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## *Articles*

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# *Chrysippus'* Indemonstrables *and Mental Logic*

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*Stoic logic assumes five inference schemata attributed to Chrysippus of Soli. Those schemata are the well-known indemonstrables. A problem related to them can be that, according to standard propositional calculus, only one of them, modus ponens, is clearly indemonstrable. Nevertheless, I try to show in this paper that the mental logic theory enables to understand why the Stoics considered such schemata to be basic kinds of arguments. Following that theory, four of them can be linked to 'Core Schemata' of mental logic and the only one that is more controversial is modus tollens. However, as I also comment, some assumptions of Stoic philosophy, which can be interpreted from the mental logic theory, can explain why this last argument was included into the set of the indemonstrables as well.*

**Keywords**: Classical logic, *indemonstrable*, mental logic, reasoning schemata, Stoic.

## *Introduction*

The basic arguments that, according to Stoic logic lead inferences are the five *indemonstrables*: modus ponens, modus tollendo ponens, modus ponendo tollens (1), modus ponendo tollens (2), and modus tollens. Chrysippus of Soli is said to be the philosopher that identified them. For example, Sextus Empiricus, in *Adversus Mathematicos* 8.223, states this fact. It is true that, as indicated by O'Toole and Jennings (2004), there is a certain discussion regarding this point. Nonetheless, what is important for this paper is that the Stoic idea seems to be that those five schemata are rules that cannot be proved and that, however, serve to demonstrate all the other inferences.

Given that, according to standard propositional calculus, it is obvious that only one of them, modus ponens, is really indemonstrable, and

that the other four arguments can be derived by means of other rules of that calculus, one might ask why the Stoics considered the *indemonstrables* to be so basic schemata. In my view, a contemporary theory on human reasoning can respond to that question. The theory is the mental logic theory (e.g., Braine & O'Brien 1998a; O'Brien 2009; O'Brien & Manfrinati 2010). Following it, people reason by using a mental logic that is different to classical logic. Mental logic is not really in contradiction with classical logic. In fact, all the valid inferences in mental logic are also valid in classical logic. The difference is that mental logic does not admit some formal rules of classical logic, and that, therefore, classical logic enables inferences that are not accepted in principle by mental logic. In this way, mental logic only considers the rules that, according to empirical research, individuals truly apply. Thus, it distinguishes different kinds of rules and describes the order and the circumstances in which such rules are used. However, what is more important here is that the mental logic theory claims that there are 'Core Schemata' in human mind that people always use when they reason about inferences with certain formal structures. Those Core Schemata are basic, since they only involve one step for finding a conclusion, and I think that the correspondences that can be found between Chrysippus' *indemonstrables* and the Core Schemata of mental logic can explain why the Stoics attributed a status so essential to the *indemonstrables*.

Thus, in this paper, I will try to show that four of the *indemonstrables*, and not only modus ponens, can be considered to be really basic in the system proposed by the mental logic theory. The difficult points are only, as I will also indicate, that, while disjunctions are exclusive in Stoic logic, that is not necessarily the case in mental logic, and that, due to this fact, modus ponendo tollens (2) must be interpreted as a derived version of modus ponendo tollens (1).

As it will be also shown, the only problematic inference is modus tollens. As it is known, this rule is not a basic rule in standard propositional calculus or in systems such as that of Gentzen (1935). Nonetheless, this schema is problematic for the aims of this paper because, in the same way, cannot be linked to any Core Schema in mental logic. Besides, modus tollens causes many difficulties in human reasoning research (see, e.g., Johnson-Laird & Byrne 2002, and Espino & Byrne 2013) and, as reported by cognitive science literature, individuals do not always apply it (see, e.g., Byrne and Johnson-Laird 2009, and López-Astorga 2013). In any case, I think that there are reasons that explain why the Stoics included it into the set of the *indemonstrables*. Such reasons are compatible with the theses of the mental logic theory and I will account for this idea below.

Nevertheless, before doing it, I will argue in favor of the thesis that mental logic allows considering four *indemonstrables* (all of them except modus tollens) to be basic schemata. Each of the five sections of this paper hence addresses one *indemonstrable*. I will begin by the sim-

plest one, i.e., modus ponens, and finish with the most complex one, i.e., modus tollens.

## *Modus ponens*

Modus ponens is an argument in which the first premise is a conditional *ἀξίωμα*. This Greek word is often translated as 'proposition'. Although I am aware that the exact meaning of the word is discussed (see, e.g., O'Toole & Jennings 2004), for simplicity I will adopt that translation in the following pages. The Stoics usually expressed modus ponens in this way:

"If the first, the second;
but the first;
therefore, the second" (O'Toole & Jennings 2004: 476).

Its formal structure hence is as follows:

$x \rightarrow y, x$ // Ergo y

Where '→' stands for conditional relationship.

In my view, it is obvious that modus ponens is a basic and essential reasoning rule. That is evident in Gentzen's system and in standard propositional calculus. In addition, it is a Core Schema, schema 7, in the description of mental logic proposed by Braine and O'Brien (1998b). So, it can be said that it is a schema that people use where possible. Likewise, its importance is also clear for axiomatic systems, both those based on classical logic and those based on non-classical logics. Furthermore, its structure is quite simple. Given a conditional proposition, if the *ἡγούμενον*, that is, the antecedent (or, in the previous quote, 'the first') happens, then the *λῆγον*, that is, the consequent (or, in the previous quote, 'the second') must happen as well. Because these facts, it is not surprising that the Stoics thought that modus ponens is an *indemonstrable*. Indeed, it seems that they really were right.

## *Modus tollendo ponens*

In this case, the first premise is a disjunctive proposition. The argument was often expressed in the following way:

"Either the first or the second;
but not the first;
therefore, the second" (O'Toole & Jennings, 2004: 476).

Thus, its formal structure is:

$x \vee y, \neg x$ // Ergo y

Where '∨' means disjunction and '¬' represents denial.

As it can be noted, the rule is that, if one of the disjuncts of a particular disjunction is denied, then the other disjunct must be correct. The

problem of this inference is that it can be demonstrated in standard propositional calculus. The derivation could be this one:

[1] x ∨ y (premise)
[2] ¬x (premise)
[3] x (assumption)
[4] ¬y (assumption)
[5] x · ¬x (·I 2, 3)
[6] ¬¬y (RA 4–5)
[7] y (¬E 6)
[8] y (assumption)
[9] y (reiteration 8)
[10] y (∨E 1, 3–7, 8–9)

Where '·' is conjunction, '·I' refers to the conjunction introduction rule (x, y // Ergo x · y), 'RA' represents the Reductio ad Absurdum strategy (if x is supposed and a contradiction such as y · ¬y is found, then ¬x must be drawn), '¬E' denotes the denial elimination rule (¬¬x // Ergo x), and 'vE' stands for the disjunction elimination rule (x ∨ y, x → z, y → z // Ergo z).

Ten steps are many steps and one might think that they do not describe the real process that human mind makes in arguments in which modus tollendo ponens is involved. However, although this deduction is truly complex in mental logic, it is not absolutely impossible in it. The derivation includes rules that are schemata in mental logic. ·I is a Feeder Schema, in particular, schema 8 in Braine and O'Brien's (1998b) system. A Feeder Schema is not a Core Schema. Nevertheless, Feeder Schemata play an important role in mental logic, since they are used when they can offer relevant information that enables to use other rule. On the other hand, ¬E is a Core Schema in that same system, in particular, schema 1 in Braine and O'Brien's (1998b) description.

The difficulties are linked to Reductio ad Absurdum and vE. Reductio ad Absurdum is, certainly, a strategy enabled by mental logic. Nonetheless, it does not take part in the 'Direct Reasoning Routine'. It is an 'Indirect Reasoning Strategy' and, for this reason, it is hard to use and it is not always applied. This is a real problem because in the previous derivation Reductio ad Absurdum is used two times. Besides, it can be thought that other controversial point related to Reductio ad Absurdum is that, from other perspectives, it is argued that the logical systems allowing resorting to Reductio ad Absurdum do not really describe human reasoning, since contradictions enable to conclude any proposition in formal logic (e.g., Johnson-Laird 2010). The idea seems to be that contradictions or incompatibilities, i.e., cases of x · ¬x, are not only linked in logic to Reductio ad Absurdum, but also to the Ex Contradictione Quodlibet principle. However, I think that this criticism is only opportune for a theory claiming that human beings reason following classical logic, standard propositional calculus or systems such as that of Gentzen (1935). Indeed, in those cases, any formula

can be supposed and, if it causes a contradiction, its negation can be drawn. Nevertheless, in mental logic incompatibilities only refer to Reductio ad Absurdum, and not to Ex Contradictione Quodlibet. In this last logic, any proposition cannot be assumed. A proposition can only be supposed if it can be true, and "Nothing follows from a contradiction except that some assumption is wrong" (Braine & O'Brien 1998c: 206). Therefore, based on mental logic, criticisms such as this one are not true problems. The difficulties are facts such as those indicated, i.e., the fact that Reductio ad Absurdum is hard to apply, the fact that it is not often used, and the fact that the previous deduction requires it to be applied two times.

As far as vE is concerned, it can be said that there is a Core Schema in mental logic that can correspond to it. That schema is schema 5 in Braine and O'Brien (1998b) and can be expressed, with other symbols, as follows:

$x_1 \vee \ldots \vee x_n$, $x_1 \rightarrow y, \ldots, x_n \rightarrow y$ // Ergo y

There is no doubt that this schema is very akin to vE. The problem is that, in modus tollendo ponens, the premises $x_1 \rightarrow y, \ldots, x_n \rightarrow y$ do not appear. They need to be made in some way (steps 3–7 and 8–9 in the previous deduction), and, undoubtedly, this means an additional effort.

It is hence evident that, although the system presented by Braine and O'Brien (1998b) allows proving modus tollendo ponens, that deduction is very hard to do in their system, and, according to the general theses and predictions of the mental logic theory, such a demonstration is very unlikely to be done. Regardless the fact that human reasoning does not seem to make inferences with so many steps in an automatic way, the empirical results reported in Braine and O'Brien (1998b) and in Braine, Reiser, and Rumain (1998) suggest that modus tollendo ponens is a simple and basic rule that only requires one step to be applied (that is, that people tend to infer y directly from x v y and ¬x). Individuals appear to solve reasoning problems involving modus tollendo ponens very quickly and, in addition, the percentage of errors in this kind of problems is very low. In this way, it can be thought that, for these reasons, mental logic assumes that the following argument is a Core Schema:

$x_1 \vee \ldots \vee x_n$, $\neg x_i$ // Ergo $x_1 \vee \ldots \vee x_{i-1} \vee x_{i+1} \vee \ldots \vee x_n$

Indeed, Braine and O'Brien (1998b) state that a schema similar to this one (with other symbols) is clearly a Core Schema of mental logic (in particular, it is their Core Schema 3) whose percentage of errors is only 2,5%. It is obvious that this schema corresponds to modus tollendo ponens and the fact that it can be considered to be a basic Core Schema enables to understand why the Stoics thought that it is an *indemonstrable*. As said, maybe modus tollendo ponens could be demonstrated in mental logic system. However, empirical evidence and experimental results indicate that it is usually applied in a rapid way, and that it is

a schema naturally used by human beings.

## *Modus ponendo tollens (1)*

In the version 1 of modus ponendo tollens, the first premise is a denied proposition. In particular, it is a denied conjunction. It was often expressed as follows:

"Not both the first and the second;
but the first;
therefore, not the second" (O'Toole & Jennings 2004: 476).

So, the logical form of this inference could be:

$\neg(p \cdot q)$, p // Ergo $\neg q$

Modus ponendo tollens (1) is an inference that can be proved in standard propositional calculus as well. The derivation could be the following:

[1] $\neg(x \cdot y)$ (premise)
[2] x (premise)
[3] y (assumption)
[4] $x \cdot y$ ($\cdot$I 2, 3)
[5] $\neg(x \cdot y) \cdot (x \cdot y)$ ($\cdot$I 1, 4)
[6] $\neg y$ (RA 3–5)

Again, in principle, it could be thought that the system proposed by Braine and O'Brien (1998b) allows demonstrating modus ponendo tollens (1) and that, therefore, it is not a basic rule. $\cdot$I is a Feeder Schema in mental logic and Reductio ad Absurdum is a possible strategy in that same logic. Nevertheless, as said, mental logic considers Reductio ad Absurdum to be a complex strategy that is not always used and that is not applied by every individual. In this way, it seems that, when reasoners face to premises such as $\neg(x \cdot y)$ and x, they resort to a simple schema that allows them to derive $\neg y$. The empirical results reported by Braine and O'Brien (1998b) and Braine et al. (1998) suggest that this is the case and that people do not really follow the previous six steps. Because of such results, other mental logic Core Schema—schema 4 in Braine and O'Brien (1998b)—has a form similar to this one:

$\neg(x_1 \cdot \ldots \cdot x_n)$, $x_i$ // Ergo $\neg(x_1 \cdot \ldots \cdot x_{i-1} \cdot x_{i+1} \cdot \ldots \cdot x_n)$

It is not hard to note that modus ponendo tollens (1) can be directly related to this Core Schema, which, according to Braine and O'Brien (1998b) has an error rate of 4%. It hence is also clear why modus ponendo tollens (1) is an *indemonstrable* in Stoic Logic.

## *Modus ponendo tollens (2)*

Again the first premise is a disjunction. The problem now is that the disjunction is exclusive. The usual wording of modus ponendo tollens

(2) is this one:

"Either the first or the second;
but the first;
therefore, not the second" (O'Toole & Jennings 2004: 476).

Obviously, this argument is only valid if its disjunction is exclusive. Thus, its formal structure could be as follows:

x $\underline{\vee}$ y, x // Ergo ¬y

Where '$\underline{\vee}$' stands for exclusive disjunction.

But it can be stated that disjunction is exclusive in modus ponendo tollens (2) not only because, according classical logic, its formal structure requires it, but also because it seems that all disjunctions are exclusive in Stoic logic. We have some testimonies in this regard (most of them mentioned by O'Toole & Jennings 2004). For example, Gellius, speaking about disjunctions, in *Noctes Atticae* 16.8, states that "*Ex omnibus, quae disiunguntur, unum esse verum debet, falsa cetera*". It is absolutely clear that what Gellius means is that, in a particular disjunction, only one disjunct can be true. All the other disjuncts must be false. Other example can be taken from Galen, who, in *Institutio Logica* 5.1, says the same idea again, i.e., that "… *τῶν διεζευγμένων εν μόνον ἔξόντων ἀληθές*,…", that is, that, in disjunctions, only one disjunct is true. Of course, more examples can be offered, but I think that these two examples are representative enough to understand the Stoic view about disjunctions.

In any case, the fact that the Stoics consider all disjunctions to be exclusive can be, in principle, problematic because disjunctions are inclusive in systems such as standard propositional calculus. Nevertheless, as it is known, the problem disappears if we take the following equivalence into account:

(x $\underline{\vee}$ y) = (x $\vee$ y) · ¬(x · y)

Certainly, standard propositional calculus can work with exclusive disjunctions by virtue of this equivalence. Thus, it can be said that modus ponendo tollens (2) is not also indemonstrable in classical logic. The derivation can be this one:

[1] (x $\vee$ y) · ¬(x · y) (premise)
[2] x (premise)
[3] ¬(x · y) (·E 1)
[4] …

Where '·E' is the conjunction elimination rule (x · y // Ergo x).

From step 4 on, the deduction is the same as that of the previous section, i.e., as that of the modus ponendo tollens (1). So, the same arguments and criticisms could be repeated here. Nonetheless, I think that the points that are important to comment in this case are the following:

On the one hand, if disjunctions are always exclusive in Stoic logic,

it could be thought that this fact affects modus tollendo ponens too. However, this is not a problem, since, as it can be noted, it does not matter whether the disjunction in modus tollendo ponens is inclusive or exclusive. The arguments and comments indicated in the corresponding section continue to be valid even if the disjunction of the first premise of modus tollendo ponens is exclusive.

On the other hand, the equivalence $(x \veebar y) = (x \vee y) \cdot \neg(x \cdot y)$ can be assumed in mental logic as well. This assumption would not cause difficulties to the mental logic theory. In this theory, ·E is other Feeder Schema and, therefore, there need be no additional problems in this way. The only aspect that would have to be highlighted is that the mental logic theory would not accept deductions as large as that corresponding to the derivation in classical logic of ¬y from $[(x \vee y) \cdot \neg(x \cdot y)]$ and x. According to mental logic, in the previous deduction, reasoners would apply schema 4 and, in step 4, would draw ¬y. So, mental logic schema 4 and the previous equivalence not only allow understanding why the Stoics thought that modus ponendo tollens (2) was an *indemonstrable* too, but also why modi ponendo tollens (1) and (2) are so linked. Both of them refer to the logical form $\neg(x \cdot y)$ and hence to a Core Schema, schema 4, in the system proposed by Braine and O'Brien (1998b).

## *Modus tollens*

This is the *indemonstrable* that is more difficult to explain because, as mentioned, cognitive science literature shows that people do not often make this inference correctly. Its usual expression is this one:

> "If the first, the second;
> but not the second;
> therefore, not the first."
> (O'Toole & Jennings 2004: 476).

Its logical form hence is as follows:

$x \rightarrow y, \neg y$ // Ergo $\neg x$

Given that modus tollens can be proved in standard propositional calculus and does not correspond to any Core Schema or to any schema of other type in mental logic, it can be argued that, by considering it to be one of the five *indemonstrables*, the Stoics made a mistake. However, it can also be thought that the Stoics had any reason to adopt modus tollens, and the aim of this section is to check whether or not that reason can be found.

As it is well known, modus tollens is not a basic rule in standard propositional calculus and its conclusion must be derived by means of several steps. The usual inferential process attributed to it is akin to this one (see, for example, Byrne & Johnson-Laird, 2009, or López-Astorga, 2013):

[1] x → y (premise)
[2] ¬y (premise)
[3] x (assumption)
[4] y (MP 1, 3)
[5] y · ¬y (·I 2, 4)
[6] ¬x (RA 3–5)

Where 'MP' means 'modus ponens'.

Thus, it is clear that, following classical logic, modus tollens is a derived rule and is not as basic as, for example, modus ponens (which, as it can be noted, needs to be used in the deduction corresponding to modus tollens). The problem in this case is, as said, that is not even a schema in mental logic. The inference is, of course, possible in mental logic, but, as in the case of standard propositional calculus, it depends on Reductio ad Absurdum and modus ponens, which means that it is an inference that is hard to apply and less frequent than others. One might ask why the Stoics thought that it is one of the *indemonstrables* and so basic.

It appears that the Stoics analyzed problems such as this one, since they were very concerned with the criteria that conditional propositions had to fulfill. Perhaps, they already noted that people do not always use modus tollens and offered a solution. Nevertheless, if we pay attention to ancient sources, it seems that their solution was related to the characteristics that a proposition needed to have to be considered as a conditional, and not to the *indemonstrables* themselves. In this way, one might suppose that the idea was that modus tollens was only applied when the first premise of the argument was really a conditional. If that was not the case, modus tollens was not used. This is my hypothesis and it is based on criteria such as that mentioned by Diogenes Laërtius at 7.73: "*συνημμένον οὖν ἀληθές ἐστιν οὗ τὸ ἀντικείμενον τοῦ λήγοντος μάχεται τῷ ἡγουμένῳ, οἷον 'εἰ ἡμέρα ἐστί, φῶς ἐστι.*'" What Diogenes Laërtius indicates is that an actual relation between the antecedent (*ἡγούμενον*) and the consequent (*λῆγον*) is needed. As I interpret this quote, without that relation, it is not possible to state that the proposition is a real conditional. Thus, it can be understood that the Stoic criterion is that, if the consequent is denied, the antecedent must denied too. O'Toole and Jennings' (2004) thesis on this point is very illustrative. According to them, the key seems to be the translation of the word '*μάχεται*', which is interpreted as 'conflicts' and refers to "some degree of common content" (O'Toole & Jennings 2004: 492) between the two clauses of conditional.

Undoubtedly, Diogenes Laërtius' example at 7.73, i.e., 'If it is day, it is light' (O'Toole & Jennings' 2004, translation) is very clear. If it is not light, then necessarily it is not day. Therefore, it can be said that, according to the Stoics, a conditional such as x → y is a real conditional only when it is also true that ¬y → ¬x. So, it appears that modus tollens is applied only when this last requirement is fulfilled. Equally,

from this perspective, it is obvious the reason why modus tollens is not used in some cases. When the relation between the antecedent and the consequent is random, the use of modus tollens is not secured. For example, in the proposition 'If I wear white trousers, then I wear red shoes', there is no an evident relation between the then-clause and the if-clause. The fact that I do not wear red shoes does not necessarily involve that I do not wear white trousers. However, in Diogenes Laërtius' example, the situation is different. If it is not light, as said, then necessarily it is not day. In this last case, modus tollens can be applied in a rapid and automatic way and without effort. Nevertheless, in the case of the white trousers and the red shoes, it is obviously harder to use.

It can be thought that the Stoics were considering cases similar to those in which an invited inference can be found (Geis & Zwicky 1971) or in which the phenomenon of conditional perfection happens (e.g., Auwera 1997a, 1997b; Horn 2000; López-Astorga 2014; Moldovan 2009), that is, cases in which the conditional leads to propositions such as $\neg x \rightarrow \neg y$ or it is transformed into a biconditional. As it is well known, when a conditional such as $x -> y$ is perfected, it is transformed into $(x \rightarrow y) \cdot (y \rightarrow x)$, or, if preferred, into $x \leftrightarrow y$. Of course, this could be an interesting idea, since, for example, a perfected conditional leads one to think that only two scenarios are possible: a scenario in which both x and y are true, and a scenario in which both x and y are false. Thus, if the first premise is $x \leftrightarrow y$ and the second one is $\neg y$, it is clearer that only one option is possible: $\neg x$.

However, I think that the explanation that can be offered from the mental logic theory is simpler and has a more evident link to Diogenes Laërtius' previous quote. In mental logic, modus tollens is not, as indicated, an accepted schema. Nonetheless, the mental logic theory can explain why this rule is applied without difficulties in certain cases. The theory admits that pragmatics plays an important role in human inferential processes (Braine & O'Brien, 1998d) and, therefore, that pragmatics can provide information, i.e., some premise, which is not explicitly mentioned in the inference. In this way, it can be stated that modus tollens is only easily used when pragmatics refers to a premise such as $\neg y \rightarrow \neg x$. Thus, if Diogenes Laërtius' example were the first premise in a modus tollens inference, the true deduction could be as follows:

[1] $x \rightarrow y$ (premise)
[2] $\neg y$ (premise)
[3] $\neg y \rightarrow \neg x$ (pragmatic premise)
[4] $\neg x$ (MP 2, 3)

Step 3 indicates that reasoners, by virtue of their general knowledge, know that if it is not light, then it cannot be day. And this last pragmatic premise allows deriving, by means of a simple application of modus ponens, $\neg x$ in step 4.

So, it can be said that the Stoics considered modus tollens to be an *indemonstrable* because they thought that it could only be used with real conditionals, i.e., with relations between x and y involving both x → y and ¬y → ¬x. Based on the mental logic theory, however, it is not necessary to distinguish between real and false conditionals. When a conditional refers to a pragmatic premise such as ¬y → ¬x, modus tollens appears to be used without effort. Nevertheless, what really happens is that the pragmatic premise allows applying modus ponens. It is evident that, if this last argument is accepted, it is easy to understand why the Stoics assumed that modus tollens was an *indemonstrable*. Although both accounts—that of Stoic logic and that of mental logic—are different, both of them share an important idea: the reference to ¬y → ¬x is needed to directly derive ¬x from x → y and ¬y. Without that reference, modus tollens is problematic because it can be thought that the conditional is not a true conditional (Stoic logic) or that ¬x cannot be concluded by means of just one or two simple steps (mental logic). The proponents of the mental logic theory could hence state that the propositions that the Stoics took as real conditionals are actually conditionals that refer to a pragmatic premise such as ¬y → ¬x.

But it is also interesting that, from frameworks such as Stoic logic and mental logic, other problems related to modus tollens commented in cognitive science literature can be solved as well. For example, Johnson-Laird and Byrne (2002) and Espino and Byrne (2013) mention inferences with the formal structure of modus tollens in which ¬x is never concluded. Such inferences often have a first premise, i.e., the premise corresponding to the conditional proposition, which can be considered to be difficult or controversial. A clear case of premise of this kind is this one:

"If Rachel is in Brazil she is not in Rio" (Espino & Byrne 2013: 102).

If an argument of modus tollens with this proposition as its first premise is thought, the conclusion that is derived is hard to accept. In particular, the inference would be as follows:

[1] If Rachel is in Brazil, then she is not in Rio (premise)
[2] Rachel is in Rio (premise)
[3] Rachel is not in Brazil (MT 1, 2)

Obviously, 'MT' means 'modus tollens'.

As it can be noted, steps 2 and 3 are absolutely incompatible, since it is not possible to be in Rio and not to be in Brazil. According to Stoic logic, the solution of this problem is evident: the denial of the consequent (she is in Rio) does not involve the denial of the antecedent (Rachel is not in Brazil). So, the first premise is not an actual conditional and modus tollens cannot be applied.

Nevertheless, following mental logic, the solution is also obvious. There is a pragmatic premise, but that premise is not y → ¬x (the antecedent of this last formula is y, and not ¬y, because the consequent

of the first premise states that she is not in Rio and hence is denied), which explains why modus tollens is not immediately applied. The true pragmatic premise is in this case $y \rightarrow x$ (i.e., 'If Rachel is in Rio, then she is in Brazil'), since, as said, a situation in which Rachel is in Rio and is not in Brazil cannot be thought. Therefore, based on the mental logic theory, it can be argued that the actual inferential process would be this one:

[1] $x \rightarrow \neg y$ (premise)
[2] $y$ (premise)
[3] $y \rightarrow x$ (pragmatic premise)
[4] $x$ (MP 2, 3)

As shown in step 4, a simple application of modus ponens leads reasoners to conclude that Rachel is in Brazil. And this shows why it is so unusual that $\neg x$ (Rachel is not in Brazil) is drawn in this type of inferences. Obviously, the process could continue and, in step 5, $\neg y$ could be inferred from steps 1 and 4 by means of modus ponens. Nonetheless, in that case, a contradiction (steps 2 and 5) would be found, which would indicate that a premise is false (for example, that of step 1).

In any case, what is important is that, as explained in the previous pages, the mental logic theory enables to understand the reasons that leaded the Stoics to state that the five arguments reviewed—modus ponens, modus tollendo ponens, modus ponendo tollens (1), modus ponendo tollens (2), and modus tollens—were indemonstrable. Four of them are demonstrable in standard propositional calculus, but, as claimed by the mental logic theory, people do not reason paying attention to the principles and rules of classical logic.

## *Conclusions*

As commented above, only modus ponens seems to be an indisputable basic schema, since it is so in standard propositional calculus. Modus tollendo ponens, the two versions of modus ponendo tollens, and modus tollens can be proved in that calculus. However, given that modus tollendo ponens, modus ponendo tollens (1), and modus ponendo tollens (2) are Core Schemata in mental logic, the only problem appears to be modus tollens.

Indeed, if we assume that human mind does not follow classical logic, but mental logic, it is not difficult to understand why the Stoics considers the first four arguments (all but modus tollens) to be so basic. Nevertheless, this last idea requires two points to be taken into account. Firstly, it is true that disjunctions are exclusive in Stoic logic. Nonetheless, exclusive disjunctions are possible in mental logic. It is only necessary to attribute to them the logical form $(x \vee y) \cdot \neg(x \cdot y)$. This logical form makes the two versions of modus ponendo tollens very similar and allows one to note that they really refer to the same schema in mental logic (schema 4 in Braine & O'Brien 1998b). Secondly, as far

as modus tollendo ponens is concerned, it does not matter whether disjunction is exclusive or inclusive. The corresponding schema (schema 3 in Braine & O'Brien, 1998b) can be used without difficulties both when it is exclusive and when it is inclusive.

Therefore, as mentioned, the only controversial *indemonstrable* is modus tollens. However, as also commented, it is not hard to understand why it is an important argument for the Stoics. According to them, an actual conditional is that in which there is a clear link between the antecedent and the consequent, and in which ¬y is obviously incompatible with x. In this way, from the perspective of mental logic, what Stoic logic claims is that a conditional is only true if it is linked to a pragmatic premise with the logical form ¬y → ¬x. Thus, it seems that modus tollens is applied, but the schema that is really used is modus ponens. So, because it is very easy to deduce ¬x from x → y, ¬y, and ¬y → ¬x, the reasons why the Stoics assumed that modus tollens was an *indemonstrable* are evident.

In this way, we can think about an extension of mental logic including modus tollens. The idea would be to consider modus tollens to be a valid schema provided that ¬y is incompatible or inconsistent with x, i.e., provided that the Stoics' requirement is fulfilled. Nevertheless, the mental logic system described in Braine and O'Brien (1998a) does not need to assume this new rule. That system admits that pragmatic premises play a role in human reasoning, and that, as indicated, if ¬y → ¬x is accepted as a pragmatic premise in an inference with the logical structure of modus tollens, just modus ponens (which is schema 7 in Braine & O'Brien 1998b) must be applied for drawing ¬x. From this point of view, to add this new rule would only make the mental logic system unnecessarily more complex, without giving it more predictive or explicative scope.

