Expressivism about Truth-Making

Stephen Barker University of Nottingham June 9 2010

0. Introduction

Truth asymmetrically and explanatorily depends on being: being explains truth; truth does not explain being. The facts of truth are not primitive; the fact that a proposition is true obtains in virtue of something: how things are with its subject matter.[1] There are various ways of expressing this dependence. Let <*p*> denote the proposition that *p*. Where <*p*> is true, then I submit, the following are hold—call these *TM-sentences*:

(i) <*p*> is true because *p*;
(ii) <*p*> is true in virtue of the fact that *p*;
(iii) The fact that *p* makes <*p*> true.

I take *(i)* to *(iii)* to capture more or less the same content. The converses of TM-statements, *anti-TM-statements*, are false:

p because <*p*> is true;
p in virtue of the fact that <*p*> is true;
The fact that <*p*> is true makes it that *p*.

We are committed to all instances of TM-sentences, and to denying anti-TM-statements. That captures the core of our commitment to the dependency of truth on being. The question of truth-making is primarily a question of making sense of these and related commitments.[2]

Some will nevertheless dispute that TM-sentences are always true. Many philosophers in the grip of truth-making questions find themselves exercised by truth-makers for logically complex sentences. Take negative truths. The corresponding TM-statements for negative truths in the case of *(ii)* and *(iii)* commit us to negative facts. For some philosophers,

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[1] For an argument against the primitiveness of truth, see Rodriguez-Pereyra (2005).
[2] Nevertheless, looking at how metaphysicians address the problem of truth-making it's not obvious that this is the issue. Armstrong (2005) says that the question of truth-making concerns whether we assert for every true propositions <*p*>: *There is a thing whose existence necessitates* <*p*>. We may enquire into whether this is so. But what has this got to do with truth-making and the explanatory dependence of truth on being?

negative facts are anathema. That's because they think of negative facts as strange kinds of absences—somehow non-existence masquerading as existence—and thus not part of any respectable ontology—see Molnar (2000), Simons (2005). However, despite their qualms, the arguments against negativity are over-rated—see Barker and Jago (201+). Indeed, I think ontological concerns about facts are generally exaggerated. I will provide some justification for this position in the last section of this paper. For now, I embrace ecumenicalism about facts, but hope to redeem that attitude later. So, we shall allow that facts of all shapes and sizes are there. The issue I want to focus on is understanding the explanatory connection between being and truth indicated by TM-statements.

Making and Truth-making

Looking at truth-making through the lens of TM-statements makes it very clear that we cannot look at truth-making just from the point of view of some supposed relation *makestrue*, as does Armstrong (2005). TM-statements *(i)* and *(ii)* feature locations *because* and *in virtue of* that are not specifically tied to truth-making. The locution *makes* appears in many other contexts apart from truth-making contexts. There is *making-false*. Falsity is made just as much as truth is. There is also *making-the case*, as when we say one fact makes another the case. Fred's being unmarried and male makes it the case that he is a bachelor. Jane's sharing memories with an earlier temporal person-stage makes it the case that she is identical with that being. Logically simpler facts make logically complex facts the case. When I ask what makes something a bronze statue, I am concerned with bronze-statue making. Being a lump of bronze formed by a sculptor in some shape makes something a statue. For just about any predicate *F*, we can talk of *F*-making. If that's right, a narrow focus on a supposed relation of *truthmaking*, that excludes consideration of other kinds of making, is bound to be unfruitful.

Our investigation of truth-making then should be carried as part of a theory of making. To explain something is to point towards what makes something the case. A wider view on making suggests that it comes in varieties. For example making can be causal. Explanations that invoke this relation are causal explanations. Let's call *analytic making* the kind of non-causal, atemporal *bringing about* that is invoked kind of invoked in explanations

of logical complex facts by simpler facts, of statues by their material constituents, of bachelors by their being unmarried men, and finally truth's explanation by being. In what follows my main aim is to examine the somewhat neglected relation of analytic making.

How do we proceed? My strategy is not to ask what is making, in the hope of a metaphysical theory about its nature. It is rather to look first to the language of *makin*g. The metaphor behind *making* refers to agency. It would be absurd to suggest that claims about making, synthetic or analytic, are claims about agency. It is not absurd, however, to propose that the concept of making somehow emerges from some feature to do with agency. That's the contention to be explored in this paper in relation to analytic making.[3]

The basic idea is this. The concept of analytic making (I just say *making* from now on), like that of causation, is tied to *recipes*. In the case of making, the recipes are not procedures for manipulating things in the world. They are, rather, *analytic recipes*. The idea of analytic recipe finds its paradigm form in the idea of an introduction rule for a logical constant. Introduction rules are linked to *construction* in the sense that they reveal the canonical grounds for use of a logical constant. I liberalise the idea of introduction-rule to that of any inference whose premises are canonical grounds for the application of a concept, be that concept a logical constant or non-logical concept. Roughly speaking, my proposal is that truth-making claims, and making claims in general, express commitments to derivations that use only introduction rules—although, as we shall see, when negation is involved, elimination rules must be applied at certain points. I submit that the proposed theory gets us the asymmetry we want in relation to truth-making, and specifically, in out basic TM-statements: we ought to assert instances of *<p> is true because p*, but not of *p because <p> is true*.

An objection is this theory is that it makes TM-statements claims about inference, that is, kinds of metalinguistic claims. But this is not the case at all. I am not offering reductive truth-conditions for TM-statements in terms of inferential commitments. Rather, again an

[3] There is a literature that seeks to explain the concept of causal making in terms of agency—Gasking (1955), Von Wright (1971), Price (1992), Menzies and Price (1993), Pearl (2000) and Woodward (2003). Agency is about capacities to manipulate events. Thus agency theorists of causation invoke *causal recipes*, procedures for an agent to get what she wants by manipulating the world, as a way of understanding the concept of causation. This paper makes an analogous proposal about making in non-causal domains.

analogy has to be made with the case of agency theories of causation. These are best not seen as theories of the truth-conditions for causation claims, since that presents us with a potential circularity, since agency may ultimately be grounded in causation. We should not see agency theorists of causation as offering truth-conditional analyses of causation at all. Instead they are offering explications of causal-language in terms of the activities and cognitive structures underpinning its production. The form of theoretical orientation naturally sees itself allied with an *expressivist* orientation to language analysis. None of this implies non-cognitivism about causal-statements, or, as I shall argue, non-cognitivism about TM-statements. They are, on this approach, truth-apt and about the world. What we offer is some subtlety about what it is to *talk about the world*.

