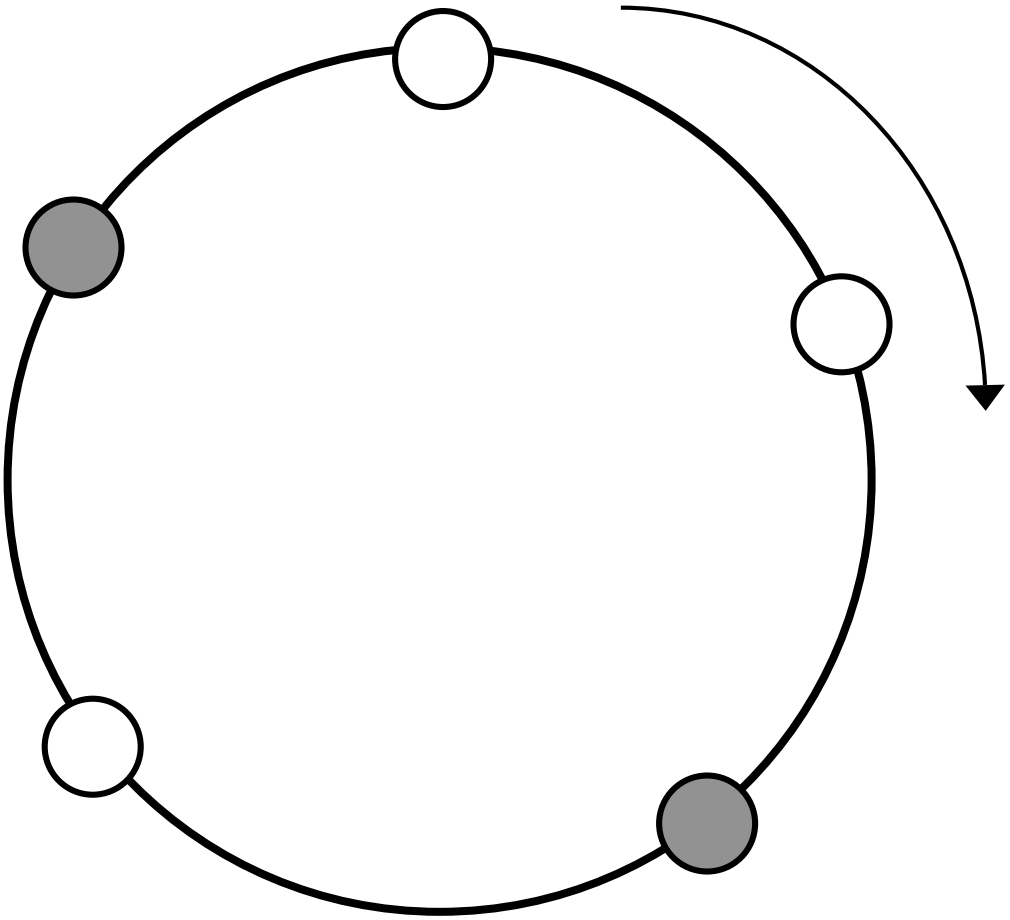




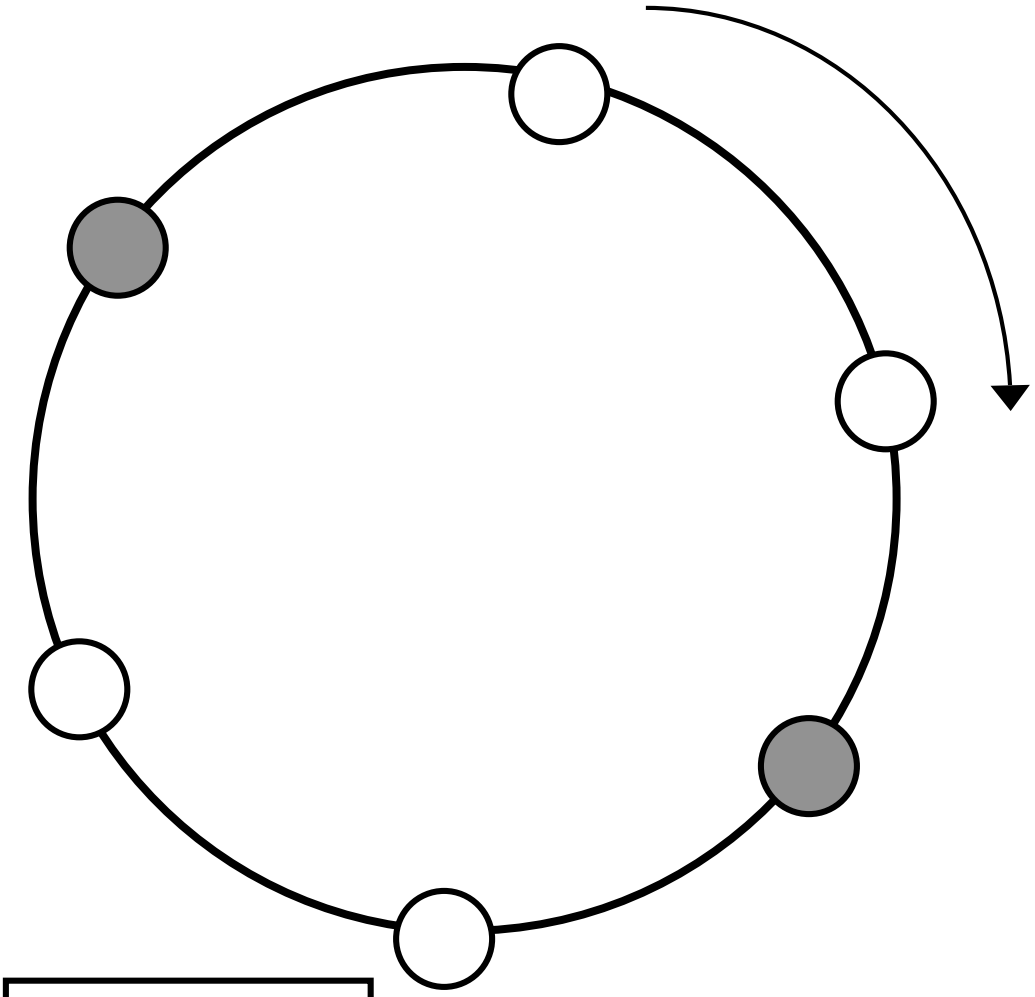




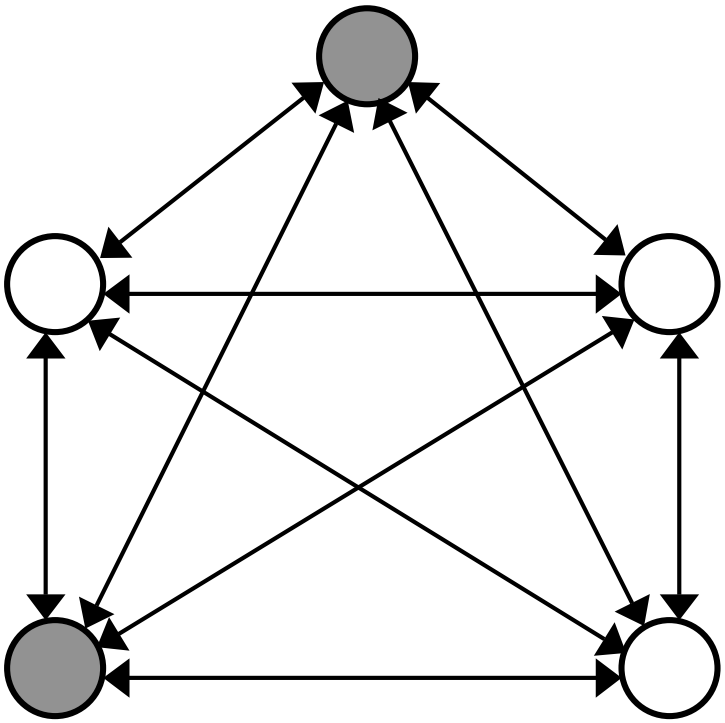
Ensemble Interaction Pages



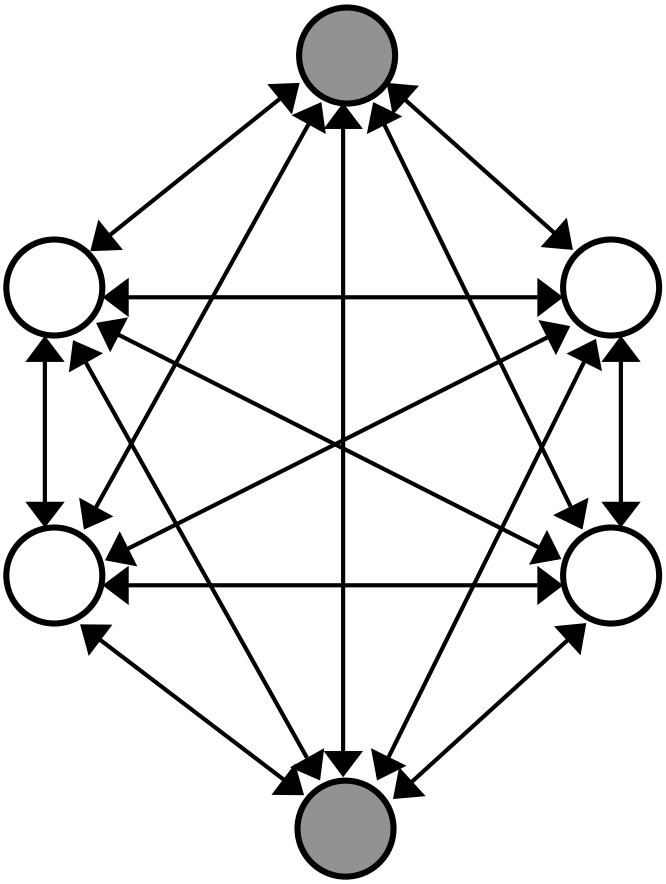
Ring Network
5 Players



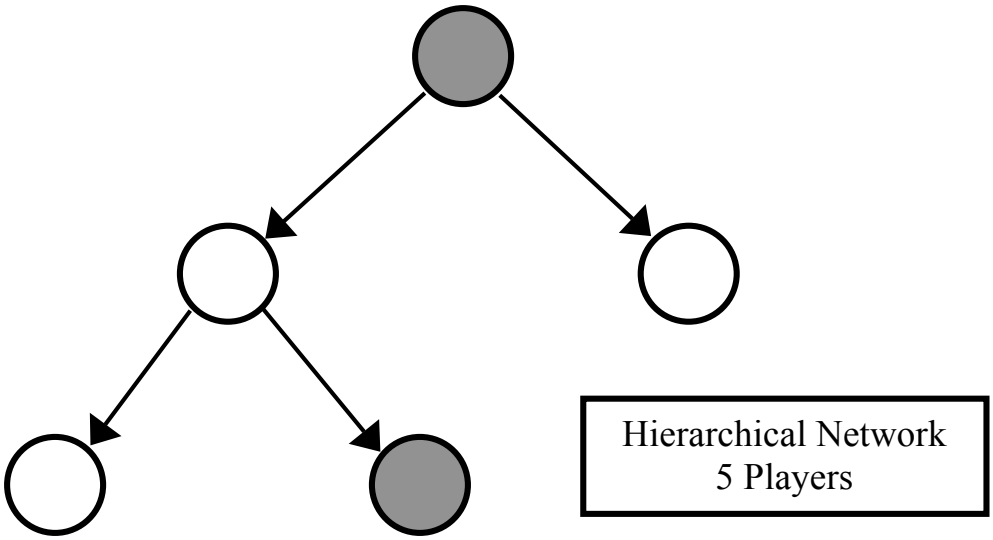
Ring Network
6 Players