In any case, paying attention to the Stoics again, it can be said that they were aware that the material interpretation of conditional is problematic. According to that interpretation, if the antecedent of a conditional is false, it is absolutely guaranteed that the conditional in entirety is true. Therefore, a proposition such as 'if elephants can fly, then human beings are oviparous' is necessarily true, since it is false that elephants can fly. Maybe cases such as this one leaded the Stoics to assume their criterion indicated by Diogenes Laërtius at 7.73. Following that criterion, the previous conditional would not be a real conditional. The reason is that the fact that human beings are not oviparous does not have any link or relation to the possibility that elephants can fly. The proponents of mental logic also noted these difficulties and rejected the material interpretation of conditional as well. Based on the mental logic theory, it cannot be stated that human beings reason considering the traditional truth tables (which, as it is well known, are consistent with the material interpretation). Human reasoning follows syntactic rules, and, in particular, the syntactic schemata that experimental re-

sults reveal (not all the rules of calculi such as standard propositional calculus). Undoubtedly, this is an important point, and, given that both an ancient theory (Stoic logic) and a current theory (mental logic) agree on it, it can be worth continuing to take this thesis into account.

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# *Resisting the Restriction of the Propositional Attitude Class*

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*It is a standard view among philosophers that an attitude is propositional if a that clause could represent its content. One way of challenging this view is to argue that attitudes whose content can be represented in that way have categorically different content. A number of authors adopted such a strategy and imposed various restrictions on the propositional attitude class. In this paper, I will argue that such restrictions are not tenable because the arguments that are used to support them turn against such restrictions as well. As a consequence, if one cannot adequately deal with these arguments from the perspective of the standard view, one is forced to discard generally the propositionality of attitudes, perhaps even their relational nature. I will consider a strategy for resolving this challenge in favour of the standard view.*

**Keywords:** Content, facts, propositional attitudes, propositional attitude reports, propositions.

## 1. *Introduction*

The predominant way in which philosophers from Frege onwards thought about attitude reports suggests the semantic thesis that whenever a that clause complements an attitude verb, as in the report

(1) Lucy believes that water is not necessarily $H_2O$,

the clause stands for a proposition and the verb for a propositional attitude. The reported attitude here would be propositional because it has a proposition for its content, namely the proposition that the complement clause picks out. So, to believe that water is not necessarily $H_2O$ is to believe the proposition that water is not necessarily $H_2O$. Abstracting from this particular case leads to the metaphysical thesis that (for any agent A and any attitude V) *when A V's that p, A V's the*

*proposition that p*. Since that thesis rests on the idea that at least some attitudes are relations between agents and propositions, I will call it *the proposition thesis*. However, exactly which attitudes are propositional? According to the previous semantic thesis about attitude verbs and clausal complements, the answer is attitudes reportable with a sentence ⌜A V's that *p*⌝. I will call the view that combines the above semantic and metaphysical theses *the standard relational view*. On this view,

(2) John remembers that Putnam was an externalist,
(3) Jane fears that her arguments are inconclusive,
(4) Tracy hopes that internalism is true,

would count as *propositional* attitude reports, just as (1) and similar sentences do, and memory, fear, or hope, just as belief and other related attitudes, as *propositional* attitudes.

My paper is a defence of the standard relational view from a family of arguments championed by a number of its critics. These arguments are supposed to demonstrate that the above semantic and metaphysical basis of the standard view have consequences sufficiently problematic to make the view untenable. I think that these arguments can be explained away in favour of the standard view. In case they could not, I will show that their consequences would be more devastating than many of their proponents thought. In section 2, I will set forth the arguments in question. In section 3, I will show how these arguments (or their cognates) are as problematic for views of many of their proponents as they are problematic for proponents of the standard view. In section 4, I will propose a strategy for dealing with such arguments that supports the standard view. If this strategy is on the right track, it eradicates these arguments as valid reasons for any departure from the standard view. In case these arguments could not be adequately dealt with from the perspective of the standard view, a radical reconsideration of the semantics of attitude reports *and* metaphysics of "propositional" attitudes would be in order.

## 2. *Three arguments*

The first argument against the standard relational view runs as follows:[1] The standard view is committed to truth of the explication principle: *If a report ⌜A V's that p⌝ can be explicated as ⌜A V's the proposition that p⌝ without losing the initial meaningfulness, and if the two are necessarily equivalent, the attitude for which ⌜V⌝ stands for*

[1] Concerning the first argument, its various formulations, and interpretations, see Bach (2000b: 120), Harman (2003: 171–172), King (2007: 137–163), McGrath (2012: sect. 5), McKinsey (1999: 530), Merricks (2009: 211–215), Moltmann (2013: 126–132), Prior (1971: 16), Rosefeldt (2008: 304–309), and Schiffer (2003: 92–95; 2006: 284–286).

*is propositional*.[2] This principle emerges from the proposition thesis in the course of semantic ascent; with it, the metaphysical thesis enters the formal mode that allows one to focus on semantic issues. Now, if (1)–(4) are propositional attitude reports (as the opening semantic thesis alleges) and if the explication principle is true, the reports

(1*) Lucy believes the proposition that water is not necessarily $H_2O$,
(2*) John remembers the proposition that Putnam was an externalist,
(3*) Jane fears the proposition that her arguments are inconclusive,
(4*) Tracy hopes the proposition that internalism is true,

straightforwardly follow. Indeed, (1*)–(4*) should say something true whenever their corresponding reports (1)–(4) do. The only difference between the corresponding reports resides in expressions that rigidly pick out (one and the same) content of an attitude. For example, the clause "that water is not necessarily $H_2O$" and the description "the proposition that water is not necessarily $H_2O$" both pick out one and the same thing—the content of Lucy's belief. Add to that that a context ⌜A V's ___⌝, unlike ⌜A V's that ____⌝, is extensional,[3] and it follows that (as the argument is often formulated) substituting ⌜that $p$⌝ for ⌜the proposition that $p$⌝ in ⌜A V's that $p$⌝ should not cause the change of truth-value or loss of the initial meaningfulness; but *sometimes* it does and that is puzzling. Whereas the corresponding pair (1)/(1*) satisfies the explication principle because (1) (and belief reports in general) can be explicated as (1*) without *ever* changing its truth-value, the remaining pairs do not.

Take the fear report as an example. (3) might say something true whereas at the same time and world (3*) might say something false. Intuitively, one might fear that $p$ and (at the same time and world) fear no proposition or one might fear the proposition that $p$ without fearing that $p$. No doubt, speakers straightforwardly hear the difference between (3) and (3*); they hear it because these reports say substantially different things.[4] Add to that a reasonable premise that if anything

[2] I do not think that "explication" here implies *synonymy*, so, following King (2007: 137–140), I set as a condition that the corresponding reports only have to be *necessarily equivalent*. I find it plausible that the clause ⌜that $p$⌝ and the description ⌜the proposition that $p$⌝ function differently. Although they both pick out one and the same thing, they make different contributions to propositions that the corresponding reports express.

[3] One can show that ⌜A V's ___⌝ is extension and ⌜A V's that ___⌝ intensional by comparing the pair ⌜A believes [that $p$]⌝ / ⌜A believes [the proposition that $p$]⌝ with the pair ⌜B believes that [A believes that $p$]⌝ / ⌜B believes that [A believes the proposition that $p$]⌝. Reports in the former pair will always be necessarily equivalent, no matter what A knows or believes about propositions. Reports in the latter pair will not because B may lack any knowledge about propositions, be unaware of their existence, or refuse to grant it. Accordingly, B could have one of these beliefs without having the other.

[4] Concerning the fear case, see King (2007: 140–141), Merricks (2009: 211–214), Moffett (2003: 83), Moltmann (2013: 127–128), Rosefeldt (2008: 304), and Schiffer (2003: 93; 2006: 285 n. 31).

stands for a proposition exclusively and rigidly, it is a description ⌜the proposition that *p*⌝, and it follows that in a report ⌜A fears that *p*⌝ the clause stands for no proposition. Otherwise, the case where ⌜the proposition that *p*⌝ supplants ⌜that *p*⌝ should not cause any problem. However, it does, and so, back at the metaphysical level, one should distinguish *fearing that p* from *fearing the proposition that p*, which shows that fear is never a propositional attitude. The same goes for the pair (2)/(2*) and a number of other attitude reports (e.g. reports about anticipating, feeling, holding, or judging). As for the pair (4)/(4*), the situation seems to be even worse since (4*) is not even a grammatical, meaningful construction.[5] So, if this argument is conclusive, it supports the rejection of the standard relational view because this view identifies instances of many attitudes as propositional although, the considered cases show, they *never* are. At best, given the argument, one could say that sometimes *V-ing that p* comes down to *V-ing the proposition that p* and sometimes it does not. However, that is not the view with which we started.[6]

Some philosophers who embraced the first argument against the standard relational view thought that the explication principle it is based on could tell us not only which attitudes really are propositional, but also identify the appropriate kind of content of attitudes that are not propositional, only if one slightly modifies it. The modification of the principle should consist in mentioning a kind of entity other than the proposition. Then we could see what attitudes can have it as their content. This idea enables one to formulate another argument against the standard view but with a positive twist. It would show us not only that some "propositional" attitudes are of another kind, but also of what kind they are. Here is a popular modification of the explication principle concerning factive attitudes:[7] *If a report ⌜A V's that p⌝ can be explicated as ⌜A V's the fact that p⌝ without losing the initial meaningfulness, and if the two are necessarily equivalent, the attitude for which ⌜V⌝ stands for is factive.* In conjunction with the previous explication principle, we could conclude the following. Just as belief would be a propositional attitude because (1*) sound fine and memory would not

[5] Concerning the hope case, see King (2007: 139, 142–143), Moltmann (2013: 127–128), Rosefeldt (2008: 306–311), and Schiffer (2003: 92; 2006: 284–285). The cases that lead to same consequences include attitudes such as guessing, predicting, wishing, or concluding.

[6] The same problem would emerge if one would, instead of propositions, talk about properties, states of affairs, sets of possible worlds, sentences, utterances, statements, mental representations, etc.

[7] Concerning this particular modification, see Harman (2003: 171–172), King (2007: 149–153; 2014: 64–70), McGrath (2012: sect. 5.4), Moffett (2003: 81–84), Moltmann (2013: 128), Parsons (1993: 453–457), Vendler (1972: 112–116; 1979: 223–229). See also Kiparsky and Kiparsky (1971): The general idea is that ⌜V⌝ stands for a factive attitude only if ⌜A V's that *p*⌝ cannot say something true unless it is true that *p*. By itself, however, this is not enough to establish the thesis about the categorical difference in content between factive and non-factive attitudes.

because (2*) does not capture the point of (2), the latter attitude would be factive because

(2#) John remembers the fact that Putnam was an externalist

sounds fine, unlike

(1#) Lucy believes the fact that water is not necessarily $H_2O$

that does not capture the point of (1). Of course, one might protest that this does not show that memory is not a propositional attitude since facts are nothing but *true propositions*. Such response, however, will not do because

(2°) John remembers the true proposition that Putnam was an externalist

sounds just as bad as (2*).[8] Taken together, then, the two arguments seems to show that only some of the attitudes that the standard relational view identifies as propositional really are of the kind, and of those that are not, at least some are factive attitudes.[9]

Finally, to explicitly state the kind of content of an attitude, as with the above explication principles, is not the only way to identify an attitude (or to discard it) as propositional. Merricks (2009: 214–215) suggested that focusing on features of the content of propositional attitudes provides the same result. Propositions are the content of propositional attitudes and traditionally they were considered to be *abstract* entities. So one should expect that abstract entities are the fitting content of propositional attitudes; attitudes that fail to meet this requirement cannot be propositional. The explication principle emerging from this observation would be: *Whenever a report ⌜A V's that p⌝ and its generalised explication ⌜A V's an abstract entity⌝ are not both meaningful and necessarily equivalent, the attitude for which ⌜V⌝ stands for is not propositional.* If propositions are essentially abstract, the criterion established with this principle seems reasonable. From "Lucy hit Maggie" one can generalise and infer "Lucy hit a girl" without losing the initial meaningfulness and truth-value (assuming that Maggie is essentially a girl). Equally so, one should be able to generalise and from ⌜A V's that *p*⌝ infer ⌜A V's an abstract entity⌝ if what the clause in ⌜A V's that *p*⌝ stands for is essentially abstract.

[8] See Harman (2003: 171), King (2014: 66–68), McGrath (2012: sect. 5.4.), and Moffett (2003: 83–84). For a number of arguments for the semantic difference between factive and propositional contexts or the metaphysical difference between facts and propositions, see Asher (2000: 125–129) and Fine (1982: 46–49).

[9] Apparently, one can go still further (see Harman 2003: 173; King 2007: 151; McGrath 2012: sect. 5.4; Moffett 2003: 82; and Moltmann 2013: 124–125, 128). Attitudes such as *fear* and *imagining* fail to satisfy both of the above principles. So they are neither propositional nor factive. Nevertheless, they satisfy the principle: *If a report ⌜A V's that p⌝ can be explicated as ⌜A V's the possibility that p⌝ without losing the initial meaningfulness, and if the two are necessarily equivalent, the attitude for which ⌜V⌝ stands for is "possibilistic".* For example, "Jane fears the possibility that her arguments are inconclusive", unlike (3*), seems to capture the point of (3).

Some attitudes meet this explication principle. Consider the conditional

(5) when Lucy believes that water is necessarily $H_2O$, she believes an abstract entity.

If propositions are contents of beliefs, and if they are essentially abstract entities, the consequent of (5) should be true whenever its antecedent is true. If there could be a case where the antecedent of (5) would be true, and its consequent false, belief would not be a propositional attitude. Intuitively, no such case exists. What about other attitudes that the standard relational view identifies as propositional? Consider the conditional

(6) when Jane fears that her arguments are inconclusive, she fears an abstract entity.

The same problem that the first argument raised appears again here. At the same time and world, the antecedent of (6) could be true and its consequent false. In other words, one could fear that *p* without fearing any abstract entity. Furthermore, consider the conditional

(7) when Tracy hopes that internalism is true, she hopes an abstract entity.

Unlike the consequent of (6), the consequent of (7) is not even grammatical. So, given cases such as (6) or (7), the following conclusion seems reasonable: If propositions are essentially abstract entities, fear, hope, and a number of other attitudes that the standard relational view treats as propositional, are, in fact, not propositional attitudes.[10]

What should we make of the three considered arguments? If the standard relational view is not the right one, as the arguments seem to suggest, what is?

## 3. *A slippery slope*

Many philosophers expressed dissatisfaction with the standard relational view, and many of them used the above arguments to support their positions. *Some* of them thought that the metaphysical part of the standard view is correct. They saw nothing problematic in the proposition thesis as long as we put it like this: *Only if V is a propositional attitude*, when A V's that *p*, A V's the proposition that *p*. Consequently, with respect to genuinely propositional attitudes, ⌜A V's that *p*⌝ and ⌜A V's the proposition that *p*⌝ would be necessarily equivalent. What they found incorrect was the class of attitudes that the standard view identified as propositional and to which the proposition thesis was ap-

[10] Another feature of propositions that could be exploited here in the same way is their *objectivity*. Also, it is worth noting that propositions are believable, assertable, meanable, and rejectable, but not hopable, fearable, or predictable. And "Julie fears something assertable (or asserts something fearable)" is not something that we would want to infer from "Julie fears and asserts that internalism is wrong".

plied. Recall, for proponents of the standard view, that class included (at least) *every* attitude whose instances could be reported with a sentence ⌜A V's that $p$⌝. However, arguments of the previous section, if conclusive, show that this cannot be the case if the attitudes we are in search for have *propositions* for their content and if their content is *abstract*. According to critics that accept the proposition thesis, only *some* of the attitudes reportable with ⌜A V's that $p$⌝ *are* propositional. So the view based on the proposition thesis should be appropriately restricted. One cannot thus straightforwardly read the nature of reported attitudes off the surface form of attitude reports. Only if the attitude reported with a sentence ⌜A V's that $p$⌝ is propositional, the clause in the report stands for a proposition. The mere occurrence of a that clause in some attitude report cannot guarantee that agent's propositional attitude is being reported.[11] In this section, I want to show that *such* departures from the standard view are not tenable if one builds them on some of the previous arguments. These arguments (or their cognates) undermine such restricted views as much as they support them and as much as they undermine the standard view.[12]

If one builds the case for the restriction of the standard relational view on the argument that there are factive attitudes that take facts rather than (true) propositions for their content, one faces the following problem. There are incontestably factive attitudes (e.g. realising, being sorry, proud, or glad) whose reports in conjunction with the fact-mentioning explication principle generate ungrammatical constructions, such as

(8) when John was sorry that Putnam was an externalist, he was sorry the fact that Putnam was an externalist.

Also, there are incontestably factive attitudes (e.g. knowledge or noticing and seeing in their non-perceptual sense) whose reports in conjunction with the same explication principle generate conditionals that are not necessarily true, such as

[11] In a sense, this would be the reversal of propositionalists' idea that the fact that a that clause does not typically (or at all) occur in a report ⌜A V's $o$⌝ (e.g. "Sam wants ice-cream" or "Joe desires coffee") cannot guarantee that a propositional attitude is not being reported. Propositionalists think that every attitude report is a propositional attitude report (see Grzankowski 2013 for a critical overview).

[12] The only version of the restricted relational view that *would not be* affected by the arguments of this and the previous section would be the one that treats as propositional only attitudes compatible with the proposition-mentioning explication principle. Such restricted view would treat other attitudes in a radically different way, not merely by changing the kind of their content. McKinsey (1999: 529) and Moltmann (2013: 151) proposed something along these lines. The defence of the standard relational view that I discuss in section 4 goes against such views as well. If that defence is on the right track, it undermines the very problem of the standard view that McKinsey and Moltmann took as the support for their proposal.

(9) when Maggie saw that Russell was a realist, she saw the fact that Russell was a realist.[13]

I do not see how "factivists" could deal with this problem except by maintaining that the style of argumentation exploited here is somehow infelicitous. Thereby, however, they would lose the main support for their position. Alternatively, they might grant that such argumentation is a good one but that it cannot support the factive idea and the standard view that would be restricted accordingly. That would, apparently, invite a more radical departure from the standard view. In any case, the previously considered support for this particular restricted relational view fails.[14]

Furthermore, we can grant that reports such as (2*)–(4*) show that the standard relational view is wrong because some attitudes that it identifies as propositional are not of the kind. If they were, reports such as (2*)–(4*) should sound fine when derived from (2)–(4). Granting this, however, still does not put attitudes such as memory, fear, and hope, aside as unproblematic for those who want to preserve the proposition thesis. Presumably, such philosophers want to defend the restricted relational view. But this restricted view should be considered (which seems to be inevitable) as part of the larger account of genuinely propositional attitudes (such as belief or assertion) and ostensibly propositional attitudes (such as fear or knowledge).[15] When they restrict the propositional attitude class, the proponents of such a view surely do not want to deny that ostensibly propositional attitudes are *relational* states that relate agents to *something*. However, that something has to have a category. Also, they cannot deny that at least some such attitudes are typically reported with a sentence ⌜A V's that $p$⌝. So the thing for which the clause in such cases stands for appears not to be something "logically simple" (a particular or an attribute). It must

[13] For this point see Kiparsky and Kiparsky (1971: 348), McGrath (2012: sect. 5.3), Moltmann (2013: 87, 128, 131, 144), Parsons (1993: 459 n. 14), and Rosefeldt (2008: 304). On the other hand, Harman (2003) and Moffett (2003) see nothing problematic in reports such as "Mary knows/realises the fact that three is even". Apparently, intuitions about meaningfulness and other semantic features of such reports vary. For example, Moltmann (2013: 124–125, 151) suggests that in the case of *noticing*, (8) would be acceptable. At one point, however, she suggests that it would not (2013: 128). To my ear, one could notice the fact that $p$ (if facts are a kind of thing that one could notice in the first place) without noticing that $p$ (or vice versa). The noun phrase here seems to trigger a different, perceptual reading of "notice", as in "Maggie noticed a strange man in the corner". Notice, by the way, that this report differs from "Maggie noticed that there is a strange man in the corner". The former one might say something true even when the latter one does not.

[14] For an additional argument against this version of the relational view, see Williamson (2000: 43).

[15] As I have already said, the only two exceptions that I am aware of would be McKinsey (1999) and Moltmann (2013). McKinsey would deny that ostensibly propositional attitudes are relational and Moltmann that they are relations to a single, proposition-like entity.

be something complex and structured, such as a fact, state of affairs, event, possibility, etc. In other words, some attitudes that would not be propositional would be *objectual*, such as loving (philosophy) or fearing (dogs). Other such attitudes would be *non-objectual*, e.g. fearing (that a dog will bite me) or hoping (that a dog will not bite me). All genuinely propositional attitudes would be non-objectual too. Moreover, whatever the kind of the content of non-objectual instances of ostensibly propositional attitudes would be, it seems mandatory for proponents of the restricted relational view to introduce the analogue of the proposition thesis for them.

In that case, the restricted relational view should be understood as part of the generalised relational view concerning non-objectual attitudes. That view would be based on the thesis that *for any attitude V (reportable with a sentence ⌜A V's that p⌝), when A V's that p, A V's the F that p* (where "*F*" stands for whatever kind of complex entity one takes to be the proper content of an attitude in question). However, how can one instantiate this thesis for ostensibly propositional attitudes that do not satisfy the initial explication principle? Is the content of such attitudes of a single kind *F* or should one expect variations in kind? To answer the latter question, one would have to pair *every* ostensibly propositional attitude V with a kind *F* to which its content belongs. In the previous section, I have mentioned two such candidates—the category of facts and the category of possibilities. However, there are ostensibly propositional attitudes that are neither factive nor "possibilistic". So what about them? Perhaps we could pair *some* of these attitudes with the appropriate explication principle (I am unaware of any such example). Nevertheless, we would still be left with the class of attitudes for which we could *never* appropriately instantiate the schema ⌜when A V's that *p*, A V's the *F* that *p*⌝. There would be no instances of the schema that are necessarily true. To support the generalised relational view, however, one would have to find, for *every* attitude report, some kind *F* that would make instances of the schema true.

As King (2007: 139, 142) and Schiffer (2003: 93; 2006: 285, 292) point out, any attitude verb that cannot be grammatically combined with a description ⌜the proposition that *p*⌝ (e.g. "complain", "hope", or "surprise"), cannot be combined with *any* other description (and most other noun phrases). For example, no matter how the conditional

(10) when Tracy hopes that internalism is true, she hopes the ___

is filled out, the result will be some ungrammatical construction. More interestingly, King (2007: 150–151) mentions cases, such as feeling, hearing, and indicating, for which the schema ⌜when A V's that *p*, A V's the *F* that *p*⌝ *can* be meaningfully (and so grammatically) instantiated. However, no matter what category we identify *F* with here, the resulting conditional will *never* be necessarily true. There will always be a world where e.g. Peg felt that Frege was wrong but where at the same time she did not felt the ___ (fill the blank at will). In that case,

the content of her feeling would be of no (explicable) kind *F*. That is clearly not an epistemological problem of not knowing the kind of the appropriate content of feeling (or other similar attitudes). The problem is a metaphysical one. No kind could in principle be identified as the kind of content of attitudes in question. Indeed, we could not even identify the content of attitudes in question as such-and-such *content*. All this is implausible; something has gone wrong.

The first two arguments against the standard relational view (namely, arguments based on the proposition and the fact mentioning explication principles) are clearly nonstarters *if* one wants to preserve the proposition thesis. Let us now follow the logic of the third argument.

If an entity is not abstract, it is reasonable to assume that it is *concrete*. So if fear, hope, memory, feeling, etc., are still considered to be relational states, it follows that when one fears that *p*, one fears something. Moreover, if that something is not abstract, it must be a *concrete* entity. From that it follows, for example,

(6*) when Jane fears that her arguments are inconclusive, she fears a concrete entity.

However, if one derives it from "Jane fears that her arguments are inconclusive", the report "Jane fears a concrete entity" seems just as problematic as "Jane fears an abstract entity". There will always be a world where Jane fears that her arguments are inconclusive and where at the same time she fears no abstract or concrete entity. Also,

(7*) when Tracy hopes that internalism is true, she hopes a concrete entity

is as ungrammatical as (7).[16] In that case, the mere removal of attitudes such as fear or hope from the propositional attitude class, even if it resolves the letter of the initial problem, cannot resolve its spirit.

The arguments considered in this section resemble in style arguments of the previous section. So, anyone who grants the former style of argumentation seems to be obliged to accept the latter arguments as well. Otherwise, one would have to deny that seeing is (sometimes) a factive attitude, that the abstract/concrete distinction exhausts the domain of entities, that some attitudes have content of some explicable kind, and even then one would not solve all the problems indicated here. If so, one should not understand the opening arguments against the standard relational view in the way that some of their proponents

[16] Furthermore, even if contents of various non-objectual attitudes categorically differ, each particular content of such attitudes is an *entity*. But explicating ⌜A V's that *p*⌝ as, for example, ⌜A V's the entity that the clause in $w_x$ at $t_x$ stands for⌝ turns out to be as problematic for a number of attitudes as explicating it as ⌜A V's the proposition that *p*⌝. The same goes for the generalisations ⌜A V's an entity⌝ or ⌜A V's entities⌝ (for similar examples see Moltmann 2013: 128 and Rosefeldt 2008: 311, 316). Should we take this as evidence that what a clause ⌜that *p*⌝ stands for is not an entity? If we want to preserve the generalised relational view, we should not.

have recommended. It is not just a particular kind or nature of the entity that "propositional" attitudes take as their content that is at stake, but the relational nature of such attitudes as well. Philosophers who were in the light of the previous arguments proposing more radical departures from the standard relational view precisely argued that not only do we need a different semantic analysis of "propositional" attitude reports, but also a different metaphysical thesis. Whatever they are, "propositional" attitudes are *not* relations between agents and propositions (or even proposition-*like* entities).[17] This could further mean one of the two things. Either *no* attitude that the standard relational view identifies as propositional would be something that relates agents to propositions/proposition-like entities or no such attitude would be something that *relates* in the first place.

## 4. *A way out*

If the considered arguments constitute a genuine problem, they do it for any version of the relational view. The moral of the two previous sections was *either* that there is something wrong with drawing metaphysical lessons from considerations based on the explication prin-

[17] One referee objected here that I have disregarded Bach's (2000b) semantics for propositional attitude reports. That semantic analysis rests on the idea that in attitude reports "that"-clauses merely *indefinitely describe* rather than specify the content of reported attitudes. Bach (2000b: 120) takes the first argument of section 2 to be a "striking linguistic evidence" against the standard relational view and a support for his modified relational view. I think that his and similar views suffer the same problem (Dožudić 2013: 103–104). Firstly, Bach does not specify the kind of content of "propositional" attitudes. All he says about it is: "since it is not clear what these 'things' are, I am reluctant to call them 'propositions'" (Bach 2000b: 122). (He conveniently ends another paper defending the same conception with the remark: "What, then, are belief contents, such that their contents can't be specified fully by 'that'-clauses, and how *can* belief contents be specified fully? Now that's a puzzle." (Bach 2000a: 108).) However, as soon as his view would be metaphysically completed in that respect—as soon as one would identify the kind of attitude's content—the same "striking linguistic evidence" would undermine it as well. Recall, one could never appropriately instantiate the schema ⌜when A V's that $p$, A V's the $F$ that $p$⌝ for a number of "propositional" attitudes. Secondly, whatever the kind of the content of "propositional" attitudes on Bach's view would be, the view would face the third argument of section 2 (or its cognates from this section). Bach's content of attitudes would surely be something abstract or concrete, objective or subjective, something believable or assertable, etc. Also, "that"-clauses are surely not the only devices that enable us to describe attitude's content indefinitely. So Bach would have to cope with reports such as "Garry hopes something abstract" or "Lucy fears a believable/fearable thing". Finally, Bach's argument that "that"-clauses do not specify attitude's content does not show that such clauses do not specify something outside attitude contexts. In fact, Bach (2000b: 132) allows that "that"-clauses function differently within and outside attitude reports, and suggests that such clauses do specify the relevant content outside such reports. However, the same "striking linguistic evidence" undermines that idea. We face problems analogous to those of pairs (2)/(2*) or (4)/(4*) in other contexts where "that"-clauses occur (see Rosefeldt 2008: 306 and Schiffer 2003: 93 for several such examples).

ciples (and so that there was no serious problem with the standard relational view in the first place) *or* that "propositional" attitudes are plainly not propositional (including proposition-like entities here too) and relational. In the latter case, a version of the adverbial, multiple-relational, or paratactic analysis of attitude reports would be in order. How one will resolve this dilemma depends on how one understands the previous arguments. I think that there are compelling reasons for thinking that so far considered criticism of the standard relational view (including its restricted versions) does not constitute a substantial, let alone decisive problem for it. Accordingly, this criticism would not call for some alternative analysis.

