SYNCHRONOUSOBJECTS

for One Flat Thing, reproduced by William Forsythe

The Dance The Data The Objects

One Flat Thing, reproduced (OFTr) is an ensemble dance that examines and reconfigures classical choreographic principles of counterpoint. In OFTr counterpoint is defined as "a field of action in which the intermittent and irregular coincidence of attributes between organizational elements produces an ordered interplay" (Forsythe). Three structural systems interact to create the counterpoint of the dance: movement material, cueing, and alignments.

Movement Material
This contrapuntal dance is composed of fixed movement material with some instances of structured improvisation. While there is no set terminology, members of the company most often refer to the different segments of fixed movement as themes. The 25 main themes are repeated and recombined over the course of the dance in their full and partial forms. In addition to the themes and their interpretation, there is a set of improvisation tasks in OFTr that ask dancers to translate specific properties of other performers' motions into their own. The dancers observe each other and make these translations in real time, producing different results in each performance of the work.

Cueing
The sequence of OFTr is organized by an elaborate cueing system that acts as an internal clock. Rather than following an external musical structure, the dancers collectively determine the flow of the dance as they give and receive cues (aural or visual signals that trigger events). With more than 200 cues in the dance, responsibility for cueing is distributed among all the dancers.

Alignments
Essential to the counterpoint of the dance is a system of relationships that the company refers to as alignments. Alignments are short instances of synchronization between dancers in which their actions share some, but not necessarily all, attributes. Manifested as analogous shapes, related timings, or corresponding directional flows, alignments occur in every moment of the dance and are constantly shifting throughout the group. The term alignment emerges from the working practices of the Forsythe Company. Other words the company uses to describe this phenomenon include hook-ups, agreements, and isometries. Within the thousands of alignments in the choreography, approximately 200 can be understood as a subset called sync-ups. These are moments in the choreography when a dancer's task is to briefly join with another individual or group.

William Forsythe and Norah Zuniga Shaw, Columbus, Ohio, January 2009

One Flat Thing, reproduced
Stage premiere: 2000, Bockenheimer Depot, Frankfurt, Germany
Choreography: William Forsythe
Music: Thom Willems
Source video: 2005, Bockenheimer Depot, Frankfurt, Germany (15 minutes 30 seconds)
Dancers (17): Yoko Ando, Cyril Baldy, Francesca Caroti, Dana Caspersen, Amancio Gonzalez, Sang Jijia, David Kern, Marthe Krummenacher, Prue Lang, Ioannis Mantafounis, Fabrice Mazliah, Roberta Mosca, Georg Reischl, Jone San Martin, Christopher Roman, Elizabeth Waterhouse, Ander Zabala

The Dance **The Data** The Objects

We now understand the structure of *One Flat Thing, reproduced* (OFTr) as a form of counterpoint that is created through the interaction of its three systems of organization: **movement material**, **cueing**, and **alignments**. At the beginning of this project those systems had a variety of names, the precise characteristics of which were hard to articulate. It took a collective effort to catalog and interpret the work as a totality. At the center of that effort and understanding is the data of *Synchronous Objects*.

The process of decoding OFTr was a creative dialog that dilated between insider accounts and outside observation, analytical needs and aesthetic interests. It was a profoundly creative and collective endeavor conducted over three years in close collaboration with William Forsythe and dancers Jill Johnson, Christopher Roman, and Elizabeth Waterhouse.

As we came to fully understand the counterpoint that unfolds in OFTr, we worked to devise methods for quantifying it in the data and expressing it in the objects. We identified what structures were in the dance; gathered the relevant data and found a way to both store and access it; considered multiple ways of understanding the dance; and then standardized terminologies. This effort produced two key sets of data: spatial data taken from our source video of the dance and attribute data gleaned from dancer accounts. You can read more about those sets of data below.

Our goal in gathering spatial and attribute data was to discover patterns of organization that we could use to create the objects featured on this site. We weren't concerned with documenting or reconstructing the dance for the stage, nor were we concerned with purely scientific questions. Instead we worked with the Forsythe Company to unearth the choreographic building blocks of OFTr, quantify them, and repurpose this information visually and qualitatively. As in many forms of inquiry, quantification requires a reductive process that necessarily obscures certain aspects of knowledge (the dancers' intentions, performance quality, and kinesthetic awareness) in order to reveal others (in this case, choreographic structure). We drew from the methodologies of many disciplines—dance, design, computer science, geography, and statistics—and invented new methods when needed.

Spatial Data
Our animators generated location coordinates of the dancers by tracking a single point on each dancer in both the top and front views of the source video of OFTr. By combining the coordinates from both views we were able to generate a three-dimensional data point for each dancer's location at every moment of the dance. Many objects, including *Movement Density, Generative Drawing Tool*, and *Cue Visualizer*, make use of this spatial data to visualize the choreographic structures of OFTr.

