

Ontology and Ideology Conceptually Revisited

Carving at the joints and worldly conceptual engineering

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Introduction

Quine famously distinguished between the **ontology** and the **ideology** of a theory.

He suggested: Ontology is committing, ideology is a *carte blanche*.

In this talk, we argue that the Quinean account has two main problems:

- **arbitrariness** of the distinction
- **dependence** of the distinction

We outline how the problems can be overcome by a **Lewis-Sider** style realist interpretation of ideology that is amended by distinctions of “worldly” **conceptual engineering**.



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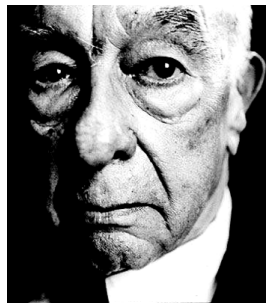
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Ontology and Ideology

Quine's Distinction

Quine (1951, p.14):

*“Given a theory, one philosophically interesting aspect of it into which we can inquire is its **ontology**: what entities are the variables of quantification to range over if the theory is to hold true? Another no less important aspect into which we can inquire is its **ideology** (this seems the inevitable word, despite unwanted connotations): what ideas can be expressed in it?”*



Ideology

Now, what exactly is the ideology of a theory?

It has to do with the possibility of a theory to express ideas or **represent things** (cf. Cowling 2013, p.3892).

Important questions (cf. Quine 1951, p.14):

- “[What] ideas are **fundamental** or **primitive** for a theory, and what ones **derivative**[?]” (p.14)
- “[Questions of] **translatability** of notations from one [theory] into another” (p.15)

⇒ Ideology = **Representational Devices**

⇒ A theory’s **ideological commitment**: the claim or stipulation that some particular non-logical expressions are primitive/undefined (cf. Cowling 2013, p.3889).

Ideology of First-Order Theories

The non-logical expressions of a first-order theory are its **individual constants and predicates**.

We can follow the Frege-Russell-Quine strategy of considering **individual constants as definite descriptions in disguise**.

Example: 'the thing that pegasizes' instead of 'Pegasus' (cf. Quine 1948/2001, p.138)



So, what remains for the ideology of a theory is the set of its specific predicates, i.e. the predicates used in its non-definitional axioms.

No individual constants \Rightarrow every (non-empty) theory makes use of quantification in one sense or another.

Ontological and Ideological Commitment

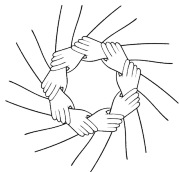
A theory T consists of a set of axioms and their **interpretation**.

Ontology of T : set of objects used in the interpretation, i.e. T 's **domain**.

Ideology of T : set of its **specific predicates**, i.e. the set of all predicates relevantly used in the axioms of T .

The commitments are as follows:

- **Ontological Commitment** of T : The elements of T 's domain exist.
- **Ideological Commitment** of T : Some specific predicates of T are undefined and have a meaning as partially and implicitly characterised via the axioms of T .



The Commitments and their Relation to Reality

According to Quine, what **exists** = what is in the **domain**.

⇒ Using **variables** does have some **ontological bearing**.

⇒ Using **predicates** does not.

Ideology is a metaphysical *carte blanche*.



Two Problems: Arbitrariness and Dependence

Two Commitments, Two Problems

Recall:

- Ontology: domain
- Ideology: representational devices
- Ontology: metaphysics \Rightarrow reality
- Ideology: (naturalised) epistemology \Rightarrow our model
- Ontology: metaphysically binding
- Ideology: metaphysical *carte blanche*

\Rightarrow Ontology is **very different** from ideology.

Problems:

- 1 The distinction is quite **arbitrary**.
- 2 The distinction is **interdependent**.

Arbitrariness: Example Cowling (2013)

Cowling (2013, p.3894):

“[A] threat arises because ontological commitments can often be exchanged in wholesale for ideological commitments.”

Examples:

- metaphysical theories regarding **objects**:
 - One can get rid of speaking about any object (other than spacetime regions) by introducing new predicates.
 - There is a **particular chair** at some region in spacetime.
 - \Rightarrow It is *chair-ing* in this region in spacetime.
 - So, ontological commitment \downarrow by ideological commitment \uparrow
- metaphysics of **time**:
 - Ontologically laden eternalism positing the existence of non-present entities
 - \Rightarrow Presentism positing the existence of present entities but introduces primitive tense operators.

