Peering into the Discourse of Industrial Design Training through a Sustainability Lens

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Our Questions

What are the ethos of industrial design? How do the ethos intersect with sustainable design?
Method

Discourse Analysis

Unpacks discourse: “an interrelated set of texts, and the practices of their production, dissemination, and reception, that brings an object into being” (Phillips. N., 2002). The discourse of pedagogy is powerful and influences new generations of designers.

DA examines what particular reality of “industrial design” is constructed in the classroom environment, and how that reality is instilled in and by various actors.

Method

Atlas.ti 7

{Graduate Industrial Course
  Undergraduate Industrial Course}
Emergent from the discourse analysis of the Purdue Dataset

- Industrial Design Ethos
- Sustainability Principles
- Material Hazards

Key Observation

From the HCI literature (specifically, Blevis 2007)

May occur if the sustainability principle is not considered as a factor

+ -
Sustainable Interaction Design: Invention & Disposal, Renewal & Reuse

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ABSTRACT
This paper presents the perspective that sustainability can and should be a central focus of interaction design—a perspective that is termed Sustainable Interaction Design (SID). As a starting point for a perspective of sustainability, design is defined as an act of choosing among or informing choices of future ways of being. This perspective of sustainability is presented in terms of design values, methods, and reasoning. The paper proposes (i) a rubric for understanding the material effects of particular interaction design cases in terms of forms of use, reuse, and disposal, and (ii) several principles to guide SID. The paper illustrates—with particular examples of design critique for interactive products and appeals to secondary research—how two of these principles may be applied to move the effects of designs from less preferred forms of use to more preferred ones. Finally, a vision for incorporating sustainability into the research and practice of interaction design is described.

Author Keywords
Sustainability, design, interaction design.
(i) linking invention & disposal—is a principle that links invention as a cause of disposal,
(ii) promoting renewal & reuse—is a principle about the first-order design requirement for sustainability which includes several of the categories in the rubric above, namely salvage, recycling, remanufacturing for reuse, reuse as is, and sharing for maximal use.
(iii) promoting quality & equality—is a principle about the second-order design requirement for sustainability concerning what is required to motivate reuse as is, achieving longevity of use, sharing for maximal use, and achieving heirloom status,
(iv) de-coupling ownership & identity—is a broadly construed principle about fashion, the commons, security & privacy, and sense of selfhood in the context of globally changing conditions for the construct of identity as these motivate relationships to the materials of consumption, especially with respect to the possibilities for sharing for maximal use,
(v) using natural models & reflection—is a principle about promoting imitation of use of resources in nature and the design method for so doing, a theme which is also especially connected to achieving longevity of use, sharing for maximal use, achieving heirloom status, finding wholesome alternatives to use, and active repair of misuse.
Findings
Findings about Industrial Design Goal

• Make innovation not technology
• Designs need to be fun and enjoyable
• Create objects that create efficient humans
• Maximize designs through multi-functionality: objects that adapt to multiple environments and are shared by multiple people
• Generate new product ecosystems and accessories
• Follow “Aesthetically Motivated Innovation”
Make Innovation not Technology

“Let yourself go and kind of come up with some stuff that’s so far out there that they're going to go, “Whoa, these people are on some sort of drug!” (8:2)”

Concentrate on creating innovative ideas and worry about the details later.
Designs need to be fun and enjoyable

“Maybe having a little more humor in laundry is a good idea.” (Simon, 36:14)

Relieved from their boring routines

Encouraging people to use the product
Create objects that create efficient humans

“if there is any way to do it FASTER, WARMER, and EVERYTHING TOGETHER, that would be nice (05:03).”

“the hectic lifestyle.”
Maximize designs through multifunctionality

- Objects that adapt to multiple environments and are shared by multiple people
  - Objects that Adapt to Multiple People
  - Objects that Adapt to Multiple Environments
Generate new product ecosystems and accessories

“I’m trying to think when they sell a laundry machine, they really don’t get to sell any consumables with it. And one thing we might look at pitching to them is, you know, [-] washer and [-] dryer and [-] consumables.”

ensuring that the product is locked down with other products that the client will produce.
Follow “Aesthetically Motivated Innovation”

“as designers it [your concept] still meets your aesthetic needs of, of being innovative.”

From design something cool, to the choice of materials, to add new value to designed artifacts, to create novel perspectives of the product.
How sustainability plays here?
Explicit Sustainability

- “Peter: And anything we can do to promote air drying is, is a definite benefit.”

- Explicitly used sustainability as feature of its design

- In creating products that are efficient, fun, maximize sharing, and multifunctional, many of the resultant designs did have sustainable side effects.
Implicit Un-Sustainability

Attempts to accessorize products may have the opposite effect.
Industrial Design Goals Trumping Sustainable Research

“Sydney: It’s means they do hang up the washed clothes in their own country.

Eva: And, uh, most of them said they didn’t change their laundry habits.

Simon: But some do it more frequently, use the dryer 12 percent, okay. Feels dirty.

Simon: Okay, all right.

Eva: Um, you know, I think most of them will depend, you know, because it really depends on how expensive the clothes it is.

Simon: Okay.

Eva: If it is just T-shirt, don’t care.

Simon: Okay. This is very nice as far as I can read this quickly and get the results. It’s pretty easy to follow even though after a little while I start getting a little tedious because there … but it, it communicates quickly and effectively with your big circle here and I can, I can get the results of it…People hate folding clothes.”
Bringing Sustainability principles
## Innovation, not technology

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<td>Linking invention and disposal</td>
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**Note:**
- **Innovation, not technology**
- **Ethos emergent from the discourse analysis of the Purdue Dataset**
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<td>Discarded toys</td>
<td>By making the experience fun, people are more likely to engage in the product use</td>
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<td>Fun</td>
<td>Build attachment</td>
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## Adaptability & Multifunctionality

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Adaptability & multifunctionality

- Promoting renewal and reuse; Promoting quality and equality

- Maximizing usage

- By adding multifunctionality to a product, it can maximize the value of the product
Creating product ecosystems and accessories

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Creating product ecosystems and accessories

Using natural models and reflection (*to achieve zero waste systems*)

Increased consumption

Continued profitability for the client, industrial design is also concerned with the accessory market
# Aesthetically motivated innovation

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<td>Increased consumption; More durable, achieve heirloom status</td>
<td>Creating items that are valued for their aesthetical innovation make them more valuable</td>
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<td>Maximizing sharing</td>
<td>Promoting quality and equality</td>
<td>NA (the barriers to maximizing sharing are implicated in conventional economic models)</td>
<td>Encourage multiple people to share and involve others</td>
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Summary
Limitations

Methodology

Sampling
Thank You