All arguments considered so far manifest the same style of argumentation. In fact we should treat them as exemplifications of one and the same phenomenon that I will call *the explication problem*. In outline, the problem is the following: According to the standard relational view, in a report ⌜A V's that $p$⌝, ⌜A⌝ stands for an agent, ⌜V⌝ for an attitude by which the agent is related to its content, and ⌜that $p$⌝ for the proposition that $p$—the abstract, objective, content of V. However, explicating numerous instances of ⌜A V's that $p$⌝ by stating the kind or the nature of their content in accordance with the standard view (what in practice means replacing ⌜that $p$⌝ in such reports for a noun phrase) results either in ungrammatical constructions or in reports that have substantially changed meaning and truth conditions. And all this happens although ⌜A V's ___⌝ is an extensional context, and ⌜that $p$⌝ and the corresponding noun phrases, such as ⌜the proposition that $p$⌝ or ⌜an abstract entity⌝, rigidly designate or apply to one and the same thing.[18] Now, if one could adequately explain this problem in a way that is compatible with the standard view, any criticism of that view that exploits it would fail. Here, I will consider one strategy of dealing with the explication problem that, I think, vindicates the standard relational view. It comes down to a slight rephrasing of the proposition thesis.

Here is a motivation for this strategy: Some philosophers have argued that there were a number of category mistakes related to principles of causation. In principles such as *if E causes F and F causes G, then E causes G* the subject and the object of the cause, according to them, are of different categories (namely, facts and events). If so, entities that cause (namely, facts) could not be caused entities (namely, events). In discussing such category mistakes, Harman (2003: 168)

[18] See the opening paragraph of section 2 for further clarifications of the explication problem. This problem is usually called the "substitution" or "substitution failure" problem (cf. King 2007, McGrath 2012, Moltmann 2013, and Schiffer 2003, 2006). In order to avoid confusing it with the more familiar substitution failure problem concerning the substitution of coreferential names in attitude reports, I prefer a different name. Also, I think that talk of *substitution* here might mislead one to think that the problem substantially depends on substituting descriptions for clauses (which, from the Russellian point, is quite controversial). That is not the case, so I adopt a more neutral talk in terms of *explication*.

in passing mentions a potential way out of the problem for those who think that causes and effects are of the same category. The idea is that one "might replace statements using the verb *cause* with statements using *is a cause of*, *(causally) leads to*, or *is (causally) responsible for*. Or, statements of the form *E causes F* are replaced by statements using constructions like *F is an effect of E*, *F is a result of E*, or *F is a consequence of E*". Such rephrasing of the initial sentence "*E* causes *F*" would make the category mistakes illusory and metaphysically irrelevant because it would expose them as the consequence of the particular *formulation* of a causal principle, not the principle itself.

It seems that we could adopt the analogous strategy in dealing with the explication problem. Prima facie, the strategy works. All that we need to do is rephrase the proposition thesis.[19] Initially, the thesis was put like this: *When A V's that p, A V's the proposition that p*. It was this formulation that led into the explication problem. Nevertheless, if that problem is a genuine one for the standard relational view, it should persist no matter how the proposition thesis is being rephrased (just as e.g. the Gettier problem persists however we rephrase the three traditional conditions for knowledge). However, as it turns out, it does not. Here is a rephrasing of the proposition thesis that in no way affects the originally intended metaphysical point but that bypasses problems discussed in previous two sections: (For any agent A and any attitude V) *when A V's that p, A stands in (or bears) the V relation to the proposition that p*.[20] Indeed, one may argue that the proposition thesis as initially formulated was nothing but a *shortened* statement of this alternative formulation. This would make sense because the rephrased proposition thesis, unlike the initial one, provides a fuller analysis of what it means *to V that p*. To wit, it explicates not only the kind of the content of V, but also V's relational nature. I seriously doubt that anyone who grants the initial proposition thesis would deny that rephrasing in this way adds anything unintended.[21]

Furthermore, the initial proposition thesis, strictly speaking, does not commit one to any particular view of propositions. So it would still

[19] Although here I talk about rephrasing the *thesis*, I mean rephrasing the *formulation* of the thesis. In the course of rephrasing the thesis itself should remain the same.

[20] Philosophers discussing the standard relational view occasionally do use constructions such as "stands in (or bears) the belief relation to the proposition" (cf. Fodor as cited in Bach 2000b, King 2007, McGrath 2012, McKinsey 1999, Merricks 2009, Rosefeldt 2008, Schiffer 2006). Such constructions come as a natural way of formulating the basic idea of the view.

[21] Perhaps we should not be surprised that supplanting a clause ⌜that $p$⌝ with a description ⌜the proposition that $p$⌝, that is of an entirely different grammatical category, at least sometimes requires adjustments to a context ⌜A V's ___⌝. The situation is similar in the case of supplanting a predicate with the corresponding abstract noun. For example, when supplanting the predicate "red" in "This car is red" with "redness", "This car is ___" becomes "This car instantiates (or participates in) ___". Otherwise, the sentence would be false.

be possible to subject that thesis to the adverbial interpretation (cf. Quine 1960: 216 and Prior 1971: 18–21), rather than take it as something that is not compatible with such interpretation. For proponents of the adverbial analysis, that would be mandatory. They certainly need to explain reports such as ⌜A V's the proposition that $p$⌝ or ⌜A V's the fact that $p$⌝ that are (at least the latter one) used even outside technical philosophical discussions (just as nominalists have to explain the explicit reference to universals). Therefore, instead of denying the truth evaluability or even the meaningfulness of such reports, they could accommodate them on their terms. Accordingly, a proponent of the adverbial analysis might construe ⌜V's the proposition/fact that⌝ as a functor that connects a singular term ⌜A⌝ and a sentence ⌜$p$⌝ that is here called a "proposition" or "fact" but interpreted as an entity compatible with the adverbial analysis, just as one can construe ⌜V's that⌝ that way. That was in a way Quine's (1995: 77) idea: "There is indeed a usage of 'proposition' that is useful and unobjectionable. It can be construed as denoting the sentences themselves, rather than their meanings, but it is used instead of 'sentence' when we are concerned with the sentence as an object of belief […] rather then with its morphology and syntax."[22] My rephrasing of the proposition thesis in principle precludes such an analysis since it replaces the original attitude verb with a phrase ⌜stands in the V relation to⌝. So the proponents of the standard relational views should prefer it to the initial proposition thesis.

If one takes the rephrased proposition thesis as the basis for the standard relational view, the arguments of previous sections, i.e. the explication problem, in no way affects it. There is nothing strange in saying e.g. that Jane stands in the fear or hope relation to the proposition that internalism is true when she fears or hopes that internalism is true. Also, there is nothing strange in saying that she stands in the fear or hope relation to an abstract entity when she fears or hopes what she does. Moreover, instead of propositions, any other kind of entity (concrete or abstract) could *prima facie* be identified via the rephrased proposition thesis as the content of V. There is nothing in the very formulation of that thesis that prevents this. For me, that is its virtue. One should make the choice of the appropriate kind of content of V on metaphysical (or at least non-linguistic) grounds. Anyone who accepts the explication problem (the list includes most of the authors mentioned in footnotes 1, 4–5, and 7–9) seems to be obliged to explain why that problem would undermine the standard relational view even though the rephrased proposition thesis generates reports that make perfect sense for *any* attitude standardly treated as propositional, namely for any attitude reportable with a sentence ⌜A V's that $p$⌝. In fact, I would

[22] Of course, proponents of the adverbial analysis would not talk about "propositions" or "facts" as *objects* of attitudes. They might say instead that "propositions" and "facts" are sentences on which a ⌜V's that⌝ operates, or that they are merely *grammatical* objects connected with attitude verbs.

say that it is far from clear to what extent the explication problem undermines the standard view in the first place. It is legitimate to wonder who bears the burden of proof here, the proponents of the proposition thesis who need to deal with problematic cases, such (2*)–(4*) and (6)–(7), or their opponents who need to deal with unproblematic cases, such as (1) or (5). We would certainly need an additional argument that favours one standpoint over the other.

In response, one might object to the rephrasing of the proposition thesis in the following way. Although ⌜that $p$⌝ and ⌜the proposition that $p$⌝ are rigidly codesignative expressions, one cannot infer the report ⌜A stands in the V relation to that $p$⌝ from the report ⌜A stands in the V relation to the proposition that $p$⌝. Such an inference would be meaningless, and it would be meaningless for any V. Then, the conclusion would be that the rephrased proposition thesis faces consequences that are as problematic as those that the initial proposition thesis has faced after all. However, I do not think that would be a problem for the proposed rephrasing. There is a straightforward explanation of the meaninglessness of a conditional ⌜when A stands in the V relation to the proposition that $p$, A stands in the V relation to that $p$⌝. The conditional is meaningless because its consequent is meaningless, and the consequent is meaningless because it is *ungrammatical*. It is easy to explain why. It is ungrammatical because in English "that"-clauses cannot follow prepositions; only noun phrases can. There is no mystery here, and so no problem for the rephrased proposition thesis.[23]

Finally, there seems to be a cross-linguistic reason to prefer the rephrased proposition thesis to the initial one. One cannot literally translate the initial proposition thesis into a number of languages (Slavic languages are a good example). One can translate its rephrased version. So the rephrased proposition thesis should be preferred to the initial one, at least if metaphysical points we want to make should exceed English or a restricted class of languages.

[23] One referee (a native English speaker) objected that (s)he sees no problem in combining prepositions with "that"-clauses and that, consequently, there is nothing problematic in a construction ⌜A stands in the V relation to that $p$⌝. If that were the case, I would have one less problem to worry about, but I am not so sure about that. To wit, I am not a native English speaker, but English grammar books seems to agree that "that"-clauses *cannot* follow prepositions in grammatical constructions (see Downing and Locke 2006: 104, 536; and Eastwood 1994: 287, 344). Of course, to some degree one could ignore English grammar in order to deliver a point using ungrammatical constructions. Philosophers sometimes do that. In that case, however, one could not at the same time appeal to the explication problem to make any point since that problem heavily depends on English grammar. If, however, one decides to take grammar seriously, the only ways I can hear a construction ⌜A stands in the V relation to that $p$⌝ as grammatical and meaningful is either by taking ⌜that $p$⌝ as a complex demonstrative not as a clause or by assuming that ⌜that $p$⌝ is capitalised or altered with another convention for which one stipulates that it transforms expressions into names of their contents (that would allow one to say things such as ⌜THAT $P$ is structured and abstract⌝).

## 5. *Concluding remarks*

Suppose that we can describe one and the same state of affairs in (at least slightly) different ways. Suppose further that some (but not all) of these descriptions sometimes lead into problems that are primarily caused by their syntactic features. What is the proper reaction to that? Should we deny that some state of affairs that actually obtains is ever being described with any of these descriptions? Should we conclude that some of the competing descriptions are just not adequate for making certain (or any relevant) points? I am inclined to side with the latter option. In fact, as the previous section shows, I think that one could discard the explication problem along that line. There are ways to express basic ideas of the standard relational view that the explication problem does not affect. This possibility, of course, does not explain the phenomena that enabled the formulation of the explication problem in the first place. However, I do not think that this is important for present purposes. Whatever the ultimate explanation of this phenomena is, we can expect that it will at the same time be the explanation of why the original formulation of the proposition thesis is problematic and the rephrased one is not.

There is, however, an additional worry one might have concerning the rephrased proposition thesis, and it runs as follows:[24] The thesis *when A stands in the V relation to the proposition that p, A V's the proposition that p* seems to be just as good as the rephrased proposition thesis that I was defending, namely *when A V's that p, A stands in the V relation to the proposition that p*. Indeed, anyone who accepts the latter one seems to be obliged to accept the former one as well. If so, then the rephrased proposition thesis does not provide a desired way out of the problems with the initial proposition thesis discusses in section 2. A report ⌜A stands in the V relation to the proposition that $p$⌝ might say something true and at the same time and world the corresponding report ⌜A V's the proposition that $p$⌝ might say something meaningless or false. I think that we can avoid this problem.

Consider the two reports that make the formulation of the rephrased proposition thesis, namely ⌜A V's that $p$⌝ and ⌜A stands in the V relation to the proposition that $p$⌝. Although they (by my assumption) report or describe one and the same state of affairs, they do it by expressing *different* propositions. They express different propositions at least because the expressions ⌜V⌝ and ⌜stands in the V relation to⌝ make different contributions to propositions that the corresponding reports express.[25] Now, we may construe the rephrased proposition thesis as an inference, namely

(11) A V's that $p$; *so* A stands in the V relation to the proposition that $p$.

[24] One of the referees for the journal raised this worry.

[25] I would say the same for ⌜that $p$⌝ and ⌜the proposition that $p$⌝; see note 2.

As it stands, however, that inference is incomplete. Some premises essential to reach the conclusion are missing here. The inference "Cicero is Roman; so Tully is Roman" is incomplete as long as the premise "Cicero = Tully" is missing. Equally so, (11) is incomplete until one adds the premises ⌜that $p$ = the proposition that $p$⌝ and ⌜to V = to stand in the V relation to⌝.[26] Accordingly, the complete form of the above inference would be

(11*) A V's that $p$, ⌜that $p$⌝ and ⌜the proposition that $p$⌝ stand for the same thing, ⌜V⌝ and ⌜stands in the V relation to⌝ stand for the same thing; *so* A stands in the V relation to the proposition that $p$.

If the three premises are true, the conclusion must be true as well; (11*) is a valid inference.

Similarly, we may construe the problematic thesis *when A stands in the V relation to the proposition that p, A V's the proposition that p* as an inference, namely

(12) A stands in the V relation to the proposition that $p$; *so* A V's the proposition that $p$.

If (12) is valid, its conclusion should be true whenever its premise is true. However (and this is the apparent problem), the conclusion might be false although the premise is true. So the inference seems not to be valid after all. If this inference is not valid, the standard relational view cannot be correct. Notice, however, that (12), just as (11), is an incomplete inference as long as the premise ⌜to V = to stand in the V relation to⌝ is missing. The complete inference form of (12) would be

(12*) A stands in the V relation to the proposition that $p$, ⌜stands in the V relation to⌝ and ⌜V⌝ stand for the same thing; *so* A V's the proposition that $p$.

Again, if (12*) is valid, the conclusion should be true whenever the premises are. However, if one should construe the problematic thesis as (12*) rather than (12), how does it represent a threat to the standard view? Assume that in (12*) the report ⌜A stands in the V relation to the proposition that $p$⌝ says something true and ⌜A V's the proposition that $p$⌝ something meaningless or false. Is that a problem for the standard view? I think that it is not. If the conclusion in (12*) is meaningless, it is such because it is not grammatical, and it is not grammatical because noun phrases cannot follow some attitude verbs (see King 2007: 139 and 142).

What if the conclusion in (12*) is meaningful but false? That could mean one of the two things. Either all the premises are true and the

[26] Of course, to make any sense of the premises so formulated we would have to adopt a convention that I have mentioned at the end of the note 23. I will disregard it here. Instead, for simplicity sake, I will use metalinguistic formulations. Also, I will ignore here general tacit assumptions, such as the one that the same expressions within a sentence stand for the same thing unless it is differently stated.

inference is invalid or a premise is false and the inference is valid but unsatisfied. The former option straightforwardly undermines the standard view and the latter one does not. So all that one need to do in order to save the standard view here is to show that a premise in (12*) *might* be false. By stipulation, the premise ⌜A stands in the V relation to the proposition that *p*⌝ says something true. So the only suspect here could be the premise "⌜stands in the V relation to⌝ and ⌜V⌝ stand for the same thing". Could this premise be false although the proposition thesis, (11), or (11*), are true? I think that it could.

Let us return to the previous fear case in which we had two corresponding reports, namely (3) and (3*), of which one could be false and at the same time and world the other one true. If we carefully observe (3) and (3*), we can notice that, intuitively, *different* relations towards one and the same thing are being reported. In that case, the verb "fear" must be ambiguous in the sense that it picks out different relations. Accordingly, "stands in the fear relation to" must be ambiguous in the same sense too. If so, the premise "⌜stands in the V relation to⌝ and ⌜V⌝ stand for the same thing" could be false whenever ⌜V⌝ is ambiguous in the above sense. In such cases, expressions ⌜stands in the V relation to⌝ and ⌜V⌝ would stand for different relations. That seems to be precisely the case with problematic instances of (12*).

If we start with the true report "Jane fears that her arguments are inconclusive", infer via (11*) the report "Jane stands in the fear relation to the proposition that her arguments are inconclusive", and then from it infer via (12*) the report "Jane fears the proposition that her arguments are inconclusive", this chain of inferences would be invalid. The reason is that throughout this chain of inferences the verb "fear" does not stand for the same relation. As King (2007: 153–159) has argued, when combined with verbs such as "fear" or "desire", noun phrases trigger different readings of such verbs than clauses do, making them pick out different attitude relations.

By itself, then, (12*) will be valid for *any* attitude whose representative verb does not turn it into an ungrammatical constructions. However, only for *some* such attitudes the validity will remain when (12*) is combined with (11*). This is something that in no way undermines the standard relational view.[27]

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# *Of Mosquitoes and Men: The Basis of Animal and Human Rights*

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*This article discusses the status of animal rights, and more particularly whether these rights may be defended from a natural rights perspective or from an ethical perspective. I argue that both options fail. The same analysis applies in the case of mankind. 'Mankind' does not bring with it the acknowledgement such rights, nor does a focus on what is arguably characteristic of mankind, namely, reason. Reason is decisive, though, in another respect, namely, the fact that reasonable beings can claim and lay down rights. It does not follow from this that animals should have no rights, since human beings may be motivated to constitute such rights, while this provides the most solid basis for them.*

**Keywords**: Animal rights, natural rights, speciesism, meta-ethics.

## *Introduction*

In the wake of an ever stronger relativization of the differences between human beings and (other) animals, it has become increasingly difficult to separate a domain of rights to which only human beings should be entitled. It seems difficult to deny that human rights should be acknowledged without also granting the relevant rights to animals, 'relevant' indicating that some rights, such as the right to vote, are of no use to them. Indeed, if one seeks to take a moral stance, this distinction has come under pressure. It is possible to focus on what presumably uniquely characterizes mankind, namely, reason, but it remains to be seen whether this position is tenable.

In section 1, I present an important argument for those who plead acknowledging rights for animals, or, similarly, treating animals well on the basis of moral considerations, namely, the argument from marginal cases, after which I indicate why focusing on mankind as such, i.e., without it being clear which criterion or criteria would purportedly warrant a special treatment, is a cul-de-sac.

Section 2 presents reason as a potential candidate. Kant's view of practical reason as a special faculty is contrasted with an account of reason that does not treat it as something the existence of which *eo ipso* warrants a certain treatment for those endowed with it, but starts from the more realistic and better supportable perspective that reason is simply a faculty that cannot be ignored when granting rights is concerned. The interests of human beings must be taken to heart (by those same human beings) since not doing so would either be inconsistent or unfeasible, or both.

The third section discusses the consequences of this outlook, taking into consideration alternatives such as Singer's. A position that starts from moral dictates is not outright dismissed, but such dictates cannot be decisive as long as it is unclear how they might motivate actions.

## 1. *Animals vis-à-vis human beings*

The issue of whether animals are entitled to a certain treatment on the basis of the acknowledgment of animal rights or moral considerations is an important one, which has been answered in the affirmative by many, from diverse considerations. There are differences of opinion whether animal *rights* or rather animal *interests* should be the focus of attention, but this is in fact a minor issue as long as their arguments to promote these rights or interests stem from the same motivation for the reason that those who plead animal interests would, presumably, want to transpose those interests into rights. The crucial issue would then be whether things like (natural) rights may be said to exist irrespective of their being realized through a process of legislation. While those who focus on animal interests are not plagued by the justification problem of proving that such rights exist, at least if their claim is that animal interests consist in something that can be demonstrated relatively easily, such as their suffering being ended or prevented, they, too, face the burden of proving on what foundation a moral appeal to those who might remove such suffering should be based. I will return to this issue below.

In any event, if one starts from a moral appeal, the argument from marginal cases (Narveson 1977: 164), meaning that the dividing line between animals on the one hand and cognitively impaired people (and maybe children) on the other cannot consistently be maintained, those clinging to it being accused of 'speciesism', seems difficult to dispel:

> […] those who think moral status does depend on capacity X are forced to draw one of two conclusions. Either they will have to admit that marginal humans do not have moral status because they do not have capacity X. Or if they wish to maintain that marginal humans have moral status they must admit that it depends on something other than capacity X. If this something else is a feature which animals share it must be admitted that animals have moral status too. (Tanner 2005: 53, 54)

There appear to be three options. It may be argued, first, that hu-

mans have natural rights (or moral status) while animals do not; second, that both humans *and* animals have such rights; and third, that *none* have such rights. Those who take the argument from marginal cases seriously would not prefer the second option to the first, but it does not follow from that given that the third option should not be preferred to both. Indeed, there are reasons to consider it the superior alternative, which are persuasive enough to do so, as I will argue.

A strategy to remedy this problem may be to shift the focus from the individual to the species to which it belongs, which includes even individuals who have lost the presumably relevant characteristic or have never had it to begin with. Kateb maintains such a position, by distinguishing between the status of individuals and the stature of the human race (Kateb 2011: 6). Human dignity is defended by Kateb by pointing to both aspects (Kateb 2011: 9). No human beings are thus excluded, providing Kateb with the opportunity to state: "There are people who are so disabled that they cannot function. Does the idea of dignity apply to them? Yes, they remain human beings in the most important respect. If they cannot actively exercise many or any of their rights they nevertheless retain a right to life, whatever their incapacities (short of the most extreme failures of functioning)." (Kateb 2011: 19).

The difficulties become apparent from the following:

> I am not saying that when we regard any particular individual we should see in him or her an embodiment or personification of the whole human record, and by that conceit inflate the person into the species, or even allow the full range of demonstrated human capacity to bestow its aura on any given human being or on all human beings equally. No, we deal here with the stature of the species, carrying with it a past that grew out of other species and will be extended indefinitely into the future. But the fact remains that every individual has all the uniquely human traits and attributes that the human record shows. The human record shows and will show, however, a cumulative display of these traits and attributes that surpasses any individual and any particular group or society. (Kateb 2011: 125–126)

The issue resulting from the argument from marginal cases is not, then, resolved by Kateb.[1]

Even if the argument from marginal cases is disregarded (if only *arguendo*), those who argue that special moral duties should apply in the case of human beings compared to animals may not, or at least not yet, consider their distinction justified, for they are still faced with the burden to prove, first, *what* makes human beings special, i.e., what quality or qualities single them out, and, second, *why* such a quality or qualities should be sufficient reason to be treated in a special way. In the next section, I will discuss a candidate that has often been proffered: reason.

[1] Besson's position is equally void: "[…] *human* rights are universal moral rights of a special intensity that belong to all human beings by virtue of their humanity. Human rights are universal moral rights because the interests they protect belong to all human beings." (Besson 2013: 97).

## 2. *The import of reason*

Reason seems to be the only quality that can consistently be presented as the relevantly distinguishing one between animals and human beings. Kant is perhaps the most important promoter of such a position. It must be said that Kant does not consider understanding, or reasoning power, the decisive feature: for him, 'reason' in the sense of *practical* reason is what distinguishes man in the decisive respect from animal; understanding does lead to a difference, but this is a relative difference (Kant 1903 [1785]: 434–436; Kant 1907 [1797]: 435, 436), which is primarily important in private law. The role of practical reason becomes clear from Kant's remark that one is to be considered an end in itself on the basis of being autonomous (Kant 1908 [1788]: 87),[2] which is (supposedly) possible in the domain that one cannot reach on the basis of—theoretical—reason (e.g. Kant 1911 [1781/1787]: A 532 ff./B 560 ff., A 702/B 730, A 800 ff./B 828 ff). (Since this limitation is in place, I say 'supposedly'.) So the understanding (or reasoning power) does not constitute the decisive ground for man to be considered an end in itself; a being rather has 'dignity' on the basis of its capacity to act morally (Kant 1903 [1785]: 435). Autonomy is the basis of the 'dignity' of man, and of every reasonable creature (or 'nature', in Kant's words).[3]

Rather than elaborate on the problems involved with Kant's defense of practical reason in particular, I will focus on what is decisive for the present discussion, which is the issue of the connection between being endowed with reason (or another quality) and being treated in a special way.

Such a connection is not evident. For example, it may be argued that those who are endowed with reason and who are in addition especially intelligent may use their abilities to display skills where others are unable to do so, resulting in, for example, different incomes, but that situation must not be confused with the present one, which is concerned with the question of whether different treatment should follow from the quality *eo ipso*, and on what *such a connection* would be based, if anything, is unclear.

McGinn rightly adduces the contingent factors that have led to human domination over animals while not being dominated by other beings (McGinn 1993: 147–149), but while this may necessitate a reassessment of mankind's special position vis-à-vis animals, or at least some of them, it is not clear why a moral obligation towards such be-

[2] Elsewhere, Kant defines autonomy (of the will) as "the quality of the will by which it is a law to itself (independently of any quality of the objects of volition)." ("[…] die Beschaffenheit des Willens, dadurch derselbe ihm selbst (unabhängig von aller Beschaffenheit der Gegenstände des Wollens) ein Gesetz ist.") (Kant 1903 [1785]: 440).

[3] "*Autonomy* is the basis of the dignity of human and every reasonable nature." ("*Autonomie* ist […] der Grund der Würde der menschlichen und jeder vernünftigen Natur.") (Kant 1903 [1785]: 436).

ings would follow from that consideration. Self-interest may provide a more compelling foundation here: one imagines oneself oppressed and would want to avoid certain experiences that accompany such a situation. In practical terms, this may alter some of mankind's relations with (some) animals, as will be indicated in section 3, but that does not touch upon the present issue of the supposedly moral foundation.

Jamieson's position is similarly problematic. He says: "[…] the community of equals is the moral community within which certain basic moral principles govern our relations with each other; and these moral principles include the right to life and the protection of individual liberty." (Jamieson 1993: 224). A community of equals may be defended: different beings should be treated equally, at least in some respects, on account of the fact that their differences should be considered irrelevant. The step from that given to a supposedly 'moral community', however, is in need of justification. By contrast, if the appeal to equal treatment may be based on self-interest, no such elements need to be added.

The same consideration applies to what Regan[4] and Francione[5] observe. As is clear from these quotes, the present considerations apply irrespective of whether one starts from a rights-based approach or from an interests-based one. In both cases, a moral criterion is put forward as decisive, without indicating what this means, let alone on what this would supposedly be based. The first part—i.e., what this means—*may* be said to be clear: isn't it morally right to keep other beings, among which animals, from suffering? To this I would respond that one may at best appeal to something as vague as an 'intuition'; perhaps more troubling, moral appeals may simply be dismissed, as no means to *enforce* such appeals are available lest those appeals not be moral, of course: it is in the nature of such appeals that one should not act upon them from exterior considerations.[6] What an alternative, 'interior' appeal, perhaps

[4] "It is […] the capacity to suffer itself that seems to provide the only adequate grounds for attributing the right in question to those humans, including morons, to whom we wish to attribute it. It is because, like us, morons can suffer, that they, like us, seem to have as much claim as we do to the right not to be made to do so gratuitously." (Regan 1977: 186).

[5] "[…] if we are to make good on our claim to take animal interests seriously, then we can do so only one way: by applying the *principle of equal consideration*—the rule that we ought to treat like cases alike unless there is a good reason not to do so—to animals. The principle of equal consideration is a necessary component of every moral theory. […] Although there may be many differences between humans and animals, there is at least one important similarity that we all already recognize: our shared capacity to suffer." (Francione 2004: 121).

[6] As Kant says: "Insofar the laws of freedom only refer to purely external actions and their conformity to the law, they are called *juridical*; do they also demand that they should themselves be the determining principles of the actions, they are *ethical*; and then one says: the conformity to the former is the *legality* of the action, while the conformity to the latter is its *morality*." ("So fern [die Gesetze der Freiheit] nur auf bloße äußere Handlungen und deren Gesetzmäßigkeit gehen, heißen sie *juridisch*; fordern sie aber auch, daß sie (die Gesetze) selbst die Bestimmungsgründe der Handlungen

doing the right thing 'for its own sake', may mean I do not profess to know, and remains, I would add, a source of confusion and obscurity. The alternative to argue from self-interest appears to provide a more solid ground to reach the same effects.

This alternative leaves room to distinguish between human beings and animals in some important respects. Reason is, in this approach, the decisive factor, although reason is not a decisive *moral* characteristic, as it is with Kant. It is rather the feature that makes it possible to realize an outcome efficiently, the outcome in the present case being the alleviation of one's own suffering, and that of other beings, if one has an interest to do so. Crucially, reason is not only the faculty on the basis of which one recognizes that suffering must be alleviated (and the fact that such suffering may in fact remain to a great extent takes away nothing from that observation), but it is arguably simultaneously the decisive characteristic to be granted certain rights, on account of two, possibly related considerations.

First, those who have reason would, if they were oppressed by others (who themselves act on the basis of reason, oppressing those others out of an interest, such as an economic interest[7]), have an interest to rise up against their oppressors, which may result in upheaval or even a civil war. This is sufficient reason for those in power not to oppress others. Slavery was admittedly not abolished in the USA because slaves themselves protested against their treatment, but black people still being treated unequally with white people thereafter, to which they responded with nonviolent *and* violent protests, did contribute to the Civil Rights Act of 1964. The policies of segregation that had been installed had been shown to have become corrupted, since it had become clear that black people were powerful and endowed with reason, both characteristics being intertwined in the sense that pure physical power would not have been sufficient, as some animals are far more powerful than any human being, while this is apparently no reason to grant them any rights. Before black people had the resolute to stand up for themselves or were simply not in a position to be able to do so, they were not treated equally. It might have been possible to leave the policies resisting equal treatment in place, as similar policies would remain in place in South Africa, but that might have resulted, in the worst case, in civil war.[8]

sein sollen, so sind sie *ethisch*, und alsdann sagt man: die Übereinstimmung mit den ersteren ist die *Legalität*, die mit den zweiten die *Moralität* der Handlung.") (Kant 1907 [1797]: 214; cf. pp. 219, 225).