Arbitrariness: Example Bennett (2009)

Perhaps most explicit in this respect is Bennett (2009):

“The high-ontologist multiplies objects while the low-ontologist multiplies [predicates]. But a similar point holds even for the strictest nominalist: she buys her way out of ontology with the coin of ideology. So even if the low-ontologist wins the battle of ontological commitment, he does not win the war of simplicity. On at least one way of reckoning simplicity, the two come out roughly on a par. [...] At this point, it starts to feel as though we are just riding a see-saw—fewer objects, more [predicates]; more objects, fewer [predicates]. Or perhaps—small ontology, larger ideology; larger ontology, smaller ideology. Either way, it starts to feel as though we are just pushing a bump around under the carpet.”
(Bennett 2009, pp.64f)

Arbitrariness: A Model

Let us consider a simple model.

Parameters of a theory T :

- n_o ... number of entities T is committed to ontology
- n_{i-a} ... number of T 's specific predicates with arity a ideology
- n_m ... number of T 's (metaphysically) distinguishable states

Arbitrariness: The Model: Example

Assume that T presupposes exactly one entity, i.e. $n_o = 1$, but it has exactly two unary predicates at its disposal, i.e. $n_{i-1} = 2$.

Then it can distinguish in principle 2^2 metaphysical states ($n_m = 4$):

- $\exists x(R_1^1(x) \& R_2^1(x))$
- $\exists x(\neg R_1^1(x) \& R_2^1(x))$
- $\exists x(R_1^1(x) \& \neg R_2^1(x))$
- $\exists x(\neg R_1^1(x) \& \neg R_2^1(x))$

Assume that T^* presupposes two entities, i.e. $n_o = 2$, but has exactly one unary predicate at its disposal, i.e. $n_{i-1} = 1$.

Then it can distinguish in principle also 2^2 metaphysical states ($n_m = 4$):

- $\exists x \exists y (R_1^1(x) \& R_1^1(y) \& x \neq y)$
- $\exists x \exists y (\neg R_1^1(x) \& R_1^1(y))$
- $\exists x \exists y (R_1^1(x) \& \neg R_1^1(y))$
- $\exists x \exists y (\neg R_1^1(x) \& \neg R_1^1(y) \& x \neq y)$

So, in terms of representational power, in-/decrease of ontology (n_o) can compensate for a de-/increase in ideology (n_i).

Arbitrariness: The Model: Combinatorics

Example: If there are a little bit more than 1 million (exactly: 1.048.576) metaphysically distinct states, then:

- *ontologically monist*: $n_o = 1$ by help of $n_i = 20$ monadic predicates
- *syntactical structuralist* (definition of *one* first-order theoretical predicate): $n_i = 1$ by help of presupposing $n_o = 5$ entities

Dependence

Let us now come to the problem of **dependence**.

'Ontological commitment': T is ontologically committed to the claim that the **elements of its domain exist**.

Domain: the set of all objects used in the interpretation of a theory.

Interpretation: mapping of the axioms and theorems of the theory to the **truth** in accordance with the rules of formal semantics.

Quine (1948/2001) on this:

*"A theory is committed to those and only those entities to which the bound variables of the theory must be capable of referring in order that the affirmations made in the theory be **true**."* (Quine 1948/2001, p.140)

Dependence: The Problem

Ontological commitment relates to the ideology of a theory T .

We want to say that *particle physics* commits us to *particles*.

So we need to characterise these entities in specifying the ontological commitment of T .

We can account for this by pointing out *properties* or *structural relations* of *particles*.

Doing so is exactly the task of T 's *ideology*.

In this sense, spelling out the ontological commitment of a theory *relies* on its ideological commitments.

Dependence: Quine

Quine (1951, p.14) seemed to have something like this in mind, when he claimed:

“the ontology of a theory may indeed be considered to be implicit in its ideology; for the question of the range of the variables of quantification may be viewed as a question of the full meaning of the quantifiers.”

And:

*“If we transform our ontology by any arbitrary one-to-one transformation, and then reinterpret our predicates in a compensatory way, our entire theory of the world will persist verbatim and all its evidential links with sensory stimulation will likewise continue undisturbed. I have pointed the moral that **what matters is structure**; the **objects, concrete and abstract, familiar and recondite, matter only as neutral nodes in the structure.**” (Quine 1983, p.500)*

⇒ Impression: ontological commitment is about “**bare particulars**” or “**sub-strata**”, i.e. something without any properties and standing in no (non-logical) relation to something else (cf. Sider 2006).