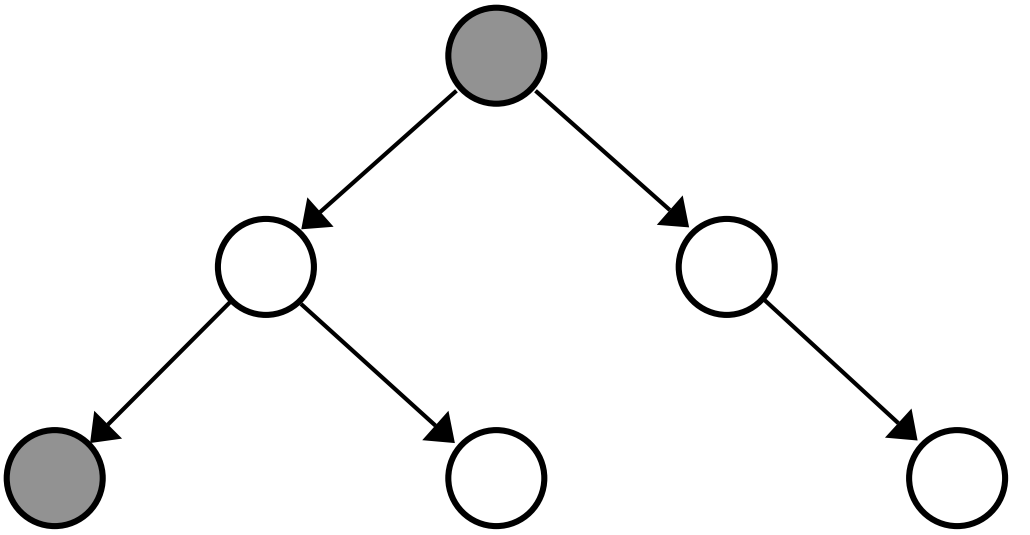
Mesh Network
5 Players



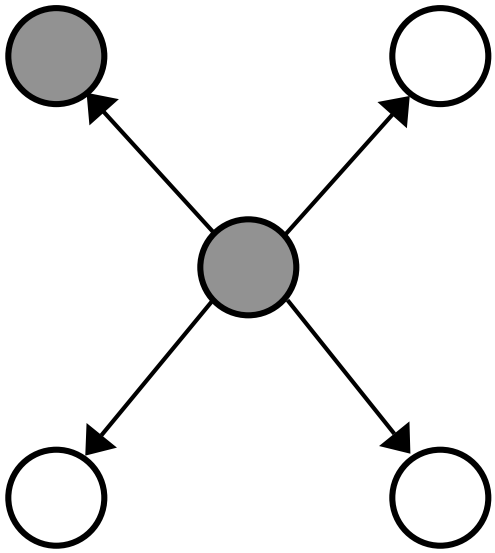
Mesh Network
6 Players



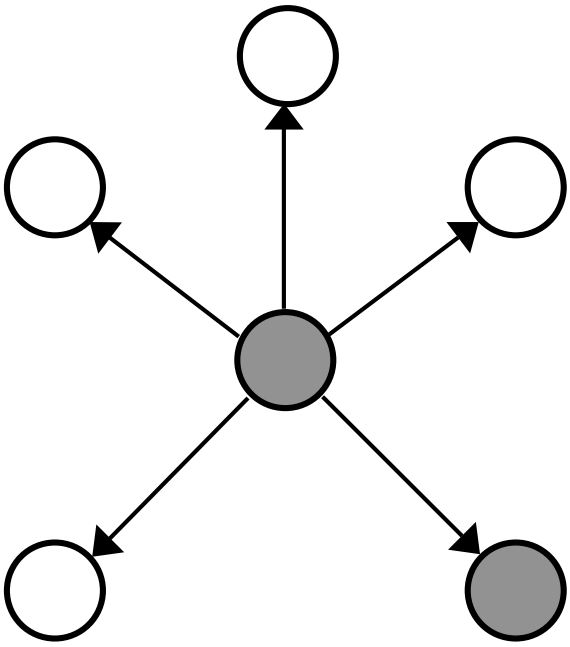
Hierarchical Network
5 Players



Hierarchical Network
6 Players

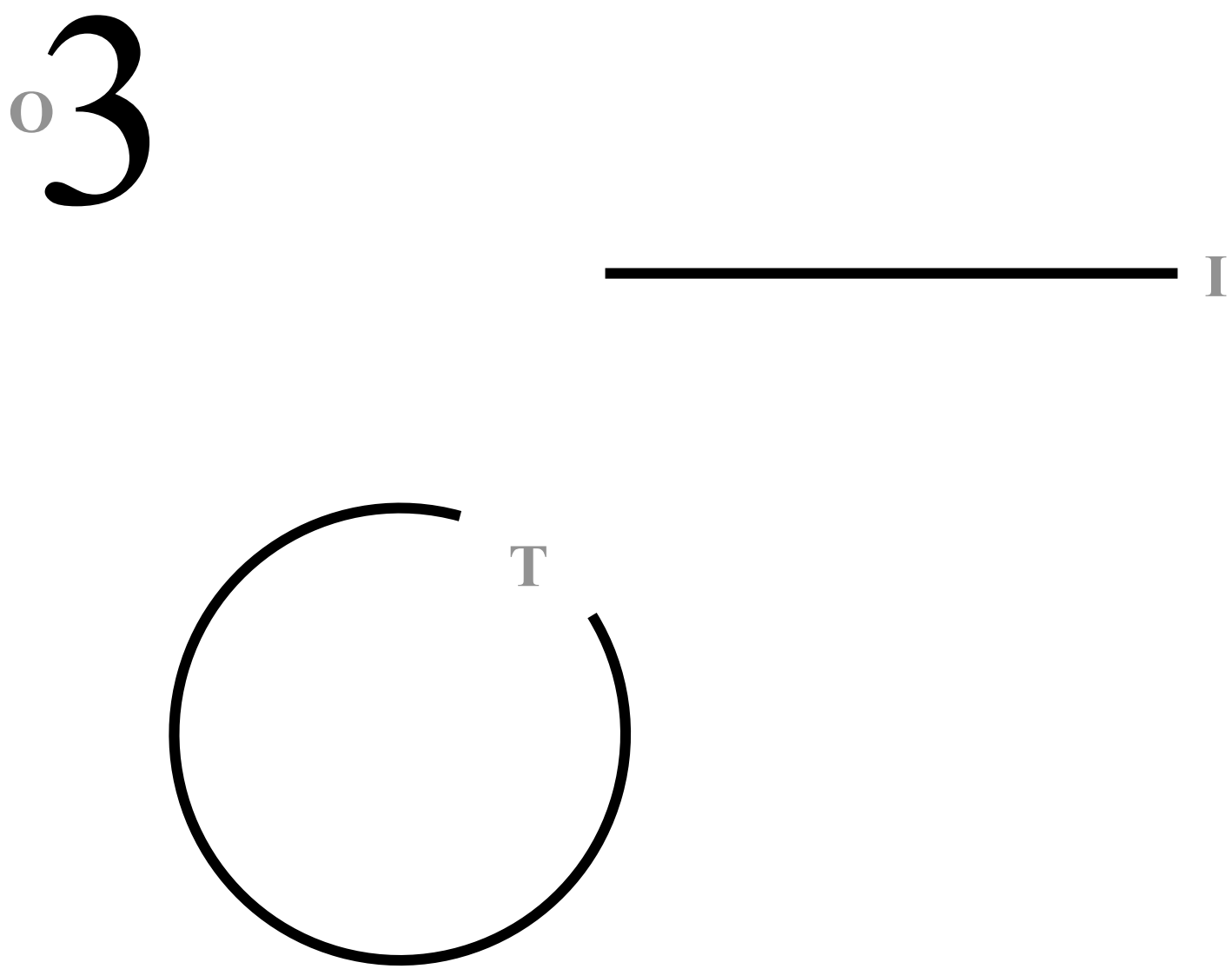


Star Network
5 Players



Star Network
6 Players

