Practising Narrative Virtue Ethics Of Technology In Research and Innovation

Transfer Talk – March 2017
Wessel Reijers, ADAPT Centre
Dublin City University
Supervisory panel: Prof. Bert Gordijn, Prof. Declan O’Sullivan & Prof. Renaat Verbruggen
Technologies play an increasingly pervasive role in our lives.

Social media mediate our conversations (filter bubble).

Weapons mediate warfare (military drones).

Wearable’s mediate our bodies (smart watch).

Technologies have ethical impacts on people, groups, society.

We need to reflect on the ethics of technological innovations developed through R&I processes.
3 Research Questions:

1. What are the established methods for practising ethics in Research and Innovation processes?

2. What are the main shortcomings of these methods and what requirements for a novel method follow from these shortcomings?

3. To what extent can these requirements be accommodated by a novel method that is based on a framework of virtue ethics of technology connected with a philosophical theory of narrative technologies?
1. Established Methods for Practising Ethics in R&I

2. Critique of Established Methods & Requirements for a novel method

3. Framework of Narrative Virtue Ethics of Technology

**Task**: conducting a literature review with the aim of finding and analysing the state of the art in methods for practising ethics in R&I

1.1. Method for literature selection

1.2 Results of literature selection

1.3 Analysis of the established methods
Literature review: Method

1. Method for literature selection

1.1. Selection databases: (1) Web of Knowledge, (2) Scopus, (3) Springerlink

1.2. Search with 7 Queries: combinations of the terms “ethics”, “ethical”, “impact”, “assessment”, “methodology”, “technology”, “research”, “practising” and “incorporating”

1.3. Total using the 7 queries: 1728

4. Useful sources (checking titles and abstracts for aspects of ethics in R&I context, discussing methods): 50

5. Backwards snowballing (checking for titles with relevant terms and/or mentioning of earlier found methods): 51

6. Total useful sources: 101

7. Selection of “Established Methods” (Criteria: should be used in 2 or more sources and discussed by multiple authors).

8. Outcome: 10 established methods for practising ethics in R&I.
10 Established Methods for Practising Ethics in R&I

- Conceptual investigations: what values should be embedded in design?
- Empirical investigations: How do different stakeholders relate to these values?
- Technical investigations: How can interventions in the technology design promote these values?

- ETHICS
- Value Sensitive Design
- Ethical Matrix
- Checklist approaches
- Ethical Impact Assessment
- Discourse Ethics
- ETICA Method
- Disclosive Ethics
- Anticipatory Technology Ethics
- Network Approach
1. Method for literature selection

1.1. Procedural Steps:
- Listing and conceptualising ethical principles and values
- Gathering empirical data about relevant ethical issues
- Including stakeholders (organising participation)

1.2. Results of literature selection

1.3. Analysis of the established methods

2. Targeted users:
- Ethicists
- Researchers/designers
  - Managers
  - Social Scientists

3. Position in relation to R&I process:
- Ex-ante methods (anticipating future applications)
- Intra methods (analysing current design)
- Ex-post methods (analysing current applications)
II Discussion of methods

1. Established Methods for Practising Ethics in R&I

2. Critique of Established Methods & Requirements for a novel method

3. Framework of Narrative Virtue Ethics of Technology

Task: formulating a criticism of established methods, offer recommendations and accordingly formulate requirements for a novel method
2.1. Criticism of established methods

2.2 Formulation of recommendations

2.3 Formulation of requirements for a novel method

Structured on 5 central challenges mentioned in the literature:

1. Uncertainty:
   • Problem: consequences of technological change are uncertain
   • Criticism: methods predicate their procedures on the assumption that consequences can be foreseen

2. Participation:
   • Problem: stakeholders without background should participate
   • Criticism: Methods don’t justify stakeholder selection or take context into account and inadequately include researchers

3. Ethical technology design:
   • Problem: “embed” values or virtues in design
   • Criticism: methods don’t take into account how technologies shape our values/virtues

4. Identification of ethical issues:
   • Problem: a justified identification of issues that challenge ethics
   • Criticism: No account of moving from empirical description to normative evaluation and focus on single type of R&I process

5. Evaluating ethical issues:
   • Problem: Difficulty of value conflicts
   • Criticism: methods don’t offer ways for dealing with value conflicts
Recommendations for each challenge:

1. **Uncertainty**: [1.1] considerations of limits of foresight, [1.2] methods should not only focus on actions but also on acting agent

2. **Participation**: [2.1] considerations of justified stakeholder selection, [2.2] taking into account context of stakeholders, [2.3] Having researchers participate in disclosing ethical issues