[7] This is no academic issue, as slavery is an important historical institution, having been abolished in the U.S.A. as recently as 1865, while black people were oppressed until far into the 20th century.

[8] I do not discuss here the criticism from other countries (such criticism being directed, incidentally, at South Africa in the 20th century, of course). After all, the fact that they would protest the policies would merely shift the question and would not provide an answer to the fundamental question that would still remain, namely,

Second, for those who have reason to claim certain rights on that basis—in this case from the consideration that reason would *eo ipso* be the relevant moral characteristic to be granted such rights while excluding other beings lacking such a characteristic—would mean their contradicting themselves. This is sufficient to counter Singer's remark that reason (or rationality) would be an arbitrary characteristic (Singer 2011: 50). It may be considered thus in moral terms, but I have already addressed that option, not starting from any supposedly moral characteristic.

I mentioned that these considerations are possibly related. By this I mean to say that they may together constitute the most plausible explanation in indicating why reason is the crucial factor. It does not by itself command respect for those who are able to act on it, unless respect is taken to mean simply that those who are endowed with reason cannot be overpowered, at least not easily. 'Power' has a broad meaning here, for those who are physically handicapped or weak are relevant beings, just as those who are potentially rational[9] (most children) or fictitiously so (the mentally handicapped, including extreme cases such as anencephalic children). In the latter case, of course, the power is vicarious in the sense that the power of those that protect them is what is decisive; the protection need not be provided by individuals (such as the parents of mentally handicapped or even 'normal' children), since on the basis of the foregoing analysis anyone may be said to have an interest in protecting them, so that it would be provided collectively.

This argument may be leveled against those who present the argument from marginal cases. It must be granted that the fictitious cases can be extended to include animals; whether the same consideration may in future times apply to the case of potentially rational beings I cannot say—if certain animals should at some point become (potentially) rational, what is argued here applies to them *for that reason*. Incidentally, reason is not to be equated with intelligence, since a certain degree of intelligence is sufficient to constitute reason and thus being eligible to the right under discussion—the right to be treated equally, which not only prohibits discrimination but protects citizens, or, more generally, legal subjects, against being killed, while various degrees of intelligence may lead to being treated justifiably differently in some cases; for instance, those who have an above average intelligence can, *ceteris paribus*, earn more money than those that have an average or below-average intelligence.

Applying the fiction not only to mentally handicapped people but to animals, too, is certainly possible (if only because a fiction does not refer to a real state of affairs but is, *ex natura rei*, a product of one's own making), but apart from cases such as one's affection to a pet it would

why those countries that oppose the policies would do so, and not implement them themselves, instead of acknowledging equal treatment as they have done.

[9] 'Reason' and 'rationality' are identified here. They may mean many things, but I will not needlessly complicate matters.

be difficult to see what would be a consideration here, while in the case of mentally handicapped people, such a consideration is evident:

> While species, as such, has nothing to do with the case at the level of foundations, there are reasons of a straightforward kind for extending the ambit of morality to infants and morons, etc. We want to extend it to children because most of us want to have our own children protected, etc., and have really nothing to gain from being permitted to invade the children of others; we have an interest in the children of others being properly cared for, because we don't want them growing up to be criminals or delinquents, etc. (and we do want them to be interesting and useful people). And we shall want the feeble-minded generally respected because we ourselves might become so, as well as out of respect for their rational relatives who have a sentimental interest in these cases. (Narveson 1977: 177)

Only those who believe in reincarnation may be motivated to apply the fiction more broadly than this. A similar stance is presented by Posner: "It is because *we* are humans that we put humans first. If we were cats, we would put cats first, regardless of what philosophers might tell us. Reason doesn't enter." (Posner 2004: 67)

Since reason is both the characteristic of those who may decide to treat beings in a certain way and the characteristic they consider crucial (on the basis of self-interest, if I am correct), reason is significant in two respects. First, it is what the beings who are able to assert rights share in common (which is an actual given, so that this may be called 'factual equality', and more specifically 'basic equality', in order to specify the decisive characteristic, which is reason, so that basic equality may in turn be specified by 'basic rationality'), and, second, it is the characteristic that is decisive in determining the extent of equal treatment (which may be called 'prescriptive equality'). So the same beings that are able to decide which beings should be treated equally are those to whom equal treatment is applied. Singer seems to overlook the fact that these two levels must both be acknowledged.[10] He says: "Equality is a basic ethical principle, not an assertion of fact." (Singer 2011: 20). Yet a little further on, when the prescriptive level is addressed, he observes: "The essence of the principle of equal consideration of interests is that we give equal weight in our moral deliberations to the like interests of all those affected by our actions." (Singer 2011: 20). After all, this means that 'equality' is not only used at the prescriptive stage, but has a descriptive component: 'all those affected' are apparently (in the relevant respect or respects) equal, in order to be considered for equal treatment. When Singer subsequently states "What the principle really amounts to is: an interest is an interest, whoever's interest it may be." (Singer 2011: 20), this still presupposes (basic) equality. It just means that one abstracts from all traits save the ability to suffer.

[10] I do not mean to say by this that reason must also necessarily be the decisive element, since I may simply be mistaken, but rather the fact that a descriptive level must be in place before certain behavior is prescribed. Incidentally, in my alternative, prescription does not imply moral prescription, or normativity in that sense.

I will readily grant that mine is a 'minimalistic' position, and that only the *necessary* conditions for such beings to live peacefully together have been outlined; one may argue that (some of) the obligations towards reasonable beings should also apply to beings that lack reason. This will be discussed in the next section.

## 3. *A realistic perspective*

In the previous section, I argued that reason is the feature on the basis of which rights should be granted, and that this feature has also been decisive in realizing legislation to grant and protect rights. This accounts for the different treatment of animals and human beings, the first not being protected in the most basic sense of being killed.[11] For example, I know of no instance in which killing a mosquito is punishable. (Those who consider this example misleading on account of the fact that mosquitoes may be a nuisance or even harmful may exchange it for another animal, to which this does not apply.) Still, it seems I have overlooked an important issue. Is the reason why some animals may be killed or even treated cruelly while others should be left unharmed not simply that the first kind does not suffer, lacking a central nervous system, so that the issue of harming them would be moot in the first place? Perhaps, but that merely specifies the question: do those animals which *are* capable of experiencing harm have natural rights or moral status?

It may be useful to first consider the position of human beings. 'Mankind', or 'humanity', is arguably an invention, a notion to encompass all human beings (without it being always clear what it means to qualify as a human being), so as to reach a stage where divisive characteristics, such as religion, race or gender, are not decisive to be granted certain rights.[12] There does not seem to be a compelling reason, prior to this invention, for those in power to extend the rights to those not in power, and it is not surprising to find such changes realized only (shortly) af-

[11] There are, admittedly, some exceptions to this rule, laws being in place that protect animals from being treated cruelly, but, first, a lesser sentence applies in being cruel towards an animal than in being cruel towards a human being (*ceteris paribus*), and, second, such legislation is arguably drafted with the interests of human beings in mind (for example, the owners of pets or farm animals, who have an interest in their being protected). The German Constitution provides a clear example from another perspective. Article 20a starts thus: "Der Staat schützt auch in Verantwortung für die künftigen Generationen die natürlichen Lebensgrundlagen und die Tiere…" ("The state protects, mindful also of its responsibility towards future generations, the natural foundations of life and animals…") Animals are obviously (at least partly) considered as means (for future human beings).

[12] While *homo sapiens* is a species (with the subspecies *homo sapiens sapiens*), determined on the basis of biological criteria, 'mankind' (or 'man', or 'humanity') has become an honorific in law. Biology describes the characteristics of human beings while law prescribes that human beings should be treated in a certain way. Still, the link between being a (human) being and being treated in some way is not evident and, not coincidentally, construed by human beings themselves.

ter the power balance has shifted. In the cases where this was not, or not necessarily, a consideration, such as in the case of the abolition of slavery in the USA, it is clear that one would act inconsistently by allowing conditions one would not oneself find acceptable or agreeable to live under to apply to other beings that are not in the crucial respect or respects different from oneself. In the case of black people being held as slaves, this situation is clear once one realizes that they are rational beings (in the sense of basically rational indicated in the previous section) just as white people are, and that this would be sufficient to grant them the same rights they—i.e., the white people—have established for themselves. The same consideration applies, *mutatis mutandis*, to the extension of suffrage to women, one's gender now acknowledged not to be a relevant characteristic here.

The foregoing analysis does not point to any moral elements, and both the original allotment and the extension of rights may more convincingly be argued to be based on self-interest. 'Humanity' is not, then, something special on the basis of which rights should be granted or one should be treated in some 'morally acceptable' way. In fact, 'humanity' is such a general, and even vague, word that it hardly has a meaning, or if it has one, it may be linked to, ironically, arbitrary traits, such as the human body; the difficulties a position such as Kateb's faces[13] were indicated in section 1, while reason is not really the decisive characteristic, since mentally handicapped people are fictitiously considered to be reasonable beings, simply because it would apparently be unwelcome or unacceptable not to do so and to treat them as things. It is clear that such a course of action does not constitute a reflection of reality but is rather a moral appeal or a political solution, while I have argued that the former, a moral appeal, is not decisive here.

Those who defend animal rights,[14] or moral treatment of animals (e.g. Singer 2011: 50), would further abstract and might use 'animality' instead of 'humanity'. Depending on how one deals with matters such as the argument from marginal cases discussed above, 'animality' would be more consistent than 'humanity' (because of the fact just mentioned, that a characteristic such as the human body is obviously no serious candidate to be used as a criterion for some treatment), and in that respect Singer's contribution is valuable. This still raises the question, though, why one should take the interests of animals to heart. Singer maintains: "If a being suffers, there can be no moral justification for refusing to take that suffering into consideration. No matter what the nature of the being, the principle of equality requires that the suffering be counted equally with the like suffering—in so far as rough compari-

[13] Kateb (rightly) dismisses a focus on bodily traits (2011: 133), but does not prevent a viable alternative.

[14] E.g. Donaldson and Kymlicka 2014: 25: "The basic premise of ART [animal rights theory] is that whenever we encounter […] vulnerable selves—whenever we encounter 'someone home'—they need protection through the principle of inviolability, which provides a protective shield of basic rights around every individual."

sons can be made—of any other being." (Singer 2011: 50). What he says is perfectly understandable, but being capable of suffering is merely a criterion to determine whether interests may be relevant: those who may suffer have an interest not to. It does not necessitate those who understand this given to abstain from causing their suffering, or to alleviate it. This given does not, in other words, entail the motivation to act in accordance with it. This motivation *is* clear in the case of human beings: allowing harmful behavior would be undesirable as one might oneself fall victim to it and in the most extreme scenario, living together peacefully might cease to be possible.

Supposed animal rights, prior to their being included in man-made law, are no more and no less difficult to substantiate than supposed human rights, and an appeal to acknowledge animal rights on the basis of the fact that human rights exist is nothing other than the extension of a starting point that has not been justified itself.[15]

The foregoing does not necessarily lead to the conclusion that human beings should be allowed to do with animals whatever they want, animals being treated as things in this regard. What was decisive before in forestalling animal rights or some treatment on the basis of supposedly moral considerations, namely self-interest, may now be appealed to in order to prevent this outcome. Self-interest in a narrow sense may not reach this result, for if 'self' is taken to refer only to the person who acts, it may be in one's interest, e.g., to eat meat, while some may even have an urge to harm animals for their enjoyment, the fulfillment of which would conflict with laws forbidding such behavior. 'Self-interest' may, however, alternatively be taken to extend to a greater domain of subjects, and if animals are considered to be such subjects, there would be sufficient reason to take their interest into consideration.

This use of 'self-interest' may be considered a rhetorical trick, simply utilizing a definition of my own making to reach an outcome that is counter-intuitive. This line of reasoning is not, however, as strange as it may be taken to be. In fact, what has already been said does not deviate from it. I have already pointed out in section 2 that the fiction of rationality is applied to children, 'normal' children being potentially rational, and may be extended to some animals (such as pets) on the basis of the same consideration why it applies to children for some people.[16] I would argue that 'indirect self-interest' is at stake in cases where one's own interest (i.e., 'direct self-interest') is not an issue, while the interest of another being one seeks to serve is relevant, experiencing some

[15] Cf. Bentham (1843: 500): "How stands the truth of things? That there are no such things as natural rights—no such things as rights anterior to the establishment of government—no such things as natural rights opposed to, in contradiction to, legal: that the expression is merely figurative; that when used, in the moment you attempt to give it a literal meaning it leads to error, and to that sort of error that leads to mischief—to the extremity of mischief."

[16] I say 'for some people' because other considerations, discussed in section 2, may be decisive for all people, including those who do not themselves have children.

bond with that being.[17] Parents make certain, sometimes great, sacrifices for their children. (This consideration applies *a fortiori* to some animal species, although this may be fully contributed to instinctual factors.) Some people may experience a bond with their pets similar to that of children. This does not warrant the same treatment that applies to children (as other considerations apply to the case of children), but it does provide an argument to take their interests seriously.

The foregoing gives rise to two problems. First, a 'popularity contest' may ensue: the cutest or cuddliest animals should be treated well, while other animals, which do not incite feelings of affection, should continue to be treated as mere things. Second, a demarcation line between various sorts of animals seems difficult to draw. Perhaps dogs should be protected from harm, but what about, perhaps in descending order of importance, a seagull, a mosquito or an ant?[18] (I have already remarked that the nuisance or harm some animals themselves produce may be a relevant factor.) Both issues may be dealt with from the perspective of those who decide which rights should be granted, and to which beings. Those who make such decisions are those who are basically equal, and, more specifically, basically rational; their interests may, as was indicated, follow from the idea of indirect self-interest. One may on that basis, for example, distinguish between domesticated and non-domesticated animals: "What distinguishes DAs [domesticated animals] from other animals is that we humans have brought them into our society." (Donaldson and Kymlicka 2014: 204). However, Donaldson and Kymlicka qualify the relationship in terms of duties and the extension of citizenship (to the domesticated animals) (Donaldson and Kymlicka 2014: 204, 205), and even remark: "[…] domestication makes the extension of citizenship both morally necessary and practically feasible." (Donaldson and Kymlicka 2014: 205). The latter—the practical feasibility—is defensible, but the substantiation for the former—the moral necessity—is not provided, and may not be forthcoming as the burden of proof may be too great.

In *practical* terms, no great differences need arise between my position and one that starts from moral appeals, and animals themselves will, presumably, not care on what basis they are treated in some way. In both cases, legislation may be implemented on the basis of which animals, or at least some animals, are protected. The underpinnings of such legislation are wanting, however, in the latter case, which is an important reason to exchange it for a more viable alternative, such as the one I have defended.

An approach such as this does not solve the problems mentioned above, and may not even confront others that have remained undis-

[17] The demarcation line between direct and indirect self-interest is difficult to draw. I will not explore that issue here.

[18] Taking the interests—or supposed interests—of the latter animals seriously would effectively mean resorting to actions such as those performed by Jains, such as sweeping the ground before walking on it.

cussed here, but the alternative of clinging to moral terms without their meaning having become apparent, let alone how they might compel one to act in one way rather than another is less appealing. Should the role of such terms become clear at some point, I would be willing to substitute this alternative for my own position, but it seems safe to say that, at least for now, such a skeptical—or pragmatic—stance is the most acceptable, to which I would add that the desire to be able to make a moral appeal on the basis of natural rights is not the same as the proof of their existence.[19] The same reasoning applies to a moral appeal.[20] If people are motivated, on the basis of indirect self-interest, to end the suffering of (some) animals, it will not be a problem to realize legislation that protects their interests, and such legislation will in that case even be desirable.

## *Conclusion*

It is difficult to maintain that human beings should be granted the most important rights while these should be withheld from animals if one bases one's claim on an account of natural rights or on an ethical theory. It does not follow from this discrepancy, however, that animal rights must be acknowledged, as human rights have been acknowledged, for such a basis for human rights is wanting, their defenders' accounts. Arguing that animal rights should be acknowledged as natural rights would only compound to the justification problems natural rights theorists and ethicists face. Still, concluding from this that the opposite result should follow, and that animals should not be protected in any way, attests to an obvious false dilemma, since a third option is available. I have defended such an option, maintaining that rights are generally realized on the basis of self-interest, in the broad sense of indirect self-interest, and that the protection such rights provide may be extended to include (some) animals. The practical results need not significantly differ from those reached on the basis of an approach such as Singer's, but their foundation is arguably more stable, self-interest providing a more solid starting point than a moral appeal.

[19] Cf. Bentham (1843: 501): "In proportion to the want of happiness resulting from the want of rights, a reason exists for wishing that there were such things as rights. But reasons for wishing there were such things as rights, are not rights;—a reason for wishing that a certain right were established, is not that right—want is not supply—hunger is not bread."

[20] Bentham is known for his focus on suffering, relativizing in light of the fact that (some) animals share this ability with human beings the other characteristics (i.e., reason and the—related—ability to speak) that distinguish them (Bentham 1843 [1789]: 143, Ch. 19), but this may also be construed as a demonstration of what consequences would follow from a consistent line of reasoning. Bentham's straightforward outlook and his view on morals invite such an interpretation: "The whole difference between politics and morals is this: the one directs the operations of governments, the other directs the operations of individuals; their common object is happiness." (Bentham 1843 [1789]: 12, Ch. 2).

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# *A Live Language: Concreteness, Openness, Ambivalence*

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*Wittgenstein has shown that that life, in the sense that applies in the first place to human beings, is inherently linguistic. In this paper, I ask what is involved in language, given that it is thus essential to life, answering that language—or concepts—must be both alive and the ground for life. This is explicated by a Wittgensteinian series of entailments of features. According to the first feature, concepts are not intentional engagements. The second feature brings life back to concepts by describing them as inflectible: Attitudes, actions, conversations and other engagements inflect concepts, i.e., concepts take their particular characters in our actual engagements. However, inflections themselves would be reified together with the life they ground unless they could preserve the openness of concepts: hence the third feature of re-inflectibility. Finally, the openness of language must be revealed in actual life. This entails the possibility of conceptual ambivalence.*

**Keywords:** Ambivalence, concepts, contextualism, linguistic life, Wittgenstein.

In § 454 of the *Philosophical Investigations* Wittgenstein writes (further quotes are also from the *Investigations*):

> 'Everything is already there in … .' How does it come about that this arrow → *points*? Doesn't it seem to carry in it something besides itself?—'No, not the dead line on paper; only the psychical thing, the meaning, can do that.' — That is both true and false. The arrow points only in the application that a living being makes of it… (Wittgenstein 1963)

Everything lies open to view in language… What does the *PI* re-view there? It is of course a review of various specific possibilities for human life and language. However, at the same time the *PI* is also a review of the close relationships between language and life which make any such review possible. In brief, it may be said that life—in the sense which pertains in the first place to human beings—requires language,

but also that language must be *such* that it makes life possible; or, switching to the terminology of concepts, that concepts must be capable of supporting our lives. What, then, must be true of language or of concepts for them to support life? Taking this question to lie at the heart of the *PI*, I draw from the text a series of interdependent features that are required for concepts to be able to ground life. I begin by acknowledging that concepts, whether conceived as belonging to language, to public life, or to the individual, serve as a ground for actual life. On the basis of this reply, I elaborate a series of implications that depicts concepts as open and as moored in our ongoing concrete life. While the series of implications is drawn from Wittgenstein, the discussion will finally lead us beyond the topics emphasised in the *PI*. A notion of *conceptual ambivalence* will be posited, in which concepts become living attitudes rather than just a ground for human engagements. It will be argued that the possibility of such ambivalence is necessary for human life and for language.

I will be speaking, thus, alternately of language and of concepts. Speaking of concepts should distance us from being caught up with the fate of a word or a phrase in favour of concerning ourselves with a piece of language that characterises some notion. Our main example, in what follows, is the concept of *subsistence*, a *livelihood*, or 'a living'. The focus on concepts is not intended as a hypostatisation, and in particular I am going to move freely between speaking of concepts as belonging to the individual and as belonging to the public sphere.

In asking how language and concepts are related to life, life must be conceived of as concrete; and to deal with concrete life, we will have to focus on *engagements*. In the present paper, this heading includes intentional engagements of every order, such as personal short- or long-term actions, thoughts and feelings, and mental attitudes such as attitudes of desire or judgement; it also includes intersubjective engagements such as conversations or conferences. The following is a brief sample list of some engagements which are grounded in and partly constitutive of the concept of 'a living': looking for work (which would permit one to earn a living); complaining about the difficulties of making a living; exploiting a person, knowing that he depends on a means of sustaining a livelihood; and making the judgement that such exploitation should not take place. Wittgenstein tells us that we cannot understand human engagements without attributing to agents the mastery of a language and of particular concepts. His reminder presents language as simultaneously belonging to life and constituting its ground. Language belongs to life in the sense that whatever we say, do, or want, we contribute to language and to its relevant parts. Language captures life, while life makes some sense for us who live it; and this sense-bearing character of life is just what language provides. This is also why there will be no need to distinguish in what follows between literally linguistic engagements, such as saying something, and other

engagements, the latter being still backed-up, as it were, by linguistic behaviour.[1]

Language thus provides a grammar with which we say what *can* be thus said—I borrow half of this formulation from the *Tractatus*, where it refers to logic. By their being grammatical, our verbal and non-verbal engagements already provide a sense in which language *grounds* life—a sense which I shall here without qualification embrace. As life and ground, concepts can be thought of as threads of actual and potential life: threads made of, and by, our specific engagements. The concept of a livelihood is spun, in the manner in which a thread is spun, from our daily efforts in its name, and from its place in our choice of studies; it is spun from conversations in which the hardships of making a living are spoken of, as well as from government decisions in which the question of the subsistence of the citizens is ignored. I thus take the 'thread' metaphor, used by Wittgenstein in order to contrast family resemblance with concepts, back to concepts. However, both the word 'concept' and the metaphor are assigned in this talk a Wittgensteinian meaning that is not precisely Wittgenstein's.

## *Two preliminary remarks on concepts and grammar*

Before we can consider further the relations of engagements and concepts, two points central to Wittgenstein's move from logic to grammar should be presented. One point is that the move to grammar is a move away from concepts in a (broadly) Fregean sense, be they conceived of as functions from objects to truth values, or as closely related with predicates, towards concepts as threads of life. However, a concept in the former sense is part of the concept as a life thread. For example, it is part of the concept of a cup of espresso that certain things are justly judged as cups of espresso. Moreover, truth is importantly parasitic: i.e., truth can easily be made relevant to any engagement that manifests a concept. Thus, drinking of a cup of coffee can be captured by sentences like 'John drank a cup of coffee' or 'John would say if asked "I have just drunk a cup of coffee"', etc. This is important for two opposed reasons: first, as a caution not to take the parasitic character of truth as entailing a possible reduction of concepts to some revised Fregean concepts. The second reason is that the discussion in terms of truth always suggests itself, and aspects that belong to or that are criticised by post-Fregean accounts of concepts will also appear below.

The second point stressed in Wittgenstein's move to grammar will be at the heart of our discussion. Namely, that while grammar grounds life—and, moreover, precisely insofar as it is its ground—grammar itself belongs to life in two senses. It belongs to life, firstly, in the sense

[1] I embrace David Finkelstein's insight (2003) that a Wittgensteinian analysis of language must comprise an analysis of life, which is not only linguistic.

that to speak and live grammatically is to become part of broader threads of life. Secondly, the relation of an actual engagement with a concept or with a part of grammar cannot be formulated under a presumption that grammar is completely pregiven. When I suggest the metaphor of the threads of life, I in fact already accept that grammar is lively in these ways. However, our actual course in this paper must in some measure beat a retreat, in order to achieve sharper understanding. We shall reconsider the lively character of grammaticality from a slightly changed perspective. We shall begin by asking what grounding by language involves, replying in a manner that increases the tension between a ground and a life. In virtue of this tension, the answer—which thus forms the first feature in our series—will, however, have to lead us to a more subtle web of relations.

## *Language and life—The first feature: language as background to intentionality*

It is part of the notion of a concept, and thus an additional aspect of its grounding character, that, generally speaking, holding a concept is not an intentional engagement. Thus I read the Rule-Following paradox—namely, as a repudiation of the picture of a rule as waiting for those who apply it to give it a meaning, or in other words as a repudiation of the idea that to follow a rule one has to intend it. To quote from § 219 of the *Philosophical Investigations*, 'When I obey a rule, I do not choose. I obey the rule *blindly*'. The living with a concept is not defined by a system of rules, but a similar point is still true. When I manifest a concept in my engagement, in general I manifest it blindly. Concepts and language would collapse if complaining about making a living as a rule included taking an attitude to, or thinking about, what a living would be. This point—one which is close to Cora Diamond's analysis of the rule-following paradox (1991)—is our point of departure, and we shall adhere to it in what follows.

## *The second feature: the openness of language*

At the same time, we have to be cautious; for concepts must be 'live' in order to comprise grounds for human engagements. They must be the foci or domains of our life, giving in a nutshell the actual and possible engagements that manifest them. Thus we should be wary of understanding concepts in a way that would reify them, annulling human life by the same token. If concepts precede intentionality, won't intentional life become the dead instances of a mysteriously pre-given sense? For suppose that all that a concept is or can be is predefined: what does such an account of concepts make of the relations between mastering the concept and the actual engagement? Engagements, concepts, and

their relations would all thereby be collapsed. When a person seeks for the means of subsistence, or when she describes her difficulties in finding them, this would perhaps be tantamount to certain 'movements' that somehow suit this 'concept', perhaps in a way similar to the movements of the wind, conceived by us as manifesting the character of a breeze.

Language must ground life, but if grounding entails pregivenness then grounding fails. So it better not entail it. The key, supplied by Wittgenstein, consists in the openness of language.[2] Its openness is realised, first, in clear concept changes. For example, neoliberal conceptions of socioeconomic life have changed the concept of a livelihood, 'inviting' people to apply the judgement 'it's a living' to jobs and work offers for which such a judgement would not have been considered in more unionised days.

The openness of language is also realised, more generally, in the concrete character that an engagement finds in a concept or gives to it. Thus, a middle-class person says of another of a different class that 'she cannot make a living' with one inflection (perhaps meaning 'she cannot feed her children'); and of herself and her friends she says similar things with another inflection ('no morning espresso for me nowadays'). The point is that concepts in the sense required *are* what we make of them and take them to be in our engagements, and thus when a certain engagement is considered, the question may arise as to the making and taking that depicts this engagement as manifesting a certain concept.[3] The concept of a living is constituted in the various forms given to it by people who already share it.

## *The second feature re-formulated: concepts are inflectible*

It is useful to speak of *inflection* in order to refer to the concept from the perspective of a specific engagement (or a domain of engagements). Inflection may be seen as a twist on the concept in question. It neither replaces concepts not complements them. Coffee, for example, is inflected in factories as a plant, as grains and as a product. However, at least for those who make the money, that inflection involves the fact that a certain drink is prepared from the grains mentioned, that

[2] Meir Buzaglo (2002) lays the emphasis on the openness of concepts, depicting conceptual expansion as part of rational human life, from mathematics to ordinary language. Openness also has a central role in Stephen Mulhall's reading of the PI in 2003.

[3] This does not prevent engagements from manifesting concepts in pre-decided modes. In particular, part of the character of various concepts is that they have a core domain of application, defined by certain limitations. It would not belong to mathematics (as it is now conceived) to allow that 1 and 1 *sometimes* make 3, and when someone is engaged in a calculation, not only does she inflect 3 as different than 1+1, but as necessarily so.

this beverage has an important place in the habits and the life style of consumers, possibly that it is also the preferred morning drink of the concept holders in question, etc. All this appeals to further inflections—and here we may evoke Rush Rhees, who took the problem that undermines the 'builders' language' (in the beginning of the *PI*) to be that of lack of interrelations with different parts of language, in which the relevant concepts are differently inflected (Rhees 1970). It is important that some of the further inflections appealed to in an inflection are, as in the example, more or less anticipated. It is also important that an inflection of a concept does not appeal to every actual or possible inflection. Thus, perhaps the workers in some places are ignorant of the coffee 'culture' whose existence their work sustains. They may later learn of it and re-inflect by the same token their concept of coffee, whereas presently this future inflection is also not appealed to.

