How the Nature of Nature and the Nature of Science Affects the Nature of Creation Care

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Outline

A Taxonomy for Considered Obedience

The Nature of Worldviews

The Nature of Science Epistemology

The Nature of Science-Policy Connections

The Effects of Worldviews and Science Epistemology on Translating Science Into Policy
Obedience to a command requires clarity in three criteria

- **Importance** of the command (e.g., is it optional, a required duty, contextually applied, etc.).
- **Goals** of the command (e.g., what is the command trying to accomplish).
- **Practice** of the command (e.g., what you actually do to obey the command).
Determinants and criteria

For creation care (and other topics), the criteria for obedience are determined by the following determinants:

Determinants:
- worldview
- ethical theories
- science epistemology
- science-policy
- politics
- economics

↑ Scripture, reason, etc.

Criteria:
- importance
- goals
- practice

Unfortunately, most dialogue about creation care only covers a few of these determinants.
A shameless commercial break for my book

- Source for today’s topics and covers all the determinants.
- To get the book:
  - The book table at this meeting!
  - Free chapter: nature.johnny-lin.com
  - Pick-up a flier in back.
  - Amazon and Wipf and Stock.
- Today: The roles of worldviews and science epistemology.
What are worldviews

When you see nature, what do you see?

▸ **Reality**: What does it mean and is it ultimate?

▸ **Origin** of universe and human beings?

▸ **Condition** of environment and humanity?

▸ **Solution** for human and environmental problems?

▸ **Destiny** for humanity and nature?

Johnson (2007); Wellcome Images
The Christian worldview of nature

- Universe is created by a good and transcendent God who nonetheless is not far away and continues to sustain His creation.
- Universe is material but not only material or “merely” material (i.e., an existence apart from God).
- Creation is best understood through worshpping the Creator.
- God charges humans to be stewards of the creation.
- God will restore creation to what it is meant to be.
The range of worldviews

- Buddhist: Existence is all there is and there is no ontological separation between humanity and nature.
- Confucian: This world is all there is and humans are “elder brothers” to nature.
- Taoism: The world is all there is and humans must live in harmony with the rhythms of nature (“go with the flow”).
- (Neo-)Enlightenment: Nature is mere “matter in motion” and purposeless.
- Romantic: Nature is best understood via aesthetics.
What worldviews provide

- **Importance:** A framework that limits what can (or should) be considered, e.g., monist vs. purpose-driven concept of personhood.
- **Importance:** Preference for protecting “valuables” and the value of different kinds of ontological forms, e.g., nature as the work of a Master Craftsman gives nature the value of such art.
- **Goals:** Motivation for the goals of creation care.
Worldviews do not generally prescribe actions

- Non-specific and non-deterministic: Harmony with nature does not tell you how large to make your windows.
- Philosophical reductionism not true:
  - Worldviews alone do not yield actions.
  - Ethics adds something additional to cosmology and ontology.
- What is $\neq$ what should be: Fact-value dualism.
Why science epistemology?

- Epistemology: How we know what we know.
- What does science investigate?
- What is the epistemic authority of science?
- The implications of:
  - Range of epistemologies $\rightarrow$ range of understandings of epistemic authority.
  - Science primarily investigates the material world.

Rodin’s The Thinker, Copenhagen, Denmark

(Photo by Pedro Cambra)
Science as hypothesis-testing

- Hypothesis $\rightarrow$ Test $\rightarrow$ Confirmed? $\rightarrow$ Retest.
- Multiple cycles leads to truth $\rightarrow$ truth is accretive.
- Self-correcting mechanism.

Spiral Staircase, Vatican Museums

(photo © User:Colin / Wikimedia Commons)
The social constructionist critique of hypothesis-testing

- But is this how science actually works?
- Thomas Kuhn: New models supplant old models not because they are more true but because they are more “useful” to the community.
- Usefulness of a paradigm not completely determined by accuracy of predictions: Copernican model less accurate than Ptolemaic without including 30 extra circles.
- Science is a “social construct,” not an inevitable road to truth.
Authority of science

Different epistemologies → spectrum of epistemic authority:

▶ Science as authoritative, providing the absolute (or at least best) truth about the environment.
▶ Science as any other human form of knowing.
▶ Somewhere in between.
Summary of the range of science-policy models

- Policy prescriptive.
- Fact-value dualism.
- Supporting Role (Science is Neutral).
- Supporting Role (Science May Not Be Neutral).
- Honest Broker of Policy Alternatives.
Policy prescriptive model

\[ \text{science} \rightarrow \text{policy} \]

values

- Science directly dictates policy.
- Values (should) have no role in policymaking.
- Scientists make the best policymakers.
Fact-value dualism model

\[
\text{science} \rightarrow \text{values} \rightarrow \text{policy}
\]

- Science provides facts.
- Ethics, politics, etc. provide values.
- Values interpret the facts and yields policies.
- Scientists cannot be policymakers.
Supporting Role (Science is Neutral) model

values (1)

values (2) + science $\rightarrow$ policy

values (3)

- Science is neutral and objective but not necessarily authoritative.
- Science can bring together disparate stakeholders into dialogue.
Supporting Role (Science May Not Be Neutral) model

- Science has no special epistemic status.
- Science is just one input amongst all the others.
Honest Broker of Policy Alternatives model

- Advocates narrow policy options.
- Science works to expand policy options instead of narrowing policy options.
- Science focuses on providing new options rather than greater certainty (e.g., CFC alternatives).
- E.g., U.S. Office of Technology Assessment.

Pielke (2007)
Science-policy models grouped by epistemic authority

Science has high epistemic authority:
- Policy prescriptive.
- Fact-value dualism.

Science unique in certain ways but less than commonly believed:
- Supporting Role (Science is Neutral).
- Honest Broker of Policy Alternatives.

Science not unique:
- Supporting Role (Science May Not Be Neutral).
The role of worldviews and science epistemology in selecting one’s science-policy framework

Questions to ask:

▶ Does science only give us knowledge of the material?
▶ How “material” is nature?
▶ What level of epistemic authority does science have?

Implications of answers: Choose science-policy frameworks where science plays a humbler role if:

▶ Science only addresses the material and important aspects of nature are not material.
▶ The epistemology of science one uses implies science does not have epistemic authority.
Example of a worldview + science epistemology → science-policy framework sequence

Answers to questions:

► Science is limited to describing the material.
► World is material but important elements are non-material.
► Science has elements of objectivity but is limited in its epistemic authority.

Implication of answers: Choose a science-policy framework with a humbler role for science:

► Supporting Role (Science is Neutral).
► Honest Broker of Policy Alternatives.
► Supporting Role (Science May Not Be Neutral).
Conclusions

- The content of creation care requires input from a wide-range of determinants: worldviews, ethics, science epistemology, etc.
- There is a broad range of ways of connecting science to policy.
- Worldviews and science epistemology strongly influence which model(s) we use to connect science to policy.
- Environmental controversies marked by debates over science may be better served by utilizing alternate science-policy models.