3. **Ethical technology design**: [3.1] theoretical considerations of how technologies mediate morality should be included

4. **Identification of ethical issues**: [4.1] methodological consideration of arriving at normative claims based on empirical descriptions, [4.2] different models of R&I should be accounted for

5. **Evaluation of ethical issues**: [5.1] solving value conflicts should methodologically be accounted for
Discussion: Requirements

5 Requirements for a novel method:

Challenge:  Recommendations:  Requirements:

1. Uncertainty
   1.1
   1.2

2. Participation
   2.1
   2.2
   2.3

3. Ethical technology design
   3.1

4. Identification ethical issues
   4.1
   4.2

5. Evaluation ethical issues
   5.1

1. Ethical theory that addresses uncertainty: virtue ethics

2. Justification of participation and making it accessible: Brey’ stages and participatory approaches

3. Theory of technological mediation: narrative technologies

4. Participatory empirical exploration of ethical issues: Ethics Canvas

5. Participatory design interventions: virtue sensitive design
III Framework of narrative virtue ethics of technology

1. Established Methods for Practising Ethics in R&I

2. Critique of Established Methods & Requirements for a novel method

3. Framework of Narrative Virtue Ethics of Technology

   Task: construct a novel method for practising ethics in R&I

3.1. Virtue ethics of technology

3.2. Narrative technologies

3.3. Application of the theoretical framework to R&I practice
3.1. Virtue ethics of technology

Does **not** focus on action

But on the agent

“Did she do something wrong?”

“How can we help her to do things right?”

- Responds to the first requirement

- **Premises**
  - People have certain *character traits* – which we call virtues – that allow them to act rightly according to changing circumstances
  - These virtues are not strictly natural, but can be *cultivated* through engagement in practices
Theoretical framework: Virtue Ethics

3.1. Virtue ethics of technology

3.2 Narrative technologies

3.3 Application of the theoretical framework to R&I practice

MacIntyre’s *After Virtue*: Theory of development of virtue(s)

- Practices: coherent and complex form of socially established cooperative [...] activity (e.g. playing an instrument)

- Practices are intelligible through the *narrative unity* of a human life

- Place in a moral tradition or community, which provides the practices with normative significance

Vallor’s* Virtue Ethics of Technology

- Introduces virtue ethics in the field of ethics of technology

- Solves two problems:
  - Accounting for the unpredictable nature of technological change: acute technosocial opacity
  - Accounting for cultural relativism: virtue ethics as a widely adopted ethical framework (Aristotelian, Buddhist, Confucian)

- Adopts MacIntyre’s model of the development of virtue(s)

- However: focus on human agency, and a consequent lack of an account of how technologies mediate virtue(s)

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Theoretical framework: Narrative Technologies

Ricoeur’s *Time and Narrative*

**Premises:**
- Narrative structures in texts (stories) can be seen as the model for human **practices**
- Narrative can help us understand how technologies mediate human practices

**Configured time:** emplotment: the organisation of characters and events in a meaningful whole

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3.1. Virtue ethics of technology

3.2 Narrative technologies

3.3 Application of the theoretical framework to R&I practice

Theoretical framework: Example

The technological practice of driving

**The good life:** Sustainable transport

**Narrative configuration:** Life plan(s)

**Practice:** Driving a car

**Narrative embeddedness:** “the traffic”

**Chain of actions:** halt in front of traffic light

**Basic actions:** changing gears, breaking

What is virtuous driving?

Connecting the approaches and structuring the method

• Connecting the dots: method of narrative virtue ethics of technology – four stages
  • *Empirical exploration* of the narrative structures that will assist in the conceptualisation of the technological practices
  • *Conceptualisation* of the technological practices using narrative theory
  • *Evaluation* of the conceptualised practices by considering how they foster or obstruct the cultivation of virtue(s)
  • *Engagement* with this evaluation through intervention(s) in the design of the technological practices
Application of the theoretical framework

Using Brey’s Disclosive Ethics* to map the theoretical stages to concrete tools and frameworks for practising ethics in R&I:

- Disclosure stage: interpreting ethical issues in R&I, ensuring participation of researchers/designers and philosophers
- Theoretical stage: theoretical evaluation the ethical issues that have been identified, ensuring participation of philosophers
- Application stage: applying the evaluation to concrete R&I practices (e.g. design interventions), ensuring multi-stakeholder participation

<table>
<thead>
<tr>
<th>Theoretical stages:</th>
<th>Ethics in R&amp;I stages:</th>
<th>Concrete tool/framework:</th>
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<tr>
<td>Empirical exploration</td>
<td>Disclosure</td>
<td>Ethics Canvas</td>
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<td>Conceptualisation</td>
<td>Theoretical</td>
<td>Narrative virtue ethics of technology</td>
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<td>Evaluation</td>
<td>Application</td>
<td>Virtue sensitive design</td>
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Disclosure stage: The Ethics Canvas

