Feminist Logic, Literally

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Abstract

I this paper, I discuss Plumwood's *feminist logic* program. I argue both in favor of her general stance in feminist philosophy of logic and her more specific feminist critique of classical logic. Plumwood's general position is in opposition with (I think it's safe to say) the prevailing view in analytic philosophy about the relation between formal logic and feminist theory, according to which feminist theory cannot say anything about or against logic proper, since the issues of oppression are external to logic as a (formal) discipline. Connected to this *externalism* is a non-Plumwoodian view that "feminist logic" either doesn't mean anything, or that it has some figurative meaning. Concerning Plumwood's (I think it's safe to say) not widely accepted feminist critique of classical logic, I propose an interpretation according to which classical logic is oppressive only when it's used to describe a particular, "dualized" or "dualizable", kind of notions. In accordance with this understanding, I consider five features of oppressive differentiations as proposed by Plumwood, arguing that two of them don't concern negation, the feminist critique of which operator Plumwood is mostly (in)famous for.

Keywords. Val Plumwood, feminist logic, dualism, the Other.

1 Questions about feminism and/versus logic

A reader not so familiar with (or about) the literature behind the following question would perhaps be perplexed by what Ayim sets to answer in the

title of her 2002 paper (2): "Passing through the needle's eye: Can a feminist teach logic?".

Note first that the question is not if a *woman* can teach logic. So, it would seem that Ayim doesn't try to engage with the old but sadly enduring stereotype that women are lacking in rationality. But it appears that the question can still be about intellectual capacities. Perhaps it addresses whether *feminists* are the ones lacking in rationality (regardless of their gender). And if they are, that would certainly affect how they teach logic and logic-related courses like critical thinking.

That's the misinterpretation Ayim was going for to attract the unsuspecting inquirer. A "feminist clickbait" of sorts, if you will. There would surely be a lot to consider on (and about) such an inquiry (including whether it is offensive to question the rationality of a loosely-defined collection of not only views but people that are upholding them and whether this is just a modified version of the previous, misguided question about women and rationality), but the answer to such a broadly conceived question would end up being quite uninteresting: "It depends on what you mean by 'feminist', but in the vast majority of cases, *yes*".

No; in reality, Ayim's question is a part of a larger discussion *between feminists*, started by Nye's famous book *Words of Power: A Feminist Reading of the History of Logic* (22). Their conversation is not aimed at debunking an old myth (or a re-interpretation thereof), because it does not question feminism at the "entry level", trying to justify that feminists (or let alone women!) are good enough to teach logic. Actually, it questions *logic*. Hence the subversive ambiguity of the question.

In this paper, I will not consider this branch of the debate. What I wanted to join Ayim in illustrating is that in some feminist circles, logic as a discipline is not taken for granted. While some logicians may question the logical coherence of some feminist theories, some feminists are considering whether logic as currently conceived and practiced is practically and theoretically consistent with women's struggle for equality. And this would seem to imply that logic is in the scope of feminist analysis and critique. It is this phenomenon that I want to address here, namely, the relevancy of feminist theory to logic taken as a discipline (be it within philosophy, AI, mathematics, or something else).

The conversations between feminist philosophers and/or feminist logicians about logic notwithstanding, I believe it's safe to assume that the prevailing view in analytic philosophy about the relation between formal logic

and feminist theory is what Plumwood (25) calls 'externalism' (a view taken also by Ayim herself, as I understand her position), according to which logic is "above contest and irrelevant to issues of oppression, which are treated as always external to the logic and never calling logic into question" (25, pp. 61-2).

This is a position that is the polar opposite of what Nye claims (and Ayim disagrees with Nye, claiming ultimately that yes, a feminist *can* teach logic). Nye's position is widely criticized (e.g., in (23; 14; 30; 9; 21)), and it is also a position she did not keep – at least that was the case in 2002 (17, p. 3). I cannot here do justice to the stance expressed in Nye's book. But in a word, she said that logic is always oppressive towards women and that it should be dismantled and replaced by something else (namely 'reading'). Be that as it may, showing that she was overreacting or confused doesn't (or rather *didn't*) necessarily involve a critical analysis of logic as it is standardly understood and practiced. Upon rejecting/dismissing Nye's (22) view, it is again, as Hass put it, "logic as usual" (15, p. 198).

Enter Plumwood (23; 24; 25), who made the next logical step: Not all logic is oppressive, but some is; most notably, classical logic.[1] Now, Plumwood's position is not so easily disregarded as Nye's, not only because it's not universal and thus not so straightforwardly falsifiable, but also – I believe – because it is more deeply entangled with the question of externalism vs. internalism (or non-externalism). It seems that, upon considering Plumwood's position, this is something we cannot put aside.