In §1, I set up some constraints on a theory of truth-making and making-the case and argue that analyses of making in terms of entailment, logical complexity and counterfactual dependencies fail. In §2, I outline the analytic recipe proposal. In §3, I show how it explains intuitions about making in relation to logically complex propositions and facts. The special case of negation is examined in §4. In §5, I reflect on these results and say something broadly about expressivism, and then argue that within the right expressivist context, we can embrace realism about making and facts, including an ecumenical attitude to fact existence, but ward off all metaphysical concerns about what these beings, both making and facts, are.

1. Making, Entailment, and Supervenience

All truths have truth-makers, since facts of truth are not primitive phenomena. Truth-making is just an instance of a more general problem, call it the making-problem, and to approach it any other way is just to court confusion. So let us begin by asking a bit about making, in particular what I have called *analytic making*.

Let *Fp* stand for the fact that *p*. The kinds of making that we shall principally be concerned with are making-true and making-the-case, and with locations of the form below:

A: F*p* ***makes-true*** <*q*>;

B: F*p* ***makes-the case*** F[*q*].

A means that the fact that *p* makes true the proposition that *q*, and *B* the fact that *p* makes the case the fact that *q*. I shall be treating making as a two-place relation between facts. In *A*, *making* holds between F*p*, and the fact that <*q*> is true. And in B between F*p* and and F<*q*>. though it could also be between F*p* and F[F*q* is the case]. But I shall treat F*q* and [F*q* is the case] as more or less the same fact. There is a sense that the *make-the case* locution is the basic one. We can express truth-making claims in these terms:

C : F*p* ***makes-the case*** F[<*q*> is true].

In what follows, I shall mainly be concerned with instances of *A* and *B*. I take sentences of the kind *A* to have the same content as: <*q*> *is true because p*, or <*q*> *is true in virtue of the fact that p*. Furthermore, we are taking it that there are no restrictions on what facts there are. I accept the fact-schema:

Fact-Schema: *p* iff it is a fact that *p*.

So, negative, conjunctive, disjunctive, universals, and so on, facts are part of what there is.

Before we begin analysis, we need to establish a few facts about making. They are:

(a) (Analytic) making somehow involves necessitation. We do not feel that causal making requires necessitation. We are used to the idea of indeterministic causation because of objective chance. Perhaps we have more difficulty with the idea of non-necessitating analytic making. The reason may be that, although we can get used to the idea of a physical process that is chancy, we are less open to the idea of a chancy analytic process. There seems to be no room for chance in this domain or indeed the idea of a process. I shall take it then that (analytic) making, and truth-making implies necessitation. This intuition that making involves necessitation will be vindicated by the theory *making*-talk to be developed later.

(b) A feature about making, any kind, is that it can be collective. Causal making can obviously be collective. When we say that *c* is the cause of *e* we often mean that *c* along with other facts or events together caused *e*—hence Mackie's (1980) idea of an *Inus condition*. *C* causes *e* iff *c* is a necessary condition of a condition sufficient, but not necessary for, production of *e*. Something like the Inus condition model applies to analytic making. More

than one fact can contribute to the analytic making of another fact: there is collective making. The following are cases thereof:

(1) Fp, Fq (together) ***make-the case*** F[p & q];

(2) Fp, Fq (together) ***make-true*** <p & q>.

Togetherness requires explanatory relevance. All the facts entering into the making relation have to do their bit: they must contribute to the bringing about. So in the cases above, Fp and Fq make essential contributions to the making: they are essential parts of the explanation for the obtaining of the fact F(p & q) and the truth of <p & q>. Hence intuitively these statements (1) and (2) of collective making seem correct. In contrast those below look wrong:

(3) Fp, Fq, and Fr (together) ***make-the case*** F(p & q)

(4) Fp, Fq (together) ***make-true*** <p>

In (3), Fr makes no contribution: the fact that r has nothing to do with the explanation of the obtaining of the fact that p & q. Similarly, in (4), Fq makes no contribution to <p>'s truth. It is not part of the explanation of <p>'s truth.

(c) I shall take is that making is transitive. So, we accept:

Trans: Fp_1, Fp_2, … Fp_n ***makes-the case*** Fq. Fq ***makes-the case*** Fr. ├ Fp_1, Fp_2, … Fp_n ***makes-the case*** Fr.

I will provide a theoretical backing for transitivity in terms of the recipe theory developed in §2-4. For now, I note merely that it seems intuitively right.[4]

(d) There can be over-determination of making. Where both Fp and Fq obtain, both independently, and not collectively, make-the case F[p v q]. The recipe theory is consistent with such over-determination. Here we are affirming a contrast between analytic making and

[4] Transitivity is often accepted for causation, but some doubts have arisen lately—see McDermott (1995). Fred planted a bomb to kill Jane. Jane's see the bomb caused her to move away. What caused Jane's being alive the next day the was the fact that she moved away. But we don't want to say that Fred's moving the bomb caused her to be healthy the next day.

causal making, since theorists are not fulsomely inclined to affirm the possibility of causal over-determination.

(e) It is often argued that truths that are logical truths lack truth-makers. That is only contingent truths have makers. This is odd. How can a class of facts about truths suddenly be primitive facts? Sometimes it is said of logical truths that they are true in virtue of the meanings of the connectives. Surely that cannot be right either. Rather, what we ought to think is this: logically necessary truths are just necessitated to have truth-makers of some contingent kind or another. They are just those truths that, no matter what, are guaranteed to have truth-makers. Take truths of the form $<p \vee \neg p>$. We can say of all these truths:

Either Fp ***makes-true*** $<p \vee \neg p>$ or F$\neg p$ ***makes-true*** $<p \vee \neg p>$.