Dependence: The Problem

If this is really what is meant with the ontological commitment of a theory, then such a **commitment waters down to a cardinality claim** about bare particulars (this is basically the so-called *Newman objection* to structural realism; cf. Halvorson 2019, p.252).

Such a cardinality claim would be independent of the ideology: it can be expressed without using any ideological element, i.e. without using any non-logical predicate:

$$\exists_{n_o}^{n_o} x x = x$$

However, by this one also would give up the claim that, e.g., the theory of **particle physics** is ontologically committed to **particles**.

Example: If it were the case that there are as many particles as there are numbers, then **numbers** would serve equally well the purpose of being “nodes in the structure” as particles do.

The Problems: Arbitrariness & Dependence

Arbitrariness: Any balance of a theory's ontology/ideology can be close-to-an-arbitrary degree shifted towards the one or the other end.

Dependence: Spelling out the ontological commitment of a theory in more detail either makes it dependent on the ideology of a theory; or it waters down the ontological commitment of a theory to a cardinality claim.

Carving at Joints: A Solution?

Balancing According to Quine

Following Quine, there are particularly two principles guiding our balancing:

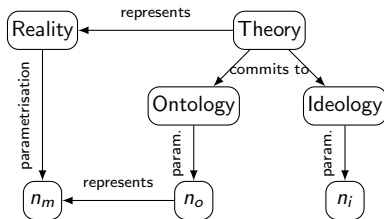
- 1 We aim at a parsimonious ontology—both in quantitative terms (our n_o) as well as in qualitative terms (i.e. we aim at positing as few natural kinds as possible, cf. Cowling 2013).
- 2 We aim at psychologically (behaviouristically in the widest sense) easy accessible theories, which should be granted via an adequate choice of ideology

For Quine, ontology is the dominant benchmark.

This seems to be quite obvious in view of his nominalism that definitely buys in quite a sophisticated and bold ideology in favour of a parsimonious ontology (cf. Goodman and Quine 1947)

Balancing According to Quine: The Schema

The Quinean schema seems to be as follows:



Reality (the n_m metaphysical states) is accounted for only by the ontology (n_o), but not the ideology (n_i) of a theory.

This means: In the end, the balancing between n_o and n_i would be **pragmatically** motivated. I.e.: it is **arbitrary** from a metaphysical standpoint.

Balancing According to Lewis

David Lewis pushes in the other direction: Also ideology has some bearing on reality.

Take, e.g., his claim with respect to set theory:

“Set theory offers the mathematician great economy of primitives and premises, in return for accepting rather a lot of entities unknown to Homo javanensis. It offers an improvement in what Quine calls ideology, paid for in the coin of ontology. It’s an offer you can’t refuse. The price is right; the benefits in theoretical unity and economy are well worth the entities. Philosophers might like to see the subject reconstructed or reconstrued; but working mathematicians insist on pursuing their subject in paradise, and will not be driven out. Their thesis of plurality of sets is fruitful; that gives them good reason to believe that it is true.” (Lewis 1986, p.4)

So, fruitfulness of an ideology has some bearing on reality in the sense that it can reasonably determine our choice in favour of a theory with higher n_o .

Balancing According to Lewis

The metaphysical impact of ideology is even stressed more, when he speaks about “sparse/natural properties” that “carve at the joints, [. . . and where] there are only just enough of them to characterise things completely and without redundancy” (cf. Lewis 1986, p.61).

⇒ Not only that theoretical features of ideology have some **impact** on what we should consider to be the **right ontology**.

⇒ But also (parts of) ideology have a realist interpretation in the sense that ideology “**carves at the joints**”, i.e. is about something out there in reality.

Balancing According to Sider

Even more explicit in this respect is Sider (2011).

He stresses **realistic features of ideology** in parallel to Quine's reasoning about ontology.