An externalist may accuse Nye of importing problems from other domains into logic and that logic is outside feminist concerns (making a parallel between, say, logic(s) and mathematics). But met with Plumwood's claim that classical logic is oppressive while some other logic is not, they have to engage in a highly specific discussion about formal features of logic(s) which some *do* find concerning; for example, the following equivalence, which holds in classical logic:

$$(p \wedge q) \rightarrow r \equiv (p \rightarrow r) \vee (q \rightarrow r).$$

I will speak about (or rather against) this formula in Section 3, where I consider Plumwood's concrete proposal for a feminist reconceptualization of

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[1]In 1993, both Plumwood's (23) and (24) were published. The former text is contained as a chapter within the latter book, the chapter being longer (including some further discussion at the end) and only slightly modified. In this paper, I almost exclusively refer to the version of the text published as a standalone paper, i.e., to (23).

logic. Along with Nye's *anti-logic* internalism and Plumwood's and Plumwoodian (8) more *logic-friendly* internalism, there are also internalisms by Hass (14; 15; 16) and LeNabat (19), who criticize the standard logical theory and practice from different angles (and traditions) but nevertheless arrive at similar conclusions regarding whether feminists have anything to criticize and propose about logic. But in order to ultimately see what is (purportedly) wrong with the above theorem, let me consider another otherwise confusing question, asked a few times in the literature (e.g., in (15; 23; 8; 19)), most recently, to my knowledge, in 2020 by Russell (30): Is there such a thing as "feminist logic"?

2   The meanings of "feminist logic"

2.1   Logic for feminist ends

My main goal is to defend a Plumwoodian answer to this question as opposed to the one advocated for by Russell (30). The Plumwoodian meaning of "feminist logic", although controversial, is fairly straightforward. She finds some features of classical logic (particularly negation) problematic from a feminist perspective. When these are eliminated or replaced with their more egalitarian counterparts, we get a *feminist logic* (more on this in Section 3). For instance, relevant logic may be a candidate (23).

Russell argues against Plumwood's view and ultimately accepts, I will call it, a more *metaphorical* meaning of "feminist logic". Much like Ayim to the question "Can a feminist teach logic?", Russell gives an affirmative and affirming answer, but ultimately, in an externalist manner, "never calling logic into question" (25, p. 62). She considers four possible answers to the question and offers her own, an extended version of one of the considered views.

Curiously, she rejects Plumwood's answer as well as a position she calls the 'non-overlapping magisteria view' (borrowed from Gould (12)), which is (fairly) equivalent to externalism as described by Plumwood. In Russell's words, this is a view according to which "feminism and logic are each legitimate disciplines, but their subject matters don't overlap, and so there is no subject matter for feminist logic to be about" (30, p. 85). In Plumwood's words, externalism sees logic as "irrelevant to issues of oppression" (25, p. 61). However, Russell does not go as far as to accept Plumwood's position.

(Below, I will argue that her view collapses into Plumwoodianism).

Instead, what Russell (30, p. 96) takes "feminist logic" to mean is:

1. logic used to feminist ends, or

2. that part of logic that studies (gender-based) social hierarchies and their influence on logical consequence.

The second option is Russell's addendum, which I consider in more detail in the following subsection. The first is what she says is a view exemplified by Susan Stebbing, a logician and the first woman to hold a chair in philosophy in the UK: "[F]eminist logic is logic used for feminist ends, as a tool for exposing and confronting bias in arguments, and for formulating and defending arguments for gender equality" (30, p. 95). A (fairly) equivalent view to Stebbing's is also considered by Hass (15) and Eckert and Donahue (8). Drawing from Harding's (13) differentiation between two types of feminist critique of science, Hass calls this the "bad logic" critique, found, she notes, in the work of Martha Nussbaum, Janice Moulton, Trudy Govier and Karen Warren. According to this kind of feminist approach to logic: "[F]eminism serves not to undermine logic, but as an antidote to bad logic. Feminist theorizing reveals systematic ways that patriarchal bias and prejudice masquerade as logical reasoning" (15, p. 198).

There is also a kind of non-externalism to this view. It is not exactly about feminist theory and *logic*, but more about feminist theory and our practice of logic. Logic and feminist theory may be about different, non-overlapping things, but, as Hass elaborates: "There is no way that the standards can be applied properly without a feminist analysis of gender" (15, p. 198). So, according to this view, to do "feminist logic" is to engage with the deep and systematic – and not merely accidental – errors we make in reasoning that are a result of the prevailing descriptive and normative views about women and the feminine(-coded).

Now, I do not want to argue against the important and necessary task of feminism-inspired self- (or meta-) reflection on our reasoning practices, but I do want to speak against it *as the default meaning of the term "feminist logic"*. I believe that, in this particular case, it obscures the more literal meaning. I say "in this particular case" because I don't want to argue that there is anything wrong about a word or a phrase having more meanings, some more literal than others. Nor do I want to argue that we shouldn't use a word or a phrase prevailingly in its figurative meaning, thus mostly

disregarding what it "really" means. No; my fear is that if the metaphorical meaning of "feminist logic" becomes the default, there will be no theoretical urgency to discuss whether logic itself – at any level of specificity or "formality" – can be oppressive. As affirming as this stance may be, it does not question the status quo of logic(s).