One might ask what provides the guarantee that one of these facts, Fp or F$\neg p$, will always obtain. But that is another matter about the making of facts, and not the making of truths, and does not undermine the claim that logically necessary truths are true in virtue of the fact. There being made true by contingent fact does not undermine their being necessary truths; they are just guaranteed to have (contingent) truth-makers.

Analysing Making: Entailment

We have set the scene to begin out enquiry into making. Standard approaches assimilate making-true to entailment or supervenience. But these will not work. Take entailment. An initial thought is that entailment is the basis of the commitment in truth-making. That is, we might propose something like:

E: $<Fp_1, Fp_2, \ldots Fp_n$ ***makes-the case*** $Fq>$ is true iff $p_1, p_2, \ldots p_n$ entail q.

And similarly:

ET: $<Fp_1, Fp_2, \ldots Fp_n$ ***makes-true*** $<q>>$ is true iff $p_1, p_2, \ldots p_n$ entail $<q>$ is true.

Let us suppose that the entailment is the relevant entailment system R—as proposed by Restall (1996). That is, each of $p_1, p_2, \ldots p_n$ must participate in the deduction of q through application of inference rules. That invalids the clearly false claims about making like (3) and (4) above in which some facts play no role whatsoever.

Unfortunately, the relevant entailment hypothesis won't work, for several reasons. First, we shall not get the vital asymmetry of truth being fixed by being, but being not being fixed by truth. TM-statements of the form <*p*> *is true because p* will come out true, but so will anti-TM statements like *p because* <*p*> *is true*, that is, the fact that <p> is true makes it the case that *p*.

The second problem is that logically simple facts will explanatorily depend on logically complex facts, contrary to intuition. To take two cases of this, the following come out correct on the relevant entailment hypothesis:

(5) F[*p* & *q*] ***makes-the case*** F*p*;

(6) F[Every *G* is *H*], F[*T* is *G*] (together) ***makes-the case*** F[*T* is *H*].

So, for example, assuming a normal case where Bob and Bill are human and there is no causal relation between their being human, the following instance comes out true: *what makes Bob human is the fact that both Bob and Bill are human*, or, *Bob is human in virtue of the fact that both Bob and Bill are human*. These variants all seem completely wrong: Bob's humanity does not depend on this conjunctive fact involving Bill's humanity. Rather the converse holds. (5) cannot be right.

Regarding (6), we may really doubt that what explains the fact that *T* is *H* is the universal and the particular fact F[*T* is *G*]. We are excluding at this point the case in which the universal fact is a law. If it is a law, or a matter of physical necessitation, that everyone at the party is drunk, then being at the party given the law could be part of what *brings it about* that T is H. But, that would be causal making, and we are currently not concerned with causal making. We are concerned with the case in which, as a matter of contingent fact, everyone at the party is drunk. Tam is at the party. Tam is drunk. But the fact that Tam is drunk does not obtain in virtue of the fact that everyone is drunk and the fact that Tam is at the party. That gets the analytic explanatory order around the wrong way. The fact that Tam is drunk obtains in virtue of facts just about Tam: his state of blood alcohol level, and so on. It does not obtain in virtue of facts about other people being drunk.

One might attempt to deal with this problem by eliminating conjunctive or universal facts from one's ontology. But we are currently allowing a full fact pluralism; we are accepting ***Fact-Schema***.

Entailment Plus

Perhaps we can make the relevant entailment account work with some extra condition added to the entailment condition. We might add a condition about logical complexity. Here's the best proposal—we again assume relevant implication:

E+ : $Fp_1, Fp_2, \ldots Fp_n$ ***makes-the case*** Fq iff $(p_1, p_2, p_3, \ldots)$ entails q, and q is more logically complex than any of $(p_1, p_2, p_3, \ldots)$.

This still won't work for two reasons. Firstly, the condition on logical complexity will not exclude cases like:

(7) $F\neg\neg p$ ***makes-the case*** $F[p \vee (\neg\neg q \,\&\, r)]$

This seems wrong. Surely it is simply Fp that makes-the case the disjunctive fact $F[p \vee (\neg\neg q \,\&\, r)]$. The negative fact, $F\neg\neg p$ obtains in virtue of the simpler fact Fp. So the facts of explanatory dependence are as follows: Fp is the common maker of $F\neg\neg p$ and $F[p \vee (\neg\neg q \,\&\, r)]$, where the path of making does not go through Fp to $F\neg\neg p$, then $F[p \vee (\neg\neg q \,\&\, r)]$.

There is a more important objection to the logical-complexity proposal. Why is making tied to increase in logical complexity? We have just stipulated that logically complex facts depend on less logically complex facts. But surely this is something we want to explain, by appealing to a prior account of making, rather than simply building it into making by fiat.

Supervenience and Variants

Entailment in some form or other is not working out as an analysis of analytic making. Some theorists equate truth-making claims with the claim that truth supervenes on being—Bigelow (1988). So perhaps making is supervenience. The supervenience thesis would be:

S : $Fp_1, Fp_2, \ldots Fp_n$ ***makes-the case*** Fq iff Fq supervenes on $Fp_1, Fp_2, \ldots Fp_n$.

Various proposals about supervenience are available, as in:

> If Fq had not obtained one of Fp_1, Fp_2, … Fp_n would not have obtained, but it's false that if one of Fp_1, Fp_2, … Fp_n had not obtained, Fq would not have obtained
>
> In any world where Fq does not obtain, one of Fp_1, Fp_2, … Fp_n does not obtain. But it's false that in any world in which one of Fp_1, Fp_2, … Fp_n does not obtain Fq does not.

But supervenience understood as a kind of counterfactual dependency, or variation across worlds, won't get the results we desire. None of our basic TM-statements will come out true, given the definitions of supervenience displayed above. The facts, Fp and F[<p> is true] co-vary perfectly counterfactually and across possible worlds—see Rodriguez-Pereyra (2005). If so, neither supervenes in the other given these definitions. Try as we may, variants on ideas about counterfactual dependencies won't get us the asymmetries we require to explain making, and truth-making in particular.[5]

2. The Analytic Recipe Approach

Our pursuit of the question, head on, of what making is, has not yet resulted in a satisfactory theory. I am going to recommend an alternative strategy at this point. This is to stop the enquiry into what making is, and replace it by an examining of the form of statements about making, including truth-making from the point of view of the kind of thinking that might be going on in making-claims. At this point, the agency theory emerges. The strategy is to take the metaphor of *making* seriously, and see where it leads.