Regarding the choice of ontology:

*“Quine's advice for forming **ontological beliefs** is familiar: **believe the ontology of your best theory**. [... **Why is this so? Because:**] **The ontological claim took part in a theoretical success, and therefore inherits a borrowed luster;**” (Sider 2011, p.12)*

Balancing According to Sider

Then he draws the parallel for a **realistic interpretation of ideology**:

“A believer in structure can say more. A good theory isn’t merely likely to be true. Its ideology is also likely to carve at the joints. [. . . Why is this so? Because:] Conceptual decisions also took part in a theoretical success, and also inherit a borrowed luster. So we can add to the Quinean advice: regard the ideology of your best theory as carving at the joints.” (Sider 2011, p.12)

And he adds:

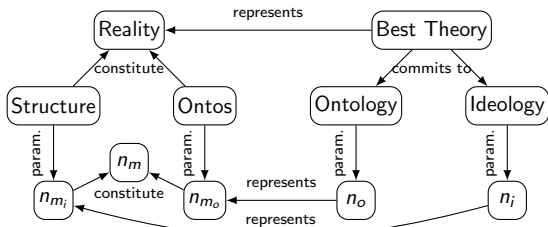
“A theory’s ideology is as much a part of its worldly content as its ontology” (p.13).

Balancing According to Lewis & Sider: The Schema

Let us differentiate between:

- **ontos**: ontological part of reality (objects out there)
- **structure**: structural part of reality (structure out there)

The Lewis-Sider schema of ontology and ideology:



n_m is a function of the number of real entities n_{m_o} and real joints or structures n_{m_i} ; our best theories account for these parameters by their ontology (via adequate n_o) and ideology (via adequate n_i)

Back to the Problem of Dependence

Recall, when we distinguished the ontological from the ideological commitment of a theory, we faced the problem that **ontology hinges on ideology**.

This was problematic for the Quinean stance that:

- ontology is realistically committing
- ideology is not (*carte blanche*)

Is it also a problem for the **Lewis-Sider** stance?

At first glance: **no**, because both have impact on our view of reality, so why to keep them strictly separated?

But recall: We wanted to make sure that, e.g., particle physics **is in fact about** particles.



carte
blanche

The Problem of Dependence for Lewis & Sider

Reality is constituted by **ontos and structure**. So, changes in the ideology can/will also trigger changes in our understanding of reality.

Let us call this combined part of ontos and structure that we access via our theory: “the theory’s **subject**”.

If our ideology has some impact on the subject (reality), how can we uphold **subject-relatedness** given we perform changes in our ideology?

Note, in the **Quinean scheme** this is no problem: There we can wiggle around with ideology as much as we want; our grasp of reality, the **subject** of a theory, is **solely determined by its ontology**.

How can we guarantee that in the Lewis-Sider schema particle physics **is in fact about** particles; i.e. how can we guarantee or understand **subject-relatedness**?

The Problem of Dependence for Lewis & Sider

This is even the more a problem, as we want to uphold the claim that **alternative ideologies** should **not deprive** different theories of their **subject-relatedness**.

Examples:

- **different modalisms** are still about **modal aspects of reality**
- the **von Neumann construction** as well as the **Zermelo construction** is still about **numbers**
- different **specifications of Newtonian particle mechanics** (with different frame conditions) are still about **particles**.

How can we account for **subject-relatedness** of theories with different ideologies although the ontology of a theory depends on its ideology and ontology is not the only ingredient of a theory's subjects?

The Problem of Dependence for Lewis & Sider

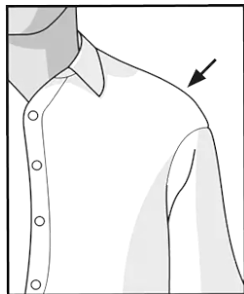
To sum up the problem with dependence:

- Quine's "laughing handling" with ideology links theory (e.g. particle physics) too loose to reality (e.g. particles).
- Lewis-Sider, on the other hand, seem to overshoot this linking and make it too tight to allow for more flexible subject-relatedness.

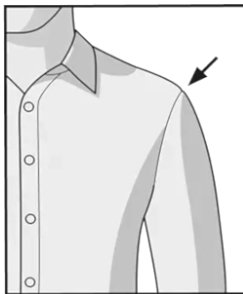
Can we do better?

A Solution: Carving at Joints & Conceptual Engineering

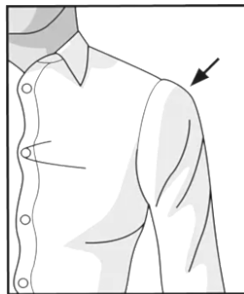
The Task



too loose



just right



too tight

Conceptual Engineering

We propose to amend the Lewis-Sider approach by **conceptual engineering**.