Individual Performer Pages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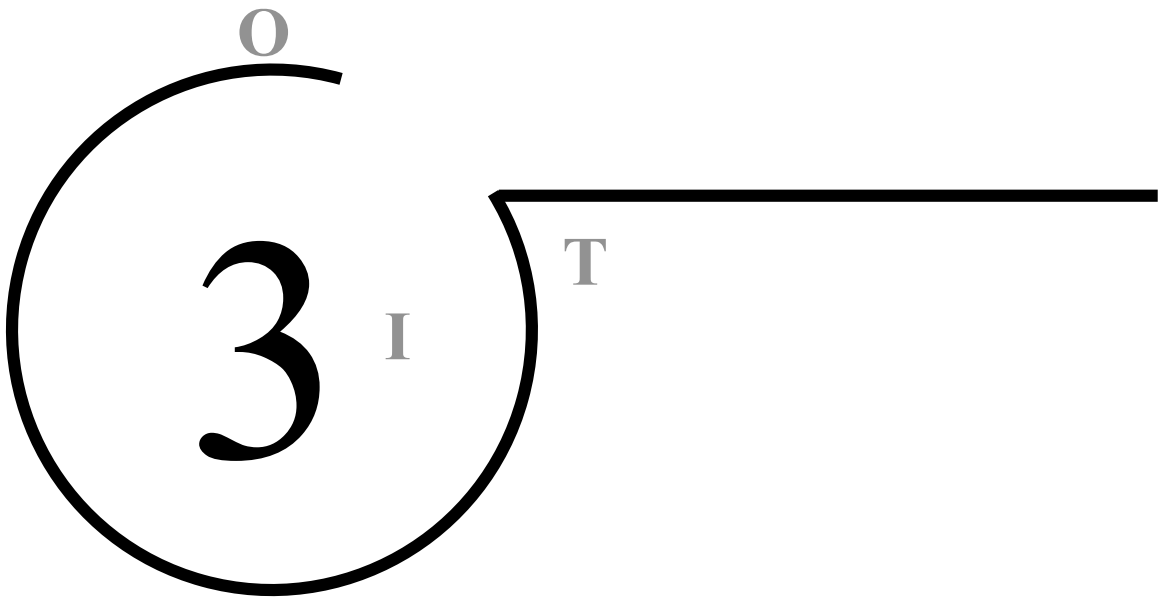
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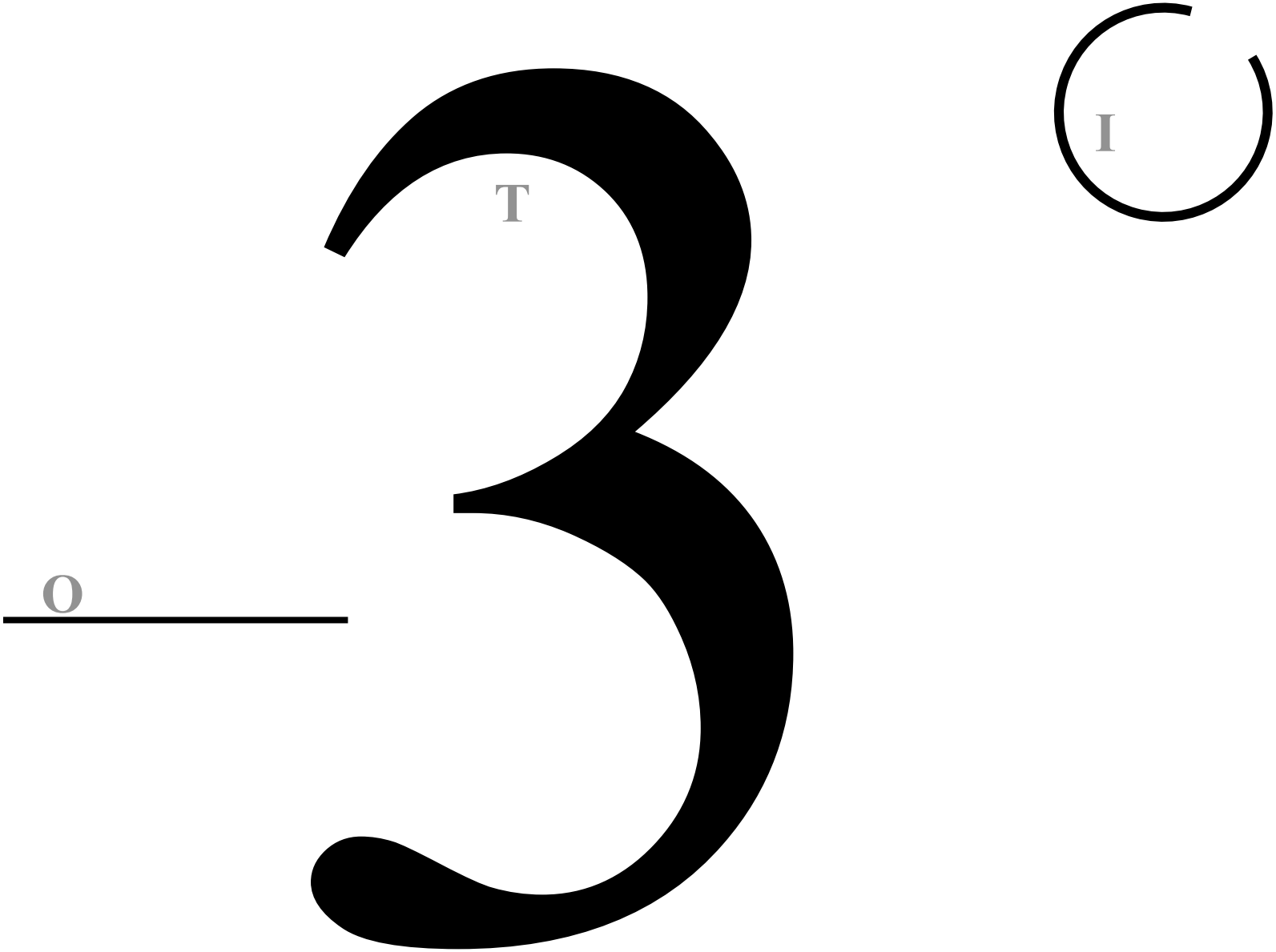
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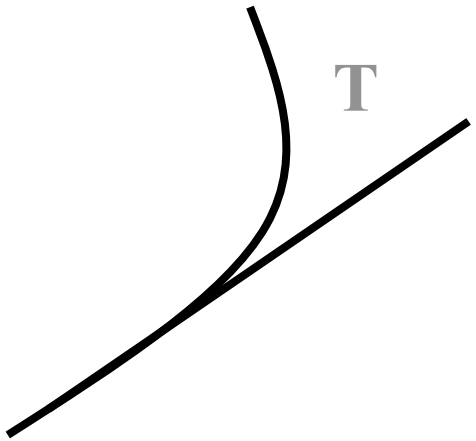

