

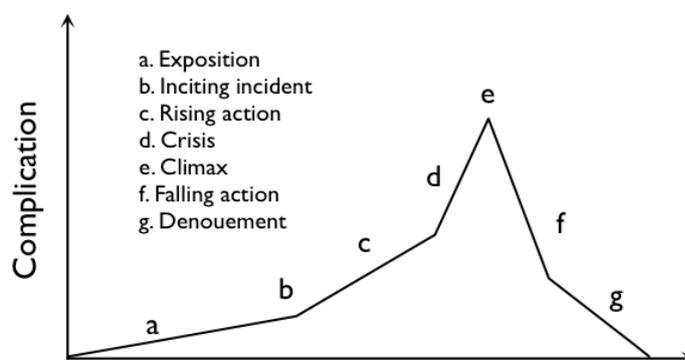
Interactive Dramaturgy in Five Steps: From Temporal Order to Evental Space

Teemu Paavolainen // Specific Case numbers in DREX are highlighted with *asterisks

1. Linear Traditions of “Whole Action”: Events of Change and Reversal

Most generally, “dramaturgy” concerns the **organization** of materials, or the *work* of actions (*drama*) – both derived from the Greek *ergon* (cf. organism, ergonomics). Translating the classic, Aristotelian conception that it depict a “whole action” with a *beginning*, a *middle*, and an *end* to perhaps more evental terms, the grossest level of such organization consists in the spatiotemporal **framing** of the whole interactive experience (possibly including forms of spatial *immersion* as in Cases *6 and *10).

Within such frames, the **action** of classical dramaturgy consists in cumulating **events** of change and reversal, often graphed along a single continuous **line or arc**. Here is Brenda Laurel’s elaboration of Gustav Freytag’s “triangle” or “pyramid” model of 1863, made “amenable to computational representation” by quantifiable variables of *time* (t) and *complication* (c: “the *informational attributes* of each dramatic incident”):



The “Freytag pyramid,” modified **Time** and redrawn after Laurel 1993, 85

Thus, dramatic action can be conceived as **rising** and **falling** with the emotional or cognitive **tension** coupled to its degree of complication. For Laurel, whether we think of plays, games, or computer interfaces – and her work is in HCI – this is a matter of questions and answers as we proceed from *possibility* via *probability* to *necessity*:

“The orchestration of probability and causality is the stuff that dramaturgy is made of. ... An incident that raises questions ... is part of the rising action; one that answers questions ... is part of falling action. ... [An early *reversal of expectations* serves] as an inciting incident, causing a sharp upturn in the c/t slope (by raising a whole set of questions all at once). The climax of a play may be a reversal that causes a sharp downward turn in the slope (by answering a host of questions all at once). ... [When] all of the competing lines of probability are eliminated except one ... when probability becomes necessity – the whole action of the play is complete.” (Laurel 1993)

2. Engaging Interactive Technologies: On Tension and Temporal Ordering

Then again, the merely linear computation of task and solution or question and answer does not quite add up to “dramaturgy” as yet, grounded as it should be not in smooth *completion* but in the kinds of *conflict* and *collision* that make events “dramatic.” This poses a challenge to **interface design**: where a good interface is often thought of as *transparent* or *intuitive*, **dramatic potential** seems to lie in the opposite direction – of conflict not control, of tension and friction in interaction, of opacity not immersion.

Thus, we have a variety of options regarding the **relationship** of input and output, action and perception: in DREX, varieties of (i) movement, touch, and speech have been mediated by (ii) cameras, control devices, sensors, and microphones, to generate (iii) light, sound, and projections – static or dynamic, live or pre-composed. Much as in the theatre (where puppets can “act” and “night” come about in full light), *anything can become anything* – yet there are degrees to the **experience** of mediation (i-ii-iii):

- invisible interface (*5 *Ergo*): “something happens” by walking the street
- getting to know it (*5 *Ergo*, *7 *Unnamed*): attention overrides transparency, user takes to explore what causes what (*5 pace, velocity, dynamics, etc.)
- intuitive interface (*3 touching an object) with dramatic surplus or surprise: object retains expected sensorimotor affordances but behaves unexpectedly
- full control (*1 Wiimote): you push a button to trigger planned outcome

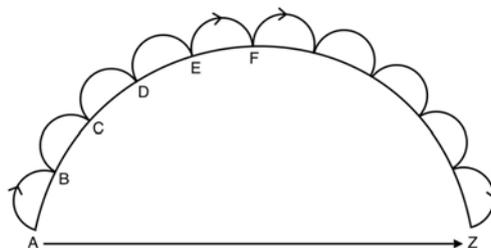
On the other hand, insofar as dramaturgy equals the **eventness** of performance over some extended, spatiotemporal continuum, neither should we reduce it to quotidian stereotypes of *drama* and *the dramatic* – marking but abrupt *points* in the continuum, “event-full” events coupled to emotional tension and dramatic complication. One way to ensure **continuity** is by applying Keith Johnstone’s basic rules for improvisatory storytelling, which simply consist in (i) *breaking routines* and (ii) *re-using materials*:

- routine of “nodding” (Case *4) – disrupted by having it trigger imagery
- routine of coupling imagery to nodding – re-used by disrupting synchrony
- practically, this implies changing parameters whether of input (*5 e.g. pace to dynamics) or output (*5 e.g. harmonics, *7 fragmentation of letters on screen)
- Johnstone: an “end” is felt once all materials have been appropriately re-used

Consider also the “transformative procedures” of **play** by which Richard Schechner suggests ordinary actions may become intrinsically interesting as ends in themselves:

- re-ordering of a sequence
- exaggeration of elements in a sequence
- repetition of (perhaps exaggerated) elements in a sequence
- breaking off of actions: stoppage, interruption, or fragmentation
- incompleteness: denial of intention (teleology) or closure (ending)

Thus conceived, the “whole” dramatic arc entails smaller arcs over time and interface:

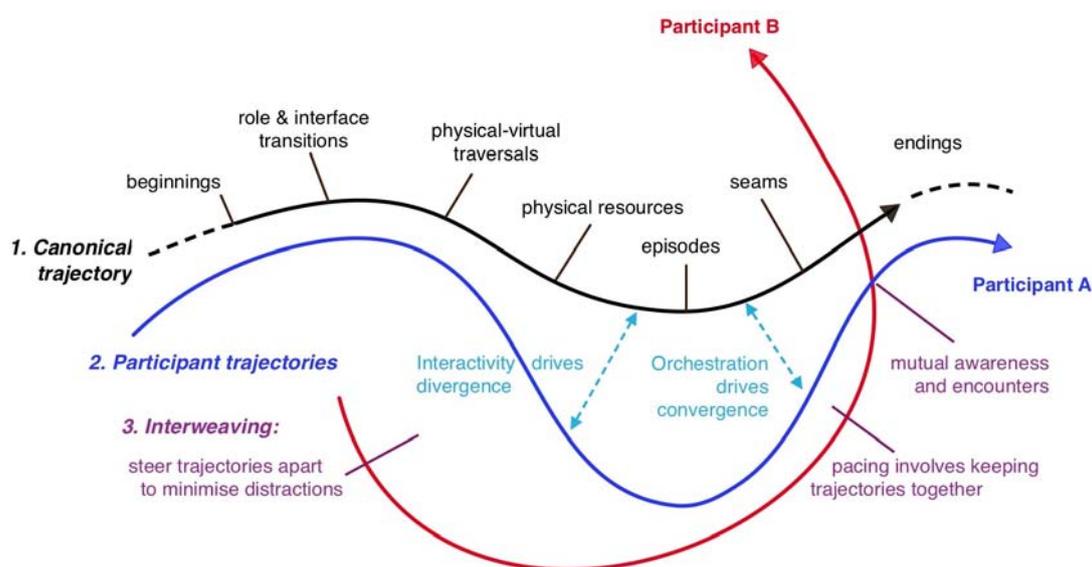


In **spatial terms**, though, no such graph will equal the “territory,” nor is the dramatic path “a static instantaneity”: where maps and graphs imply “a coherent closed system” of which the observer remains “outside and above,” the “instantaneously interconnected” space they imagine may have little to do with how space is *enacted* as an “opened interweaving of a multiplicity of trajectories” (Massey 2005). The next section elaborates this line of thinking by paraphrasing Steve Benford and Gabriella Giannachi’s notion of **trajectories** (see 2011, and their awarded CHI paper of 2009).

3. Benford & Giannachi: From Interaction to Trajectories

In *Performing Mixed Reality* (2011), “a dramaturgy of interactive user experiences” is built on the concept of ‘trajectories,’ bridging the disciplines of HCI and performance studies – and it may also be of use in identifying technological requirements. In short:

A **trajectory** describes a journey through an extended user experience emphasising *continuity* and *coherence*. Inspired by dramaturgical notions of space, time, plot and character, these trajectories pass through *hybrid structures* of **space** (physical and virtual – adjacent, connected, overlaid), **time** (story, plot, schedule, interaction, and perceived time), **roles** (bystander, spectator, participant – actor, operator, orchestrator) and ecologies of **interfaces**, suggesting trajectories towards and through them.



