Rethinking Agreement? Reflections on the implications of nudging experiments in an ongoing regime change within Finnish silviculture

Nina Janasik-Honkela, University of Helsinki
Ari Jokinen, University of Tampere
Maria Åkerman, University of Eastern Finland
Janne Hukkinen, University of Helsinki
The ConBio project

- The objective of this study is (1) to assess the potential of CCF to integrate wood production, climate change mitigation and biodiversity protection, and (2) to analyse the effectiveness, speed, and path dependence of relevant cognitive-behavioral policy instruments for nudging the forest owners’ choices with respect to mitigation and adaptation to climate change.

- We hypothesize that at the stand level, CCF will result in both gains and losses in the ecosystem services, depending on species, growth site and climate. The focal questions at landscape level are, (1) **how should CCF be combined with other, more traditional management regimes** when simultaneously targeting timber production, climate change mitigation and biodiversity conservation, and (2) **how feasible is the combination** given the Finnish fragmented land ownership and stakeholder preferences?
1. Continuous Cover Forestry (CCF)

*Figure 1: A classification of high forest silvicultural systems adapted from Matthews (1989).*
Vasemmalla avohakkuu (+ säästöpuita mäen harjalla). Oikealla jatkuvapeitteinen metsätalous: tilanne pienaukkohakkuun jälkeen (punaiset rinkulat)
2. Three major behavioral approaches within conservation science (Reddy et al. 2015)

1. **Promoting awareness and concern**
   - "Numerous environmental education and communication programs have been guided by the rationale that new knowledge/beliefs lead to increasing awareness, followed by concern (i.e. change in attitude), which then increases pro-conservation behavior” (p. 6)

2. **Incentivizing behavior**
   - "The underlying assumption for incentivizing behavior is simple—people are most likely to respond if there is something to be gained (or a loss to avoid).” (p. 7)

3. **Nudging**
   - "Nudges’ make small changes to the decision context (i.e. choice architecture) that target intuitive thinking, without restricting choices or significantly altering economic incentives, such that pro-conservation behavior is more likely.” (p. 8)
Caveats and constraints of behavioral approaches

• Behavior change is context- and actor-dependent (i.e. dependent on existing forms of practice).
  • I.e. what works in context does not necessarily work in another, seemingly similar one (compare innovation diffusion).

• There can be challenges with each form of approach, and they can undermine each other.
  • E.g. money disincentivizes from intrinsic motivations, which could be strengthened by promoting awareness and concern and/or nudging.

• Yet, belief that “integrating two or more behavioral change approaches that target multiple, context-dependent factors may be most successful; however, caution must be taken to avoid approaches that could undermine one another”. (Reddy et al. 2015, p. 2)
3. Our argument

- Building on the fundamental practice dependency of behavior change, as well as on results from our previous work on nudging and cognitive dissonance, we suggest that the most effective way of promoting conservation outcomes in relation to CCF might be one that:
  
  - 1) grounds the conservation-promoting intervention firmly in a view of practices and its elements as fundamentally based on metaphorical thinking (Hukkinen 2015),
  
  - and 2) deliberately and wisely creates not “integration”, but tensions between the two behavioral approaches of awareness promotion and nudging (Isoaho, Janasik-Honkela, Toikka & Hukkinen, submitted).
4. Practices and nudging by metaphors

• ”[...] In doing things like driving, walking or cooking, people (as practiticioners) actively combine the elements of which these practices are made. By elements we mean:

  • Materials – including things, technologies, tangible physical entities, and the stuff of which objects are made;
  • Competences – which encompasses skill, know-how and technique; and
  • Meanings – in which we include symbolic meanings, ideas and aspirations.”

  (Shove, Pantzar & Watson 2012)
Illustration of a practice as based on metaphor (Hukkinen et al. 2016)

Figure 2. Practice intervention as adjustment of primary metaphors: school lunch as an example
Data and methods of linguistic nudging experiment: Questionnaire on Finnish forest management scenarios

- Half-page scenario texts on future of Finnish forest management
  1. Business-as-usual, BAU (nudged & non-nudged)
  2. Biodiversity, BIDI (nudged & non-nudged)
  3. Climate mitigation
  4. Bioenergy
- Questionnaire to
  - Forestry professionals, ”Prof” (n=10)
  - Environmental policy students, ”Envi” (n=68)
  - Forestry students, ”Fore” (n=46)
### Nudging effect: mean factor score difference between nudged vs non-nudged

- **Negative effect (increase in dissonance):**
  - mean factor score difference $< -0.20$
- **Small to no effect:**
  - $-0.20 \leq$ mean factor score difference $\leq 0.20$
- **Positive effect (increase in resonance):**
  - mean factor score difference $> 0.20$

#### Table: Results of textual nudging

<table>
<thead>
<tr>
<th></th>
<th>Prof</th>
<th>Envi</th>
<th>Fore</th>
<th>Subst</th>
<th>Style</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BAU</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive</td>
<td>-0.72</td>
<td>-1.27</td>
<td>0.53</td>
<td>0.17</td>
<td>0.56</td>
</tr>
<tr>
<td>Affective</td>
<td>-0.07</td>
<td>conj1</td>
<td>0.02</td>
<td>conj3</td>
<td>-0.16</td>
</tr>
<tr>
<td><strong>BIDI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive</td>
<td>0.45</td>
<td>0.57</td>
<td>0.70</td>
<td>0.34</td>
<td>-0.42</td>
</tr>
<tr>
<td>Affective</td>
<td>1.50</td>
<td>conj2</td>
<td>1.14</td>
<td>conj4</td>
<td>0.34</td>
</tr>
</tbody>
</table>

**Diagram:**

- Difference between nudge vs non-nudge
- $-2.50 \leq$ Mean factor score $\leq 2.50$
5. Towards Targeted Nudging

• New experiment by means of not ”integrating”, but *intentionally crafting tensions* between 1) Promoting awareness and concern and 3) Nudging...

• ...on the basis of a deep *contextual understanding of forestry practices as based on primary metaphors* (i.e. in line with the school lunch example), in effect constituting a form of:

• → *Targeted Nudging* with four different kinds of scenario versions, utilizing context- and actor-sensitized primary metaphors, with increasing nudging strength (BAU, NEUTRAL, CCF+, CCF++) depending on type of recipient (forest owner/forestry manager).
Illustration of the survey design

• Four sections A-D
  • A. Gathering basic information on forestry expertise and experience.
  • B. Stroking with highlighting one or more of the following elements: solid forestry education, solid forestry experience, capability to rational and responsible forestry.
  • C. Creating dissonance by stating that yet, many challenging remains before the target of environmentally sustainable forestry has been reached. = (1) PROMOTION OF AWARENESS AND CONCERN
  • D. Administering the survey questionnaire. = (3) NUDGING
### Illustration of hypothesized results grid of ConBio Targeted Nudging experiment

<table>
<thead>
<tr>
<th></th>
<th>BAU</th>
<th>NEUTRAL</th>
<th>CCF+</th>
<th>CCF++</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FOREST OWNERS</strong></td>
<td>No significant reaction</td>
<td>No significant reaction</td>
<td>Minor reduction of dissonance</td>
<td>Major reduction of dissonance</td>
</tr>
<tr>
<td><strong>FORESTRY MANAGERS</strong></td>
<td>No significant reaction</td>
<td><em>Can still accept</em></td>
<td><em>Minor induction of dissonance</em></td>
<td><em>Major induction of dissonance</em></td>
</tr>
</tbody>
</table>
Thank you!