Much ado about affordances: Implications for researching technological affordances

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Overview

The contested ontology of 'affordances'

- – Ontologies = Multiple ways of experiencing (Bleakley, 2012) and translating (Callon, 1998) the same phenomenon

1. A brief history of social science conceptualizations of affordances

2. Coevolving definitions of technological affordances

3. 4 views on technological affordances

4. Implications for research

# A desk-based study of 'affordances' & 'technological affordances'

Review of **disciplinary** literature

- Anthropology
- Archaeology
- History
- Philosophy
- Psychology
- Sociology

Review of **interdisciplinary** literature

- Science & Technology Studies
- Education / Medical Education
- Design
- Communications
- Organizational studies

Analysis of 4 often-cited **TEL/Networked Learning** papers on **technological affordances**
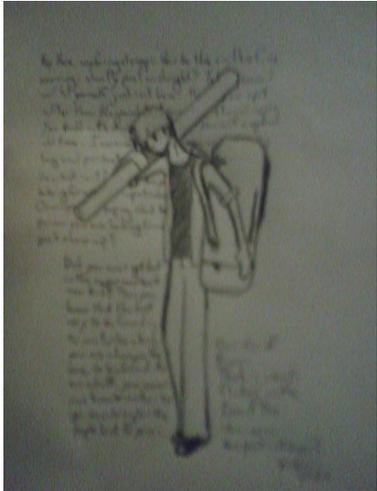
Gibsonian Affordances

Ecological psychologist, James Gibson (1977, 1979) posited the original theory of affordances as…

"Latent in environments, such as substances, surfaces, objects, and places that hold possibilities for action."

Critiques of Gibsonian 'affordances'

Points of contention

1. Gibson's
   1. **Claims around 'natural vision'**
   2. **Rejection of the notion of social and/or cultural (learned) ways of perceiving an environment**

2. Broader critiques
   1. **Incommensurability – tensions between positivist/realist and interpretivist perspectives within the Gibsonian concept of affordances**
   2. **Ambiguity around subject-object & direction of agency distinctions.**

Norman's (1988) Real & Perceived Technological Affordances

Norman's 1st attempt to resolve the ontological debate on Gibsonian affordances:

- **Real affordances**
- **Perceived affordances**
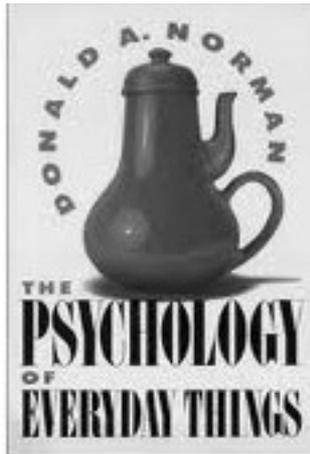
Critiques of Norman's work

1. **Real affordances become 'Black-boxed,' invisible, unquestionable**
2. *And* **therefore un-researchable**

Harvey's (1986) alternative resolution to realist-interpretivist 'affordances' dilemma

- Distinguishing between observe-ability and perceive-ability

- Addressing issues of subjectivity and objectivity

- Problematizing the logic of 'measuring' truth and validity

Turvey's (1992) 'effectivities' vs Reed's (1996) 'regulators'

1. Turvey: dispositional properties of objects and environments, manifest themselves in relation to actualizing circumstances

2. Reed: scarce environment resources implicated in evolutionary natural selection processes, and therefore, regulators of human and animal adaptive behaviours

Sanders' (1997) response

Can the color, blue, be said to exist?

Chemero's (2003) relational 'affordances'

Perception of a property of an object

Perception of a feature of a situation

Chemero:

- Argues that Gibsonian affordances are "impossible ghostly entities"…

- Rejects Sanders' 'blue' argument, as well as Turvey's & Reed's arguments.

- Brings in Strawson's (1955) concept of feature placing to redefine affordances

- Adds a distinction between properties of objects and features of situations

Scarantino's (2003) relational & conditional affordances

Scarantino's argument claims to:

Reclaim Gibson's 'visionary insight' independent of the 'most controversial claims of the Gibsonian movement'

And…

Distinguish between 'surefire' and 'probabilistic' affordances.