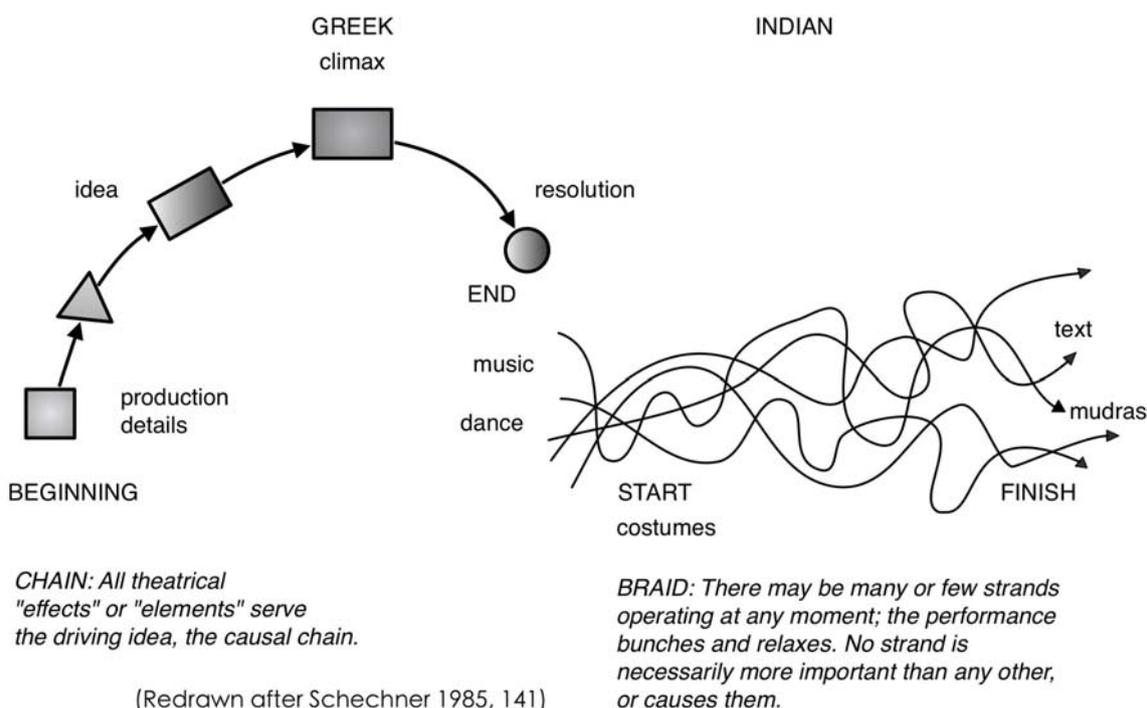
Trajectories of Interaction: compiled and adapted from figures at www.performingmixedreality.com

Trajectories have to negotiate various **transitions** and **traversals** during which continuity may be at risk: from *beginnings* (framing the experience / attracting attention) to *endings*, through *role and interface transitions*, *physical-virtual traversals*, *temporal episodes*, *physical resources*, and *seams* in the technological infrastructure (e.g. GPS). **Canonical trajectories** and **participant trajectories** represent intended and emergent lines of engagement, diverging and converging due to *interactivity* and *orchestration*. **Interweaving trajectories**, in collaborative and/or multi-tasking situations, serves to address problems of *awareness*, *encounters*, *separation*, *pacing*, and *prioritisation*.

4. Textures of Tangled Trajectories: Toward a Dramaturgy of Evental Space

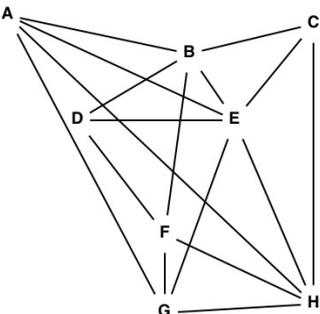
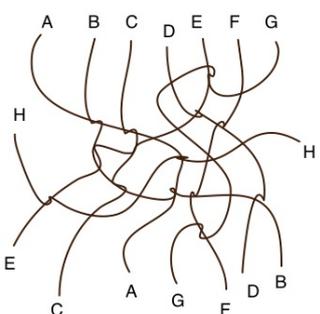
With this notion of *interweaving*, the mere “interaction” of pre-designed components begins to give way to the **eventness** of spatial experience as it actually unfolds – to the sorts of “emergent” or “generative” dramaturgies as explored in Cases *5 and *6. Moreover, insofar as there is a “dramaturgy” to each of the materials or interfaces at work, we may consider them also as unfolding *events* rather than mere static *objects*, as **spatiality** itself becomes a function not of its architectural containment but of the trajectories and **mobilities** coursing through it: an outcome of concurrent **practices**, whether these be *strategic* practices of design, or *tactical* practices of use (Dourish).