Neither Hass (15) nor Russell (30) stop at "logic for feminist ends" meaning of "feminist logic". Hass considers and adopts (also) a Plumwoodian, "more radical" (15, p. 198) position (see also her (14) and (16)). Russell adds a possible meaning quoted above: "[T]hat part of logic that studies (gender-based) social hierarchies and their influence on logical consequence" (30, p. 96). She proposes that social hierarchies be studied in logic by considering the formal instruments developed in various areas of (philosophical) logic and mathematics, e.g., "the interaction of a social hierarchy with modal and deontic logics looks especially interesting" (30, p. 96).

As I announced, I want to side with Plumwood, but also, in a sense, against Russell. Regarding the definition of "feminist logic" as "logic for feminist ends", I believe it is metaphorical because it is not exactly *logic* that is feminist, but its use. And Russell admits to that, finding nothing wrong with it (since she includes it as a possible meaning):

> On Stebbing's view, feminist logic would be applied logic and feminism one application among many. There would be conservative logic, and environmental logic, and even evil logic – logic for promoting evil ends! (30, p. 95)

I disagree with this interpretation as the default one firstly because I believe it plays right into the externalist's hands, presupposing that the tool we use is *neutral*. Or at least it doesn't make readily available the question of whether some tools may be themselves good or bad (for some uses). An externalist could argue: "If there's anything oppressive about logic, that's the problem with its use. Logics don't oppress people, people oppress people". And this is, I believe, a risk that outweighs the possible benefits: We can call more things "feminist logic", but at the cost of not calling into question the status quo of the logic(s) we use.

Also, I don't think this strategy is extremely helpful for the feminist cause, even outside logic. For instance, we wouldn't ordinarily say that Thomas Hobbes' fountain pen was *contractualist*. Why would we make this concession, which so stands out from the everyday practice, only for the

attribute 'feminist'? In my opinion, this may come across as forcing feminist discourse upon a topic or a domain, which is exactly what feminist theory is regularly unfairly accused of. This again plays right into the externalist's hands, for they could argue along the following lines: "The research in logic and the research in feminist theory have non-overlapping domains, so there is no such thing as 'feminist logic'. The only way there can be such a thing is if quite an unorthodox interpretation of both 'logic' and 'feminist' is adopted, which proves that feminists have no urgent business in logic proper".

Lastly, there's a contradiction lurking behind the above conception since one and the same tool can be used for competing ends. We would then have to call, say, Twitter, politically both ultra-conservative and ultra-progressive. I don't think this position is easy to defend.

All this being said, I believe a more suitable name for the use of logic(s) for feminist ends is simply *analytic feminism*. Not unlike analytic *philosophy*, there are questions about its definition and about the demarcation between analytic and non-analytic feminism, as well as some questions specific to feminist theory, for instance, whether it is a good idea, strategically and otherwise, to categorize or divide feminist philosophers by philosophical method (see, e.g., Garavaso (10) and Garry (11)). However, "[o]ne common way of characterizing analytic feminists is as philosophers who apply the analytic approach, which is characterized by the extended use of conceptual analysis and argumentation, to issues of social inequality widely addressed in feminist literature" (10, p. 3). And the use of (formal) logic as a tool to confront patriarchal bias and to formulate pro-feminist arguments certainly fits the bill. Now, perhaps some work will include methods that are outside the analytic tradition, especially if we consider Hass' (15) formulation, in which "feminist logic" as "critique of bad(ly practiced) logic" includes also the need to see through the masquerade played by the prevailing cultural and social norms. But in any case, the *logic part* of the (so-called) "feminist logic" will fall under what is commonly understood only as analytic feminism.

2.2 The part of logic that studies social hierarchies

What about Russell's addendum to the definition? Is "that part of logic that studies (gender-based) social hierarchies and their influence on logical consequence" (30, p. 96) the most literal meaning of "feminist logic"? I have to admit, I have some difficulty understanding what she meant by the "influence on logical consequence". From the rest of what is said about

this meaning of the phrase in the closing section of her paper, I believe she meant only to say that different logical theories (representing different social hierarchies) will have different sets of tautologies and/or theorems (since logic is, after all, all about consequence). I don't think she meant that we should study how our inference-making is influenced also from a, say, psychoanalytic perspective (which would maybe fit the first condition of the definition, especially if we instead take Hass' (15) description of the need to fight deeply ingrained and systematic bias.

By "social hierarchies", Russell means patriarchy as well as "other dualisms and rankings of groups based on gender, race, class, age, ability, sexual orientation, and so on" (30, p. 95). And by "dualism", she means a dichotomy in which there is an asymmetry of power, a term used by Plumwood (23), which plays a substantial role in her feminist philosophy of logic. More on that later.

Notably, Russell calls such feminist logic *a part of logic*, which she doesn't do for the previous possible meaning. This means this time we are in the domain of *logic proper*. For instance, Russell suggests that "[o]ne might – following Lewis – add to first-order model a pair of nested sets – intuitively the smaller is the set of men and the difference between the smaller and the larger the set of women. And then we could look for hierarchy-sensitive expressions" (30, p. 96). Perhaps a paper titled "A Four-Valued Model for Smith's Axiomatization of the Patriarchy in the Countries of the European Union" would fit the category. Or maybe a more catchy one, "The Modal Collapse of Western Society". All joke aside, this seems to look (or to will have looked) like logic proper, if anything does. Even if it was classified under "(formal) social *ontology*", or "(formal) social *mereology*" etc., the sheer "mathematicality" of the paper would speak for itself.