Schmidt's (2007) social affordances

1. Relations between human perceivers and social environments "propertied by other people"

2. Inherently intersubjective and exist in a temporally extended and historical fashion

   1. Phasic vs tonic perception
   2. Econiche

Ingold's (2011) 'Wayfaring' Notion of Affordances

1. Primacy of movement
   1. **Links back to Gibson's notion of mobility**
2. Pathways

Technological Affordances

Determinist perspective

Relational perspective

Pfaffenberger's (1992) Socio-technical system notion of technological affordances

The huge iron and steel plants of Lorraine are rusting away…

Akrich & Latour's (1992) legislative technological affordances

Hutchby's (2001) functional & relational technological affordances

1. You can…
2. You can't…
3. You can…
4. You can't…

Bloomfield, Latham, and Vurdubakis' (2010) situated technological affordances

Co-evolving definitions of 'affordances' and 'technological affordances'

4 (cases) / 4 often-cited TEL/NL publications on technological affordances

Author / Year	Citation tracker	Citations	Journal impact rank
Pea (1993)	Google Scholar ©	1038	N/A – Book chapter
Conole and Dyke (2004)	Publish or Perish ©	88	highest
Laurillard, et al. (2000)	Publish or Perish ©	132	2nd highest
Suthers (2005/6)	Publish or Perish ©	226	highest

Pea's (1993) Technological affordances **as** links between perception and action in technological environments

Pea
1. Draws on Gibsonian affordance, but critiques 'natural vision'
2. Acknowledges but critiques Norman's perceived affordances
3. Asserts that technological affordances are relational and socially constructed

Pea's work aligns well with parts of
1. Scarantino's, Chemero's, Hutchby's, Bloomfield et.al's and Schmidt's subsequent definitions of affordances
2. Foreshadows intersubjective conceptualisations

Laurillard et al.'s (2000) Technological affordances **as** designed features and activities in electronic environments

Gibsonian	a clear statement of an overall goal - to support generation of a task-related plan
Chemero, Scarantino, Hutcby, Bloomfield et al.	continual reminders of the goal - to support keeping to the plan
Gibsonian	index of sub-goals - to provide a choice of activities relevant to task
Gibsonian	multimedia resources - as alternative presentations of the material
Chemero, Scarantino, Hutcby	interactive activities - to provide adaptive feedback on actions; to motivate repeat actions to improve performance
Gibsonian	an editable Notepad - to enable students to articulate their conceptions
Gibsonian	a model answer - as feedback on their conceptions; to motivate reflection on their conceptions

Conole and Dyke's (2004) Technological affordances as functional properties of ICT environments

Sample ICT Affordance	Citing …	Supporting arguments do not account for critiques/revisions to definitions of affordances
Accessibility	Pea's (1993) adaptation of Gibsonian affordances	Chemero (2003), Pfaffenberger (1992), Akrich & Latour (1992) Hutchby (2001)

Remaining Taxonomy Items
2. Speed of change
3. Diversity
4. Communication & Collaboration
5. Reflection
6. Multi-modal & non-linear
7. Risk, fragility & uncertainty
8. Immediacy
9. Monopolization
10 Surveillance

In a 2011 update of the taxonomy, Conole has refined affordances as "inherent characteristics of different technologies [that] can be instantiated in different contexts, and through the different preferences of individuals and how they interact with technologies"

Suthers (2005-06) Technological affordances as constraints and resources for intersubjective learning

Sample Affordances	Cites Norman (1988), but …	Supporting arguments **do** account for & foreshadow critiques/revisions to definitions of affordances
Judiciously designed constraints		Akrich & Latour (1992)
Conversational resources Models, simulations, visualisations		Chemero (2003), Scarantino (2003), Hutchby (2001), Schmidt (2007), and Bloomfield et al. (2010)

Calls for abandoning the term…

Conole & Dyke	Laurillard	Suthers
Accessibility	Clear statement of an overall goal	Judiciously designed constraints
Speed of change	Continual reminders of the goal	Conversational resources
Diversity	Index of sub-goals	Models, simulations, visualisations
Communication & Collaboration	Multimedia resources	
Reflection	Interactive activities	
Multi-modal & non-linear	An editable Notepad	
Risk, fragility & uncertainty	A model answer	
Immediacy		
Monopolization		
Surveillance		

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Questions? Comments?

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