What we need is to find a domain of agency relevant to analytic making-claims. The domain of agency we are looking for is a conceptual one. It resides in the manipulation of concepts. The kinds of manipulations we need to look at are derivations that go on in formal proofs. Derivations involve introduction and elimination rules. In *making* we construct

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[5] An idea related to the supervenience proposal is given by Lewis (2003). He offers a theory according to which truth-makers of an atomic proposition <Rosy is red> is Rosy *qua* red. Rosy *qua* red is Rosy taken under a certain counterpart theoretic constraint. The constraint requires that all counterparts of the actual Rosy be red. Truth-making is then a matter of counterfactual dependency. The problem with this approach is that it does not capture asymmetry. If Rosy qua red had not existed, <Rosy is red> would not have been true. But similarly if <Rosy is red> had not been true, Rosy qua red would not have existed.

something. Introduction rules are linked to construction in the sense that they reveal the canonical grounds for use of a logical constant. Let us liberalise the idea of introduction-rule to that of any inference whose premises are canonical grounds for the application of a concept, be that concept a logical constant or non-logical concept. This leads quickly to a proposal of making through introduction-rules:

> ***M***: In asserting <Fp_1, Fp_2 ,...F$p_{\underline{n}}$ ***makes-the case*** Fq>, U defends a commitment to a derivation of q using only introduction rules using all of $\{p_1, p_2...p_n\}$.

Truth-making claims then come out as:

> ***TM***: In asserting Fp_1, Fp_2 , ...$Fp_{\underline{n}}$ *make-true* <q>, U defends a commitment to a derivation of <q> *is true* using only introduction rules using all of $\{p_1, p_2...p_n\}$.

In this account, we require that all the premises in the derivations are involved at some stage in the application of introduction rules.

Note that what we are offering in ***M*** and ***TM*** are not truth-conditions for making and truth-making claims but an analysis of what the speaker does in assertion such claims. You may wonder about what the truth-conditions are. It is one of the options to be explored below that there is no interesting, reductive account of truth-conditions for making statements.

(a) This theory will need some tweaking to deal with making of negative facts that parallel causation of absences (omissions). The proofs that underpin claims about the making of negative facts are reductio proofs. These reductio proofs will require that we use elimination rules, rather than introduction rules, in that part of the proof that unpacks consequences of accepting the hypothesis. I say more about this in §4.

(b) We need to ask what the logic governing the derivations is. Is it classical or relevant, or some other kind of logic? In fact, the agency approach is fairly neutral on questions of the logic used. The logic is not the central constraint on making-statements, it's in the restriction on introduction-rule that does the work. For simplicity, I shall assume classical logic.

(c) There is some question about the psychological reality of the proposal. We do not require that speakers have an explicit grasp of introduction and elimination rules, or the concept thereof. It may be that the psychological reality for speakers involve cognitive representations of such rules, and possessing those states does not in any way involving being in possession of the concept of a derivation. It is rather, that the speaker, at some stage, could relatively easily, acquire such concepts.

For now, let us see what we can do with the analysis. The goal is to see if we can model correctly intuitions about making and truth-making.

Truth and Introduction Rules

Let us suppose, as seems right, that the elimination and introduction rules for the truth-predicate are those below:

Truth-I : $p \vdash$ <*p*> is true.

Truth-E : <*p*> is true $\vdash p$.

In terms of ***TM***, we now explain the basic asymmetry between being and truth and our assertion of TM-statements, F*p* ***makes-true*** <*p*>, and our rejection of anti-TM-statements, like F[<*p*> is true] ***makes-the case*** F*p*.

It would be wrong to say that, on this theory, the asymmetric fixing of truth by being is *constituted* by facts about introduction-rules. Rather, it is that our assertion of this asymmetry involves our defending commitments to derivations involving introduction rules. Yet this assertion of a worldly asymmetry, has its correlate in a cognitive/logical asymmetry: that between introduction rules and elimination rules. But what is the latter distinction?

I argue that what characterises an inference-rule as an introduction rule are certain cognitive and epistemic asymmetries that are linked to the idea of a canonical ground. Basically in an introduction rule, $A_1, A_2, \ldots A_n \vdash B$, there is a concept on the right hand side, in *B*—expressed by a predicate, operator, or connective—not present in $A_1, A_2, \ldots A_n$. New

right-hand concept characterises the general form of the conclusion. So, it's a way of bringing into existence application of concept.[6]

Definitional Dependency

The analytic recipe theory is meant to explain our assertion of making-statements like (8):

(8) F[Fred is an unmarried man] ***makes-true*** <Fred is a bachelor>

One the extended idea of introduction rule, the following is plausibly an introduction rule:

Fred is an unmarried man ├ Fred is a bachelor

We may worry that the vagaries of definition could get in the way here. Suppose your concept of *brother* is derived from *male sibling*. My concept of *sibling* is disjunctive: *either brother or sister*. In which case you will accept as an introduction rule: *Fred is a male sibling* ├ *Fred is a brother*. I will accept as an introduction rule: *Fred is a brother* ├ *Fred is a sibling* You will accept the first truth-making claim, I will not. Which is right? The answer is that there is no objective fact about which is right. There does not have to be.

The Entailment Principle and Transitivity

The recipe theory drags truth-making away entailment and towards causation. That means some familiar principles, beloved of certain theorists, have to go. One is the entailment principle—see Armstrong (2005):

EP: If *f* ***makes-true*** <*p*>, *p* → *q*, then *f* ***makes-true*** <q>.

From the point of view of the analytic recipe view, there is no reason at all the think that making should be preserved by entailment. Only failure to clarify the real nature of the truth-making problem would. The closest we get to the entailment principle is:

EP^{AR}: If U asserts *f* ***makes-true*** <*p*>, and accepts, *p* ├ *q* (only with introduction rules) then U ought to accept *f* ***makes-true*** <*q*>.