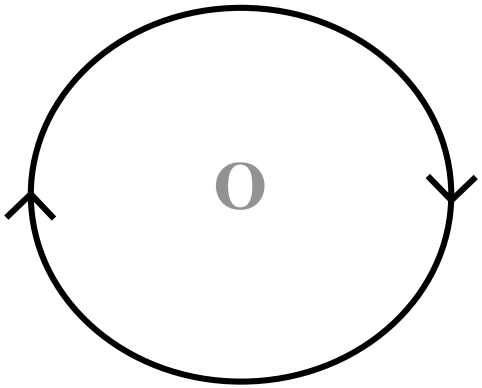

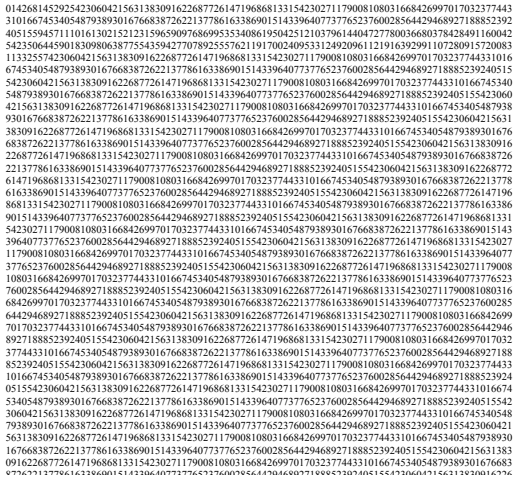

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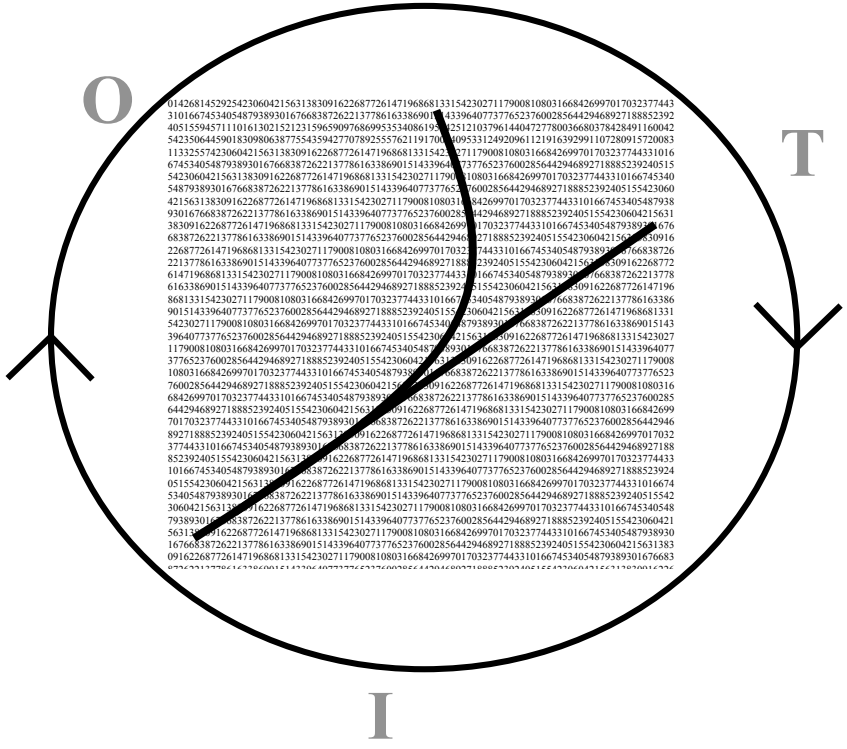
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