Past meta-theoretical investigations of **conceptual engineering** focused on **concepts** as units of revision.

However, the very new approach of Cappelen (2018) frames the units of change as “worldly”:

“[When we ask, e.g., about gender and race, we ask] what we want those things to be, i.e., what we want gender and race to be (not what we want the words to be and not what we want the concepts to be). [...] I think this ‘worldly’ description is the correct way to describe all instances of conceptual engineering, not just in the social domain. This sounds radical—and might raise worries about endorsing a form of linguistic idealism—but it is not. We’re not creating new stuff using language. We are reclassifying[.]” (cf. Cappelen 2018, p.46)

This turn **away from concepts towards the world** makes conceptual engineering relevant for the problem of dependence/subject-relatedness.

Conceptual Engineering

The keyword in the quote before is 'reclassifying' which might be considered as just another parlance for 'changing the ideology of a theory'.

The idea is that we can employ a similarity constraint put forward in conceptual engineering in order to work out how **subject-relatedness is upheld notwithstanding a theory reclassifying entities of its ontology.**

Conceptual Engineering and Subjects

Cappelen's (2018) approach of conceptual engineering and subject-relatedness in a nutshell (cf. particularly chpts.9&10):

- Conceptual engineering: changing the extension of some representational device (“worldly” part) via its intension.
- Example: If one lifts a different-sex condition in the intension of ‘marriage’ one allows for changes in the extension.
- What relates such changes in the intension of ‘marriage’ still to the subject of marriage?
⇒ new subject?
- No: main idea: subjects supervene on intensions and extensions—which means in particular that they are more coarse-grained.
- So, any changes of subjects are in need of changes in the intension or extension, nothing similar holds for the other way round (multiple realisability of one and the same subject).
- Example: Changes in the supervenience base (e.g. lifting the same-sex condition) allow still for subject-relatedness after the change (still about the subject marriage).

Conceptual Engineering and Subjects

Subjects *supervening* on the intension and extension and the possibility of multiple realisability allows for *subject-relatedness notwithstanding change*.

Are there also any rules determining which changes in the supervenience base *trigger also changes in the subject*?

Conceptual engineers employ a model proposed only quite recently by Dorr and Hawthorne (2014, pp.281f), which suggests to distinguish *two kinds of representational devices*:

- *modally robust* devices where small changes in the underlying supervenience base will not cause any or only minor changes at the higher supervenience level.
- *modally plastic* representational devices where also small changes in the underlying supervenience base cause similar or even major changes at the higher supervenience level.

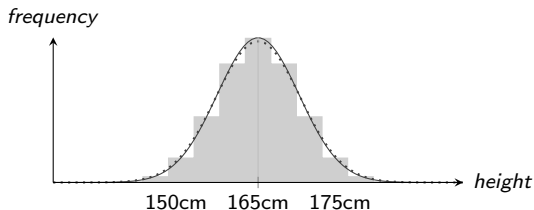
Modally robust representational devices are also called a '*patchwork*'.

Coarse-grainedness: within a particular patch changes at the lower level have no significant effect at the higher level (just when leaving the *patch*).

Dependence: Conceptual Engineering and Patches

Example: *height-to-the-nearest-5cm* supervening on *height-to-the-nearest-1mm* and producing a coarse-grained partition, i.e. a jerky pattern at the higher level compared to the lower level.

Example: The concept *height-to-the-nearest-2mm* is modally plastic given the same supervenience base, because gradual modifications at the lower level cause similarly gradual modifications at the higher level (modify example for arbitrary fine resolution).



Conceptual Engineering and Patches

There is even a **linguistic marker** for separating **patchwork concepts** from **plastic concepts**, namely so-called *disquotational speech reports*.

Assume that S is the sentence uttered by some person A . Then the following statement is a disquotational speech report (cf. Cappelen 2018, p.110):

'A said that S .'

Note that a quotational speech report would state 'A said ' S ''.

Dorr and Hawthorne (2014, p.286) argue that accepting a disquotational speech report is an indicator for the plasticity of a concept, whereas rejecting such a speech report is an **indicator** that the concept is a patchwork concept.

In conceptual engineering this is cashed out in the sense that modifications within the plasticity of a concept can be considered to be about the **same subject**, because of the acceptance of the disquotational speech report.