[6] One may be concerned about the introduction-rule for the predicate *fact*: *p*. ├ *it is a fact that p*. If this is accepted as an introduction rule we should ideally be disposed to assert: *Fp* ***makes-the case*** *F[it is a fact that p]*. But that looks perfectly acceptable.

EP$^{\mathbf{AR}}$ is not particularly informative, since it is just a trivial consequence of the analytic recipe view.

Transitivity of making is also validated in the recipe view. If there is a proof construction underpinning assertion of $Fp_1, Fp_2, \ldots Fp_n$ ***makes-the case*** Fq. And one underpinning assertion of Fq ***makes-the case*** Fr. Then there will be one underpinning assertion of $Fp_1, Fp_2, \ldots Fp_n$ ***makes-the case*** Fr.

Non-Analytic Truth-Making

It might be objected that the analytic recipe approach to truth-making cannot work generally. Take (9), which Armstrong (2004) takes to refute a reduction of truth-making to entailment:

(9) F[*X* is H_2O] ***makes-true*** <*X* is water>.

(9) looks right, but how can we explain our affirmation of it? (9) is not a pure instance of truth-making in the sense that the *making* is purely analytic. The making in (9) is partially *synthetic*. That is because *physical necessitation* is being appealed to and that is not an analytic matter. Let us look over the inferential structure underpinning assertion of (9).

There is no analytic reduction of the concept of water to that of H_2O. Still, we can think of the concept of water as being captured in the phrase: *the underlying stuff that is causing watery appearances*. If so we have the following introduction rule:

X is the underlying stuff causing watery appearances. ⊢ *X* is water.

Given acceptance of that rule, we are obliged to assert (10):

(10) F[*X* is the underlying stuff causing watery appearances] ***makes-true*** <*X* is water>.

We now have to find the connection between *X*'s being H_2O and *X*'s being the underlying stuff causing watery appearances here. There is no analytic connection. There is, however, a non-analytic connection. This is a substance *X*'s being H_20, given the physical laws, physically necessitates that that *X* will play certain causal roles, in particular, *X*'s being H_2O

physically necessitates that *X* causes watery appearances. In which case, we are committed to the non-analytic, that is synthetic, claim of making (11):

(11) F[*X* is H_2O] makes it the case that *X* is the underlying stuff causing watery appearances here.

We can now use (11) and (10) to derive (9), by transitivity of making. This is a cross-modal or cross-categorical making. (9) is not a pure instance of analytic making; it has a synthetic element. This is not an objection, but merely a refinement in the notion of *making*.

3. Truth-Making and Logically Complex Truths

We have explicated assertion of basic TM-statements, explained our basic commitment to the explanatory asymmetry of truth on being, and some features of making. We now move on to a refinement of these ideas: making and truth-making for logically complex propositions and facts. First, let us consider, conjunction, disjunction, existential quantification, and universals.[7] I treat negation in §4, which, as we already noted, brings with it some refinements of the conception of derivations underpinning making-statements. Part of the goal is to explain our sense that logically complex truths and facts depend for their truth or their obtaining on logically simpler facts. Isn't the introduction rule-account a rather shallow explanation of that intuition? Maybe it is, but it isn't merely a stipulation of the condition that the logically complex depends on the logically simpler.

Conjunction

The treatment of conjunction is straightforward. Our acceptance of the introduction rule, $p, q \vdash (p \,\&\, q)$, means our acceptance of:

(12) F*p*, F*q* (together) ***make-true*** $\langle p \,\&\, q \rangle$

[7] I will not consider indicative conditionals here. That's because it is not clear at all that they have truth-conditions, and so, that they are truth-apt.

On the other hand, we accept the elimination rule, $(p \,\&\, q) \vdash p$, and so will find the truth-making claim (13) below counterintuitive as we do (5) above, the corresponding making claim:

(13) F[*p* & *q*] ***makes-true*** <*p*>

The conjunctive thesis is argued against explicitly by Rodriguez-Peyera (2006), who sees truth-making as explanatory. Of course, those philosophers like Armstrong (2005) who do not see truth-making as explanatory do not necessarily deny (13). But my suggestion is that the latter have missed the point about truth-making in failing to see the explanatory connection.[8]

Disjunction

In the case of disjunction we accept the introduction rule: $p \vdash p \vee q$. So we have the following intuitively correct making-statements:

(14) F*p* ***makes-the case*** F[*p* v *q*]

(15) F*p* ***makes-true*** <*p* v *q*>

The interesting issue is the collective making statement:

(16) F*p*, F*q* (together) ***make-true*** <*p* v *q*>

According to our agency proposal, this cannot be right, it involves explanatory irrelevance. We use an introduction rule to derive (*p* v *q*) from either the *p* or from *q*. Either way, one premises, either *p* or *q*, is left doing no work.

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[8] However, an issue of some subtlety arises in relation to the schema: (*) F[*p* & *p*] ***makes-true*** <*p*>
It might seem that we should accept (*). Here's an argument from Jago (2009). He accepts:

M: Whatever truth-makes <*p*> ought to truth-make <*p* & *p*>, and vice versa.

If F[*p* & *p*] makes-true <*p* & *p*> it ought to truth-make <*p*>, but that means accepting (*). However, the current analytic recipe hypothesis won't allow us to accept (*). To assert (*) we need a derivation from *(p & p)* to *p*, to <*p*> *is true*, but that means using an elimination rule. Is the recipe theory's denial of (*) objectionable? Jago's argument is open to dispute. M is a theoretical principle, without independent intuitive power. This is particularly so, since it asks us to have intuitions about weird sentences that we do not normally use. I mean here conjunctions of the form: *P and P*. In standard formal treatments, these are acceptable, but for natural language in which semantics and pragmatics interpenetrate they are not obviously. A conjunction *(p & q)* is only well-formed if *p* and *q* don't contain each other informationally. This fact about the intuitive weirdness of *(p & p)* is enough to undermine appeals to the supposed intuitiveness of ***M***.