One thing that these examples should already make clear is that the notion of an inflection does not depict inflections as intentional. What about the other point of the explanation, regarding inflections as concepts under a twist? What is involved here perhaps requires further discussion, for it may be natural to endorse a certain aspect of the notion of inflection and thereby in fact reify inflections, even if they are supposed to be the live forms of a concept. It appears to me that Charles Travis's work takes this double direction. Interpreting Wittgenstein, Travis is impressed with the possibility that the concept would take up its character in the circumstances of use. Travis's concepts are Fregean sharp concepts relativised to a particular occasion. Thus he might say that if someone says 'This is coffee' in regard to a particular liquid matter, she presupposes on the occasion a concept whose extension is the cups and jugs of coffee (rather than cacao or some cleaning agent). As such, Travis's concepts may not agree with the above description of inflection, even if it were reframed, as much as possible, in regard to functions from objects to truth. Yet Travis's occasions retain the vague identity that occasions have in everyday life, and, furthermore, he acknowledges that if the diverse uses of a word are understood, then they are not reduced to mere homonyms.[4] The following implication in our series distances inflections from homonyms and characterises inflections and engagements as vague. By contrast, as the last feature in the series makes clear, Travis's account in fact identifies concepts with homonyms. We shall now see that if the openness of language and concepts that enables them to ground life is tantamount to inflectibility, then the analysis in terms of inflections may not serve as a reduction of openness. From there, we shall proceed to endorse conceptual ambivalence, a phenomenon for which no room is left in Travis's account.

[4] This is stressed in (Travis 2000: 185). The rest of the paragraph refers to (Travis 2008) and to the introduction to (Travis 2000).

## *The third feature: concepts are re-inflectible*

Is it then essential to conceive of inflection in terms of a concept with a twist? And, if it is, in what sense is this properly essential? We have seen that the openness of language is tantamount to the inflectibility of concepts, but we have not examined how this pair of ideas—of openness and inflectibility—should be understood. It may seem that an open concept amounts to a multiplicity of inflections. The problem, however, may now be clear: namely that the relation of an inflection to the concept that transcends it entirely disappears, and with it any reason to speak of a unitary and open concept. It may be helpful to reconsider the case of the middle-class person who, in her judgements as regards the hardships of making a living, measures a living in terms of espresso in regard to herself and in terms of bread in regard to a poor acquaintance. If openness is reduced to multiplicity of closed inflections, it is as if two different concepts pertain to each of her judgements; as if another person cannot ask her: why then one rule for you and another for others? Or as if this question is a matter of a third concept of a living that has nothing to do with those two already presumably acknowledged concepts.

Indeed it is important that we can *add* the last question. That is, it won't be sufficient to accept some sophisticated version of closed inflections and closed relations of engagements. For, in any version that equates inflectibility with a multiplicity of closed inflections, we can neither ask for a rise, nor reject someone else's demand, nor have any good old grammatical cup of coffee. To see why, let us recall how we have been led to see that language, as the ground of life, must be open. We accepted the requirement of a language as background rather than part of intentionality. However, in so far as we supposed that as a background, language completely precedes the actual engagement, it was no longer clear how the engagements borrow any sense from language. Hence, openness—i.e., inflectibility. However, if the concept of a 'living', or that of 'coffee', are reducible to their 'inflections', do we not merely move from a reification of an a priori language, to its reification at the level of concrete use, as if any engagement should be juxtaposed with its particular concepts or inflections of concepts?

It is thus impossible to determine univocally and conclusively how a given engagement inflects a concept. In fact, no positive qualification could fix an engagement entirely, not even the engagement of one person, and not even when we think of it—so far as is possible—only from a first-person point of view. Consider one's dismissive reading in the papers, on a certain Thursday, of the sufferings of the unemployed who just sit in cafes all day long: is this reading disparate from one's general attitude to the working classes? Is it a disparate engagement from one's own sitting in a café at the time of reading? If one then goes back

to work only to hear that one has been fired, the past engagement may be seen in a different light. Has it changed? We cannot give univocal answers if we wish engagements to reveal the person as engaged with something; and engagements are, if anything, more indefinite when more people are involved in it. Furthermore, they are more indefinite as there is always the possibility of more people getting involved, including such people as we would be, were the examples in this talk concerned with real people—that is, including those who make inquiries or judgements about the engagements.

The point is that to analyse engagements as indefinite is again to deal with the liveliness indispensable for a concept if it is to render an engagement with sense. When we wish to speak of the 'same engagement'—an idea that introduces a difference, but one in which the engagement nevertheless remains the same—we present the engagement as taking some different course in language, or letting language somehow back it up differently.[5] Thus, it cannot be conclusively determined how a concept is inflected. Now, if we think of an inflection as a mini-concept, we may sometimes have to worry how the inflection itself is inflected. Other cases would similarly suggest a split of inflections in the first order, while these inflections can always require further splitting. My conclusion, however, is not that we ought to distinguish between first-order and higher-order splits of inflection, but rather that an ontology of inflections is a bad idea.

In any case, the third point arrived at in our series is that how a concept is inflected is open to change and re-interpretation, and may be indefinite. In the words of Wittgenstein, in § 62 in regard to the orders 'Bring me the broom' and 'Bring me the broomstick and the brush which is fitted on to it':

> You may say: 'The point of the two orders is the same'. I should say so too.—But it is not everywhere clear what should be called the 'point' of an order.

Indeed, Wittgenstein guides us far away from any explication of his 'meaning is use' slogan in terms of mini-meanings underlying definite uses. Let us read § 83.

> Doesn't the analogy between language and games throw light here? We can easily imagine people amusing themselves in a field by playing with a ball so as to start various existing games, but playing many without finishing them and in between throwing the ball aimlessly into the air, chasing one another with the ball and bombarding one another for a joke and so on. And now someone says: The whole time they are playing a ball-game and following definite rules at every throw.
>
> And is there not also the case where we play and—make up the rules as we go along? And there is even one where we alter them—as we go along.

[5] This 'backing up' will not always be formulated in terms of one and the same concept.

## *The fourth feature: conceptual ambivalence*

What is the language that life requires? It is, in addition to what we have seen, a language whose concepts can raise ambivalence. Before developing the reply, however, a clarification of this question may be called for, namely, that this question is tantamount to asking what natural language requires. It is not necessary for formal languages to be capable of ambivalent use and their terms or concepts do not have to be re-inflectible or even at all inflectible.[6] The reason that the series of features does not apply to formal languages is that the concept of language is inflected as relative in the relevant contexts. In other words, formal languages constitute domains within natural language. Of course, formal languages are typically developed as independent domains. However this is again a relative independence: it only means that certain dependencies are prohibited. Thus, when a formal language is mixed with other uses of its terms and with other expressions, this would not itself be seen as part of the formal language. At the same time, formal language (and actual formal languages) must always presuppose other dependencies. For instance, the logician uses informal language in developing a formal language, the interests served by this formal language must be backed up by our broader language, etc.

So what *is* the language that life requires? Where has the series led us? It is a language whose rules are followed blindly, as in 219, but it is not a language with fixed rules or, more generally, with a pre-given definite grammar. If some games may be described in terms of a fixed nature, this is because such a description does not stand alone, but rather the game is part of a life in which our engagements flexibly and without final determination inflect concepts. § 83, added to § 219, leads us far. Yet there is further to go. The very meaning of openness poses a difficulty. For, as openness goes beyond any engagement, the question arises of how openness can *necessarily* belong to our life and talk. Even if it is impossible to reduce open concepts to univocal definite elements, might we not arbitrarily define the engagement, its context, and the inflection of relevant concepts? What lends sense to our talk of the same old engagement in regard to cases and possibilities in which the concept is inflected differently? What is it in language that gives us undeniable permission to meaningfully ask our middle-class protagonist: why do you acknowledge only discriminatively that a person cannot make a living? Namely, how *is* it possible to refer to her abovementioned engagements, yet under a different inflection of the concept of a living?

One answer would be to note that this is how we live, and that just *is* the game of life and language: neither engagements nor their inflection

[6] I thank Bill Child for bringing up the issue of formal languages in a private exchange.

of concepts are fixed. And this of course is true. We must ask, however, how the openness of a concept enters into how we live, rather than merely into a story told about us. Indeed, in recent decades the character of language as ground for life has been systematically confused with certain *modes* of language that discuss or represent human life, namely folk-psychology or -theory, images and interpretations. Thus, Daniel Dennett (1987 & 1996) has argued that there are only theories. However, the reduction of *human life* to theories is presupposed across cognitivist philosophy: Wilfrid Sellars 1962 is an especially influential example.

Here, then, is another way that the necessary blindness of our use of language threatens a collapse of life and language. Since we do live and talk, there must, therefore, be some qualification to the blind use of language; moreover, the qualification must take a particular direction, i.e., towards a way of having concepts that exposes their openness. To put it briefly, the openness of language is anchored in the possibility of what I propose to call conceptual ambivalence. When one is conceptually ambivalent, one's engagement is bound up with two contending inflections of the concept, and neither any of them, nor their contention, could be omitted.

Now, the order of presentation of the entailment of conceptual ambivalence may also be inverted: the non-exhaustive character of any inflection is part of our life only if a person must, in her concrete engagement, sometimes go beyond an inflection that her engagement all the same takes up. And, further, when an inflection is both held and challenged by someone, and is held only to the extent that it is challenged, then the inflections and conflict are, by the same token, intentional engagements. It follows that our unintentional sharing in language must be acknowledged as the general rule that always allows exception. '[T]here is a way of grasping a rule which is *not* an *interpretation*' Wittgenstein writes in § 201. There is also a way that *is* an interpretation. And there are other ways to be intentionally engaged with rules, or more generally with language. We should remember that Wittgenstein again and again posits the blind use of language precisely in the context of learning a certain use and of the possibility of misunderstanding. To imagine a doubt is not to be in doubt, he tells us in § 84, but can doubts only be imagined? Or must we sometimes be in doubt? The relations of engagements with language require that we are sometimes engaged with language. I think that it is because Wittgenstein takes this requirement seriously that Kripkeian and Dummetian interpretations of Wittgenstein, according to which grasping a rule is intentional, are even possible.[7]

[7] In Kripke 1982, this interpretation is part of the problem that the paradox exposes. In Dummett 1959, the intentionality is entailed by Wittgenstein's solution, according to which one adopts a convention in every use of (mathematical) language.

Let me then clarify the notion of conceptual ambivalence. The first question is why conceptual ambivalence, as that phenomenon of opposed inflections that is required by the openness of language, implies that blindness is qualified by it. In fact, to have spoken of the contention of inflections as a form of ambivalence has already been to regard it as intentional. Ambivalence is a mental attitude, or—in slightly different terms—it is the holding of opposed mental attitudes *as* opposed. Now, this is precisely what we need, namely, that one would be engaged such that from one's own point of view, as thus engaged, one is inflecting a concept and challenging the inflection. We need concepts to be held as tension-fraught attitudes. Yet what could this mean? After all, concepts are not intentional and in particular they are not mental attitudes. Of course to speak of concepts in terms of attitudes is by the same token to enter into the territory of concept inflection, and this is part of the answer. However, we also know that concept inflection is not in general intentional: when someone is engaged in checking whether some job provides a living, her inflection of the concept of a living does not comprise a second engagement on her part. Otherwise, inflections would only add a second set of engagements, and all our difficulties in regard to the relation between concepts and engagements—difficulties that have led us to conceive of concepts in terms of inflectibility in the first place—would reappear between concepts and inflections.

Although concepts or inflections are fundamentally unintentional, sometimes we hold concepts as attitudes. The concept is then not merely inflected in some direction, but rather the very inflection engages the agent. How is this to be understood? First, we should shift between thinking of intentional inflections as the concepts and as attitudes towards the concepts (or, again, as attitudes towards the inflections themselves). Secondly, we have been concerned with the dual direction of fit between concepts and engagements, according to which engagements *make* and *take* the character of the related concepts. At the intentional level, this dual direction of fit equates the inflection with an attitude of a particular sort, namely value judgement.[8] To inflect a concept intentionally is, by the same token, for the agent to judge that she[9] ought, in that context or in general, to give such a character to the concept, or

[8] This is based on my analysis of judgements in terms of interdependent dimensions, one of them a cognitive dimension and the other similar to emotions and desires. On the cognitive dimension, the judgement aims to acquire a pre-given objectivity—in our case, as to how the concept should be taken. The particular inflection is taken to be appropriate. On the non-cognitivist dimension, to judge that the object is of a certain value is to treat it as of such value. This means in our case that the inflection of the concept is treated as appropriate. What would it mean to treat an inflection as appropriate? In the simplest case—which is ours—it is nothing other than to inflect the concept accordingly. The two-dimensional analysis of judgements, and more on their relations to concepts, can be found in Razinsky 2014.

[9] That she ought, or that one ought.

that her inflection of the concept is right. 'It's a living' is sometimes said qua 'you should learn to think of livelihood this way'.

In conceptual ambivalence, moreover, we have two attitudes—or, if you wish, one ambivalent attitude. When I say that conceptual ambivalence (i.e., the contention of inflections that are both manifested together in the engagement of a person), is *ambivalence*, I make a grammatical point. For, if an inflection is inflected as challenged, it is not blind.[10] The two inflections compete to be the right inflection for the concept under the engagement in question. Suppose someone is ambivalent whether to pay another person as a salary the lowest sum that he would agree to take. Such engagement reflects and finds expression in ambivalence as to how to inflect the concept of livelihood at that person's expense—in other words, whether to inflect the notion of a 'living' as involving having access to bread, or to espresso.

Another example may be drawn from Travis's exposition of his idea of 'an understanding' in the introduction to *Unshadowed Thought*. Travis there refers to a door over two stacks of milk crates serving as the desk in a certain poor student's room. Is there a desk in the student's room? It depends on what you mean by a desk. In some cases a desk is an item of furniture deliberately produced as one. For instance, a richer student may tell his mom, 'I don't have a desk in my room at the minute. I have ordered one, but until they bring it from the store, I'm doing homework on a door laid over two stacks of milk crates'. In other cases, anything functioning as a desk is a desk. It is however just as ordinary—and here we must go beyond Travis's framework—that these two inflections are both involved in the inflection of the concept of a desk. This may happen in many ways, not always constitutive of ambivalence between the inflections. For instance, the richer student might say 'right now I'm using a funny sort of a desk but the real desk is going to arrive in a few days'. He seems quite settled how 'a desk' should be understood in the situation, namely in a way that makes of a door over milk crates a liminal referent. Consider, however, someone who uses the milk-crates desk regularly. Now he is going to host a 'respectable' relative who would need to complete a talk paper during her stay. He wants her to understand the situation in advance, and in explaining it to her, he is engaged in conceptual ambivalence as to the inflection of the concept of a desk. In other words, he ambivalently counts and yet does not count the-door-and-two-stacks-of-milk-crates as a desk. 'You know, there is some desk there, but it is of a funny sort', he might tell her, or 'there is a bed and some comfortable chairs. There is of course also a desk, it works for me alright. Yet, I must admit that it is not a real desk…'.

[10] Here I refer to an inflection as made, and by the same token challenged, by one person. An interpersonal engagement may also be indispensably bound up with some contention of inflections (it does not have to be univocally decided what the character of the contention is). This is how many disputes must be understood.

A remark in parentheses: conceptual ambivalence is not only very common, but it is an essential feature of various phenomena. I elsewhere argue that the scientific enterprise is bound up with conceptual ambivalence: every theory, or the scientific community holding it, is conceptually ambivalent in regard to methodological concepts (for instance, the concept of explanation) and to 'material' concepts (such as that of electron). Secondly, ethics is bound up with recurrent opportunities for conceptual ambivalence regarding the value concepts in question. Thirdly, the logic of desire and fulfilment invites cases of conceptual ambivalence in regard to the concept of 'a fulfilment of so and so's desire that such and such'.[11]

I have argued that language requires the possibility of conceptual ambivalence, and that conceptual ambivalence is a concrete engagement that reveals the openness of a concept. Let me make it clear, however, that conceptual ambivalence is not tantamount to such openness. On the contrary, in cases of conceptual ambivalence, as in any other case, we inflect the concept in a certain concrete direction—concrete and tension-fraught in the case concerned; And to be inflected in a concrete direction entails that the concept or inflection may always be transcended by other inflections. Paradoxically, if conceptual ambivalence was openness, it would exclude openness. The point in speaking of conceptual ambivalence as exposure to openness is different, however: when one ambivalently inflects a concept, the two inflections are both necessary. Yet they cannot be combined into one inflection. The concept is inflected, by and from the point of view of our protagonist, in each of the two ways, each of them is held *qua* a suggestion that the other be excluded. Yet it is not excluded. Instead, each inflection disrupts the other, and thus it exposes that the concept is not tantamount to the contending inflection.

## *Conclusion*

It might be worthwhile to make explicit two of the more silent dialogues in which this paper engages. First, this paper might have begun by insisting, with Rhees, that Wittgenstein's 'builders' do not have a language, and moving from there to ask what language must be in view of the existence of real people. Rhees offers two explanations for why the builders' language is not a language. One of these explanations—that the builders' 'concepts' lack interrelations with other inflections of such concepts—has played a part in the present account. What about the other lack that he identifies—along with Raimond Gaita (1991), who goes back to Rhees's paper—namely the lack of a genuine conversation between people? My reply is that this lack is indeed crucial, and that while our present series ends with a phenomenon of individual life, a different course would draw a mutual constitution between meetings

[11] See Razinsky 2014 for the second claim and Razinsky 2015 for the third claim.

and relationships, our individual lives, and the language that backs up human life.

The other dialogue to be mentioned includes Donald Davidson and his account of the interrelations between mind and language. Although his focus is individualistic, and although he is hostile to ambivalence, Davidson's work on basic rationality, language and irrationality is all about human life being linguistic, and language being the domain and background of human life. On Davidson's account, however, concepts are themselves mental attitudes, and are symmetrical with beliefs and desires. While the Wittgensteinian asymmetry is important, this paper has argued that in fact it encompasses the truth in Davidson's view—namely, that Wittgenstein defends an inherently fragile asymmetry.[12]

We can end by returning to conceptual ambivalence—and to Wittgenstein. Does Wittgenstein move from the inflectibility of language to conceptual or to linguistic ambivalence? I shall only point towards Wittgenstein's simplest answer, which is a 'yes' that is striking in its unaccentuated and innocent tone. For he remarks in § 677 regarding a similar phenomenon 'one does indeed also say "I was half thinking of him when I said that"'.[13]

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[12] Davidson's individualistic approach, his exclusion of ambivalence from basic rationality (by including the consistency of attitudes in the *charity principle*), and his understanding of concepts as attitudes can be found in Davidson 2004. The present paper is related to Davidson also in borrowing from him the view of mental attitudes as intentional dispositions (in this I disagree with the interpretationalist understanding of Davidson's account of attitudes).

[13] I wish to thank Yemima Ben-Menahem, Charles Blattberg, Bill Child, Ayal Donenfeld, Dalia Drai and Ben Young, who read and commented on various versions of this paper.

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# *Mereological Essentialism and Mereological Inessentialism*

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*Mereological essentialists argue that mereological summations cannot change their parts. Mereological inessentialists argue that mereological summations can change some or all of their parts. In this paper I articulate and defend a position called Moderate Mereological Inessentialism, according to which certain mereological summations can change some, but not all, of their parts. Persistent mereological summations occur when the functional parts of mereological summations persist through alterations to its spatial parts.*

**Keywords:** Mereology, mereological sum, mereological essentialism, mereological inessentialism.

Hansel and Gretel eat a piece of the candy from which the witch's house is constructed. Is the house the same house before and after this incident? Debate rages between mereological essentialists, who answer in the negative, since mereological summations cannot change their parts (Chisholm 1973; Van Cleve 1986), and mereological inessentialists, who answer in the positive, since mereological summations can change some or all of their parts (Thomson 1983; Van Inwagen 2006). In this paper I articulate and defend a position called Moderate Mereological Inessentialism, according to which certain mereological summations can change some, but not all, of their parts.

This paper is divided into seven sections. First, I outline the relevant principles of classical mereology which give rise to the difficulties associated with mereological essentialism (§ 1). I then outline, and ultimately judge incomplete, two contemporary versions of mereological inessentialism: the first (§ 2), what I call the Weak Sum Identity view of Peter Van Inwagen (2006); the second (§ 3), what I call the Moderate Sum Identity and Strong Sum Identity proposals of David Sanford (2011). I then define several varieties of mereological summations

(§ 4), arguing that mereological essentialism is true for unstructured mereological summations, but there is a class of persistent mereological summations (§ 5), where moderate mereological inessentialism is true for this class (§6). I then demonstrate how moderate mereological inessentialism overcomes the difficulties that Van Inwagen and Sanford face (§ 7).

## 1. *Mereological Commitments*

Mereology, from the Greek *méros* = part, is the study of the relation between parts and wholes. Classical mereology is that tradition within the twentieth century study of mereology that attempts to formalize mereological theory. Pioneers of this enterprise include Lésniewski (1916) and Leonard and Goodman (1940), while contemporary proponents include Simons (1987) and Casati and Varzi (1999), of whom my notation follows the latter. In these works, formal mereological principles and definitions are established, several of which are relevant to the material discussed below. First, the principle of transitivity:

$$\textit{Transitivity} =_{df} (Pxy \wedge Pyz) \rightarrow Pxz$$

Transitivity states that if $x$ is a part of an object $y$ that is itself part of a larger object $z$, then $x$ must be part of that larger object $z$. For example, if the banana stem is part of the banana peel, and the banana peel is part of the banana, then the banana stem is part of the banana. Second, when two (or more) individuals, in some way, combine:

$$\textit{Overlap:}\ Oxy =_{df} \exists z(Pzx \wedge Pzy)$$
$$\textit{Underlap}:\ Uxy =_{df} \exists z(Pxz \wedge Pyz)$$

According to these definitions, $x$ overlaps $y$ if $z$ exists such that $z$ is part of $x$ and $z$ is part of $y$. Imagine that two distinct roads (King St. and Weber St.) intersect at a junction. In this case, King St. and Weber St. overlap, where the overlapping portion is the individual called junction. The junction exists, and this junction is a part of King St. and a part of Weber St. And, $x$ underlaps $y$ if $z$ exists such that $x$ is part of $z$ and $y$ is part of $z$. To return to the example of the banana, the peel and the fruit-flesh underlap the banana, or, they are both parts of the banana. These two definitions help to define the summation operation:

$$\textit{Sum}:\ z = [x + y] =_{df} \exists z \forall w(Owz \leftrightarrow (Owx \vee Owy))$$

That is, there is a $z$ that exists which is the sum, and for every $w$, $w$ overlaps $z$ iff $w$ overlaps $x$ or $w$ overlaps $y$. The banana, for example, is the sum of the peel and the fruit-flesh, so only if the stem overlaps the banana, the stem overlaps the peel or the fruit-flesh. In this case, the stem overlaps the peel. Similarly, only if the stem overlaps the peel, the stem overlaps the banana.

## 2. *Van Inwagen on Mereological Essentialism*

Strong Mereological Essentialism is the view that mereological sum $y_1 = [x_1 + x_2]$ necessarily has all and only the parts $x_1$ and $x_2$. Strong mereological essentialism implies that mereological sum $y_1 = [x_1 + x_2]$ cannot change any parts. That is, if mereological sum $y_1 = [x_1 + x_2]$, and mereological sum $y_2 = [x_1 + x_3]$, then $y_1 \neq y_2$. According to this view, the witch's house can be composed of all and only the candy originally composing it. Roderick Chisholm (1973) points to Leibniz and Moore as historical advocates, while Chisholm and Van Cleave (1986) can be included as adherents as well.

Strong Mereological Inessentialism is the view that mereological sum $y_1 = [x_1 + x_2]$ can have any part, such as distinct hypothetical parts $f_4$ and/or $u_7$. Strong mereological inessentialism implies that mereological sum $y_1 = [x_1 + x_2]$ can, without caveat, change any and all its parts. That is, if mereological sum $y_1 = [x_1 + x_2]$, and mereological sum $y_2 = [f_4 + u_7]$, then it may be that $y_1 = y_2$. According to this view, the house can be composed of a pebble on Mars and the Eiffel Tower (cp. Chisholm 1973: 584). Strong mereological inessentialism is an extreme position that, so far as I know, currently lacks adherents.

Similarly, strong mereological essentialism is, even to the minds of its adherents, an "extreme principle" (Chisholm 1973: 586). Many have attempted to weaken the doctrine (Chisholm 1973; Plantinga 1975). Here is one such weakening: Moderate Mereological Inessentialism is the view that mereological sum $y_1 = [x_1 + x_2]$ may, within certain parameters, have $x_1$ and $x_3$, rather than $x_1$ and $x_2$, as parts. Moderate mereological inessentialism implies that mereological sum $y_1 = [x_1 + x_2]$ may, within certain parameters, change some of its parts. That is, if mereological sum $y_1 = [x_1 + x_2]$, and mereological sum $y_2 = [x_1 + x_3]$, then, possibly, $y_1 = y_2$. According to this view, the same house can be composed of different candy. Moderate mereological inessentialism has a number of adherents (Plantinga 1975; Thomson 1983: 204; Van Inwagen 2006), though they do not label themselves as such, nor do they agree on the conditions requisite for summation alteration. Of course, moderate mereological inessentialism is heavily dependent upon outlining and legitimating the conditions under which summation modification is plausible. In this section, and the next, I evaluate, and ultimately judge incomplete, two sets of conditions placed upon mereological summations according to which they may be capable of changing some of their parts.

In this section I consider Peter Van Inwagen's (2006) argument that sums can change their parts. Central to his argument is his view that a mereological sum is actually a mereological summation *of parts*. This means that a mereological sum is an object that is distinct from its parts (Van Inwagen 2006: 616–617). In other words, Van Inwagen accepts the Principle of Ontological Generosity:

> *Ontological Generosity*: When $x_1$ and $x_2$ underlap, a new individual $y_1$ exists, which is the mereological sum of $[x_1 + x_2]$, but is not only $x_1$ and $x_2$.[1]

A straightforward reading of classical mereology indicates that whenever $x_1$ and $x_2$ underlap a mereological summation of these two parts, the mereological summation is a new individual $y_1$, or a singular term $y_1$ (cp. Simons 1987: 13; Casati and Varzi 1999: 43–44, 51). To use a common example, Tibbles is an individual cat, Tib is the cat's body minus the tail, and Tail is the cat's tail (Wiggins 1979: 309–310; Noonan 1980: 23; Simons 1987: 191). In this case, Tibbles ≠ [Tib + Tail].

The principle of ontological generosity has its share of detractors (Lewis 1991: 81; Armstrong 1978: 36; Baxter 1988). Those detractors argue that mereology is ontologically innocent:

> *Ontological Innocence*: When $x_1$ and $x_2$ underlap, the new individual $y_1$, which is the mereological sum of $[x_1 + x_2]$, is only $x_1$ and $x_2$.

According to ontological innocence the mereological sum $y_1$ is nothing over and above the parts $x_1$ and $x_2$. The mereological sum is, as it were, a transparent container, leaving only the parts as content: "The fusion [of several cats] is nothing over and above the cats that compose it. It just *is* them. They just *are* it. Take them together or take them separately, the cats are the same portion of Reality either way" (Lewis 1991: 81).[2]

The Principle of Ontological Innocence faces several trenchant difficulties, one of which is highlighted by Van Inwagen himself. Namely, the mereological summation has the property of being singular, while the parts have the property of being a plurality, so, by Leibniz' Law, the mereological summation ≠ the parts (cp. Van Inwagen 2006: 614; Sider 2007: 55; Yi 1999; McDaniel 2008). Even Lewis is cognizant of this difficulty: "What is true of the many is not exactly what's true of the one. After all, they are many while it is one" (Lewis 1991: 87; cp. Sider 2007).

If the mereological summation were identical to its parts, then a change in the parts would necessitate a change in the mereological summation. But, given that mereological summations are distinct from their parts, a change in the parts does not necessitate a change to the mereological summation. In other words, the distinction between mereological sums and their parts, as implied by ontological generos-

[1] Ontological generosity is also evident in cases of the product operation of closure mereology as well. In this case, when $x_1$ and $x_2$ overlap, a new individual $y_1$ exists, which is the intersection of $x_1$ and $x_2$, which is not only $x_1$ and $x_2$.

[2] Casati and Varzi support Lewis' intuition by saying "Imagine bargaining over two cats in a pet store. Can you buy the cats without buying their sum? Can you buy the sum but not the individual cats" (Casati and Varzi, 1999: 43–44)? Not all intuitions support mereological innocence however: imagine buying a Toyota and it is shipped to you in a box of pieces. You have all the parts, but you do not have the car.

ity, renders it possible for the parts to change without the summation changing. Van Inwagen exploits this opening:

> There is an object *x* [i.e., a house] such that for a certain interval before *t*, *x* was a mereological sum of the Tuesday Bricks and, for a certain interval after *t*, *x* was a mereological sum of 'the Tuesday Bricks minus the Lost Brick'. 'But the Brick House was not the same mereological sum before and after the Lost Brick ceased to be a part of it.' Well, it was not a mereological sum of the same things. But that does not mean that it 'wasn't the same mereological sum' (Van Inwagen 2006: 626).

Since the mereological sum (i.e., the house) is a distinct object from its parts (i.e., the bricks in his example), it is possible for the same mereological sum to have different parts at different times. In other words, Van Inwagen endorses a Weak Sum Identity Condition:

> *Weak Sum Identity Condition*: sum $y_1$ of $[x_1 + x_2]$ = sum $y_2$ of $[x_3 + x_4]$ iff $y_1 = y_2$.

Van Inwagen frames weak sum identity as follows: "$x$ is the same mereological sum as $y =_{df} x$ is a mereological sum and $y$ is a mereological sum and $x = y$" (Van Inwagen 2006: 626). Since $y_1$ is a distinct object from $x_1$ and $x_2$, and $y_1$ is an object capable of persisting through changing parts, $y_1$ can remain the same sum through changes to its parts.

