



xCoAx 2021 9th Conference on  
Computation, Communication, Aesthetics & X

[2021.xCoAx.org](http://2021.xCoAx.org)

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## Partial Decisions: For Solo Performer and Interactive Audiovisual System

**Keywords:** Interactive Multimedia, Audiovisual, Real-Time Performance, Semi-Improvised, Algorithmic, Max/MSP/Jitter

*Partial Decisions* is a real-time, semi-improvised work for a solo performer and an interactive audiovisual system of over 600 individual tones and shapes. The work models the results of individuals choosing to come together or strike out on their own. The performer exploits the results of those decisions to shape various sonic and visual outcomes, which in turn shape future results. While the performer can merely impose limits on the decision-making capabilities of the modeled community, imposing those limits can yield unexpected results, sometimes beautiful, sometimes chaotic, and sometimes beautifully chaotic. Each performance is unique and opens up a chance for new possibilities, a chance for newfound beauty from the partial decisions of the many.

## Description

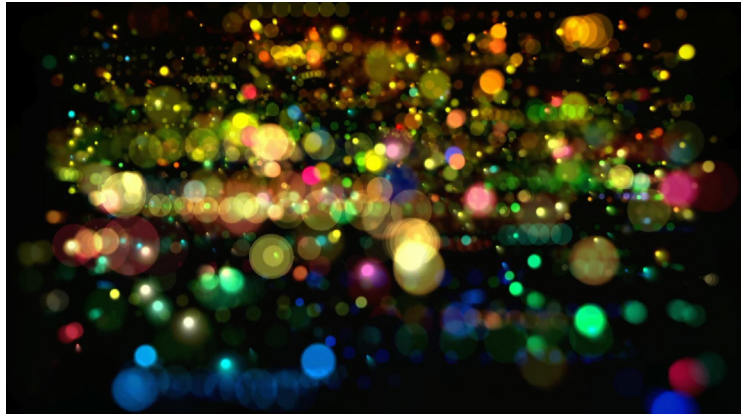
*Partial Decisions* is a real-time, live-streamed, semi-improvised work for a solo performer and an interactive audiovisual system of over 600 individual tones and shapes. The work models the results of individuals choosing to come together or strike out on their own. Before the work begins, the performer set initial limits on the system and then initiates the first decision. Throughout the work, the performer can change those limits, closing off certain pathways while opening others. While the performer can merely impose limits on the decision-making capabilities of the modeled community, imposing those limits can yield unexpected results. Of course, responding to the results of artistically imposed limits will yield new result, perhaps desired or unintended, creating an artistic feedback loop.

Statistical modeling visualizations used by media outlets to show trends and potential outcomes of human behavior, especially at the start of the coronavirus outbreak, served as a partial inspiration for the work. The graphic simulations published by the Washington Post were particularly arresting: <https://www.washingtonpost.com/graphics/2020/world/corona-simulator/>. One interesting consideration is the effect of the visualizations themselves to inform and perhaps even change the future behaviors of those that view them. This work is an artistic improvisation on this 'observer effect' for in it, the program runs a model of decisions and the performer reacts to these partial decisions of the computer further altering future decisions. The results often render sonic and visual landscapes both beautiful and haunting.

The work was created using Cycling74's Max/MSP/Jitter and features a few limiting controls for the algorithmic system. This particular performance features up to 640 sine tone oscillators and accompanying colored spheres. During the work, each individual object will either wait to act for a chosen amount of time, participate as a member of a harmonic spectrum over an active fundamental, join other partials as a member of the harmonic spectrum of the next selected fundamental, or strike out on its own and select a new fundamental using a just-intoned intervallic ratio chosen from the first nine partials. Amplitude envelopes and durations are also algorithmically assigned as well as any inharmonic deviations from the whole number ratios. There is also a probability control over the decision to join or strike-out which the performance can choose to manipulate.

When partials are participating as members of the same fundamental, they will vertically align both in the visual plane as well as in the stereo-field. They can, however, choose to abandon that origin point and move out on their own. Their visual height within the alignment is a simple mapping of their frequency. The color of each partial is a combination of a mapping of their fundamental to the color spectrum and scaled by a similar mapping of the partial number. The performer also has final control over how many individuals can be let into the system and when the simulation ends. Each performance is unique and opens up a chance for new possibilities, a chance for newfound beauty from the partial decisions of the many.

**Fig. 1.** Partial Decisions Still.



**Fig. 2.** Performance

Documentation

<https://drive.google.com/file/d/1Acab7RYrtj0Ep7PaNdPaipZ0wIS9vLeF/view>