Rather than “simply operating within a spatial environment,” thus, **technologies** are always already “implicated in the production of spatiality and spatial experience” (whether they enable movement, navigation, or representation: see Dourish); meanwhile, **dramaturgy** – as the **architecture** of performance – offers “a way of thinking about space and event together ... rather than thinking of performance largely in terms of its action, and architecture in terms of its immutable spaces” (Turner). Beyond the rising and falling “assembly line” of focal action, it becomes an **assembly of lines** that bring forth a meaningful event in their very interweaving – the contrast is akin to Richard Schechner’s *chain* and *braid* models for distinct performance traditions:



Thus, spatial **structure** must accommodate the ongoing **texture** of whatever trajectories participate in its performance; with anthropologist Tim Ingold (directly influential on Benford & Giannachi as well), we might think of space itself not in terms of its boundaries but as a “**meshwork** of interwoven lines” – as a “zone of entanglement” in which “there are no insides or outsides, only openings and ways through.”

Surely, we must conceive of its components as profoundly **multimodal** – in the sense that e.g. lines of locomotion may translate into musical textures, as in Case *5 *Ergo* – yet clearly the notion of texture helps highlight tacit aspects of **process** and **context**: by contrast to the idea of Whole Action as a Sequence of Events, *eventness* becomes the contextual quality of performance in its unfolding, much of whose “*con-texture*” will always also leak beyond our direct experience (be it in the relentless undercurrent of code or indeed in the gathering and dispersal of those who co-enact the event); conversely, a dramaturgy of **evental space** is actively enacted or brought forth by whatever lines or trajectories enter its ongoing texture. The final section summarizes some of the **parameters** between which it can be designed and/or experienced to take place.

| 5. From Design to Experience: PARAMETERS to Navigate Spatial Dramaturgy | |
|--|--|
| <p>work <i>on</i> actions, vertical design Innovation as the “dramatic” event experience as Product for consumption Following pre-given dramaturgy Analysis of possible strands of action construction of space – Building though strategic channeling</p> | <p>horizontal emergence, work <i>of</i> actions ongoing “eventness” of Improvisation as generative/relational/temporal Process dramaturgy as actively Constituted in how strands of action Interweave Dwelling – constitution of event though tactical maneuvering</p> |
| Ingold 2007: | |
| <p style="text-align: center;">NETWORK of connected points</p>  <p>vertical integration, normative spatiality: “eventness” in moments of input and output – “joining the dots”</p> | <p style="text-align: center;">MESHWORK of entangled lines</p>  <p>spatiality as experience of its unfolding: integration <i>along the way</i>, “eventness” as spatiotemporal interweaving</p> |
| Benford & Giannachi 2011 | |
| transitions and traversals of trajectories via space, time, roles, and interfaces | interweaving trajectories as they emerge, orchestrating relation to canonical ones |
| STRUCTURE, TIME, SEQUENCE | SIMULTANEITY, SPACE, TEXTURE |
| Barba 1985 | |
| identifies “two poles” which through their tension, balance, and dialectic “determine the performance and its life: actions at work – dramaturgy”: | |
| linear dimension: interweaving by means of concatenation | three-dimensional dimension: inter- weaving by means of simultaneity |
| Pearson 2011 | |
| sequence: ordering material | stratigraphy: layering material |
| Edgar 2009 | |
| time emplotment works vertically by ordering the events of the story | space emplotment works horizontally by juxtaposing its different strands |
| temporal Complication: dramatic “knot,” “untangled” in the end | spatial Complexity: how every strand of action is “entangled” together |
| Etchells 2009 | |
| schematic dramaturgy: “positioning” or “giving weight to information, ... creat- ing hierarchies” – a “matter of sequence and managed revelation arranged across time,” “the line A B C D”: “Strange, but something like this, as cold and formal as this, can really send shivers down the spine, make you cry.” | dramaturgy as thickening: “Here ... we have A and also B and meanwhile C, the one running through the other. ... The stage is not so much a sequence as a tan- gle of diverse intentions. A threading, mirroring, echoing, space. A dramaturgy of knots, collisions, tangles. ... Space is already dramaturgy.” |

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Figure Credits

(all images redrawn by author)

- p. 1 Laurel 1993, 85
- p. 2 Esslin, Martin 1976 *The Anatomy of Drama*, 45. Temple Smith, London
- p. 3 www.performingmixedreality.com (redirects to Facebook page)
- p. 4 Schechner, Richard 1985 *Between Theater & Anthropology*, 141. University of Pennsylvania Press, Philadelphia
- p. 5 Ingold 2007, 82