There is no reason to accept the validity of the disjunctive principle—see Read (2000) and Rodriguez-Pereyra (2006):

DP : If F*r* ***makes-true*** <*p* v *q*>, then F*r* makes-true either <*p*> or <*q*>.

This principle fails if we allow disjunctive facts. And that's what we are doing. Thus, F[*p* v *q*] makes-true <*p* v *q*> but does not make-true any of its disjuncts. If we confine ourselves to atomic facts, then ***DP*** is acceptable.

The rule of disjunctive elimination, (*p* v *q*), (*p* → *r*), (*q* → *r*) ├ *r*, does not furnish us with intuitively correct making-statements:

(17) F[*p* v *q*], F[*p* → *r*], F[*q* → *r*] (together) ***make-true*** <*r*>.

(17) does not seem right. It has the same kind of counter-intuitiveness as (6). It may be that our belief that *r* is brought about by a deduction using disjunction elimination. But that does not mean that the factual reality F*r* is brought about by a disjunctive fact, along with certain facts of entailment.

Existential Quantifications

The case of existential quantification is unproblematic, given the obvious introduction rule. So we accept:

(18) F[*T* is a *G*], F[*T* is *H*] (together) **make-true** <At least one *G* is *H*>.

Intuitively, these seem right if we consult our sense of explanatory order. Likewise the elimination rule does not furnish us with any intuitively correct making-statements.

Existential quantifications confront us with the potential over-determination of analytic making. There may be many things that are *G* and *H*. So there are many pairs of facts of the form F[*T is a G*], F[*T is H*] that in themselves (together) make-true <*At least one G is H*>. Again, that's ok with the recipe view.

Existential quantifications are related to another matter of interest. We are taking it that facts make propositions true. But propositions about existence are often cited as cases in which objects make propositions true. Is <At least one bird exists> made true by individual

birds, Tweety, for example? I shall resist the idea that material objects make propositions true. Since we are being unconstrained about facts, there is no problem with our saying that it is facts of individual existence that make true, each independently, <At least one bird exists>.

Universals

Universal truths, it might seem, present us with a special problem. In terms of a Fitch-style natural deduction system, the introduction rule for universals is:

U-Intro

	$G\alpha$
	$H\alpha$
Every *G* is *H*	

In this rule, α is an *eigen* variable or arbitrary object term. U-Intro involves a sub-proof in which we suppose that an arbitrary object α is *G* and derive a conclusion that it is *H*. How are we to understand truth-making of universals in terms of this rule? The answer is that it is not the proof that is the truth-maker. It is the premises for the proof that correspond to the truth-makers. What the speaker expresses in asserting a truth-making claim is a derivation from premises, that is, assertions, using introduction rules, to the truth of a claim. U-intro, unlike, say, disjunction introduction, does not specify premises, in the sense of propositions. It specifies a kind of proof. Obviously, what we want are the premises that could support application of the U-Intro, and not the derivation itself. The question now is what these premises are.

There are two cases that we have to consider in answering this question. There is the case of non-accidental universals, true by virtue of necessitation of some kind, and accidental generalities, true by virtue of brute facts.

Where *Every F is G* is an accidental truth. One might wonder in this case, how U-Intro will be applied? What is the minimal information about contingent facts required to apply U-Intro? We answer this by considering what premises we need in order to carry out a suppositional proof that begins with suppose $F\alpha$ and ends with $G\alpha$. The supposition is that some arbitrary α has *F*. The answer is simple. The premises we require are the following:

$\{T_1, T_2, T_3 \ldots T_n\}$ are all the Gs

T_1 is H, T_2 is H, T_3 is H, $\ldots . T_n$ is H.

If that is correct, then the following is our basic truth-making claim about universals:

(19) F[T_1 is H], F[T_1 is H], F[T_2 is H], F[T_2 is H], …F[Every G is in the class $\{T_1, T_2, T_3 \ldots T_n\}$] (together) ***make-true*** <*Every G is H*>

This result entails that universals need facts of totality as part of their truth-makers, facts like F[Every G is in the class $\{T_1, T_2, T_3 \ldots T_n\}$]. This is more or less what Armstrong (2005) argues, and indeed, it seems intuitively correct. We have derived a conservative result in (19), but at least we get a principled reason for explaining an intuition shared by many people.

4. Negation

That's our account of intuition about positive making and truth-making. Now for negations. Let us begin that investigation with the introduction and elimination rules for negation. Take the standard introduction rule:

Suppose $P \ldots\ldots \bot . \vdash \neg p$

There is a concern about this being an introduction rule given my analysis of what an introduction rule is—see §2. This was that the right-hand side of the rule contains a concept not present on the left. One might object: here we find $\bot$, which is, it could be claimed presupposes negation. But I suggest that goes not itself presuppose negation. $\bot$ is absurdity. One form of absurdity is explicit contradiction, which will require negation. But absurdity is not constituted by explicit contradiction.

Given acceptance of that introduction rule, we ought to assert truth-making claims like the following:

(20) Fp ***makes-true*** <$\neg\neg p$>

That fits in with intuition and the idea that logically complex truths depend on simpler facts.

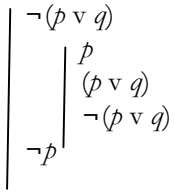
We now address the promised modification of the basic proposal about introduction rules outlined in §2. Here is the issue. The analysis as we have developed it so far does not quite work. It generates the result that we should assert (21), below, but not (22):

(21) F[¬(*p* v *q*)] ***makes-the case*** F¬*p*,

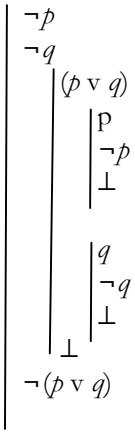
(22) F¬*p*, F¬*q* (together) ***make-the case*** F¬(*p* v *q*).