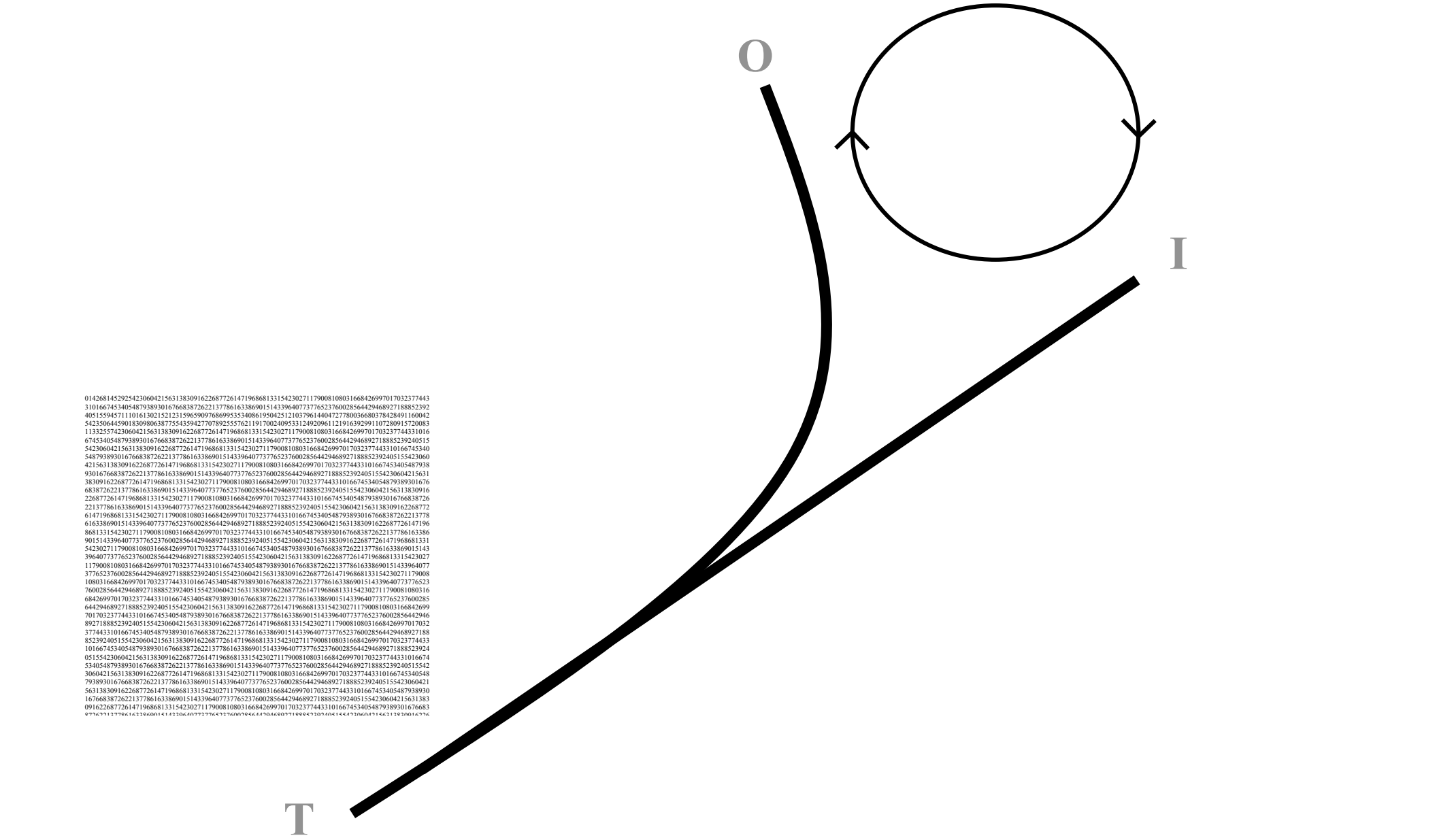
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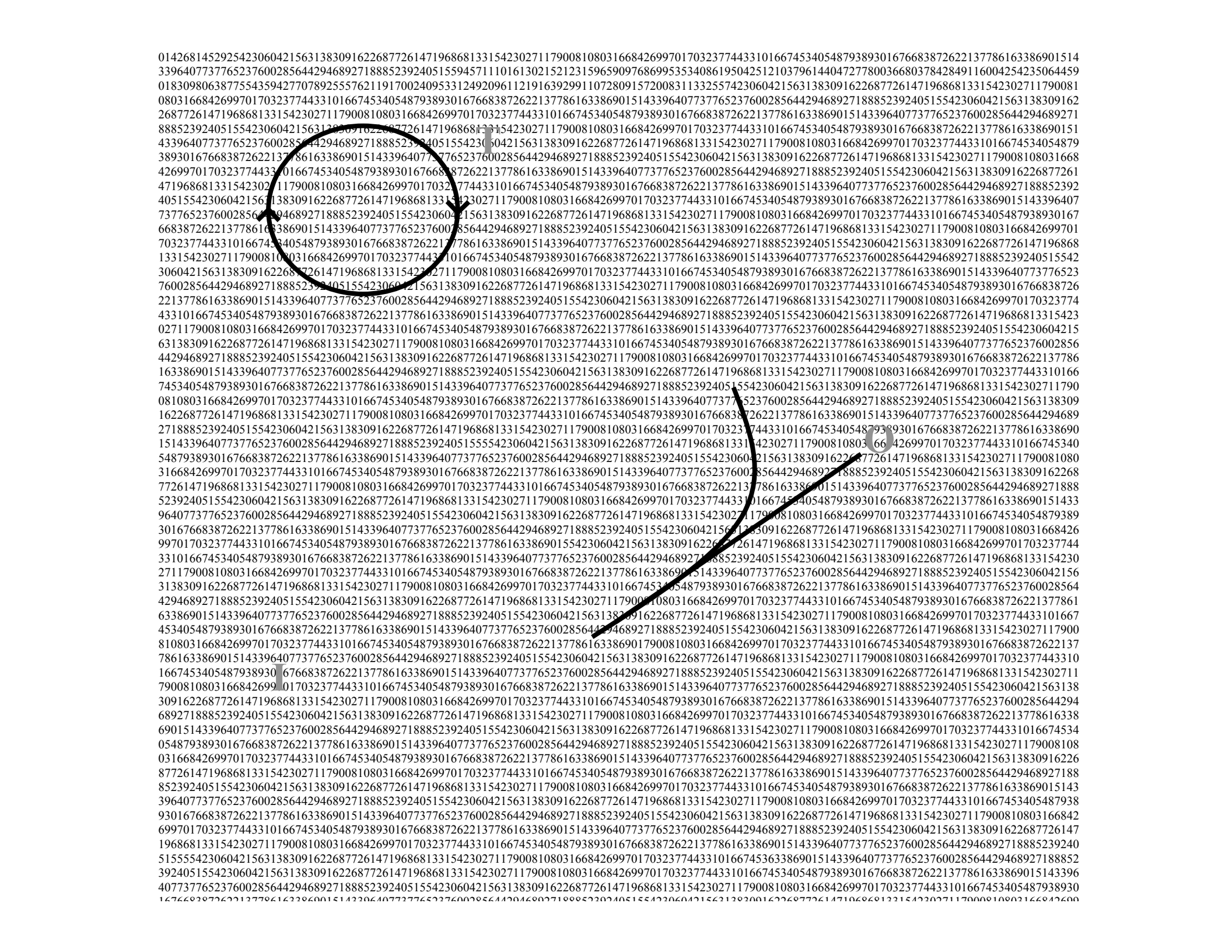
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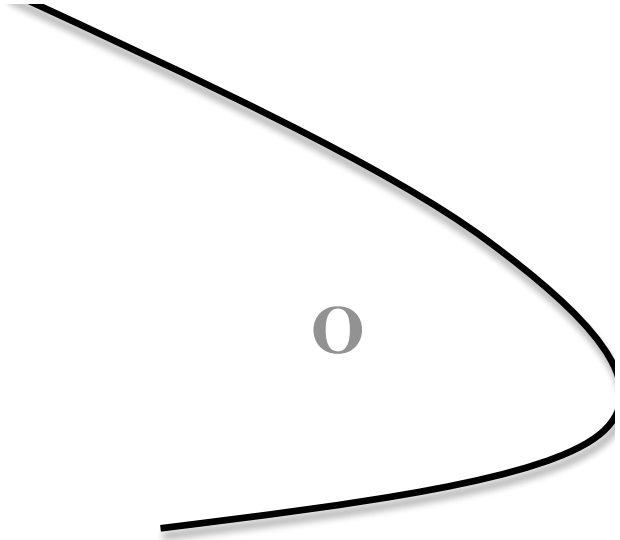