Van Inwagen's solution is of significant worth, and will be substantially incorporated into the final solution below, but it is incomplete in at least one respect. While Van Inwagen is correct in demonstrating the distinction between the mereological sum and the parts, his solution fails to meet the following plausible condition on sum identity:

> *Overlap Condition*: sum $y_1$ of $[x_1 + x_2]$ = sum $y_2$ of $[x_3 + x_4]$ iff $[x_1 + x_2] = [x_3 + x_4]$.

Here is some motivation for the overlap condition: according to the definition given in the discussion on classical mereology, only those things ($w$) that overlap some part ($x_1 \vee x_2$) of the summation ($y_1$), overlap, or, are included in, the summation. For example, only those things $w$ that overlap some part ($\text{candy}_1 \vee \text{candy}_2$...) of the Tuesday House, are included in the Tuesday House. In this case, $w$ overlaps $\text{candy}_1$, which is a candy on the western wall of Tuesday House, so $w$ is included in the Tuesday House. Also, $\text{candy}_{1b}$, which is a candy on some store shelf on Tuesday, does not overlap any part of the Tuesday House, so $\text{candy}_{1b}$ does not overlap, or, is not included in, the Tuesday House. Imagine that Hansel and Gretel eat $\text{candy}_1$ on Wednesday, so the witch replaces $\text{candy}_1$ with $\text{candy}_{1b}$. Now again, only (and all) those things $w$ that overlap some part ($\text{candy}_{1b} \vee \text{candy}_2$...) of the Friday House, are included in the Friday House. Since $w$ overlaps $\text{candy}_{1b}$, $\text{candy}_{1b}$ is included in the Friday House. But, since $w$ does not overlap $\text{candy}_1$, which has been digested, $\text{candy}_1$ is not part of the Friday House. Now the question: is Tuesday House = Friday House? The answer is no. Why is that? It is

already established that $candy_{1b}$ is not included in Tuesday House, so if Tuesday House = Friday House, then $candy_{1b}$ is not included in Friday House. But, it is established that $candy_{1b}$ is included in Friday House, so a contradiction arises if Tuesday House = Friday House. At the same time, it is established that $candy_1$ is included in Tuesday House, so if Tuesday House = Friday House, $candy_1$ is included in Friday House. But, it is established that $candy_1$ is not included in Friday House, so a contradiction arises if Tuesday House = Friday House. For both reasons, it cannot be the case that Tuesday House = Friday House. So, a difference in the parts of the houses on Tuesday and Friday implies that Tuesday House ≠ Friday House (cp. Meirav 2009: 185ff; McDaniel 2010: 419ff; Johannson 2006: 8–9).

What is needed is a principled account of how the Tuesday House = the Friday House while $candy_1$ of the Tuesday House ≠ $candy_{1b}$ of the Friday House. Van Inwagen assumes, without adequately demonstrating, this is possible. Below I sketch a model that meets this Overlap Condition.

## 3. *Sanford on Mereological Essentialism*

In a recent paper, David Sanford (2011) offers two other possible identity conditions for sums. According to Sanford, the first condition, call it the Strong Sum Identity Condition, entails mereological essentialism. Meanwhile, the second condition, call it the Moderate Sum Identity Condition, offers more hope in permitting sums to change their parts. I argue that the second substantially reduces to the first, thus neither models permit sums to change their parts. I will begin with the first condition:

> *Strong Sum Identity Condition*: sum $y_1$ of $[x_1 + x_2]$ = sum $y_2$ of $[x_3 + x_4]$ if $[x_1 + x_2] = [x_3 + x_4]$, and the parts $[w_1 + w_2 + w_3 + w_4]$ of the parts $[x_1 + x_2]$ = the parts $[w_5 + w_6 + w_7 + w_8]$ of the parts $[x_3 + x_4]$ (cp. Sanford 2011: 235–236).

Strong sum identity says that $y_1 = y_2$ if $y_1$ has all the same parts, and the same parts of parts, as $y_2$. Sanford explains it as follows, where the *y*s are parts of the mereological sum *x*: "Every part of every *y* shares a part with some *z*, and every part of every *z* shares a part with some *y*" (Sanford 2011: 235). To return to the example of the house: the house on Tuesday has four walls, a roof and a floor, where these parts are each composed of candy. On Wednesday one gummy bear is removed from the western wall. The Friday house has the same parts as the Tuesday house (i.e., four walls, roof and floor), but the parts of these parts are not the same (i.e., one of the gummy bears on the western wall is gone). So, according to strong sum identity, the Tuesday House ≠ the Friday House. Sanford, therefore, is correct in arguing that this strong identity condition entails strong mereological essentialism.

Sanford's second sum identity condition, the Moderate Sum Identity Condition, more plausibly enables sums to change their parts:

> *Moderate Sum Identity Condition*: sum $y_1$ of $[x_1 + x_2]$ = sum $y_2$ of $[x_3 + x_4]$ if $[x_1 + x_2] = [x_3 + x_4]$ (cp. Sanford, 2011, 237).

According to this condition, the Tuesday house (i.e., *wall* with all the candy) has the same *wall* as the Friday house (i.e., *wall* with the missing gummy bear), so the sum identity appears to go through. Sanford argues that the moderate sum identity condition is "logically independent" (Sanford 2011: 237) from the strong sum identity condition. This is because, among other things, it is possible to imagine a scenario whereby the Strong Sum Identity Condition renders two sums identical while the Moderate Sum Identity Condition renders the same two sums distinct. Here is his example:

> Four brick walls constitute a brick house. *A* is the sum of the walls on Tuesday. *B* is the sum of the walls on Friday. This time a brick is removed from one of the walls without destroying the wall. It is the same wall with one less brick. Because the removed brick is a part of one of the walls on Tuesday that is not a part of any wall on Friday, $A =_1 B$. Because the walls on Tuesday and Friday are the same walls, $A \neq_2 B$ for the same reason as before (Sanford 2011: 238).

According to Moderate Sum Identity, Tuesday House = Friday house, since all their parts are the same, including Tuesday Wall = Friday Wall. According to Strong Sum Identity, however, Tuesday House ≠ Friday House, since not all the parts of the parts are the same. Specifically, $\text{candy}_1$ in Tuesday Wall ≠ $\text{candy}_0$ in Friday Wall.

As it turns out, at least in this regard, the moderate sum identity condition reduces to the strong sum identity condition, thereby entailing that the Tuesday House ≠ Friday house on the moderate sum identity condition. There are two different ways to show this. First, the moderate sum identity condition assumes that Tuesday Wall = Friday Wall, so Tuesday House = Friday House. But Tuesday Wall does not have the same parts as Friday Wall, so, due to the overlap condition, Tuesday Wall ≠ Friday Wall. Since Tuesday Wall ≠ Friday Wall, the house composed of four walls, including Tuesday Wall, is not the same sum as the house composed of four walls, including Friday Wall.

Secondly, as outlined in Section One, one of the basic principles of classical mereology is the principle of transitivity: if *x* is a part of an object *y* that is itself part of a larger object *z*, then *x* must be part of that larger object *z*. While the transitivity principle has been questioned (Lyons 1977: 313; Cruse 1979), it is widely accepted. And, plausibly, the transitivity principle is symmetrical, so it entails the transitivity of summation:

> *Transitivity of Summation*: if *z* has part *y*, and *y* has part *x*, then *z* has part *x*.

So, the Tuesday House has Western Wall as part, and the Western Wall has all of its candy as parts. The Friday House has Western Wall

as part, and the Western Wall has all but one of its candies as parts. Since Western Wall does not have the same parts on Tuesday and Friday, Tuesday House ≠ Friday House.

One way to overcome this difficulty is to find a principled reason for why the house may have only four walls, a roof and a floor as essential parts, without also having the parts of these parts as essential parts. In other words, the principle of transitivity of summation can be rejected if the following principle is true:

> *Principle of Parthood Immediacy*: if $z$ has $y$ as part, and $y$ has $x$ as part, it is not necessarily the case that $z$ has $x$ as parts.

Sanford, in arguing that the Friday House = Tuesday House since Tuesday Wall = Friday Wall, despite the fact that Tuesday Wall has a part that Friday Wall lacks, appears to suggest such a move. His reason is that the Friday Wall is the same *object* as the Tuesday Wall, where objects can change parts and *sums* cannot change parts (Sanford 2011: 238–239). In other words, the Tuesday Wall Sum ≠ Friday Wall Sum, but the Tuesday Wall Object = Friday Wall Object, and the Friday House is composed of the Friday Wall Object, not the Friday Wall Sum. But now the question arises, and this is similar to the question that arises in the discussion on Van Inwagen: how does Tuesday Wall Object = Friday Wall Object despite the fact that Tuesday Wall Sum ≠ Friday Wall Sum? What is needed, and what I shall outline below, is an explanation of how the wall can remain the same wall, despite changes to some of its parts.

## 4. *Varieties of Mereological Summations*

According to classical mereology, mereological summation is unstructured. That is, the only existence condition on mereological sum $y_1$ is that it must have $x_1$ and $x_2$ as proper parts. Thus, since spatial proximity and/or ordering are omitted, it is plausible that my left arm and a pebble on Mars compose a mereological sum. And, since temporal proximity and/or ordering are omitted, it is plausible that Socrates and the first teleportation devise compose a mereological sum.[3] Unstructured mereological summations are often called aggregates (Burge 1977; Elder 2004: 60), but I shall call them the cumbersome but more precise title of Maximally Unstructured Mereological Summations. As before, I symbolize these as $y_1 = [x_1 + x_2]$, but I intend this to indicate that no other conditions or relations need obtain.

Many agree that mereological summations have structure, though agreement on gradations of structure is not universal (cp. Fine 1994: 139; Burge 1977; Donnelly and Bittner 2009). I shall provide some argumentation for the claim that mereological summations have structure,

[3] Moreover, since modal considerations are left out, it is plausible that a billion grains of sand compose the mereological sum of the beach, even though this is an unusual result when conceiving of them as scattered throughout the universe.

but first I will provide a non-exhaustive list of some relevant structured mereological summations.[4] First, there is a category of mereological summations that includes the requirement for summations to be spatially proximate. A forest, for example, is a summation of trees that stand in spatially proximate relations.[5] Rivers and lakes are likewise summations of water that essentially stand in spatially proximate relations to each other. These sorts of mereological summations are sometimes called collections or groupings, but I shall call them Spatially Proximate Mereological Summations, where the mereological sum has requisite spatial proximity among the parts (cp. Whitehead 1920: 76; Van Inwagen 1990; Barnett 2004: 90). Hence, if the same parts do not stand in spatially proximate relations, then the spatially proximate mereological summation no longer exists (Wiggins 1980: 27; Thomson 1983: 201; Sanford 2003). I leave the condition of sufficient spatial proximity open to slight variation (so long as it conforms to the conditions outlined below). After all, the requisite proximity of the planets in the solar system may be different from the requisite proximity of the water molecules in a puddle (cp. Laan 2010: 137). I also leave the strength of the bond between grouped parts open: the group can be strongly bonded (i.e., a cemented brick wall, covalently bonded molecules), or loosely bonded (i.e., pebbles on a beach).

Some summations have temporal structure as well. Imagine, for example, that on some African plain a tree grows and dies, and then another tree grows immediately after and immediately beside where the first tree dies, and so on for thousands of years. The result is that, without consideration of temporal structure, these trees are spatially proximate, and yet they do not compose a forest. Or, imagine that Mario makes a salad. The maximally unstructured summation of [lettuce + tomatoes + bacon + olive oil] in various fields scattered across the planet over a variety of times is different from the salad, which Mario *makes* by bringing these ingredients into spatial proximity at a time (cp. Fine 1999: 62). Mario's salad is not only a spatially proximate mereological summation, but also a Temporally Proximate Mereological Summation, where the mereological sum is temporally proximate if the parts stand in a synchronous relation with the other parts.

[4] As examples, in addition to the structured mereological summations listed here, Donnelly and Bittner (2009) distinguish between maximally unstructured mereological summations and 'portions of stuff', which are summations of the same stuff, and Fine (1994) distinguishes between maximally unstructured mereological summations and compounds, which are summations of more than one thing.

[5] It is possible to object that mereological summations are exhaustively composed of their parts, so spatial, temporal or other relations should be excluded from mereological summations. In response, it is worth pointing out that mereological summations are, longwindedly, mereological summation relations between parts. So, (summation) relations are already included within mereological summations, so spatial and/or temporal relations are not anathema.

Spatially proximate mereological summations lack requisite spatial ordering relations among the parts. This is to say that they are commutative ($x + y = y + x$). Other mereological summations have parts that stand in requisite spatial ordering relations. A bicycle is a mereological summation whose parts are essentially spatially arranged. The bicycle spokes necessarily stand in an inside-of relation to the bicycle wheels, the bicycle frame necessarily stands in an on-top-of relation to the bicycle wheels, *etc*... Chairs, tables, and pizzas are similar examples. Call these Spatially Ordered Mereological Summations, where the mereological summation is spatially ordered because the parts stand in sufficiently spatially arranged relations to one another. That is to say, they are not commutative. Examples include mechanisms as well as words and sentences: "dog" ≠ "god", and "the sky is blue" ≠ "the blue is sky".

Similarly, temporally proximate mereological summations do not have parts that necessarily stand in any temporally ordered relation with the other parts. This is to say they are associative [$x + (y + z) = (x + y) + z$]. Other mereological sums have requisite temporal ordering. A car is a mereological summation with essentially temporally arranged parts. The car's pedal is depressed before the car's gas rushes into the car's engine, the car's gas rushes into the car's engine before the car's wheel turns, *etc*... Call these Temporally Ordered Mereological Summations, where the mereological summation is temporally ordered when the parts necessarily stand in ordered temporal relations with the other parts. That is to say, they are not associative. Examples include the car and mathematical equations involving various operations, such as [$2 + (4 \times 8) \neq (2 + 4) \times 8$].

There is a further condition that can be placed on mereological summations, which allows mereological summations to survive alterations to their parts and/or spatial/temporal ordering over time. Some argumentation for this type of summation (§ 5), and explanation of how this type of summation persists (§6), will be provided below, but for now it is sufficient to register the category. First, some mereological summations appear capable of changing some parts: a salad is still the same salad, even if one leaf of lettuce is replaced by another before the meal begins; the car is still the same car, even if one wheel is replaced by another wheel. Second, some mereological summations appear capable of persisting through some change to some of the spatially ordered relations: the house persists even if the western wall is moved in/out a foot. Third, with respect to changes to some of the temporally ordered relations: an amoeba moves around over time and performs its functions with different temporal sequencing, indicating contortion to its temporal (and spatial) structure, but the amoeba continues to persist as the same individual. Some call these continuants (Simons 1987), but I shall call them Persistent Mereological Summations, where mereological summations are persistent when the mereological summation remains the same despite alterations to some of its parts and/or spatial/temporal proximity/ordering relations.

## 5. *Arguments for Persistent Mereological Summations*

The existence of persistent mereological summations is, without a doubt, controversial. Indeed, it lies at the centre of our controversy, with mereological essentialists denying their existence and mereological inessentialists granting their existence. In this section I motivate the existence of the category by providing four arguments in support of the view that persistent mereological summations exist.

First, there is a common sense argument: a stingy restaurant owner charges Sally 400$ for eating seventy salads at the restaurant—a different salad for every bite. Few will agree that the owner's tactics are plausible. Or, with respect to spatial ordering: Benji barks at the stranger, which causes the stranger to walk over to the owner and threaten him. The owner replies that his dog did not bark at the stranger. After all, the dog that was barking had a different spatial ordering than his current dog has. Few will agree with this line of reasoning, and this is because it is pre-theoretically intuitive to endorse the view that persistent mereological summations exist (cp. Meirav 2009: 176).

There is also a linguistic argument: language often captures constancy through part replacement and alterations to spatial/temporal relations. The Amazon rainforest has been called the same name for many years, though the trees composing the rainforest, and the spatial boundaries of the rainforest constantly shift. There are three options here. One, agree that the rainforest stays the same through changes, thereby rendering our language accurate. Two, argue that the rainforest does not stay the same through changes, so, in order to keep our descriptions accurate, we must re-label the rainforest with every changing tree. This move, while preserving linguistic accuracy, is unlivable. Third, argue that the rainforest does not stay the same through changes, but, rather than re-labeling the forest with every change, admit that human labeling is inaccurate but convenient. This move, while livable, sacrifices accurate reference. All things being equal, the first option appears most palatable (cp. Turner 2013: 313–315).

There is also an argument from nature. Nature, as it so happens, contains persistent mereological summations. That is, sometimes parts group together in space and time in such a way as to allow for part replacement. The same beach exists after the wind blows a pebble away. Similarly, sometimes parts group together in space and time, with spatial and temporal order, in such a way as to allow for part replacement. The same bird exists after she loses a feather. The same bird exists if all the molecules in her heart are gradually replaced by new molecules. Since nature contains homeostatic clusters of parts, it is the philosopher's duty to, with natural submission, express them by granting the existence of persistent mereological summations of parts.[6]

[6] There are worries that this attitude leads to the overpopulation of our ontology. But such worries are benign. Including temporal/spatial proximity/ordering relations

Finally, persistent mereological summations retain their intrinsic qualities through changes to some of their parts, which is further reason to conclude that the mereological summation is the same through changes to some of its parts. Here is an example from mathematical summation: 3 + 4 = 7. Can the mathematical summation '7' survive changes to its parts 3 + 4? Imagine that we replace 3 in the left side of the equation with 2 at the same time we replace 4 with 5, resulting in 2 + 5 = 7. In this case the mathematical parts on the left side of the equation have changed: (3 + 4) ≠ (2 + 5); but the mathematical summation on the right side of the equation remains the same: 7 = 7. Likewise, a house retains its own intrinsic qualities through changes to many of its parts. A child could sleep through many changes to the house and wake up thinking it is the same house, since it retains its native essence. The preservation of the intrinsic qualities of the mereological summation through changes to its parts is possible because, according to ontological generosity, the mereological summation is distinct from its parts, so, a change in the parts does not necessitate a change to the mereological summation. While ontological generosity renders persistent mereological summations possible, it is nature that validates the existence of persistent mereological summations—nature contains wholes that retain their native essence and homeostatic unity throughout changes. A model explaining this phenomenon follows below (§ 6), but for now it suffices to conclude that certain mereological summations retain their intrinsic qualities through some transitioning parts. I do not take this argument, even when combined with the other three, to be decisive. I do think, however, that they shift the burden of proof on to those who deny persistent mereological summations.

## 6. *A Model of Persistent Mereological Summations*

Persistent mereological summations are those mereological summations that remain the same despite alterations to some of their parts and/or spatial/temporal proximity/ordering relations. In this section I provide an account of how persistent mereological summations are possible.

I begin, however, with an immediate difficulty. Namely, persistent mereological summations cannot persist through unlimited modification to their parts and/or spatial/temporal proximity/ordering relations. With respect to part replacement, imagine that the tomato in the

among parts, and persistent mereological summations, within our ontology, is innocent. By this I mean that it does nothing more than include the mundane spatial/temporal grouping/ordering relations that nature already does. There are also worries that this attitude is false, due to the atomistic truth that everything is ultimately reducible to (microphysical) parts. Atomism, however, is also problematic due to these same intuitive and linguistic arguments. That is, the view that a bee is only its parts is unintuitive, and goes against our linguistic practices of calling them 'bees', rather than calling them 'many atoms' or perhaps 'atoms arranged bee-wise'.

salad is replaced by a wrench, and the lettuce is replaced by screws, *etc*... There is no salad anymore. With respect to the modification to the spatial relations among the parts of the summation: imagine the ingredients in the salad are lined up, one by one, horizontally. This is likely not a salad anymore. Or, imagine that the house's western wall is moved such that it is pressed against the house's eastern wall. The house does not exist anymore; there is only a three sided run-in with a thick eastern wall. Thus, persistent mereological summations withstand some, but not unlimited, modification to both their parts and their requisite spatial/temporal relations.

How is the range of acceptable replacement parts determined? Here is a straightforward answer: so long as the replaced part's function continues to be adequately performed by the replacement part and/or through the altered spatial/temporal relations, then the persistent mereological summation remains intact (cp. Simons 2006: 609ff; Garbacz 2007). The western wall, for example, can be replaced by any wall that continues to function as the house's western wall. That is, it can be replaced by any substance that can function as a wall (i.e., brick, candy canes), and cannot be replaced by any substance that cannot function as a wall (i.e., oxygen, soap bubbles). Likewise, the western wall can be spatially modified in any way, so long as it continues to function like a wall (i.e., touching the house's northern wall, southern wall, roof and floor without touching the house's eastern wall), and it cannot be modified in any way that prevents it from functioning as the house's western wall (i.e., by being pressed against the eastern wall, or by being disconnected from the northern wall).

This response introduces the crucial distinction between spatial parts and functional parts of mereological summations.[7] While it is common to distinguish between several different types of parts in mereological summations (Nagel 1952; Winston, Chaffin and Herrmann 1987; Johannson 2004), only spatial parts and functional parts are important for my purposes.[8] Spatial parts are those parts of mereo-

[7] The introduction of functional parts also solves a lingering difficulty. The difficulty is that it is possible to construct mereological summations that are spatially/temporally proximate/ordered, though the parts are otherwise unrelated. For example, the mereological summation of myself and the ground is spatially and temporally proximate (so long as I am not jumping in the air), and is necessarily ordered in an on-top-of relation, but myself and the ground lack essential relatedness. The introduction of functional parts of mereological summations solves this problem. The ground plays no functional role in maintaining my existence, and I play no functional role in maintain the existence of the ground.

[8] Strictly speaking, spatial/temporal proximity/ordering relations among the parts of the mereological summation are important as well, but these relations are included within the functional parts. That is, functional parts are defined in such a way as to include these relations. For example, the functional part of being a western wall is any wall-like spatial part that is spatially ordered in a connecting-the-western-edges-of-northern-and-southern-walls way, and is temporally synchronous relation.

logical summations that occupy a region of space (at a time). While functional parts have been variously defined (Rescher and Oppenheim 1955; Simons 2006; Garbacz 2007; Johannson 2006), for my purposes, functional parts are those parts of mereological summations that define an essential function of the mereological summation. A house, by definition, has four walls, a roof and a floor. So, these are the functional parts of the house. The functional parts are defined in terms of the relations they bear to the rest of the parts of the house. Thus, the western wall is defined as that wall with appropriate spatial parts and is temporally proximate to the other parts, and is spatially ordered such that it touches the house's floor, roof, northern and southern walls, without touching the house's eastern wall. These functions are necessary for a house—without a western wall, there is no house. These functions are also definitional, or abstract, which implies that they are not essentially tied to a particular spatial part or spatial/temporal relation. This is what renders it plausible for persistent mereological summations to change some parts. If the house's functional part of being the Western Wall was performed by Tuesday Wall, and continues to be performed by Friday Wall, then the house continues to exist through this modification since the western wall function was still being realized. Or, if the house's functional part of being a western wall continues to be performed through alternating spatial relations, such as the wall moving in six inches, then the house remains the same since there was still something acting as the western wall.[9]

Having established that persistent mereological summations have functional parts and spatial parts and spatial/temporal proximity/ordering, the pieces are now in place to demonstrate how persistent mereological summations can remain the same through some alterations to some of their parts. Before beginning, it is worth noting that mereological essentialism is the doctrine that the parts of a mereological sum are essential to, or necessary for, their mereological sum. Essential and necessary parts are parts that the mereological sum cannot exist without. So, my strategy is to study which parts are essential to a mereological sum, in order to shed light on whether mereological essentialism is true or not.

[9] Here is an important objection: since functional parts are definitional, or abstract, it may be tempting to imagine the functional parts of the mereological summation without some spatial parts performing the function. The house, in the architect's mind, before anything construction, has four walls, a roof and a floor. To avoid this possibility, persistent mereological summations have been defined in such a way as to include some spatial part as a necessary realizer of the function. That is, according to the definition outlined above, if persistent mereological summation $y_1$'s functional part $y_{f1}$, which was performed by spatial part $x_1$, continues to be performed by spatial parts $x_{1b}$, then the mereological summation $y_1$ continues to exist. Or, to return to the example, if the house's western wall is realized by Tuesday Wall and then by Friday Wall, which both function as the house's western wall, then the house continues to persist across changes to its spatial parts.

Consider the mereological sum $y_1$, which is the maximally unstructured mereological summation of my dinner plate and the moon. Can this aggregation change its parts? Intuitively, the answer is no. Imagine that I replace my dinner plate with another one. This appears to be a different aggregation $y_2$. This is because there is nothing preserving their identity, since maximally unstructured mereological summations are composed of just their spatial parts, and the spatial parts are not the same. Or, due to the overlap condition, since $y_1$ has parts $\text{plate}_1$ and moon, while $y_2$ has $\text{plate}_2$ and moon as parts, $y_1$ does not have the same parts as $y_2$, so $y_1 \neq y_2$.

Matters grow murkier when considering persistent mereological summations. Consider, for example, a finicky chef who, in preparation for the grand opening, makes a salad on Tuesday. On Wednesday he replaces a leaf of lettuce, since it is slightly wilted. On Thursday he replaces the cucumber for a green pepper, and re-tosses it. Is the Tuesday salad the same as the Thursday salad? Intuitively, the answer is yes. This is unsurprising, since the replaced parts were functionally equivalent, and the alterations to the spatial relations among the parts were within acceptable functional parameters. But now on Friday the chef replaces the lettuce with screws and the other vegetables with hammers and wrenches. Moreover, he also lines up all the ingredients one by one. Is the Tuesday salad the same as the Friday salad? Intuitively, the answer is no. This is unsurprising, since the replaced parts were not functionally equivalent, and the alterations to the spatial relation among the parts was not within accepted functional parameters. There are several lessons here: (1) the salad persists when the particular spatial parts are replaced, so the particular spatial parts are unnecessary for the salad; (2) the salad persists when the particular spatial relations among the parts are altered, so the particular spatial relations are unnecessary for the salad; (3) the salad does not persist when the functional parts perish (that is, when there are no longer any salad-like parts and/or no salad-wise spatial/temporal relation, there is no salad), so the functional parts are necessary for the salad. Necessity, as mentioned above, indicates essentiality, so specific spatial parts, and specific spatial/temporal proximity/ordering are unnecessary for persistent mereological summations, but functional parts are necessary. Or, in other words, since specific spatial parts and specific spatial/temporal relations are unnecessary for, or inessential to, persistent mereological summations, persistent mereological summations can change some spatial parts and spatial/temporal relations without perishing. Thus, moderate mereological inessentialism is true for persistent mereological summations.

## 7. *The Overlap Condition and the Transitivity Condition*

In this section I further unpack this model by demonstrating how it can accommodate both the overlap condition that Van Inwagen's model did not, and overcome the transitivity condition, which Sanford's model did not.

Van Inwagen's model faces difficulty supporting the overlap condition on mereological summations, according to which identical mereological summations must have the same parts. That is, returning to the example of the gummy bear that is eaten from the western wall on Wednesday: Tuesday House is underlapped by Eastern Wall, Western $\text{Wall}_1$, Northern Wall, Southern Wall, Roof, and Floor. Friday House is underlapped by Eastern Wall, Western $\text{Wall}_2$, Northern Wall, Southern Wall, Roof, and Floor. Since Tuesday House does not have the same spatial parts as Friday House, Tuesday House ≠ Friday House.

It is possible to accept the overlap condition while simultaneously arguing that persistent mereological summations remain the same through changes to some of their parts. According to the model presented above, persistent mereological summations are essentially summations of functional parts. That is, since their functional parts are necessary for their existence, persistent mereological summations are essentially summations of these parts. How does this insight help in meeting the overlap condition? The overlap condition states that sum $y_1$ of $[x_1 + x_2]$ = sum $y_2$ of $[x_3 + x_4]$ iff $[x_1 + x_2] = [x_3 + x_4]$. Since, however, the only essential parts of persistent mereological summations are functional parts, it is plausible to interpret this as saying: sum $y_1$ of [functional parts $x_1$ + functional part $x_2$) = sum $y_2$ of [functional part $x_3$ + functional part $x_4$] iff [functional parts $x_1$ + functional part $x_2$] = (functional part $x_3$ + functional part $x_4$]. Persistent mereological summations do have the same functional parts across changes, so the overlap condition is met. In fact, since the same functional parts are essential for persistent mereological summations, the overlap condition is necessarily true: the same persistent mereological summations must have all the same functional parts, or it will cease existing. For example, assume the Tuesday House necessarily has the functional parts of a western wall, an eastern wall, a southern wall, a northern wall, a roof and a floor and the Friday house necessarily has the functional parts of a western wall, an eastern wall, a southern wall, a northern wall, a roof and a floor. Since [western wall + eastern wall + southern wall + northern wall + roof + floor] = [western wall + eastern wall +southern wall + northern wall + roof + floor], Tuesday House = Friday House. The overlap condition is met since the Tuesday House has the same functional parts as the Friday House.