That being said, I think it's safe to say this position can be clearly distinguished from both the Stebbingian *logic-for-feminist-ends* and the Plumwoodian *logic-without-oppressive-features* meaning of "feminist logic". I want to say three things against this view. Firstly, "that part of logic that studies (gender-based) social hierarchies and their influence on logical consequence" (30, p. 96) doesn't sound explicitly feminist. Compare it with Plumwood's later wording of what feminist logic does:

> It is a challenge for feminist theory to delineate the characteristics of that subset of dichotomies that are oppressive and can properly be termed dualisms or binarisms, and for feminist logic to

investigate the logical expression of oppressive and oppositional forms of division. (25, p. 66)

Oppression is front and center in this description. In Russell's, on the other hand, oppression (or at least *unfairness*) can be read off only from the use of the phrase "social *hierarchies*" instead of "social *structures*". The former word is ethically loaded – at least more so than the latter. But I wonder if this is enough. Can an anti-feminist logician not also study (gender-infused) social hierarchies? Perhaps they could, in a highly sophisticated formalism, describe some such rankings in their own society and culture and then proceed to claim that the logic of the said society and culture mustn't change – however unfair it may seem to some groups! – because otherwise the system would run into a contradiction and we would all be worse off.

My second critique is that we again (i.e., like in the first half of Russell's final definition) don't see the "logic as usual" put into question. There's a plethora of logics we can use to study social hierarchies, but again, there is no implication that there can be anything deficient with the tools themselves and which would call for a feminist critique. Nothing is challenged in the way we standardly conceptualize and practice logic(s). Unlike Plumwood's definition expressed above (25, p. 66), Russell's definition doesn't presuppose that there is an underlying feminist theory behind the feminist logic. According to Plumwood, feminist logic is a continuation of feminist theory, namely that branch thereof that studies asymmetrical conceptual divisions. It necessarily includes a critique of the prevailing practice and is oriented towards a *reform* of logic (or, more precisely, towards a reform of the stance that classical logic should be the default logic). As such, Plumwood's feminist logic is comparable to Brouwer's intuitionism. I will expand on this analogy shortly.

The last thing I want to say against Russell is, from a Plumwoodian perspective such as my own, not really a critique. I believe Russell's second definition is unstable, in the sense that it can easily collapse into a full-blooded Plumwoodianism. Let's return to the anti-feminist logician mentioned above. How would they be criticized by a logician who is a feminist? The latter would probably point to some aspects of the former's logic that can be changed to provide a more inclusive and fair logical theory. But the anti-feminist would then possibly argue that the aspects in question should have the status of axioms, or that such change brings with it a host of unnecessary complications, or that changing the system in the proposed ways would be "changing the subject". However, in any case, the two would be

arguing about whether some facets of the given logic (like its theorems or va-
lidities) contribute to the marginalization of some groups within the analyzed
society.

For instance, say, additionally, that the anti-feminist logician's theory
rests on the mutually exhaustive and jointly exhaustive terms 'man' and
'woman'. Their opponent, like Plumwood, may retort that such a differenti-
ation is too oppositional and that we should include also the (purportedly)
contradictory cases of *both* and *neither*.[2] Now, this would be a discussion
in philosophy of logic proper about the laws of excluded middle and of non-
contradiction, akin to the discussions brought upon by Brouwer's intuitionist
challenge of the former law or Priest's dialetheist critique of the latter law.

But if this is so, then the feminist logician and their opponent would
disagree in an analogous way, say, an intuitionist and a realist about mathe-
matics do. Their disagreement about logic would stem from their conflicting
underlying philosophies. And if there is a case in which the feminist (logic) ar-
guments are analogous to intuitionist (logic) argument, the discussion starts
to fit more and more with Plumwood's definition of "investigat[ion] [into] the
logical expression of oppressive and oppositional forms of division" (25, p.
66). So to say, the whole conversation collapses into Plumwoodianism. This
is not to say that there is no longer a place for a (formal) study of "(gender-
based) social hierarchies and their influence on logical consequence", but
there is now also a substantial philosophical disagreement. And indeed, I
believe there are significant similarities between Plumwood's and Brouwer's
approach to (philosophy of) logic.

Plumwood's vs. Brouwer's logic

Brouwer (e.g., in (4)) claimed that mathematics doesn't behave in accordance
with the laws of classical logic. According to his intuitionist philosophy,
mathematics does not exist outside the mind(s) of mathematicians. What's
constructed is all there is. But the laws of classical logic overshoot the
mark and introduce (by entailment) also some entities which were not (yet)
constructed or even constructible by any known means. This is why, he
proposes, we should refrain from using some classical laws when reasoning
about (or within) *the domain of mathematics.* Brouwer was not against
classical logic, as evident from the following quote from one of his late papers:

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[2]See also her and R. Routley's (29). For two *fuzzy* logics of gender – which could also,
in my opinion, be called *feminist* logics – see (32) and (7).