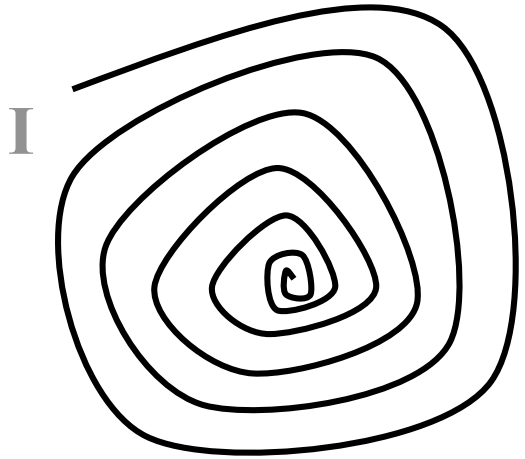

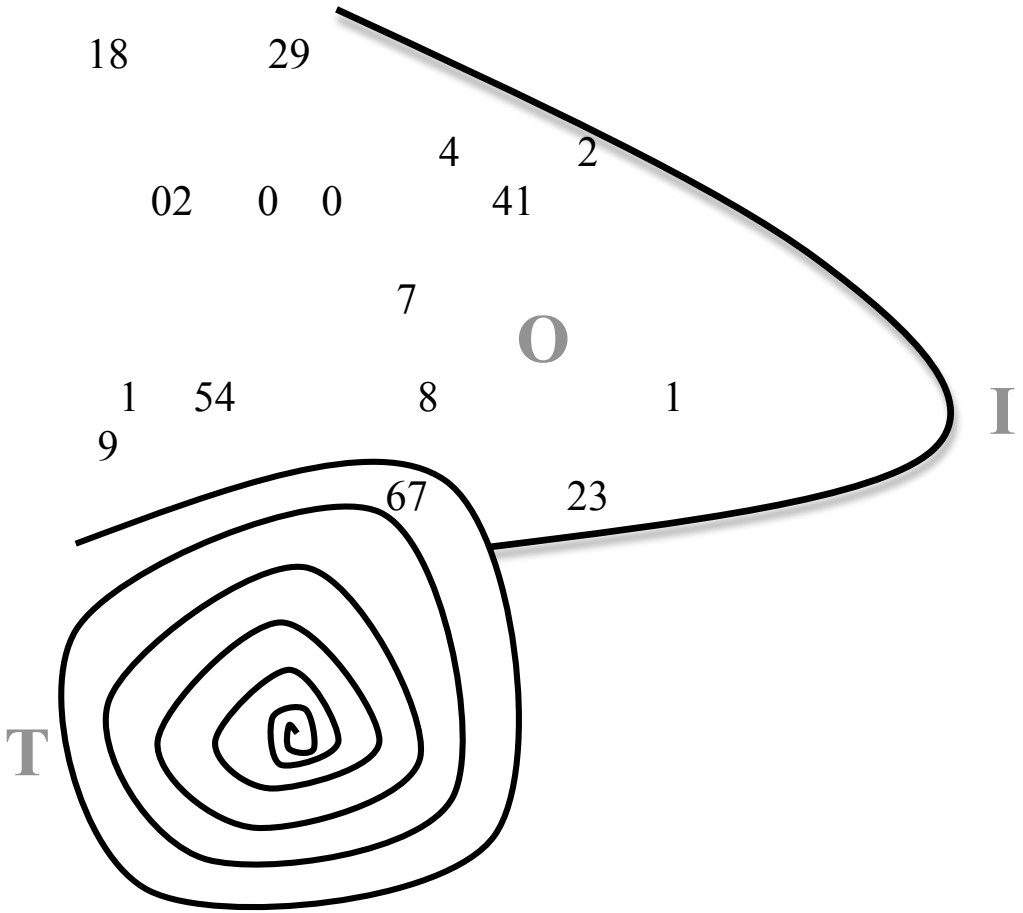
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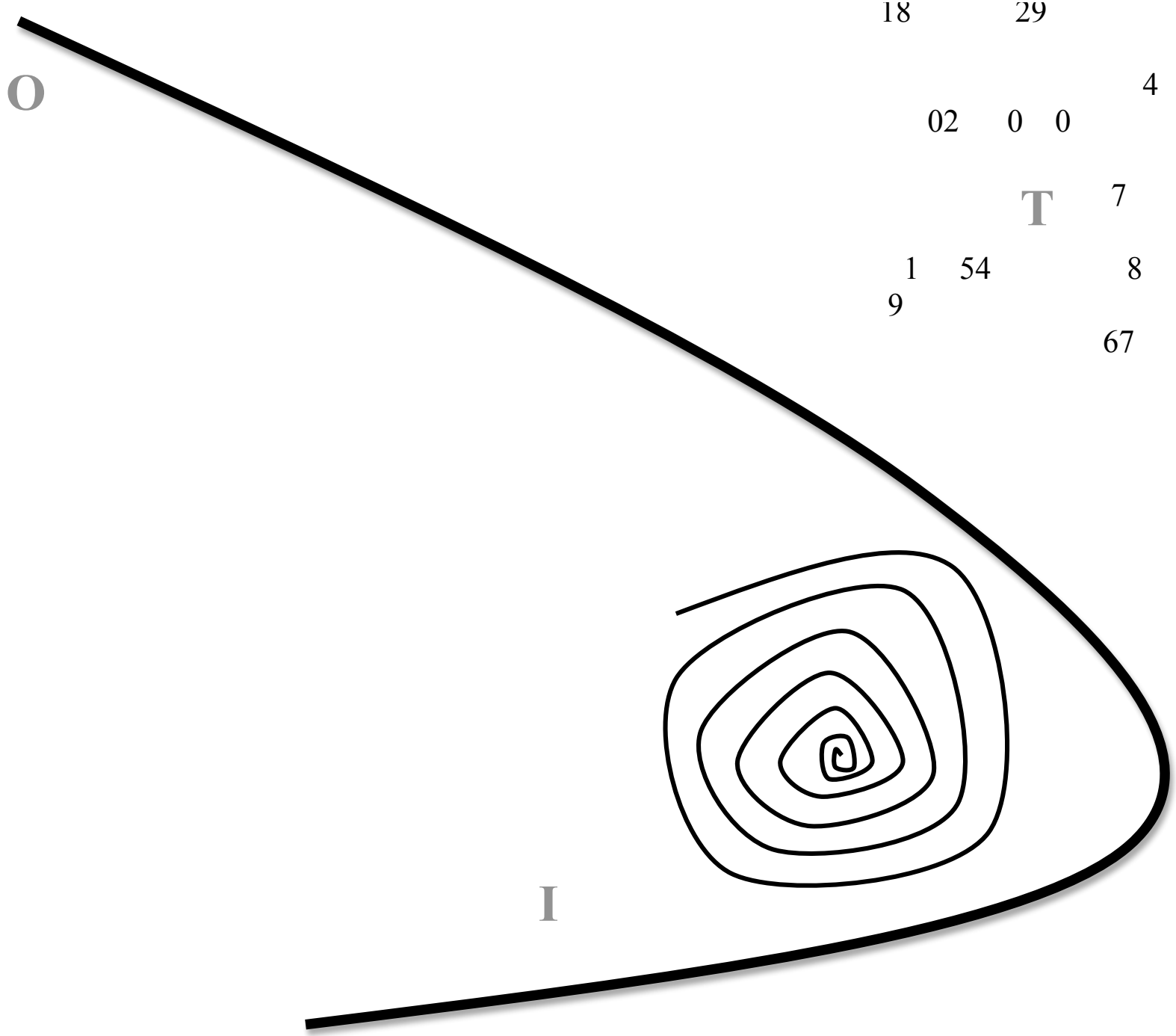