- **Aim:** to empirically explore the narrative structures people consider when discussing concrete technologies
- **Based on a method in Business Model Development: BM Canvas**
- **Re-designing the BM Canvas as a collaborative tool**
- **Tested in classroom setting and in R&I settings**

**Ethics Canvas**

<table>
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<tr>
<th>Individuals Affected</th>
<th>Changes in Individual Behaviour</th>
<th>Social Conflicts</th>
<th>Organisation or Group Interests</th>
<th>Organisations and Groups Affected</th>
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<tbody>
<tr>
<td>Identify the types or categories of individuals affected by the product or service, such as men, women, consumers, age-category, etc.</td>
<td>Name problematic differences in individual behaviour such as differences in habits, time schedules, choice of activities, etc.</td>
<td>Capture possible social conflicts that could be caused by the product, such as labour conflicts, minority/majority conflicts, ethnic conflicts, etc.</td>
<td>Identify relevant ethical interests that other organisations or groups might have in your project, such as environmental, privacy, justice interests.</td>
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**Changes in Individual Relations**

- Name problematic changes in relations between individuals, such ways of communication, frequency of interpersonal contact, etc.

**Resolving ethical impacts**

- Select the four most important ethical impacts you discussed.
- Identify ways of resolving these impacts by changing your project's product/service design, organisation or by providing recommendations.

**Public Sphere**

- Discuss how the general perception of somebody's role in society can be affected by the project, e.g., people behaving more individualistic or collective, people behaving more or less extremist.

**Products and Services provided**

- Name the different types of products and services that your project will provide.

**Impact of product or service failure**

- Capture the potential negative impact of your product or service failing to operate as intended, e.g., technical or human error, financial failure/restructuring/acquisition, security breaches, data loss, etc.

**Impact of resource consumption**

- Capture possible negative impacts of the consumption of resources of your project, e.g., climate impacts, privacy impacts, employment impacts, etc.

**Resources needed**

- Capture the consumption of energy, raw materials, human resources, financial capital, social capital (trust, tolerance, etc.), marketing capital (reputation, brand, etc.), privacy and personal data needed by your product or service.
Application of the theoretical framework

Theoretical stage: Evaluating technologies using the narrative virtue ethics of technology framework

• Ethics of personalisation technologies
• Personalisation technologies make use of user models – digital persona and profiles – to adjust computational processes to the behaviour and preferences of their users

Application of the theoretical framework

• We interpreted the way these technologies mediate our understanding of the world by means of the two hermeneutic distinctions – and evaluated these focusing on the virtue of honesty
Application of the theoretical framework

Application stage: Virtue sensitive design

- From ethical evaluation to design interventions
- Outcome of the theoretical analysis leads to an evaluation in terms of virtues that are either fostered or obstructed

- **Possible evaluation:** the practice of conversation on social media fosters the virtue of flexibility but obstructs the virtue of empathy

- Virtue sensitive design takes up this evaluation in a participatory process leading to design interventions
  - 1: participatory conceptualisation of the practice of online conversation
  - 2: deliberation on the weight of either flexibility and empathy as virtues in online conversation
  - 3: aligning the design with the outcome of this deliberation (e.g. fostering the cultivation of empathy through design)
Conclusions: Overview

1. Established Methods for Practising Ethics in R&I
   1.1. Method for literature selection
   1.2 Results of literature selection
   1.3 Analysis of the established methods

2. Critique of Established Methods & Requirements for a novel method
   2.1. Criticism of established methods
   2.2 Formulation of recommendations

3. Framework of Narrative Virtue Ethics of Technology
   3.1. Virtue ethics of technology
   3.2 Narrative technologies
   3.3 Application of the theoretical framework to R&I practice
Conclusions: Evaluation

How are the 5 central challenges addressed?

1. Ethical theory that addresses uncertainty: Virtue Ethics
2. Justification of participation and making it accessible: Brey’ stages and participatory approaches
3. Theory of technological mediation: narrative technologies
4. Participatory empirical exploration of ethical issues: Ethics Canvas
5. Participatory design interventions: virtue sensitive design
Conclusions: Research Plan

1. Established Methods for Practising Ethics in R&I

2. Critique of Established Methods & Requirements for a novel method

3. Framework of Narrative Virtue Ethics of Technology

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Conclusions: Publications

- **Journal articles**: 4
- **Conference papers**: 5
- **Selected publications**:
  
  
Thank you for your attention!