Complex Interaction

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limitless interactivity
What is it that makes interaction complex?
Our paper is an attempt to conduct an analytical examination of interaction complexity with the purpose to develop a theoretical tool suitable for interactive artifact analysis.
Our analysis is not from the perspective of ease of use, difficulty to use, user experience, but from a design perspective, that is, focusing on qualities that a designer can control.
Our fundamental questions are: what is complex interaction and where does “complexity” reside?
Our research started with questions such as:

Why are some artifacts seen as complex?

Why does sometimes a seemingly simple artifact lead to complex interaction?

Why can some artifacts be used in a virtuoso way and others not?
In the paper we discuss five common everyday design strategies for dealing with complex interaction:

1. eliminate unnecessary complexity
2. make it simple by sacrificing (quality of) function
3. hide complexity
4. confine complexity
5. dilute complexity
We argue that these common strategies are sometimes insufficient, and sometimes even harmful.

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As a proposed corrective we introduce the notion of benign complexity.

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And we make the case that complexity in many situations offer desirable interaction qualities.
So, our hypothesis is that it is possible to shape complexity into a benign form that humans can comfortably deal with

BUT

it requires a deeper understanding of interaction complexity
benefits of complexity

richness
depth
entertaining
challenging
Proposed model of complexity

Internal complexity
External complexity
Interaction complexity
Mediated complexity
Internal complexity is the complexity of the internal workings of the artifact.

External complexity is the complexity of the artifact’s interface with the outside world and the user.
Interaction complexity is the complexity of the relation between input and output, between what the outside world and the user does and what the artifact does.

Mediated complexity: complexity that is located not in the interior or the exterior of the artifact but in the environment, channeled through the artifact and impacting interaction complexity.
Proposed model of complexity
Distributions of complexity
or complexity profiles, or complexity allocations
Some findings

-- Design tradeoffs
-- Automation and control
- -Use virtuosity and complexity
-- Easy and difficult to use

Most intriguing result is that the findings are in many ways counterintuitive
Benefits of a framework on complex interaction

predictive purposes,
analytic purposes,
theoretical purposes

maybe even
design purposes
an analytical approach suitable not just for complexity
Ongoing studies