Conceptual Engineering and Patches

Example: If one re-engineers, e.g., the classical concept of *marriage* by lifting the different-sex condition and if after this modification disquotational speech reports like

'Oscar Wilde said that marriage is the triumph of imagination over intelligence and that second marriage is the triumph of hope over experience.'

are accepted, then, so Cappelen's (2018, p.114) approach of conceptual engineering, the re-engineered representational device is about the same subject.

Dependence: Conceptual Engineering and Patches

The main idea is as follows: **Patchwork concepts** are modally robust, but extensive changes of their supervenience base cause jerky changes at the higher supervenience level.

Conceptual engineers like Cappelen (2018) consider this as causing changes of subject.

So, **patchwork concepts** allow only for small modifications, in order to be still about one and the same subject.

In case of **plastic concepts**, on the other hand, gradual changes in their supervenience base cause gradual changes at the higher supervenience level.

This non-jerkyness of higher level changes indicates that there is **no matter of fact** which would allow one to speak of a change in subject.

Dependence: Conceptual Engineering and Patches

Dorr and Hawthorne (2014) express this difference even in terms we used above, when **inferring metaphysical structure from the ideology of our best theories**.

According to them, **patchwork concepts** “**carve nature at the joints**”, because one would need “to engage in some quite specific and improbable **linguistic manoeuvres**” of redefining notions etc. in order to uphold slightly alternative concepts (this is a consequence of their jerky changes).

Plastic concepts, on the other hand, do not carve nature at the joints, because “it is hard to believe that it would have been much harder for [a plastic concept] to express any of [its] variant properties than to express the property of being [the concept it is]” (p.283).

So, **differences in patchwork concepts** are about **differences in metaphysical structure**, whereas **nothing similar holds for plastic concepts**.

Dependence: Ideology and Patches

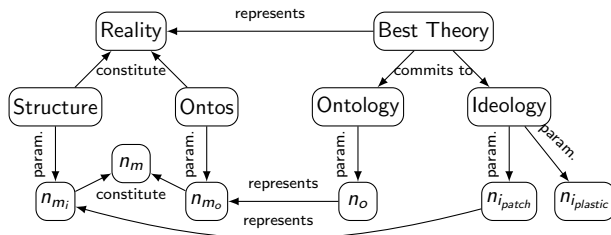
The idea is now that the **ideology** of a theory can vary in its **plastic concepts**, but **not in its patchwork concepts** in order for the theory to be still about the **same subject**.

So, the suggestion is that theories with the **same ontology** but **different ideologies** can be still about the **same subject**, if the **ideologies do not (drastically) differ** in their patchwork concepts, but (possibly only) in their plastic concepts.

Example: if the patchwork concepts of Newtonian **particle mechanics** such as *force* remain stable, then different specifications in terms of conceptually plastic frame-conditions allow us to say that these theories are about the same subject, namely **particles**.

Ideology and Patches: The Schema

The schema for this approach to ontology and ideology in the sense of worldly conceptual engineering supplementing the Lewis-Sider approach is as follows:



In our best theories, ontos (n_{m_o}) is accounted for by the theories' ontologies (via adequate n_o); structure (n_{m_i}), on the other hand, is accounted for by the patchwork part of their ideologies (via adequate n_{i_patch}). The plastic part of their ideologies ($n_{i_plastic}$) remains a *carte blanche* and allows for explaining how there can be equally good “best theories” that are about the same subject though they differ in their ideology.

Conclusion

- The traditional Quinean distinction between the **ontology** and the **ideology** of a theory has at least two main problems:
 - **arbitrariness**
 - **dependence**
- **Quinean schema**: what one can infer about reality from a theory is restricted only to the **ontology** of the theory.
- **Lewis-Sider schema**: Take the ideology of our best theories to carve at the joints of reality \Rightarrow also the **ideology** of a theory matters.
- **Problem of Quine**: **arbitrariness & dependence** corrupts ontological demarcation
- **Advantages of Lewis-Sider**: **arbitrariness** vanishes; **dependence** is less critical due to realistic interpretation of ideology
- **Problem of Lewis-Sider**: **subject-relatedness**
- **Worldly Conceptual Engineering** assists: distinguish ideology in **patchwork** and **plastic** components and keep the **patches fixed**

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