> Fortunately classical algebra of logic has its merits quite apart from the question of its applicability to mathematics. Not only as a formal image of the technique of common-sensical thinking has it reached a high degree of perfection, but also in itself, as an edifice of thought, it is a thing of exceptional harmony and beauty. (5, p. 554)

So, he was by no means against classical logic in all areas.[3] I will argue that Plumwood thinks the same when it comes to the domain of gender, but also other areas connected to "dualisms" (however, when it comes to beauty and "perfection" of classical logic, she disagrees vehemently with Brouwer). Interestingly, Hass, another non-externalist feminist philosopher of logic, claims that Irigaray's critique of (formal) language can be understood in a similar way. In this interpretation, "Irigaray's claims about formal logic are analogous to those offered by quantum or intuitionist logicians", because "[i]t is only insofar as [the] formalism is used as a model for sexual difference that Irigaray's critique gets its purchase" (16, p. 84).

Knowing the story behind Brouwer's logic, we can consider a *Russellized* definition of intuitionist logic as "that part of logic that studies mathematical structures derived from intuition and their influence on logical consequence". Given such phrasing, we read from it that not every logic will do for the task. We need intuitionist philosophy in order to see what the said structures are in the first place, but we also need to reflect on the way we reason about and within mathematics – to question the very principles of reasoning in the area in question. Intuitionist logic is a logic with a reformist agenda, and so is Plumwood's.

Quantum logic too, we immediately recognize, is a logic that is proposed to replace (or maybe *reform*) classical logic when it comes to reasoning about the quantum world. Both intuitionist logic and quantum logic challenge classical logic. Why wouldn't we extend the same courtesy to feminist logic as well? Feminist logic *does* study the social structures by formal means, but it also criticizes "logic as usual", the classical logic.

This leads us back to the question of externalism vs. internalism. As I hope to have shown, it is not unimaginable for a critique of logic as a disci-

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[3]Even more, Brouwer was not against the use of classical logic in the very area of mathematics, provided that mathematical reasoning is about (and within) a restricted, *finite* domain (cf. his (6)). However, once we step outside the finite picture, classical logic becomes inadequate for the task. I thank an anonymous reviewer for pointing this out.

pline or a critique of some formal features of a logic to come from feminist theory. The exact content of these critiques is another question. But they deserve to undergo a critical examination as any other philosophy does. Externalism a priori denies that a conversation between logic and feminism can (and should) happen. However, Plumwoodians (and other internalist feminist logicians) warn that it is urgent that it does. I conclude this section with the closing word from LeNabat (19), who – I believe – captures this sentiment beautifully. In the following section, I offer some arguments in favor of Plumwood's specific feminist (philosophy of) logic.

> When actually expressed, the arguments, often by fiat, that logic is beyond feminist challenge are, in effect, the same sorts of arguments that feminists have always encountered when knocking at the door of some discipline. And they are scarcely more valid here than they have been anywhere else. But in the case of logic, it is arguably that much more critical that open discussion take place. To the extent that we perceive logic to underwrite inquiry (as the laws that prescribe how inference-making should proceed), or language (as a regulative ideal), it is undeniably urgent that its pronouncements be critically reflected upon [...]. Nothing that plays so important a role should operate unchecked. (19, p. 78)

3   Plumwood's feminist logic

When it comes to the literature that critically engages with Plumwood's work in feminist logic, most of it is concerned with her critique of classical negation, particularly as expressed by a Venn diagram (see Figure 1). But also, as Eckert and Donahue confess: "The length of time it took for any scholarly uptake at all makes us somewhat uncomfortable" (8, p. 434). Be that as it may, they offer quite convincing Plumwoodian answers to criticism put forward by MacPherson (21) and Garavaso (9). In the remainder of the paper, I instead want to underline the importance of Plumwood's anti-dualist philosophy to her feminist logic, as well as the fact that it is not only negation that can be problematic.

Plumwood argued that in the Venn diagram (but also generally) "$\neg p$ [cannot] be independently or positively identified, but is entirely dependent on p for specification"; it is "a passive, undifferentiated universal other which
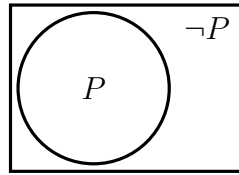
Figure 1: Venn diagram for negation

is specified as a lack, which offers no resistance" (23, p. 454). However, as many have noticed (e.g., (21; 30; 9; 31)), the grouping can be reversed, whereby what was once non-p becomes the positive property (call it q), and what was once positively defined p becomes the "free-floating rest" of the universe. Russell (30) and MacPherson (21) in particular, as I read them, see this as the most damaging critique of Plumwood's account and reason enough not to ascribe to a feminist reformist (or internalist) view of logic – finding no oppressive elements to report in logic itself.