Here is an objection: perhaps the overlap condition does not read that in order for $\text{sum}_1 = \text{sum}_2$, they must both have the same *functional*

parts. Rather, perhaps it says that in order for $sum_1 = sum_2$, they must have *all* the same parts. This concern leads to the transitivity problem that Sanford's Moderate Sum Identity view faces. That is, the response just given is akin to the moderate sum identity view where two sums are identical if they have the same (functional) parts, regardless of whether they have the same parts of these functional parts. The objection, then, is that because of the principle of transitivity, moderate sum identity entails strong sum identity. That is, two sums are actually only identical if they have the same (functional) parts, *and* the same parts of those functional parts. Thus, the Tuesday House with the same functional parts (i.e., four walls, roof, floor), but differing parts of functional parts (i.e., a missing candy in the western wall), are actually not the same houses.

There are two ways in which my model overcomes this transitivity difficulty facing Sanford's moderate sum identity condition. First, according to my model, persistent mereological summations require the same functional parts because they are essential to the existence of the mereological summation. And, according to my model, persistent mereological summations do not require the same spatial parts because specific spatial parts are inessential to the existence of the mereological summation. This account provides a principled and intuitive reason for endorsing the principle of parthood immediacy rather than transitivity. Namely, if $z$ has $y$ as part, and $y$ has $x$ as part, it is not essentially, or necessarily, the case that $z$ has $x$ as parts because there is ample evidence that persistent mereological summation $z$ cannot continue to exist without parts $y$, but can continue to exist without $y$s specific parts $[x_1 + x_2]$.

Secondly, it is common in the literature to argue that the principle of transitivity does not apply to functional parts. Numerous examples prove this point: a handle is a (functional) part of a door, and a door is a (functional) part of a house, but a handle is not a (functional) part of a house (Cruse 1979); Simpson's finger is a (spatial) part of Simpson, and Simpson is a (functional) part of the philosophy department, but Simpson's finger is not a (spatial or functional) part of the philosophy department (Winston, Chaffin and Herrmann 1987: 431). Numerous explanations are given for this fact: transitivity applies only to spatial and temporal part-whole relations (Garbacz 2007; Pribbenow 2002), so transitivity does not apply to functional part-whole relations (Casati and Varzi 1999: 34; Varzi 2006). This would explain the example of the handle and the house—although the door requires a functioning handle, and the house requires a functioning door, a house does not require a functioning handle. Alternatively, some argue that transitivity applies to intra-categorical part-whole relations, but not to inter-categorical relations (Winston, Chaffin and Herrmann 1987). That is, if $x$ is a spatial part of $y$, and $y$ is a spatial part of $z$, then $x$ must be a spatial part of $z$. But, if $x$ is a spatial part of $y$, and $y$ is a functional part of $z$,

then *x* is not necessarily a part of *z*. After all, would *x* be a spatial part of *z*, or a functional part of *z*? Neither is intuitive. This would explain the example pertaining to Simpson—Simpson's finger is no functional part of the philosophy department, nor does the philosophy department have spatial parts like Simpson's finger.

In summary, mereological essentialism is true for maximally unstructured mereological summations, since they are composed of only and all their specific spatial parts. However, moderate mereological inessentialism is true for persistent mereological summations. This is partially a mereological essentialist view, since persistent mereological summations are necessarily composed of all their functional parts. However, it is partially a mereological inessentialist view as well, since persistent mereological summations can endure certain modifications to their spatial parts and/or spatial/temporal relations. Certain mereological summations, therefore, can, within a functional range, change certain parts.

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# *Social Constructivism of Language and Meaning*

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*To systematically answer two questions "how does language work?" and "where does linguistic meaning come from?" this paper argues for Social Constructivism of Language and Meaning (SCLM for short) which consists of six theses: (1) the primary function of language is communication rather than representation, so language is essentially a social phenomenon. (2) Linguistic meaning originates in the causal interaction of humans with the world, and in the social interaction of people with people. (3) Linguistic meaning consists in the correlation of language to the world established by collective intentions of a language community. (4) Linguistic meaning is based on the conventions produced by a language community in their long process of communication. (5) Semantic knowledge is empirical and encyclopedic knowledge distilled and condensed, and the uses of language accepted by a linguistic community. (6) Language and meaning change rapidly or slowly as the communicative practice of a linguistic community does. The crucial point of SCLM is to focus on the triadic relation among language, humans (a linguistic community) and the world, rather than the dyadic relation between language and the world.*

**Keywords**: Conventionality, historicity of language and meaning, intentionality, openness, publicity, sociality.

What is language? How does language work? What is linguistic meaning? Where does linguistic meaning come from? To these big questions, there are quite different and even opposite approaches in philosophy of language and linguistics in the 20th century. Just as Searle says, "… the standard accounts of language in philosophy of language and linguistics tend to underestimate, and therefore misrepresent, the role of society and of social conventions." (Searle 2007: 17).

In what follows, I will argue for my social constructivism of language and meaning (SCLM), which consists of six theses, abbreviated as P1–P6:

P1. The primary function of language is communication rather than representation, so language is essentially a social phenomenon.
P2. Linguistic meaning originates in the causal interaction of humans with the world, and in the social interaction of people with people.
P3. Linguistic meaning consists in the correlation of language to the world established by collective intentions of a language community.
P4. Linguistic meaning is based on the conventions produced by a language community in their long process of communication.
P5. Semantic knowledge is empirical and encyclopedic knowledge distilled and condensed, and is the uses of language accepted by a linguistic community.
P6. Language and meaning rapidly or slowly change as the communicative practice of a linguistic community does.

The crucial point of SCLM is to focus on the triadic relation among language, humans (a linguistic community) and the world, rather than the dyadic relation between language and the world.

## P1. *The primary function of language is communication rather than representation, so language is essentially a social phenomenon.*

Language has at least two functions: public communication and expression of thought. Almost nobody denies this. But about the question "which is the primary function of language?" different scholars have different opinions. For example, Chomsky seriously regards expression of thought as the primary function of language (cf. Chomsky 2013: 645–662); I take communication as the primary function of language. The two different conceptions of language will lead to very different theoretic consequences. Since thinking is firstly and mainly personal business, Chomsky emphasizes that language is the innate competence of individuals with a genetic foundation and other characteristics, such as universality and autonomy. Communication has to be done in a society, and leads to cooperation or coordination, so it is a social phenomenon, controlled by the collective intentionality of a linguistic community. I will emphasize the sociality of language and the publicity of meaning.

I take communication as the primary function of language for the following reasons:

(1) The emergence of language is due to human beings' need to communicate and cooperate with each other.

Human beings are weaker than some other kinds of animal. In order to defend attack from other animals, and to obtain food, shelter, etc., they have to live together, work together, and so on. So, they need to talk with each other, to express their feelings, to pass on their ideas to their

companion. By means of linguistic communication they can coordinate individuals' behaviors and actions, and transfer the accumulated experience of life to the next generation. Marx and Engels are clearly conscious of the correlation of language, consciousness and communication in the sense of genesis: the need for communication and collaboration impels the emergence of language and consciousness; both language and labor facilitate the final realization of the transition from ape to man (cf. Marx 2000: 183; Engels 1987: 452–464). Malinowski points out, "In its primitive uses, language functions as a link in concerted human activity, as a piece of human behavior. It is a mode of action and not an instrument of reflection." (Malinowski 1989: 312)

(2) There would be no language without the need of communication with other people.

The well-known fictional character, Robinson Crusoe, drifted to an isolated island. Since he was a member of human society before, he still had his linguistic ability and previous experience of human life. Now consider another guy, called "Robert". He was put onto an isolated island to live alone when he was a baby, never lived with people, and did not have memory of language. Does he think of the possibility of inventing a language just for his own use, e.g. for his thinking and memory? The answer is probably "No", since he has no necessary sapience, knowledge and experience. Though almost every person has inherited physiological basis of language, such as flexible vocal organs and sharp hearing organs, which could be developed into actual linguistic competence, but the real trigger of the competence will not happen without required social surroundings. For example, "feral children", were separated from human life as babies to live together with animals, when found in different countries, cannot speak, even cannot be taught to speak human language. In their childhood, the separation from human life has caused them to lose their linguistic competence (see Newton 2003). Even for an adult, who has grasped his native language, if he leave human society to live alone for a long time, his acquired linguistic ability will gradually lose. There is a true story: in the 1940s, the Japanese army caught a Chinese peasant, Liu Lianren [刘连仁], and sent him to Japan to work in the mine. By trying many times, Liu finally escaped into the Hokkaido mountain, living there alone for 13 years. When he was found, he had forgotten most Chinese words, and couldn't communicate with people in Chinese. However, later his linguistic ability was recovered by keeping practice.[1]

(3) Language flourishes with expansion of communicative needs, and declines with shrivel of communicative needs.

(a) A language, when used by increasing population, must satisfy more and more complex needs, and the life world and expe-

[1] See "刘连仁" [Liu Lianren], http://baike.baidu.com/link?url=bK6y3bpIOQdnSDFwH8I_cQikI84V1qSWKsGW5TnMqDTKPU8T0uyQge62x0z

rience of its users are gradually precipitated to the language, making it extended and enriched in its phonology, lexicon, syntax, semantics, etc., and its means of expression tends to become more and more flexible, various, and vital. English, Chinese, Russian, and French are such kinds of language. F. Palmer points out, "The words of a language often reflect not so much the reality of the world, but the interests of the people who speak it" (Palmer 1981: 21). The degree of fine discrimination of things in a language is proportional to the importance of those things in the ordinary life of the users of that language. For example, for a long time China was a patriarchal clan society controlled by Confucianism. In order to distinguish intimacy, to achieve the respect for seniority and family solidarity, people adhere to their roles and levels in their families or societies with different rights, obligations, and corresponding standards of etiquette. Therefore, the vocabulary of signifying the kinship of a family in Chinese,[2] is much richer than that in other languages, e.g. the Indo European languages.

(b) If a language gradually loses its dependent population, no longer acts as their communicative means, it will also lose its vitality, and even become dead. The most typical examples include Latin in the western world, and the Manchu language in China. In history, Latin was originally spoken by the *Italic Latins* in *Latium* and *Ancient Rome*, and became the official language of the Republic of Rome in the early fifth Century B.C.. With the expansion of the military and political power of Roman Empire, Latin spread to a broad area as the official language of the Empire. In the middle ages, Latin was an ordinary language for communication in different European countries, and also the academic language used in science, literature, philosophy, theology, etc. Until modern times, understanding Latin was still prerequisite of studying the humanities. But the situation changed with time, because Latin gradually loses ordinary communicative function, and becomes a "dead" language right now.[3] The similar situation happens to the Manchu language. Though Manchu was one of the official languages of Qing Dynasty in China, with the fall of the Qing Dynasty and the continued assimilation of Manchu population with the Han, it almost no longer bears daily communicative function, and is endangered on the verge of extinction.

The above discussion illustrates that communication is the most basic and important function of language; other functions of language, say,

[2] See "Chinese family kinship system and appellation", http://wenku.baidu.com/view/6d3dcd661ed9ad51f01df209.html

[3] See "Latin", http://en.wikipedia.org/wiki/Latin

as the instrument of thought and the means of expressing feelings and conveying ideas, are secondary to communicative function. If a language loses its communicative function, it cannot serve as the instrument of thought. From the claim "communication is the primary function of language", we can infer that language is a social phenomenon in its intrinsic nature. This corollary not only implies the following assertions: language is mostly used in a social environment; we use it to communicate with other people; when learning language we have to rely on other people; we often borrow expressions and usages from one another; language also helps us perform a variety of social functions, and even plays essential roles in social and institutionalized reality, such as money and marriage. But the corollary also implies: the meanings of linguistic expressions are conferred by the community of language users; if separated from the intention, custom, tradition, and life world of language user, the connection between language and meaning will become a mystery being not-understandable by us.

In the writings of his different periods, Chomsky always contests the idea that the function of language is communication, called it "virtual dogma", and maintains that language is an instrument of thought. In his paper (2013), he clarifies these viewpoints once again, and develops quite systematic arguments for them. He claims:

> [I]nvestigation of the design of language gives good reason to take seriously a traditional conception of language as essentially an instrument of thought. … It follows that processing is a peripheral aspect of language, and that particular uses of language that depend on externalization, among them communication, are even more peripheral, contrary to virtual dogma that has no serious support. It would also follow that the extensive speculation about language evolution in recent years is on the wrong track, with its focus on communication. (Chomsky 2013: 654–655)

It seems to me that Chomsky gives three reasons to support his position.

First, Chomsky points out that the following typical formulation of the "virtual dogma" is obviously wrong.

> It is important that in a community of language users that words be used with the same meaning. If this condition is met it facilitates the chief end of language which is communication. If one fails to use words with the meaning that most people attach to them, one will fail to communicate effectively with others. Thus one would defeat the main purpose of language. (Chomsky 2013: 655)

Chomsky makes two criticisms of this formulation: (i) it is odd to think that language has an end or purpose, because "[l]anguages are not tools that humans design, but biological objects, like the visual or immune or digestive systems. Such organs are sometimes said to have functions, to be for some purpose. But that notion too is far from clear" (Chomsky 2013: 655). I reply: in some sense this criticism is reasonable, but not substantial, since "the purpose of language" can be replaced by "the primary function of language" to escape the criticism. (ii) "…even insofar

as language is used for communication, there is no need for meanings to be shared (or sounds, or structures). Communication is not a yes-or-no but rather a more-or-less affair. If similarities are not sufficient, communication fails to some degree, as in normal life" (Chomsky 2013: 655). I will reply this criticism below.

Secondly, Chomsky mentions biological or genetic evidence to support his position:

> There is, then, persuasive and quite far-reaching evidence that if language is optimally designed, it will provide structures appropriate for semantic interpretation but that yield difficulties for perception and language processing (hence communication).
> Again, where ease of processing and communicative efficiency conflict with computational efficiency in language design, in every known case the former are sacrificed. That lends further support to the view of language as an instrument of thought, in interesting respects perfectly designed, with externalization an ancillary process, hence a fortiori communication and other uses of externalized language. (Chomsky 2013: 660)

That is to say, according to Chomsky, language is optionally designed for thought, not for communication. Before his (2013), he has expressed and argued for this viewpoint many times, e.g. in his co-authored *Science* paper (2002). When replying to the *Science* paper, Pinker and Jackendoff (2005) argue that, supposing language is designed for thought or for communication, it is very difficult for us to explain why language has to map meaning onto sound, and also tough to explain why language can be learned only in social settings. They claim that innate language faculty makes humans able to learn language in a social environment, and that in order to express meaning, language permits redundancy and complexity in using phrase-structure, liner order, case, etc. They reject the idea that language is not an adaptation, namely that it is "perfect", non-redundant, unusable in any partial form, and badly designed for communication, and argue for their own hypothesis that language is a complex adaptation for communication which evolved piecemeal.[4] Some cognitive linguists also hold that linguistic system is a highly complicated cluster of conventional units in which there is a lot of redundancy and complexity when representing linguistic structures.

Thirdly, Chomsky argues that his own linguistic theories can support the conception of language as an instrument of thought quite well:

> The interesting cases are those in which there is a direct conflict between computational and communicative efficiency. In every known case, the former prevails; ease of communication is sacrificed. (Chomsky 2013: 659)

However, Chomsky acknowledges that his theories have some counter-examples and exceptions. But he emphasizes that since Galileo, "Willingness to be puzzled [by anti-examples, phenomena, and com-

[4] There are four-turn exchanges between Pinker, etc. and Chomsky, etc., see http://itre.cis.upenn.edu/~myl/languagelog/archives/002422.html.

mon sense] is a valuable trait to cultivate, from childhood to advanced inquiry." (Chomsky 2013: 651)

The discussion above has shown that, Chomsky has not given strong enough support to his claim that language is in the first place an instrument of thought, has not yet given a destructive criticism to the popular idea that communication is the primary function of language, and some scholars have challenged Chomsky`s reasons and evidence in his arguments. At least, we can say that there are still debates and controversies about the correctness of Chomsky's theories.[5]

## P2. *Linguistic meaning originates in the causal interaction of human bodies with the external world and in the social interaction of people with people.*

Only our body, not our mind or soul, can causally interact with the external world. Here, "body" refers not simply to our isolated brain and flesh, but to the body in interaction with physical and social environment. According to experientialist philosophy developed by Lakoff and others, our mind, cognition, language, and meaning are all embodied: we use our bodies as the base to understand the world around us, to establish significant correlation of language with the world, to construct our system of knowledge about the world. "Embodiment is the property of our engagement with the world that allows us to make it meaningful." Dourish also says, "Embodied Interaction is the creation, manipulation, and sharing of meaning through engaged interaction with artifacts" (Dourish 2001: 126).

As far as language is concerned, meaning comes from the interaction of our bodies with their environment. Meaning is based on human perception; human perception is based on the structure of our body; cognitive structure and perceptive mechanism are closely related. Insofar as our bodily structure, human beings use special methods to perceive external objects, to understand complicated relation among external objects, so concepts and meanings are some kinds of mental phenomena based on our embodied experience, so they will inevitably have the prints of human beings and their bodies. Consideration of language and meaning must be human-oriented, and even human-bodies-oriented; we should "attempt to characterize meaning in terms of *the nature and experience of the organisms doing the thinking*. Not just the nature and experience of individuals, but the nature and experience of the species and of communities" (Lakoff 1987: 266).

Basic words of a language are directly related to space and our bodily experience, and are the results of perceiving the world by our body, and of our conceptualizing the world. For example, the spatial words "before", "after", "left", and "right" take the place of a speaker or a personi-

[5] For a new debate about the correctness of Chomsky's linguistics, see Bartlett 2012.

fied object as the point of reference, and reflect the speaker's experience and understanding of the relative spatial relation between himself and the environment around him. "Buy" and "sell" describe the same behavior; the difference is only that the speaker's standpoint is on this side of the transaction or the other. Many words are not neutral descriptive words, but a hybrid of speaker's position, attitude and emotion. For instance, Dummett talks of a pejorative term, "Boche", popular in France during the First World War, a rude name for Germans, assumed to be barbarous and more prone to cruelty than other Europeans (1973: 454). He states:

> More characteristic are the differences between 'dead' and 'deceased', 'woman' and 'lady', '*vous*' and '*tu*' in French, 'rabbit' and 'bunny', 'womb' and 'uterus', 'enemy' and 'foe', 'meal' and 'repast', 'politician' and 'statesman'. The choice between such twins serves to convey, and sometimes also to evoke, an attitude to the subject or, more particularly, to the hearers. …These complex social aspects of linguistic interchange are signaled by our choice of words; and, in so far as it is capable of serving to give such a signal, that capacity is part of the meaning of a word. (Dummett 1991: 122)

Lakoff thinks, in a language, complicated and abstract words are usually derived from basic words through the mechanism of metaphorical mapping. He asserts that "Abstract concepts are largely metaphorical" (Lakoff & Johnson 1999: 5).

In my view, it is reasonable to say that linguistic structures reflect experience of our body to some extent. Consider the following pair of sentences:

(1a) The roof slopes gently downwards.
(1b) The roof slopes gently upwards.

If we equate the meaning of a sentence with its truth condition, then the truth conditions of (1a) and (1b) are the same. But the difference in the meanings of (1a) and (1b) is obviously detectable, that is, the speakers' "perspectives" are different: in (1a) the speaker looks down from top, but in (1b) the speaker looks up from the lower part.

Consider the following set of sentences:

(2a) Someone stole the diamonds from the princess.
(2b) Someone robbed the princess of the diamonds.
(2c) The diamonds were stolen from the princess.
(2d) The princess was robbed of her diamonds.

So to speak, (2a)–(2d) describe the same phenomenon, and their truth conditions are almost identical. However, they expose different "focuses of discourse", that is to say, the speakers of (2a)–(2d) give different degrees of importance to "someone", "diamonds", and "the princess", and arrange the three items in different orders; they are eager to convey to his hearers "special" information about the items.

Concerning the social character of linguistic meaning, I will appeal to Burge's famous thought-experiment, i.e. his arthritis argument. He asks us to consider an actual situation in which one person, say Paul,

uses the word "arthritis" to express a number of thoughts about pain in his joints. One day, he declares "I have arthritis in my thigh". Since the community to which Paul belongs only applies the word to inflammation of the joints, what Paul says is false. Burge then asks us to conceive a counterfactual situation, which is entirely identical to the actual one except that the community to which Paul belongs applies "arthritis" to both inflammations of the joints and other rheumatoid ailments. In the latter situation, there is no change in Paul's physical history or non-intentionally characterized experiences, but the statement he makes there is true, not false. Burge concludes that meaning of the word "arthritis" on Paul's lips is different in each of these situations because of the different linguistic communities to which he belongs, and that the truth-value of what Paul says differs in the two situations since something different is meant in each context. By this argument Burge wants to show that the meanings of someone's words are identified not only by facts about the individual but also partly by facts about the uses of words in a bigger community. So, the meanings of the words in a person's language do not just depend on that person, but essentially on the linguistic practice of other people around him. Burge asserts:

> The dependence on others for access to examples grows as one's linguistic and cognitive resources widen. In some cases we depend heavily on the perceptual experience of others (as with 'tiger', 'penguin', and 'rain', for those of us in California). In other cases we depend on theoretical background knowledge ('gene', 'cancer') or on more ordinary expertise ('arthritis', 'carburetor'). In many such cases, we intentionally take over the applications that others have made. We rely on their experience to supplement our own. And we accept corrections of our explications from them because they have better access to the examples which partly determine the nature of our concepts. Although the function of explication varies significantly in these various cases, the main points of the argument for social dependence apply equally, indeed even more obviously, to terms that are less closely associated with direct perception. (Burge 2007: 287–288)

In my judgment, Burge's argument and conclusions are by and large right. Facts about the meaning of words supervene not only on facts about our use of the words, but also on facts about other people's usage. Inasmuch as social factors are constitutive of meaning and hence of language, both language and meaning are social phenomena. I myself endorse a much stronger claim: "the social meanings of the expressions of a language are indeed determined from their individual meanings, i.e., the meanings the expressions have for the individuals, together with the structure of linguistic power that exists in the community" (Gärdenfors 1999: 27–28). The distribution of power in a society certainly have effects to the meaning-conferring and the popular degree of linguistic expressions, since it is much easier to popularize the words, utterances, meanings, and even speech styles used by political leaders and other public figures than to popularize those used by ordinary people.

## P3. *Linguistic meaning consists in the correlation of language to the world established by the collective intentions of a language community.*

It is necessary briefly to clarify the concepts of intentionality and collective intentionality. Intentionality could be roughly explained as "aboutness": some things are *about*, or are *directed to*, or *represent*, other things, e.g. the belief that dogs are animals is about dogs, as is the fear of dogs, the desire to have a pet dog, and seeing that many dogs are fighting each other. This phenomenon of "aboutness" is called "*intentionality*". Collective intentionality denotes the intentional state of a group, an organization, or a society, e.g. desiring, intending, believing, or acknowledging. Collective intentionality is used to explain the coordinative or cooperative behaviors of social groups, and also to explain social rules or norms, and social facts.

Searle claims that the intentional content of an intentional state determines satisfaction conditions for the state. An intentional state is linked to its object through its intentional content. The state can be said to "represent" the state of affairs satisfying these conditions. Each state also has a psychological mode determining the direction of fit: mind to world, or world to mind. For example, we get truth when the mind matches the world; in a successful desire the world must come to match the mind. Then, Searle distinguishes four relations between intentional states and reality: language to object, intentional state to object, intentional state to psychological infrastructure, and intentional state to neurological infrastructure. Here, I will focus on his view of the relation of language to objects.

Searle thinks that language depends on human mind; it relates to reality because speakers relate it to reality in their speech acts. Speakers *use* names to refer the individuals they intends to refer, *use* sentences to represent the state of affair they wish to represent, or *use* sentences to express the meaning they want to express. So, our understanding of linguistic meaning depends on our analysis of mental intentional states, and the relation of language to reality can be reduced to a special case of the relation of mind to the world. It is from the perspective of intentionality that Searle explores the relation of language to reality: by means of the concepts such as "Background", "Network" and "Intentional contents", he develops his theory of *intentional* reference of proper names: "objects are not given to us prior to our system of representation"; our representations must intervene between name and referent (Searle 1983: 231).

Searle strongly criticizes so-called semantic "externalism", i.e. the view that meaning is just a matter of causal relations between the utterances of words and objects in the world. For instance, the word "water" means what it does to me not because I have some mental content associated with the word, but rather because there is a causal chain connecting

me to various actual examples of water in the world. Externalism has led to an extensive research project of trying to describe the nature of the causal relations that give rise to meaning. He comments that:

> The problem with this research project is that nobody has ever been able to explain, with any plausibility whatever, the nature of these causal chains. The idea that meanings are something external to the mind is widely accepted, but no one has ever been able to give a coherent account of meaning in these terms… What we require in order to resolve the dispute between internalists and externalists is a more sophisticated notion of how the mental contents in speakers' heads serve to relate language in particular, and human agents in general, to the real world of objects and states of affairs. (Searle 2008: 18)

I am with Searle's side on this point. Language is not an automatic system correlating itself to the external world. More specifically, names do not designate external objects by themselves, and sentences do not describe external states of affairs or facts by themselves. It is human beings, who use a language, that build the bridge connecting a language and the world, and that create the referring (or predicating) relation of names (or sentences) to the corresponding objects (or states of affairs). The referential relation of a name to an object depends on our intention in using the name, our understanding of the name, and what state the object has in the world; the truth-value of a sentence depends on at least two elements: our ways of speaking, and the states that things have in the world. It is not the case that semantics takes no account of speakers; on the contrary, it must at least consider a language community. Any talk about meaning and reference of an expression is relative to the community. At this point, objectivist semantics mentioned above is wrong, especially when applied to natural languages. I think, it is an illusion to regard language as an autonomous and self-sufficient system, and it goes astray to investigate the relation of language to the world without considering a linguistic community.[6]

By following C. S. Peirce, Charles Morris divided semiotics into three branches in his (1971): syntax, semantics, and pragmatics. Here, syntax is concerned with the structural relations among symbols, semantics the relations between symbols and the objects to which they

[6] I assume that "SHARING" is the most important characteristic of a language community. The members of the community have a roughly common understanding of their language, so they can communicate with each other smoothly and successfully. A language community could be large or small. For instance, some netizens use special symbols, figures, and pictures to communicate successfully, then they form a linguistic community. Of course, a nation, that uses its native language, such as English, Chinese, Japanese, Tibetan, is typically a language community. Moreover, different nations in the world, although using different languages, still can communicate and even understand each other; this fact shows that there are common elements in their languages, which make the translation between languages possible. So, we even can regard different nations in the world as a generalized language community, e.g. a bilingual or multi-lingual one. Obviously, the concept "a language community" is quite fuzzy and vague, and its borderline is not clear, but "SHARING" can be taken as its essential characteristic.

refer, and pragmatics the triadic relation among the symbols, the users of symbols, and the objects to which symbols refer. Since a language is a system of special symbols, studies of language correspondingly have three dimensions: syntax, semantics, and pragmatics. Such a saying seems to be accepted widely, but I think it is debatable. The crucial point is how we consider the relation between semantic and pragmatics. As I said above, semantics must at least consider a language community. Except considering a language community, pragmatics pays much more attention to individual users of language, who speaks with particular intention in a particular context so that his utterance will have a special significance, we call it "conversational implicature" or "pragmatic meaning". So, in my understanding, both semantics and pragmatics must investigate the relation among language, humans and the world, the difference is only that semantic mainly considers a language community, but pragmatics must considers individual users of language. Perhaps conscious of this fact, Brandom makes an important assertion: "semantics is answerable to pragmatics" (1994: 83).

I should point out that, most of time, collective intentionality in the use of language does not appear in the form of contract, protocol, and agreement, but embodies natural convergence or unconscious choice of language uses made by a linguistic community. I think the following cases show different levels of how collective intentionality effects language and meaning.

(a) Common words, depending on natural convergence or unconscious choice of their uses by the majority of ordinary people. In a contemporary society, ordinary people connect with each other by means of Internet: they have freedom to express themselves in cyberspace, to invent new words and new styles of expression, to endue old words with new meanings, and so on. Some words and phrases they invent gradually disappear in public linguistic practice; other words and expressions are warmly welcomed and widely used by people, gradually become some kinds of public choice, even enter into dictionaries, encyclopedias, and handbooks. It is reported that *Xiandai Hanyu Cidian* (《现代汉语词典》, *Modern Chinese Dictionary*, 6th edition, 2012) adds more than 600 Chinese characters, more than 3000 new words and phrases, including "雷人" (shocked, awesome), "给力" (helpful, giving a push to), and other network hot words, such as "北漂" (*beipiao*, north drift, referring to young people who live and work in Beijing without Beijing registered residence, and change their rented rooms from time to time and from place to place), "草根" (*caogen*, grass roots, referring to ordinary people without political power or sufficient money), "达人" (*daren*, master, referring to young people with special talents or styles in fashion), "愤青" (*fenqing*, literally meaning angry young men, a Chinese slang term for young nationalists and young cynics), "名嘴" (*mingzui*,

popular TV presenters; the word literally translates as "famous mouths", a catch word for those well-acclaimed television anchorpersons), "蚁族"(*yizu*, antizen or ant tribe, referring to young persons who have graduated from universities or colleges, but are drifting in Beijing with unstable jobs and low income, crowded at night in small rooms locating at the boundaries of urban and rural areas). The dictionary also adds new abbreviations or foreign words, such as ECFA (cross-strait economic cooperation framework agreement), PM2.5 (inhalable particles with diameter less than 2.5 micron floating in the air), and supplements new meanings to old expressions, for instance, a new meaning to the old word "宅": "a new verb, stay at home for a long time, do not like to go out of room", so "宅" has its new derivative words, such as "宅男宅女" (*zhainan zhainv*, indoorsmen and indoorswomen, referring to young people much addicted to the Internet, playing electronic games and other indoor activities). The dictionary deletes some old words that are no longer used. Clearly, it is the collective intentionality embodied in contemporary Chinese practice which results in the change and revision of *Modern Chinese Dictionary*.