The proof underpinning (21) is ***P1*** below, and that underpinning (22) is ***P2***. ***P1*** only used introduction rules, but ***P2*** uses elimination rules in the reductio sub-proof with *(p v q)* as its premise:

P1 :



P2 :



So by the lights of the hypotheses offered, (21) ought to be accepted, and (22) rejected. But surely it should be the other way around. (21) looks wrong: an atomic negative fact F¬*p* is not explained by the compound negative F[¬(*p* v *q*)]. Rather, F¬*p* is part of the explanation of the compound fact. Accepting (21) is akin to accepting (5), that a positive atomic fact is made the case by a conjunctive fact, which we reject. In contrast, (22) looks right. We explain why F¬(*p* v *q*) is the case through the negative facts corresponding to its negated disjuncts. (That's just as we explain the falsity of a disjunction by appeal to the falsity of disjuncts.)

The way out is to block proof ***P1***, and allow ***P2***. How can we do that given that it looks ***P1*** involves only introduction rules, and ***P2*** has elimination rules at the second sub-proof level? The answer, which I shall justify below, is that the proofs supporting making statements can included elimination rules, under certain circumstances. Those circumstances

are met in ***P2***. Furthermore, elimination rules cannot be deployed under certain circumstances, and those are met in ***P1***.

To motivate these ideas, we look to causation again. Consider the structure of causation of negative events or absences. Say that the placing of a hand in a certain position caused a shadow in the grass. The shadow is an absence, the absence of light. How is the placing of the hand able to cause the absence of light on the grass? The causing of an absence is intimately connected to the prevention of a positive event. The hand prevented light from being on the grass. How does the placing of the hand prevent the light from being on the grass? The hand excluded a condition that would have caused light on the grass. Generally speaking we can say:

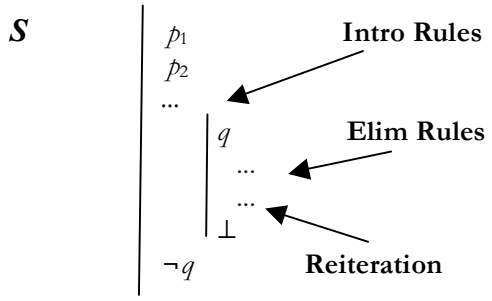
> Fact/Event *C* causes fact ¬*E* (*C* prevents *E*) iff *C* is identical to, or causes, a condition *D* that excludes a causally sufficient condition for *E*.

Exclusion here means that given the physical laws, it follows from *C*, and other facts, that *D* will not obtain.

The suggestion I want to pursue is that analytic making of negative facts works in a structurally identical way to prevention. If some facts, Fp_1, Fp_2… Fp_n bring about a negative fact F¬*q*, that is,

(23) Fp_1, Fp_2… Fp_n (together) ***make-the case*** F¬*q*,

Then the facts Fp_1, Fp_2… Fp_n do so by preventing a positive fact F*q*. That means that they together exclude a condition that brings about F*q*. To determine what would bring about F*q* we need to apply the converse of introduction rules to *q*—we need to apply elimination rules to specify a condition that is explicitly incompatible with $p_1, p_2 \ldots p_n$. In other words, in the proof that supports the making judgement (23), elimination rules have to come in a specific point. That point is the following. The proof the underpins the judgement for assertion of (23) will be a reductio proof with supposition *q*, with premises $p_1, p_2 \ldots p_n$, with the structure below:



In this proof, we may use introduction rules in the main line, on the premises $p_1, p_2 \ldots p_n$, but in the main line of the reduction sub-proof, beginning with hypothesis *q*, all the inference rules we apply to *q* are elimination rules.

The proof structure ***S*** is exhibited by ***P2***, but not by ***P1***. In ***P1*** introduction rules are deployed in the reduction sub-proof, whereas they should be elimination rules for the hypothesis *p*. On the other hand, ***P2*** uses only elimination rules in the main line of the reduction sub-proof for hypothesis *(p v q)*. That is the solution to our problem. We have modified the basic picture of the analytic recipe theory presented in §2, but not drastically, and in line with the intuitive idea that analytic making parallels the structure of causation. So, in sum, in making a making statement, the speaker expresses a commitment to a derivation that used introduction rules at all places, except for the rules applied to suppositions of reductio proofs.

Elimination Rules of Negation

We have not yet finished with analytic making and negation. We need to consider elimination rules for negation. We have assumed classical logic, and so the elimination rule is: $\neg\neg p \vdash p$. The corresponding making statement is predicted to be unintuitive:

(24) F$\neg\neg p$ **makes-true** <*p*>.

And that seems right, for already familiar reasons. The proposition <*p*> is made true by F*p*, and F*p* makes-the case F$\neg\neg p$, but not vice versa.

5. Expressivism, Realism, and Metaphysics

That completes the treatment of analytic making statements in terms of the recipe account. We have provided a kind of normative/speculative cognitive theory of what informs assertion of analytic making-statements. Assertions about making express commitments to derivations involving introduction rules—but with elimination rules applied in the manner specified in §4 in the case of negatives. I emphasize that it is not being proposed that statements about making are statements *about* commitments to derivations. Derivations are semantic/cognitive entities. We are not giving the truth-conditions for statements of making. Rather we must say that statements of making are *expressions* of commitment to such derivations, where *expressing* is not a semantic relation, like representing.

Isn't the fact that we have offered an analysis of making-claims in expressivist terms an indication that there is no making after all? Compare the case of value. Expressivists propose that in asserting that *x is good*, the speaker expresses a motivational state. Values have no role in the account at all in the analysis of how value-language works. So values have been dispensed with in the explanation of our talk about value. So isn't that a good reason to conclude that values don't exist. So our talk about value needs to be understood in quasi-realist or fictionalist terms.[9] There are not values, but we talk as if there are. So, you might think the same holds for making. Making does not exist, but we talk as if it does.

Now maybe we can live with fictionalism or quasi-realism about making. But I don't think we have to accept the argument that leads to that conclusion. The argument was this: if a referent has no role in the account of talk about it, then we should conclude that the referent does not exist. But why accept this premise? Why can't we hold that value terms really do pick out values, it's just that values have no explanatory role in the account of talk about values. We are not proposing that values have no explanatory roles whatsoever. Perhaps they can have a role in explaining why people behave in certain ways. We are just denying that they have a role in the account of what goes on in the language activity of value-talk.

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[9] This seems to be Blackburn's (1984) view. It's also taken on by Kalderon (200+).