But what I like to claim is that Plumwood challenged "only" some application of the above abstraction. In my understanding, Plumwood's critique of the Venn diagram (and other features of classical logic) was not meant to be taken in isolation from her theory and critique of dominant and oppressive "dualist philosophy". For illustration, let me use a clear-cut example of an oppressive, dualist interpretation of the Venn diagram for negation, shown in Figure 2. I will argue that it was models like that one – and not the (fully) abstract structure shown in Figure 1 – that Plumwood was arguing against.
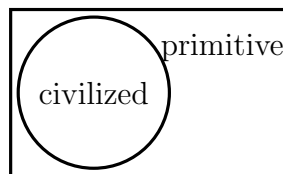

Figure 2: A non-Plumwoodian and oppressive diagram of people

3.1   Plumwood's critique of dualist philosophy

Civilized/primitive is only one among many dualisms Plumwood addresses in her work. "Dualism" is a term she uses (23; 24) to describe a well-established phenomenon in feminist theory – the tendency of western thought to concep-

tualize reality in terms of mutually exclusive and jointly exhaustive binary oppositions, like reason/emotion, subject/object, mind/body, nature/culture, universal/particular and male/female. Feminists warn against two salient and connected features of such differentiations. First, among contrasted pairs, one is typically devalued or considered inferior. Second, contrasts are mapped onto each other, in such a way that the subordinated members of dichotomies are associated with each other. And since, 'female' is the worst-off notion in the contrast, the negatively coded concepts are associated with the feminine: Men have been construed to be on the side of – for instance – reason and subject, women have been relegated to the side of – for instance – emotion and object (see also, e.g., (18; 20; 27)).

Plumwood describes dualism in some of the following ways. It is "a general way of thinking about the other which expresses the perspective of a dominator or master identity" (23, p. 442), "an alienated form of differentiation, in which power construes and constructs difference in terms of an inferior and alien realm" (23, p. 443), or "particular way of dividing the world which results from a certain kind of denied dependency on a subordinated other" (23, p. 443). Plumwood stresses the fact that dualisms are not universal to human thinking, but are rather "conceptual responses to and foundations for social domination" and that "[a]n account of their development would also be an account of the development of institutionalised power, and for prehistory would necessarily be speculative" (23, p. 444).

The civilized/primitive dichotomy fits this definition of dualism. Firstly, it is clear which term is the devalued one – it is hardly ever used with positive connotations. But also, the term "primitive" is connected with the other lesser terms in the above-listed contrasts. We can often hear the phrase expressing the idea that "primitive peoples" are somehow "closer to nature". This doesn't necessarily have to be objectionable, but more often than not what is implied (or even meant) is that they are *further from culture*. Moreover, if someone were to describe to us what "civilized" means, they would probably use terms like "rational" and "cultured".

The notion of rationality has been particularly analyzed in the feminist literature, influenced by a seminal 1984 book *The Man of Reason: "Male" and "Female" in Western Philosophy* by Lloyd (20), wherein she exposes (implicit) male bias in the idea(l) of reason in western philosophy. For instance, Aristotle famously defined a human being as a rational animal, but said also that the female of a species is "like a deformed male" (GA II 3 737a27–28) (1, p. 82), more commonly appearing as "misbegotten male"

or, in Ross' translation, "mutilated male". In her 1981 paper "Gender and dichotomy", Jay summarizes Aristotle's idea in the following words:

> Aristotle's famous notion of woman as "misbegotten male" [is also] an idea endorsed by patristic and scholastic theologians. A woman, having no positive sexual reality of her own, is only a failure to become a man. Aristotelian embryology claimed that, because all form, like the soul, is in the semen, and only formless matter is contributed by the mother, it is the true nature of all pregnancies to result in boy babies only. If girl babies are born, it is because of some failure in the gestation process, probably the south wind was blowing too much, thought Aristotle, or perhaps something else went wrong. (18, p. 46)

Mutual association between concepts in dualisms is not always straightforward. Sometimes the "linking postulates", as Plumwood (23) calls them, have to be made more explicit. Here's Plumwood's example of the workings of a dualist association of concepts:

> [T]he postulate that all and only humans possess culture maps the culture/nature pair onto the human/nature pair; the postulate that the sphere of reason is masculine maps the reason/body pair onto masculine/feminine pair, and the assumption that sphere of human coincides with that of intellect of mentality maps the mind/body pair onto the human/nature pair, and, via transitivity, the human/nature pair onto the masculine/feminine pair. (23, p. 445, n. 6)

It's important to have in mind that much of the above postulates and linkings are not necessarily made consciously and by a single individual, hence Plumwood's talk of 'western thought', 'western philosophy', 'western concepts' etc. A full explanation of "the deep roots of phallocentrism and other oppressive conceptual structures in western thought" (23, p. 441) is far beyond the scope of this paper, but also – as Plumwood (23; 25) stresses – beyond the scope of logic and philosophy of (only) logic. The dualizing western thought is a massive "conceptual and cultural challenge", in which logic gets a say too, albeit "[c]hallenging dualistic otherness at the level of formal logical theory is only part of what needs to be done to problematise the naturalness of domination" (23, pp. 455-6).