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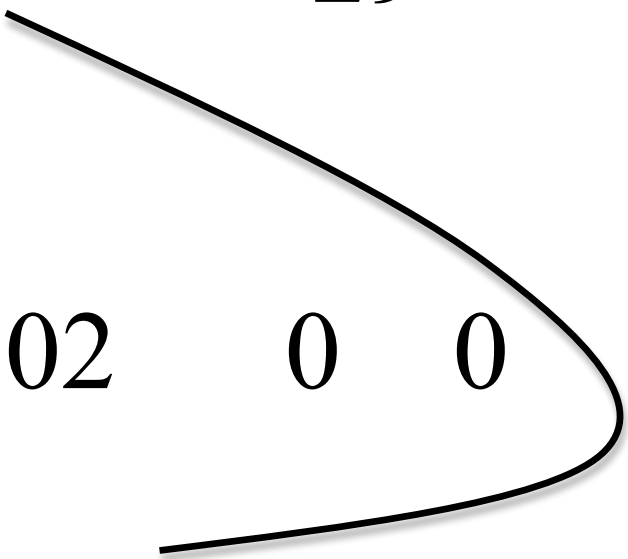

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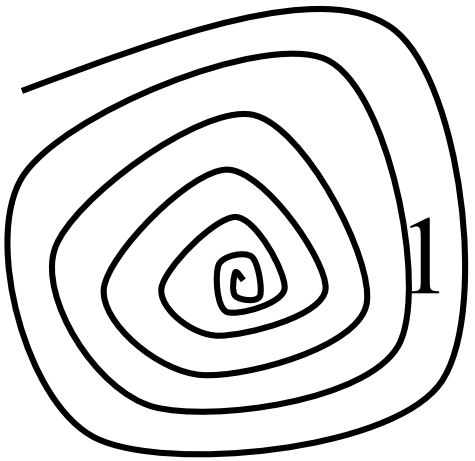

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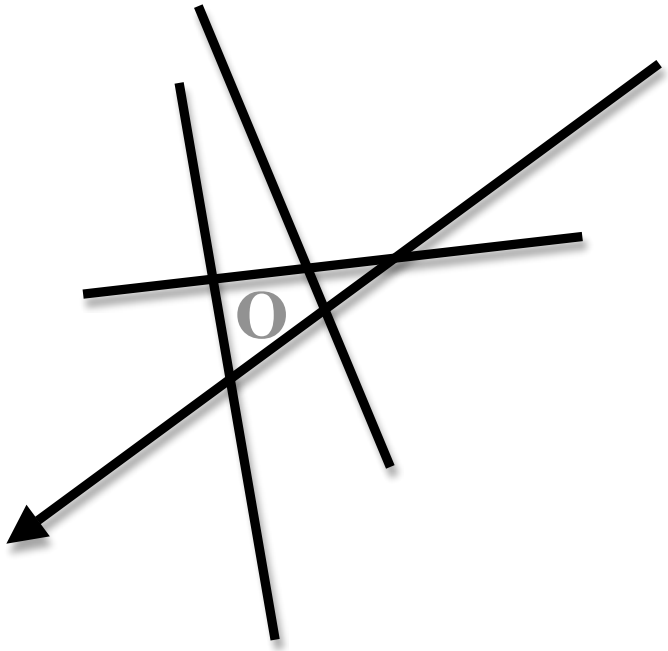

