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 conceptualisations of affordances
2. Coevolving definitions of technological affordances
3. 4 views on technological affordances
4. Implications for research
A desk-based study the contested ontology of ‘affordances’ & ‘technological affordances’

Review of **disciplinary** literature on the concept of affordances
- Anthropology
- Archaeology
- History
- Philosophy
- Psychology
- Sociology

Review of **interdisciplinary** literature on the concept of affordances
- Science & Technology Studies
- Educational Research
- 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 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

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’

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’
A desk-based study of 4 often-cited TEL/NL publications on technological affordances

<table>
<thead>
<tr>
<th>Author / Year</th>
<th>Citation tracker</th>
<th>Citations</th>
<th>Journal impact rank</th>
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<tr>
<td>Pea (1993)</td>
<td>Google Scholar ©</td>
<td>1038</td>
<td>N/A – Book chapter</td>
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<tr>
<td>Conole and Dyke (2004)</td>
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<td>Suthers (2005/6)</td>
<td>Publish or Perish ©</td>
<td>226</td>
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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

<table>
<thead>
<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>Gibsonian</td>
<td>A clear statement of an overall goal - to support generation of a task-related plan</td>
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<tr>
<td>Chemero, Scarantino, Hutchby, Bloomfield et al.</td>
<td>Continual reminders of the goal - to support keeping to the plan</td>
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<tr>
<td>Gibsonian</td>
<td>Index of sub-goals - to provide a choice of activities relevant to task</td>
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<td>Gibsonian</td>
<td>Multimedia resources - as alternative presentations of the material</td>
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<tr>
<td>Chemero, Scarantino, Hutchby</td>
<td>Interactive activities - to provide adaptive feedback on actions; to motivate repeat actions to improve performance</td>
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<tr>
<td>Gibsonian</td>
<td>An editable Notepad - to enable students to articulate their conceptions</td>
</tr>
<tr>
<td>Gibsonian</td>
<td>A model answer - as feedback on their conceptions; to motivate reflection on their conceptions</td>
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Conole and Dyke’s (2004) Technological affordances as functional properties of ICT environments

<table>
<thead>
<tr>
<th>Sample ICT Affordance</th>
<th>Citing …</th>
<th>Supporting arguments do not account for critiques/revisions to definitions of affordances</th>
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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

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<th>Cites Norman (1988), but ...</th>
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<td>Judiciously designed constraints</td>
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<td>Akrich &amp; Latour (1992)</td>
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<td>Conversational resources</td>
<td></td>
<td>Chemero (2003), Scarantino (2003), Hutchby (2001), Schmidt (2007), and Bloomfield et al. (2010)</td>
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### Calls for abandoning the term…

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<th>Suthers</th>
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<td>Conversationalal resources</td>
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<td>Diversity</td>
<td>index of sub-goals</td>
<td>Models, simulations, visualisations</td>
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<td>Communication &amp; Collaboration</td>
<td>multimedia resources</td>
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<td>Reflection</td>
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