With this brief description of dualism, let me now turn to Plumwood's main, logical critique. I first discuss the problems with negation and then turn to a (Plumwoodian) critique of some dualistic features of classical logic that don't seem to rest on negation.

3.2   Plumwood's critique of classical negation

Dualisms, as well as non-oppressive dichotomies, rest on negation. "[A]ccounts of negation can be seen as providing, at a very abstract level, certain structures and principles for conceiving and treating otherness [...], the other which is not self, whatever self may be" (23, p. 441). "If negation is interpreted as otherness, then how negation is treated in a system, together with other features of the system, provides an account of how otherness is conceived in that system" (23, p. 454).

Classical logic is the default logic and its negation is the default negation. It is privileged as *intuitive* or *normal*. That means also that the difference within a dualism is by default perceived as classical negation. However, this kind of negation, Plumwood argues, has such properties that it seems as if it comes right out of the dualist's playbook.

Plumwood's (23; 24) contribution to the analysis of oppressive conceptual contrasts is her listing of five distinct (disjunctive but connected) features of such contrasts: relational definition (or incorporation), homogenization (or stereotyping), radical exclusion (or hyperseparation), instrumentalization (or objectification) and backgrounding. She first explains these features generally, in terms of the "master/slave dialectic" of dualist philosophy and ideology. For a condensed but informative account of the features, see Russell (30) and Eckert and Donahue (8). Later in (23), Plumwood argues that all these features are exemplified by classical negation and some additional features of classical logic. That is why Plumwood calls it a 'logic of domination' (23) or a 'logic of colonisation' (24).

Before I turn to each of the five oppressive features in the context of classical logic, an interpretative remark is in order. Plumwood speaks mostly about propositional logic, saying at one place explicitly that "[a]t the level of *propositional* logic, classical logic is the closest approximation to the dualistic structure" (23, p. 454, added emphasis). By that, she doesn't necessarily mean to say that only propositional logic is problematic from a feminist perspective (as evidenced, e.g., in another place in the paper where she says that "[b]oth in terms of predicate logic and in terms of propositional logic,

a dualism must be seen as a quite special kind of distinction or dichotomy"
(23, p. 446). What she means, as I see it, is that we don't even need to
climb up to the first order to see the oppressive features of classical negation.
However, even so, she wasn't fully correct, as shown by MacPherson (21),
whose critique I consider below, when discussing homogenization.

In this paper, I want to take *predicates* as default referents. I believe
nothing is lost if Plumwood's analysis is extended in the proposed way,
but there is a lot to be gained. Firstly, the problem MacPherson notices
is thus solved. But moreover and more importantly, predicates are, I be-
lieve, more appropriate for representing dualisms. Consider Plumwood's
list of key dualisms in western thought: "culture/nature, reason/nature,
male/female, mind/body, master/slave, reason/matter (physicality), ratio-
nality/animality, reason/emotion, mind (spirit)/nature, freedom/necessity,
universal/particular, human/nature (non-human), civilised/primitive (na-
ture), production/reproduction (nature), public/private, subject/object,
self/other" (23, p. 443).

Most of these terms can (with some modifications) be *predicated* of some-
one or something. Further, speaking about predicates is consistent with the
interpretation I want to provide to offer a defense of Plumwoodian logical re-
formism, an interpretation according to which it is the logic of such concepts
– i.e., concepts that (can) appear in dualisms – that Plumwood wants to be
a *feminist* logic.

Relational definition (incorporation) in classical negation

Let's first consider a critique mentioned at the beginning of this section, the
fact the $\neg p$ is in classical logic not positively identified. This fits under 'rela-
tional definition' feature of dualism. The phenomenon of relational definition
(within an asymmetrical binary structure) was recognized at least as early
as by de Beauvoir, who writes, as quoted in Plumwood (23, p. 450), that

> [H]umanity is male and man defines woman not in herself but as
> relative to him; she is not regarded as an autonomous being. [...]
> She is defined and differentiated with reference to man and not
> he with reference to her; she is the incidental, the inessential as
> opposed to the essential. He is the Subject, he is the Absolute –
> she is the Other. (3, pp. 15-6)

In a similar fashion, Plumwood offers the following description in her later paper on feminist logic:

> Eurocentric and androcentric thinking often pictures its Others as deficient versions of the center, defining them as lacking the center's virtues. The Other is said to be distinguished by its lacks – of the wheel (in the case of indigenous Australians), of a well-controlled and distanced rationality (in the case of women). The Other's achievements and excellences are not mentioned – that they had the aerofoil in the boomerang, that a blend of reason and care has an essential role in maintaining the conditions for life. The Others of Eurocentrism and androcentrism are pictured in terms of negative otherness, as other-than-the center rather than in terms of nonhierarchical difference, as positively-other than. Positive otherness is crucial for their liberation. (25, pp. 52-3)

The crucial problem here – in my understanding – is not that the privileged pole *cannot* (by logical possibility) be defined by reference to the inferiorized pole (for instance, the Australian settlers may be defined by their lack of sophisticated boomerangs), but that this is rarely ever done in practice. So much so that inverting gender terms in everyday situations can have ridiculous results: "Men! Just a little reminder to smile today, because women like positive men" (30, p. 90) (see also (18)).