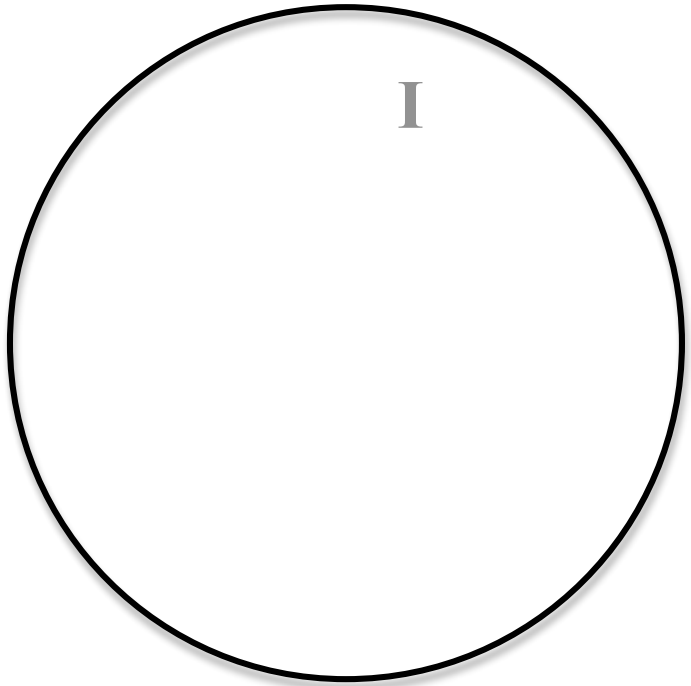

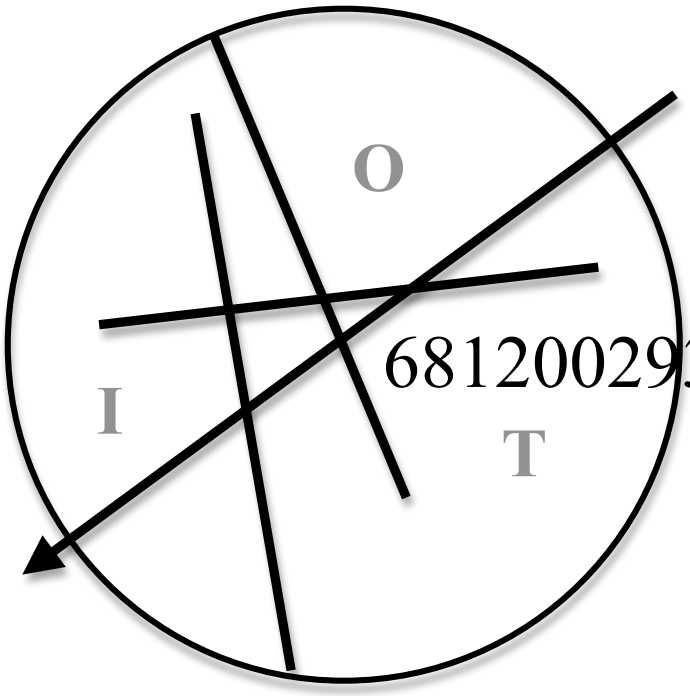

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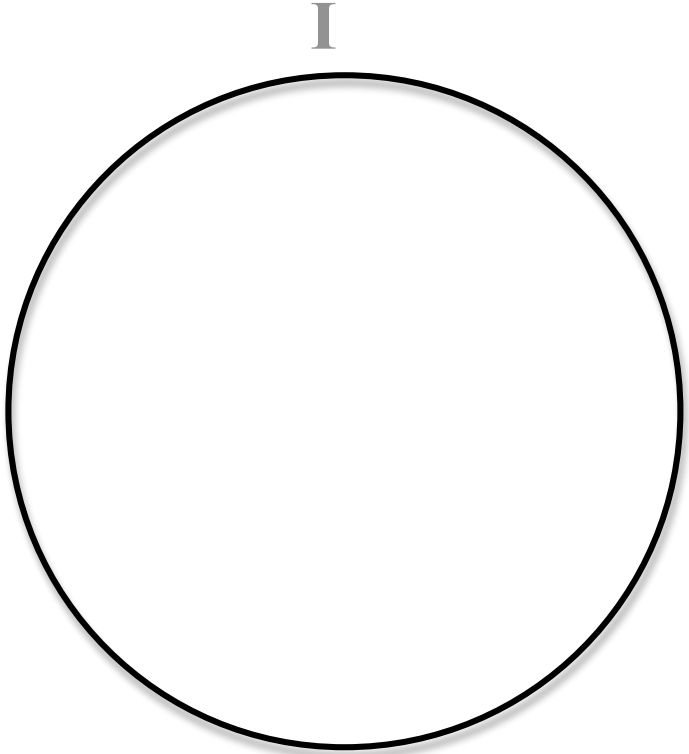

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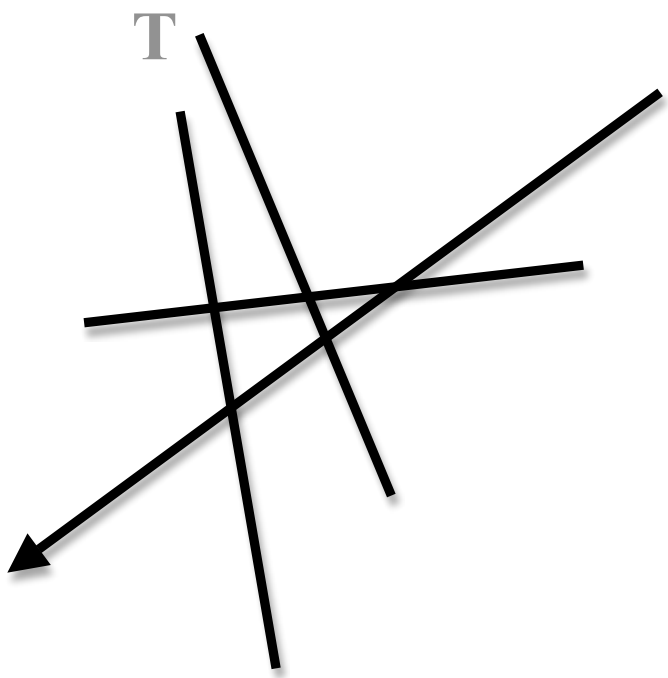

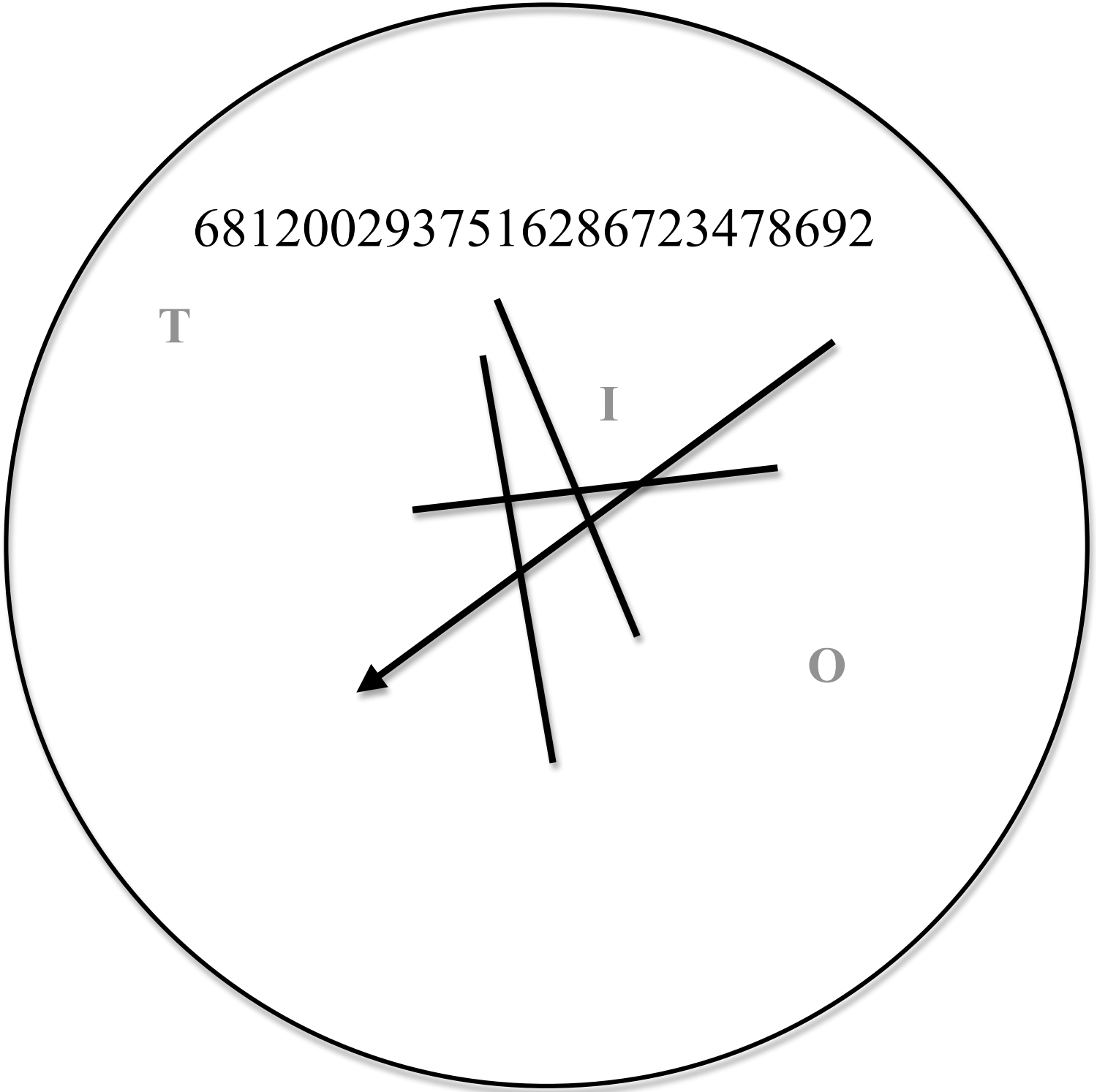
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