(b) Scientific vocabulary, underwriting which is the community of scientists with special status. Ordinary people are busy with creating material wealth, so the task of investigating complicated and intensive learning has to be done by a small number of elites, who challenge common sense, explore unknown fields, conceive new possibilities, and create novel and strange vocabulary and expression-style being too profound to be understood by ordinary people. Liberal scholars and natural scientists separately form their own circles, and have their own academic rules and occupational morals, and also have the rules, methods, and procedures about acceptance of research results. Special terms and expressions of natural science, arts and humanities, when winning some kind of respect in their own circles, begin to spread to civil society. On these issues, ordinary people transfer their intellectual sovereignty to liberal scholars and natural scientists, accept their research results and interpretations. Just as Putnam's "hypothesis of universality of the division of linguistic labor" asserts:

> Every linguistic community exemplifies the sort of division of linguistic labor just described, that is, possesses at least some terms whose associated 'criteria' are known only to a subset of the speakers who acquire the terms, and whose use by the other speakers depends upon a structured cooperation between them and the speakers in the relevant subsets. (Putnam 1975: 146)

So, in scientific vocabulary and expressions, at least we will find the collective intentionality of scientist's community.

(c) Legal language, whose authority comes from people's granting authorization to legislature. In modern democratic society, members of legislature are elected; although the ways of election vary, even have significant differences, but it is undeniable that the members have got sort of public support. In the legislative process, relevant personnel have to do extensive poll and careful research, to repeat discussion and negotiation, finally to pass statutory procedures for approval by parliament. We can say that the laws passed embody public opinion to a large extent, and that there is collective intentionality in the laws and regulations. The meaning and reference of legal language is stipulated by legislature: all matters, such as what a word or a provision of a law exactly means, which legal cases a law applies, depend on the regulation and interpretation by legal institutions, and also depend on judicial officials' and enforcement personnel's understanding. Evidentially, legal language has no direct relation to its society; it is legal people, who regulate and implement laws, which make legal language connect with its society.

(d) Government documents, whose authority comes from legal authorization. Governmental agencies are established on the base of the Constitution and other laws; their organizational forms, responsibilities, operational procedures, and rules, are set up by legal provisions. Their authority has two sources: one is the authorization from state law system; another is the fact that they bear social management functions, such as money issue, marriage registration, crime punishment, traffic control, economic development, national defense, etc., all of which have to be done in any era, nation, and society. So, when implementing the functions of social management, governmental agencies obtain legal authorization directly, and get people's mandate indirectly; thus, there is collective intentionality in governmental documents. It is collective intentionality which makes the governmental documents play special roles.

## P4. *Linguistic meaning is based on the conventions produced by a language community in their long process of communication*

I think the collective intentions of a language community normally appear in the form of conventions of language use. So, we can say that language and meaning are *conventional*: a word may be used as the name of one object or another; a sentence may express one state of affairs or another. The fact that a language has become what it looks like now has no *a priori* or necessary logic, but is the result of unconscious choices and conventions by a linguistic community.

In his publications (1969, 1975), Lewis develops his general account of convention and particular argument for the conventionality of language. He defines *languages* as abstracts objects, i.e. sets of ordered pairs of sentences and meanings: a language is a function from sentences to sentence meanings. A sentence's meaning is a function from possible worlds to truth-values, i.e. a set of possible worlds in which it is true. It is conventions which make an abstract language become an actual language used by a linguistic community. Lewis asserts that a language L is a language used by a population P if and only if there prevails in P a convention of truthfulness and trust in L sustained by interest in communication. He interprets: (i) Speaker x is truthful in language L if and only if x utters a sentence of L only if x believes that sentence to be true; (ii) Speaker x is trusting in language L if and only if x imputes truthfulness in L to others and thus tends to respond to another's utterances of L by coming to believe that the uttered sentences are true in L; (iii) What sustains such a convention is our interest in communicating: we intend to produce certain responses in part by getting others to recognize our intentions, and so on.

Based on his general account of convention, Lewis gives a two-step argument for his explanation of the conventionality of a language L. I have to set his argument aside in this paper.

In what follows, I myself will argue for the conventionality of language and meaning directly.

(1) Linguistic communication will not happen without the convention of truthfulness and trust; even if it did, it will not proceed smoothly and endure for a long time.

In order to make linguistic communication successful, before talk a speaker has to predict what response he will get from his hearer to his words; based on his understanding of the speaker's words, the hearer replies to the speaker, and predicts what response he will get from him. If both sides receive what they predicted before, they have well understood each other to some extent. In this way, they may continue their dialogue. Otherwise, they have to readjust their speech acts. The basic condition of making dialogue smooth and successful is that there are regularities in the speech acts of the participants. One regularity is that a speaker says what he himself thinks is true, and the hearer regards what the speaker says as true, so both sides will understand their words literally, and don't need to make great effort to guess the real meanings of their respective words. Another kind of regularities is that a speaker is not honest, and is accustomed to lie all the time; or that the hearer is always suspicious of what the speaker says. Even in such a situation, the dialogue can still proceed smoothly. If the speaker knows that his hearer tends to understand his words from the reverse side, in order to convey the truth to the hearer he can say false things systematically; if the hearer knows that the speaker tends to lie systematically, he can understand his words from the opposite side, and

then he will grasp the truth. In the two kinds of situation above, the convention of truthfulness and trust still function in communication, only in *special* ways. What makes a dialogue really impossible is that there is no regularity in the talking-modes of dialogue participants. That is to say, not following any order and rule, the speaker arbitrarily jumps from the true to the false and vice versa, so the hearer feels very difficult to distinguish what the speaker said as true or as false; when understanding the speaker's utterance, the hearer just decides on a sudden whim, he freely takes the speaker's saying as true or as false. In so doing, all participants in a dialogue will not know what and how they say in the next turn; it is very difficult for them to achieve mutual understanding. Since the dialogue is too expensive, all participants have no interest to continue. Then, the dialogue stops.

The need inherent in the convention of truthfulness and trust put forward by Lewis is that the participants of a dialogue must cooperate with each other. Grice expresses such kind of needs in "the Cooperative Principle": "Make your contribution such as it is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged" (Lewis 1989: 26). Then, he distinguishes four categories: Quantity, Quality, Relation, and Manner, under each of which fall certain more specific maxims and submaxims.

Some scholars challenge the convention of truthfulness and trust in this way: in actual communication, there are situations contrary to the convention, e.g. speakers intends to lie or to cheat, or they speak by means of irony, exaggeration, humor, ridicule, or in the forms of telling story, playing game, talking rubbish things, or malapropisms. In such a situation, the hearer still can understand what the speaker does mean, although he does not trust him. I think, all these phenomena are not really opposite to the convention of truthfulness and trust. Only if a speaker says the true most of time, will we care about why he occasionally says something false, and try to figure out what he really means by his false words. Only if the hearer has some kind of regularity in his understanding our speeches, e.g. trusting or not-trusting, will we accept him as our companion of dialogue; and once he speaks out queer and even wild words, makes not-understandable responses, we will follow Grice's principle of cooperation to judge that he is still cooperating with us, and then try our best to figure out what he really means by guessing that he has special or hidden reasons to say so. Anomaly and heterodoxy are just apparent violation of rules or conventions, we still have to appeal to rules or conventions to interpret them.

(2) The literal or dictionary meanings of linguistic expressions come from natural convergence of linguistic uses among language users, and from unconscious choice made by a language community.

As I argued above, semantics not only concerns the relation between language and the world, but pays more attention to the relation among

language, human beings (a linguistic community), and the world. At semantic level, when talking about meaning and reference of a linguistic expression, we usually talk about its meaning and reference acknowledged by our community, which constitute the literal or dictionary meaning of that expression. In stressing the conventionality of language and meaning, I emphasize that the literal or dictionary meanings of all linguistic expressions are *conventional*. Except their conventional meanings, linguistic expressions have no other kind of semantic meaning. The special significance of a particular expression used by a particular speaker with a particular intention in a particular context, seems to be deviation or divergence of its literal meaning. If such kinds of deviation or divergence become very popular among language users, they might be accepted as a part of their dictionary meanings. Take for example the Chinese word "囧" popularized in Chinese net-culture in recent years. "囧" is a derivative word from ancient Chinese character "冏". "冏" is symbolic character, literally meaning that the window of a room is transparent and bright, symbolizing "light" and "bright", commonly used in ancient Chinese, but rarely and sparsely today. In recent years, some Chinese netizens have dug "冏" up, used it to symbolize the mood of sadness, helplessness, distress, or extremely awkwardness, for if we regard "囧" as a human face, then "八" is the two drooping eyebrows of the guy showing his sadness and depression, "口" is his mouth agape and with tongue-tied. When the guy says "我很囧" (I am embarrassed), you could imagine his face completely like "囧". Moreover, the pronunciation of "囧" is very close to that of another Chinese phrase "窘迫" (distress, embarrassment). So, "囧" is warmly welcomed by Chinese netizens: it has become a hot word in the Chinese net-culture, and is widely used by mass media, even appeared in the titles of some popular Chinese movies, e.g. 《人在囧途》 (*Lost on Journey*) and 《泰囧》 (*Lost in Thailand*). Right now, "囧" seems to be in the process of becoming a common Chinese character.

I think many kinds of dictionaries, encyclopedias, and handbooks reflect consensus about names, words, phrases, and other sides of a language shared by a linguistic community, obviously embody the conventionality of language and meaning. The editing process of dictionaries or encyclopedias is roughly like this: collecting data, i.e. building the database about used words; choosing and deciding entries by experts; writing and revising interpretation of the entries by experts; editing those manuscripts by editors, and finally publishing by presses. As Quine says:

> The lexicographer is an empirical scientist, whose business is the recording of antecedent facts; and if he glosses 'bachelor' as 'unmarried man' it is because of his belief that there is a relation of synonymy between these forms, implicit in general or preferred usage prior to his own work. The notion of synonymy presupposed here has still to be clarified, presumably in terms relating to linguistic behavior. *Certainly the 'definition' which is the lexicog-*

> *rapher's report of an observed synonymy cannot be taken as the ground of the synonymy*. (Quine 1961: 24; italic added)

(3) Public language is prior to different idiolects.

As I argued above, not a particular language user, but a linguistic community, is the subject to confer meaning on language. Only by means of the acceptance of a community, can the meaning-conferring activity of a particular person be transformed into public meaning-conferring activity; otherwise, it will fail. Here, someone may ask a further question: whether the meaning-conferring activity of a particular person is prior to that of a language community or vice versa?

In my view, when challenging the necessity of sociality and conventionality of language for linguistic communication and understanding in the context of radical interpretation, Davidson supposes the priority of idiolects to public language. In terms of the fact that we can understand some person's abnormal words, he asserts that "convention is not a condition of language. …The truth rather is that language is a condition of having a convention" (Davidson 1984: 280). He takes a famous example: in Sheridan's play, Mrs. Malaprop uttered "There's a nice derangement of epitaphs" to mean "There's a nice arrangement of epithets". We can understand what Mrs. Malaprop means, but do not necessarily share her conventions and uses of her words.

I think, such kind of examples is not enough to challenge the necessity of public convention and shared meaning for communication and understanding, and also not enough to shake the priority of public language to idiolects. If a single speaker does not start from public convention, rather he confers completely new meanings on every word, and arranges the words in a totally novel syntactical way, he will speak a "foreign" language never heard before, and nobody will understand what he says. For example, suppose Mrs. Maraprop speaks in this way: "Epitaphs a nice there derangement of is", any person whose native language is English cannot understand what she means by her words. The actual situation is that by basically following public syntactical rules and semantic conventions of language, individual speakers may occasionally make small deviations and changes from public uses. In this sense, public language is prior to idiolects. But at the same time we have to acknowledge that there is a mutual interaction: on the one hand, the meaning-conferring activity of each individual speaker; on the other hand, the selection, refinement, and acceptance of a language community. Without the former, public language and shared meaning will lose their source, disintegrating into arbitrary regulation of a small number of people; without the latter, linguistic communication will lose a public stage so that people are very difficult to achieve mutual understanding.

Here, it is necessary to reply two objections to public language and shared meaning.

One comes from Chomsky (2013). He argues that linguistic communication is risky and success is never guaranteed, and that since an unsuccessful communication is still using a language, it raises a challenge to the view that communication is the primary function of language.

I reply as follows: (i) although there are many cases of unsuccessful communication, e.g. complete misunderstanding or being quite at a loss, most linguistic communications function quite well. That's why our social life can proceed smoothly and social affairs can be done normally. (ii) What makes communication unsuccessful is exactly the lack of common convention about language and meaning, so that the participants of communication have no bridge to connect them together and to understand each other. (iii) When an unsuccessful communication happened, if absolutely necessary, we will try our best to re-define the crucial words or concepts in our discourse, to choose the sentences more easily understandable, to clarify background knowledge, to make the logic of our discourse clearer, etc. All these efforts aim at building a common stage so that the both sides of communication become close in their uses of language, and share the rules, conventions, and meanings of linguistic expressions, and finally achieve successful communication and understanding.

Another objection is that linguistic conventionalism appears to be unable to account for the creativity of language: that is, it cannot explain why people have the ability of understanding potentially infinity-many long and novel sentences on the base of quite limited linguistic sources. I think this charge is not fair to conventionalism. It is not the patent of the dyadic approach of language to account for the unlimited generative proficiency of language; even behaviorists like Quine can do this job. Quine distinguishes two stages of language learning: ostension and analogical synthesis, sometimes calls the latter "extrapolation". By means of ostension, i.e. by pointing to an object at its presence, children learn many nouns, such as "mama", "eye", "face", "finger", "foot", and learn many simple sentences, such as "My finger hurts". Then, by means of analogy or extrapolation, naturally they can say "My foot hurts" (cf. Quine 1960: 108–110). This is not a very difficult leap for children.

Those like myself who maintain the triadic approach of language, would like to argue further: in public linguistic practice, we learn many words, and also many linguistic structures, especially syntactical structures. It is these structures which tell us how to generate more complicated and novel structures, especially long and novel sentences never heard before, from those linguistic materials already learnt. If the linguistic materials we have learnt are based on public conventions, the more complicated long-and-novel combinations generated from the primitives will get derivative conventionality.

## P5. *Semantic knowledge is empirical and encyclopedic knowledge condensed, and the uses of language accepted by a linguistic community.*

So far, it can be naturally concluded that semantic knowledge is empirical knowledge distilled and condensed, and the uses of linguistic expressions approved by our language community; and that there is no clear boundary between semantic knowledge and empirical ones.

The above conclusions are close to those from cognitive linguists. Taken for example, Langacker states a basic tenet of cognitive grammar:

> Lexical meanings cannot be sharply distinguished from general knowledge of the entities referred to. Our knowledge of a given type of entity is often vast and multifaceted, involving many realms of experience and conceptions with varying degree of salience, specificity and complexity. …A lexical item is not thought of as incorporating a fixed, limited, uniquely linguistic semantic representation, but rather as providing access to indefinitely many conceptions and conceptual systems, which it evokes in a flexible, open-ended, context-dependent manner. (Langacker 1999: 4)

He points out that our knowledge of trees, for instance, subsumes physical properties (e.g. shape, height, color), biological characteristics (e.g. growth rate, root system, reproduction, photosynthesis, dropping of leaves), utility (wood, shade, food source), and numerous other specifications (forests, habitant for animals, how to cut one down). In principle, each of these specifications figures to some extent in the meaning of *tree*.

In my view, Langacker's assertions above get strong support from many linguistic materials. I cite the interpretation of Chinese word "牛" (niú, ox) by an authoritative Chinese dictionary:

1. *noun*. mammals, ruminant; having a large body, and the ends of four limbs with hoof, a head with a pair of horns, a tail with long hair; having a strong energy, used for labor and service; raised for milk or for both milk and meat; its skin, hair, bones are all useful. In China, 牛 (ox) usually includes cattle, buffalo, yak, etc.
2. *adj*. obstinate or pride: 牛脾气 (cattle temperament) |牛气 (arrogant).
3. [slang] *adj*. having powerful skills and special strength : 牛人 (a guy who is really something)
4. *noun*. One of the lunar Mansions.
5. *noun*. One of Family name in China: 牛 (Niú).[7]

This entry lists five uses of the Chinese word "牛" in modern Chinese. Interpretation 1 explains 牛 as animal: "mammals, ruminant" describes ox's genus and species; "having a large body, and the ends of four limbs

[7] *Xiandai Hanyu Cidian* (《现代汉语词典》: Modern Chinese Dictionary), 6th edition, Beijing: The Commercial Press, 2012, p. 953.

with hoof, a head with a pair of horns, a tail with long hair" describes its shape and appearance; "having a strong energy" describes one characteristic of 牛 (ox), "used for labor and service; raised for milk or for both milk and meat" describes the uses to which we put oxen; "In China, 牛 (ox) usually includes cattle, buffalo, yak, etc." describes the distribution and kind of 牛 in China. All of these are empirical knowledge about ox, and become semantic knowledge about the Chinese word "牛" (ox) when appeared in an authoritative dictionary. This kind of phenomena is quite general, so we can say that semantic knowledge comes from empirical knowledge, and that the former is the induction and summarization of humans' linguistic practice.

By carefully examining the evolutional history of the concepts from "protein" to "DNA" and "RNA", Haack (2009) wants to show that empirical knowledge gradually enters into our dictionary or encyclopedia and becomes semantic knowledge so that there is no clear boundary between empirical knowledge and semantic ones.

> This history… suggests something of the processes by which scientists adjust and readjust their terminology and shift and adapt the meanings of existing words to work out a vocabulary that better represents real kinds of stuff. The word "protein" has lost any suggestion of prime importance; it has ceased to be analytic that nucleic acids are found exclusively in the nuclei of cells; the old word "nuclein" has eventually been replaced, in several steps, by "DNA"; and "DNA" itself has acquired new, complex connotations, and produced new, elaborate terminological offspring; and so on. The dictionary definition of "DNA" confirms that, *by a kind of sedimentation of knowledge into its meaning, this term has indeed "acquired information,' as Peirce puts it, 'in use and experience;"*…(Haack 2009: 15–16; italic added)

It might be objected that the dictionary definition conflates the meaning of "DNA" with what is known about DNA; and that to take it at face value as simply giving the meaning of the term is to misrepresent important biological discoveries—that DNA is the genetic material, that it has this double-helical structure, etc.—as merely analytic truths. Haack replies:

> Of course I don't deny that these were major biological discoveries; nor that, at the time they were made, it was not part of the meaning of "DNA" that it is the genetic material, that it is a double helix, etc. Nevertheless, the objection misfires. For my thesis is in part that *meaning grows as our knowledge grows*; and this implies both that the supposed distinction between "the meaning of 'X'" and "our presumed knowledge of X" is an artificial one, and that "analytic" is best understood as elliptical for "analytic given the meaning of the words *at time t*." (Haack 2009: 16; italic added)

I agree with Haack's argument and conclusion. Actually, external Objects have complicated relations with each other, and have multi-aspects and different qualities. So, we have to characterize the meanings of the words by describing these objects. Lakoff presents "idealized cognitive model" (ICM), a complicated and compound gestalt based on many cognitive models (CM). He points out that besides those CMs

characterizing *mother* as a human female, we have to consider at least five CMs for any adequate understanding of the word (cf. Lakoff 1987: 74–76):

(a) Birth CM: a female who gives birth to the child;
(b) Genetic CM: a female who contributes genetic material to a child;
(c) Nurturance CM: a female adult who nurtures and raises a child;
(d) Genealogical CM: the closest female ancestor;
(e) Marital CM: the wife of the father.

Later, Taylor uses "cognitive domain" (CD) to replace "cognitive model", and thinks that to understand *mother* fully, we have to make corresponding analysis of *father*. In terms of the typical convention of traditional society, he analyzes *father* into five CDs (cf. Taylor 1995: 86–87):

(a′) Genetic CD: a male who contributes genetic material to a child;
(b′) Responsibility CD: financially responsible for the well-being of the mother and the child;
(c′) Authority CD: a figure of authority, responsible for the discipline of the child;
(d′) Genealogical CD: the closest male ancestor;
(e′) Marital CD: The father is the husband of the mother.

The five CMs of *mother* or the five CDs of *father* constitute the cluster of ICMs separately for *mother* and for *father*, which is more fundamental than any single CM or CD. If deleting or revising some model of ICM of *mother*, we will get the non-proto-members of mother, such as:

(a″) *Stepmother*: fits the Nurturance and Marital models but none of the others;
(b″) *Foster mother*: fits the Nurturance model but none of the others;
(c″) *Birth mother*: fits the Birth model but none, or not all, of the others;
(d″) *Genetic mother*: fits the Genetic model but not all of the others;
(e″) *Unwed mother*: fits (probably) all but the Marital model [etc.]

Such kind of ICMs has quite strong interpretative force. Obviously, all of them come from the empirical research of the objects to which relevant terms refer.

We can conclude that semantic knowledge is originated from empirical or encyclopedic knowledge, and that there is no obvious distinction between them. If our conclusion holds, the traditionally entrenched distinction of analytic and synthetic propositions will completely lose its foundation, and will become totally relative: relative to some dictionary or encyclopedia, or relative to our linguistic knowledge in some periods.

## P6. *Language and meaning rapidly or slowly change as the communicative practice of a language community does.*

If we set dead languages aside, any language, including its phonemes, lexicon, syntax and semantics, changes. Because the world changes, our cognition of the world also changes. Our linguistic community adjusts language and its meaning to the needs of our cognition and practice. As a result, language and its meaning are always in the process of change and growth. More specifically, some old expressions die or are abandoned, and even a whole language may become "dead"; some new expressions spring up, and the scope of old expressions may also be extended or narrowed. Such changes may not be perceived in a short period, but in the long run they are evident and obvious. For instance, we could tell the changes by contrasting old English to modern English, or ancient Chinese to modern Chinese.

I explain the reasons why language and meaning change as follows.

(1) The external world which language characterizes is in the process of change.

As mentioned above, in order to reflect changes of contemporary social life, *Modern Chinese Dictionary* (the 6th edition) introduces many new words and new meanings, and also deletes some old words and old meanings. In what follows, I take the English word "Oxford" for another example, which evolves from a proper name to a family of names. The evolution of "oxford" indirectly reflects the change and development of the actual world.

Oxford was originally a ford for oxen to cross River Thames. It is situated in the center of England, becoming a focus of the routes that followed the Thames east to London and the Cherwell Valley to the Midlands and North. Around this place people gradually settled down and established the original town, called "Oxnaforda" by *The Anglo-Saxon Chronicles* in 912. Teaching existed at Oxford in some form as early as 1096, and developed rapidly from 1167, when Henry II banned English students from attending the University of Paris. Those English students went back to Oxford and continued their study. By the end of the 12th century a university was well established, modeled on the University of Paris, initially with faculties of theology, law, medicine, and liberal arts. In 1221, Robert Grosseteste (c.1168–1253) became the first chancellor of the University. As the University became more and more famous in Europe, the population at Oxford also became larger and larger. There were conflicts between townsmen and students. In 1209 the townsmen expelled the students, one of whom had accidentally slain a townswoman. Some teachers and students went to Cambridge, where they helped to establish a university, now known as University of Cambridge. As University of Oxford became one of the most

celebrated universities in the world, many kinds of things have come to be called "Oxford-…", for example, "Oxford bag", "Oxford blue", "Oxford clay", "Oxford corner", "Oxford dash", "Oxford down", "*Oxford English Dictionary*", "Oxford frame", "Oxford gray", "Oxford grouper", "Oxford hollow", "Oxfordism", "Oxford movement", "Oxford shoe", "Oxford unit", "Oxford University Press", "Oxford weed", and *et al*.[8] Nowadays, the original town has become the City of Oxford, and the county in which the city is located is called "Oxfordshire".[9]

So far, "Oxford" has become a family of names, with the city or the university at its center. However, there is some kind of historical continuity among these oxford-words, that is, they have a common origin and core meaning. By knowing the use history of "oxford", we know the meanings of the word. Apart from what the history of Oxford conveys, what we can expect for the semantic meanings of the word "oxford"?

(2) Our cognition of the world, which language reflects indirectly, is in the process of change.

Here, I take the evolution of the concept "atom" as an example. In ancient Greece, to explain what constitute material bodies, Democritus invented the concept "atom", which means the smallest and indivisible unit of matter. At that time, the concept "atom", as the result of speculation, is a pre-scientific concept. From 17th century to early 19th century, due to the contributions of Robert Boyle, Antoine Lavoisier, John Dalton and many others, atoms were regarded as the basic elements of matter, the smallest unit of chemical change, and became a scientific concept, though its meaning "indivisible" was preserved. Later on, scientists found that an atom is not indivisible, but has a complex internal structure: it consists of the electrons, protons, neutrons; that protons and neutrons are further composed of quarks; and that protons and neutrons constitute the nucleus, while the electrons rotate around the nucleus. To explain the interaction of the elements within an atom, scientists have proposed a variety of models, such as Dalton's atomic model, Thomson's plum pudding model, Rutherford's planetary model, Boyle's atomic model, modern model of quantum mechanics, and so on.[10] Clearly, there is a continuous history of the word "atom" from ancient Greek to modern sciences. The meaning of "atom" changes with advance of science. Its current meaning is the summarization and concentration of humans' previous cognitive achievements. In order to completely understand the meaning of "atom", it is absolutely necessary to trace back the whole history of its use.

(3) In a language, the change of some elements will lead to many linked changes.

[8] About these entries, see *Oxford English Dictionary*, Second edition on CD-Room (Oxford: Oxford University Press), 2009.

[9] See "Oxford", http://en.wikipedia.org/wiki/Oxford.

[10] See "Atom", http://en.wikipedia.org/wiki/Atom.

A language is a whole; there are connections not only among its modules, such as phonemes, lexicon, syntax and semantics, but also inside each module. Small changes in some places can lead to a series of change. For instance, in the Indo European language family, there are common roots for many different words; if there appear changes in the forms and meanings of root-words, the changes might produce corresponding changes in their derivative words. Take "justify" as an example. It is a verb, having many derivative words, say, "justified" as its past particle, "justifying" as its present particle, "justified", "justifiable", and "justificative" as adjectives, "justification" and "justifier" as nouns, etc. The change of each word might lead to the changes of other relevant words, plus changes of other words combined with them. In arguing for indeterminacy of translation, Quine makes a famous thought experiment: linguists visit a native tribe about whose language they know nothing. When separately learning and translating the tribe language, those linguists may choose different and even conflicting translations in the basis of the same behavioral evidence, e.g. translating a native word "gavagai" into "rabbit", "undetached part of a rabbit", "temporary section of rabbit", and even "rabbithood", *as far as they make sufficient compensational adjustment in translation of other parts of the tribe language*. Quine also mentions, when translating French construction "ne…rein" into English, we may choose to translate "rein" as "anything" or "nothing", only if we make a necessary compensational adjustment in the translation of "ne": in the former case, "ne" will be translated as a redundant construction; in the latter case, it will be translated into "not" (cf. Quine 1969: 33–34).

In semantics, many linguists try to account for the inter-connection of lexical meanings and the additional effects of the meaning-change of words. By introducing his theory of lexical or semantic fields in the 1930s, Jost Trier tried to emphasize: (i) Some words of a language are related with each other in their meanings, and constitute a complete system of lexicon-semantic field, i.e. a set of words (or lexemes) grouped by meaning referring to a specific subject. A semantic field has its hierarchy: it subsumes sub-fields, and sub-sub-fields…. For example, the semantic field "food" is consisted of semantic sub-fields such as "fruit", "meat", "vegetable", "grain", etc.; the semantic sub-field "grain" subsumes semantic sub-sub-fields such as "rice", "wheat", "corn", etc. (ii) Semantic fields are not stable, but always in the process of change: old words disappear, new words come forth, finally resulting in the re-adjustment of meaning relation of vocabulary. Most of time, if the meaning of one word becomes narrower, that of some other words will become wider. (iii) Only by considering the meaning relation of one word to others of the same semantic field, can we make clear the exact meaning of that word. For instance, the word "week" constitutes a semantic field, whose members include *Monday*, *Tuesday*, *Wednesday*, *Thursday*, *Friday*, *Saturday*, and *Sunday*. If we ignore other elements of the semantic field, we cannot really understand the exact meaning

of a single word of that field. (iv) We should not focus on the semantic change of a single word one by one, rather should treat the lexicon of a language as a complete system, and combine the static transverse association of words with others in a dictionary and dynamic longitudinal correlation of words in our language practice. The main methodological defect of traditional diachronic semantics consists in separately tracing historical evolution of single word's meaning (see Trier 1931, 1934).

(P1)–(P6) argued above constitute my own philosophy of language, i.e. Social Constructivism of Language and Meaning (SCLM). If it is correct, how is SCLM applied to linguistics and philosophy of language? What can it achieve? What changes does it bring about in philosophy of language and linguistics? All these questions are left to further investigation.[11]

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