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Attribute Data
This data set is built from the dancers' firsthand accounts. We cataloged when dancers said they gave or received a cue, what alignments they were aware of (called sync-ups), when they were improvising, and what themes they were performing in every second of the dance. When dancers' accounts differed, we made a determination based on other data and our own observations. The attribute data catalogs the three systems of the dance: movement material, cues, and alignments.

> Movement Material:
> In their accounts dancers noted when they performed a theme (set choreographic sequence) and when they improvised. We recorded the theme name and its duration. We then analyzed these in relation to the accounts of our project advisors and other performers in the company. We had many discussions about terminology and decided that for clarity's sake we would number these themes (T1, T2, T3, etc.) based on when they first appear in our source video of *the dance*.
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> Cues:
> We noted when a dancer is giving a cue for another dancer to move and who is receiving it. We also made note of any performative nuances mentioned by the dancers in their accounts.
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> Alignments:
> The entire system of alignments was not quantified in the attribute data as it is based more on observation and Forsythe's choreographic eye than on dancer accounts. There is a subset of alignments, sync-ups, that the dancers were aware of because they had been instructed to insert a specific alignment at a precise moment. Because they were contained in the dancers' firsthand accounts, sync-ups are quantified in the attribute data. While not quantified, other alignments that Forsythe uses in OFTr are annotated in the Alignment Annotation object as well as the Full Video Score.

Because we focused on the dance as a choreographic resource—rather than scoring it for the purposes of preservation—we were empowered to take this rigorous process of data collection into new creative spaces. We hope our choices, aesthetic and analytic, generate new possibilities for ongoing creativity and research, both in the studio and in the lab.

Norah Zuniga Shaw, Columbus, Ohio, March 2009

The Dance The Data **The Objects**

To make *Synchronous Objects*, we assembled a group of designers, dancers, and scientists to illuminate the organizational structures that make up William Forsythe's *One Flat Thing, reproduced*. The materials we created—animations, graphics, computer applications—are investigatory (we wanted to probe Forsythe's choreographic thinking) and exploratory (we wanted to find out what we could see in the dance, and how we could visualize those interpretations). But perhaps above all, these visual interpretations we call objects are the stuff of collaboration, reflecting and embodying the disciplinary cross-pollination we experienced while working together to make them.

Our objects are not a substitute for the live stage performance of *One Flat Thing, reproduced*, but offer alternative sites for understanding Forsythe's work and seeing its choreographic structures unfold. As he said of the objects you'll see on this web site: "Ideally, choreographic ideas in this form will draw an attentive diverse readership that will understand and champion the innumerable manifestations, old and new, of choreographic thinking in this dance." That, in short, is our hope for them.

Looking at *One Flat Thing, reproduced* for the first time raised numerous questions for our project team, especially for those of us coming to contemporary dance for the first time. "What should we understand when we look at it?" we asked. "Is this just chaos or is it improvised?" As Bill explained his methodology for designing its choreography to us, we felt an instant connection to his organizational principles, his use of spatial geometry, and his creation of visual complexity because they were deeply related to organizational systems used in our disciplines (which, outside of dance, include animation, graphic design, music, statistics, and geography, just to name a few). Suddenly we were released from looking for a linear story and instead could engage with *One Flat Thing, reproduced* as a contrapuntal composition of complex relationships, patterns, and trends.

We could, after all, read this dance. And much of our learning to read involved translating our new knowledge of it in ways that displayed our visual way of thinking. These experiments enabled us to deconstruct and communicate the dance's complex principles of counterpoint through the language of images. We first worked to reduce the visual complexity of the dance so that we could better understand its core systems: cueing, alignments, and the movement material with which Forsythe's counterpoint is constructed. Some of our early reductions took the form of animated annotations that called out significant alignments and cue networks. From them came charts, maps, scores, and more. Anything to help our brains to identify and organize the complex patterns within the dance.

Through persistence, teamwork, and experimentation, these early exercises evolved into the variety of objects you see on this site. Some showcase our work in annotating the dance, while others (like the *Counterpoint Tool*) invite interaction with its contrapuntal principles. In some objects, the visuals are the result of code that uses the data we collected from the dance. This code translates that data—raw numerical information—into wonderfully complex, abstract animations (*Data Fan*) or interactive analytical tools (*Cue Visualizer*). A few objects use the quantitative properties of the dance to empower new composition. Take the *Generative Drawing Tool*, for example, which allows users to paint with data from the dance.

These objects are a way of sharing ideas: about the dance, about visualizing complexity, about interpreting works of art in unconventional ways. We share Bill's hope that, taken together, they act as a catalyst, compelling users to consider what they themselves see in the dance. Our objects have certainly played that role for us and represent only some possible outcomes of our investigations. Our initial goal was to explore, make, interpret, and transform *One Flat Thing, reproduced* as a way of inviting ourselves and others into the dance. It is in that spirit we share this exploratory work.

Maria Palazzi, Columbus, Ohio, March 2009