In taking this line, however, we really have to insist that in using value language, we are really referring to values. They are really there to be referred to. But to take this line we have to deny the following thesis, which, to some, will appear quite natural:

> ***(ER) Explanatory Representationalism***: Any assignment to sentences or phrases of reference to real things *F* requires that *Fs*, or things in terms of which they can be defined, be part of the account of how the talk using those sentences and phrases function.

We must deny this thesis. So, in other words, we must be able to assert *O is referring to Fs with her terms T,* b*ut Fs have no role in the account of O's use of T.* Value-expressivism's non-representational stance to value-vocabulary cannot help but have implications for the kind of stance we take to certain other vocabularies, in particular the semantic vocabularies. So, O may say things like *The term 'goodness' is being used to refer to goodness.* If the language activity underpinning term *refers* requires an explanatory representationalist stance—explaining use of *O is referring to Fs* requires appeal to *F*s or things in terms of which they can be defined—then that conflicts with the expressivism in relation to *goodness*. What we must do here is bite the bullet, and extend our expressivism to the semantic vocabulary. So, in explaining what goes on when a speaker U asserts, *O is referring to goodness*, the referent of the term goodness cannot have an explanatory role. Generally: an expressivist about a vocabulary *D* who wants to be a realist about *D*, will have to extend their expressivism to the semantic vocabulary for talk about the semantic features of *D*.

Just what expressivism about the semantic vocabulary looks like is another matter. But let us bypass that question, which I deal with elsewhere,[10] and ask how the resulting theory will differ from straight realism. It is thought that expressivism about value is attractive because it allows us to escape questions to which a commitment to values gives rise. The feared questions are metaphysical: what are these queer beings that we call values that somehow have a compelling power on our motivational systems. I submit, however, that if our expressivism extends to the semantic vocabulary, to talk of reference and truth, then

[10] See Barker (2004, 2007) for a theory about what such expressivism looks like.

we do not have to dump realism. We can keep realism, but still escape metaphysical quandaries about value. Concerning values, we can say: values exist, but there is no theoretical requirement to give a theory of what value is. This is not to say that values are metaphysically primitives, but to say that they are without metaphysical nature. The empire of metaphysical concern cannot extend to them. In short, we have realism without an attendant obligation to uncover the metaphysical nature of things we take to exist.

If we apply this orientation to the language of making, and its subject matter, the relation of making, the result we get is this. There is making, the making that goes on when how things are with the world make propositions true, it's just that there is nothing to say about what it is. We have evacuated the question of its nature of any positive content. In other words, making is real but without any metaphysical nature. That conclusion seems very paradoxical. In metaphysics, we are very used to asking questions about the nature of *F*s for any *F*. We always ask: *what does being F consist in?* It seems our answer in the case of values, or making, if we follow the present line, is that there is nothing these things consist in. We have realism but without any metaphysical essence to the beings concerned.

We can now turn this attitude and orientation to fact-talk itself. My strategy in relation to making-statements embraces ecumenicalism about facts. So the facts are all out there. But of course, the commitment to a plenitude of facts will offend those committed to ontological austerity problems. How can you allow all these beings? But what lies behind this fear of ontological hypertrophy about facts is an assumption that facts, if they exist, have some metaphysical nature, and the metaphysical nature of negative or universal facts will be odd indeed. So, goes the familiar line of thought, we need to deny their existence. But here's the alternative approach I want to pursue. We extend our expressivism to talk of facts, and the result will be that we can say that facts of all kinds exist, it's just that they have no inherent metaphysical nature to speak of, and so, positing them comes with no ontological cost about what they are, with the attendant fear of the supposed queerness of negative facts or universals facts. What would this expressivism about fact-talk be?

The core idea is that fact-talk involves *nominalization*. Basically, in using *the fact that p* as a referring term to refer to a fact, the speaker U asserts *p* but, through the

grammatical modifier *the fact that* attached to *p*, U enables the asserted sentence to combine with a predicate to form a sentence. So in assertion of a sentence like:

F*p* ***makes-the case*** F*q*.

The speaker U performs three intimately connected assertions, *(i)* U asserts that *p* and that *q*, *(ii)* U attaches 'F' to each sentence enabling the resulting expressions to combine with the predicate ***make-the case***; and *(iii)* and makes an assertion with the whole sentence, which means U expresses a commitment to a proof construction involving *p* and *q*.[11] Any assertion, of no matter what logical complexity, can be nominalized.

This analysis of fact-talk does not give facts themselves any explanatory role in the account of what goes on in the production of sentences about facts. Yet, I submit, it is consistent with realism about facts. Facts exist. Of course, some people may balk at the idea that in the speech acts we perform in using *Fp* and *Fq*—nominalized assertions—we are performing referring acts. How can these terms, used in this way, really be referring terms?[12] The reason they balk at this is that they are implicitly accepting explanatory representationalism or ***ER***. ***ER*** implies that in order for something to be a referring term, it must be part of the explanation of what a speaker does in using the term that an object is assigned to the term. But in characterising the function of *Fp* and *Fq*, on the nominalization model, no such function is assigned.

The expressivism we offer, however, is all for denying ***ER***, and so will challenge this object. If that response works, then I think we can move towards possibly saying the following. Facts of all kinds exist, but facts as such have no metaphysical nature to speak of, and so, worries about the inherent nature of negative or even positive facts assume falsely that there is something to worry about—the metaphysical nature of facts. If this response works, then we are fully on our way to embracing a fully articulated conception of truth-

[11] This approach needs further development to deal with embedding of fact-locutions, as in: *If Hitler had invaded England, then the fact that he invaded England would have meant all subsequent history was different.* In this case, the use of the fact locution carries no commitment to a fact.

[12] We are not saying that some asserted sentences are referring terms. It is rather that some terms of the form *that S* are derived from sentences, but addition of *that*. The resulting term has the syntax of a referring term. One might say that primary referring terms, terms which are not nominalizations, fix the syntax, which nominalizations, then borrow, enabling them to function as referring terms.

making, but without the distortions that come with metaphysical austerity programs. But they way to do this is to embrace expressivism about truth-making.

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