But that raises a question. If it's not logic but dualist culture, society or ideology that suppresses the "equity of definability", doesn't that mean that logic is not at fault here and that the problems are *external*? It is at a similar point of discussion in (25) that Plumwood introduces externalism, saying that its "idea that centrism and phallocentrism are always external to logic itself, just a matter of informal assumptions and usage" is "in conflict with the central and fundamentally correct insight of the theory of Other, that oppressive assumptions can become naturalized as part of the logical structure of concepts of otherness, where they are very difficult, without employing considerable logical and philosophical skill, to detect, expose, and discard" (25, p. 61).

In Plumwood's later (25) terminology, 'centrism' (i.e., dualism) – not negation – is the problem. There are even two subsequent subsections of the paper titled "Are Negative Categories Oppressive?" and "Centrism, Not

Negation, Is the Problem", respectively. However, I must confess, Plumwood's message in these pages remains elusive to me.

On the one hand, it seems that Plumwood there makes a concession to classical negation; as if she's saying that not all classical negations are bad, only those that are or can be weaponized by dualist philosophy. This is supported by a place in (25), where she discusses mutual exclusivity and joint exhaustivity of dualisms, saying that the problem is that "[t]his [i.e., classical] form of dichotomy is exclusive and exhaustive *everywhere*" [p. 63, added emphasis]. I take this to imply that *somewhere*, there may be a place for a non-dualistic use of classical negation.

But, on the other hand, when discussing some non-problematic forms of division, Plumwood praises all the *non*-classical features, like incompleteness and inconsistency for negation (cf. her and Routley's (29), where a four-valued semantics is suggested). So, it would seem that not all negation is the problem, but classical always is, which is what Plumwood seemingly states outright just above the previous quote about classical dichotomies being exclusive and exhaustive everywhere; she says "Classical negation [...] is a centrist negation, but not all dichotomous negations are centrist" (25, p. 63). On this interpretation, classical negation is to be avoided at all times. If for no other reason, then strategically. However, I believe Russell (30) shows in an example that this position is absurd.

If Plumwood thought that *each and every* use of classical negation is oppressive, then, as Russell suggests, the distinction of *even versus odd numbers* would be an oppressive differentiation, which is absurd. True, Plumwood does argue that contrariety may be less oppressive than contradiction (even though dualisms are usually meant to be jointly exhaustive), which would make odd/even more of a dichotomy than a dualism. However, odd/even difference becomes oppressive once again if we consider the oppressive feature of hyperseparation (discussed in detail below), according to which the poles have to be separated on pain of total system collapse. In any case, we would be oppressing some *numbers*, be it odd, even or, say, complex. To avoid this paradox – while also keeping, unlike Russell, a Plumwoodian feminist internalist position in logic – I propose a reading on which classical negation *is* centrist, but *whenever it is applied in relevant theories (or situations, contexts, domains)*, such theories (etc.) being those that use notions that appear or can appear in dualisms, dualisms being binary conceptual structures characterized by asymmetry of power.

If western thought is dualist thought (as Plumwoodians believe), then

there are some notions that will regularly end up being privileged over their (so-called) counterparts. Those in power will cherry-pick among the possible formulations, keeping only those that promote their rule. It will always be wheels before boomerangs, unless we disrupt the very (classico-)logical structure of dualism and thereby make it harder to definitionally discard the complement.

Plumwood doesn't make a lot of concrete suggestions for a feminist reform of logic, proposing in her work on the topic relevant logic on a number of occasions, but only generally. However, it is not her intention to propose relevant logic as *the* feminist logic. That would be contrary to her program since it would limit the arsenal of non-classical formal tools which can be used for liberation. That being said, however, her much more known work in relevant logics can be applied to her feminist logic, yielding a Plumwoodian position (not necessarily but potentially agreed upon by Plumwood herself). I will propose a similar strategy shortly, concerning the relevantist critique of (the analogue of) backgrounding. Regarding the present concern of relational definition (also called 'incorporation'), Eckert and Donahue (8) argue that we use Plumwood's (then V. Routley) and R. Routley's *record cabinet model* (proposed in (29) as a part of the debate model of negation) for a feminist purpose (a 'record' meaning a pizza-shaped object with two playable sides, to be played on a record player). In the record cabinet model:

> Both sides can co-occur (occur simultaneously) in a framework [...] and one can perfectly well consider both of them. The important point [...] is that one side does not somehow *obliterate* of wipe out or entirely exclude of exhaust its opposite. Not is the reverse, or opposite, just defined negatively as *the other* – it has an independent and equal role on its own behalf. (29, p. 220, original italics)

Homogenization (stereotyping) in classical negation

Connected to relational definition or incorporation is homogenization. About the Venn diagram of negation, Plumwood says, vividly, that:

> In the phallic drama of [the] p-centred account, there is really only one actor, p, and $\neg p$ is merely its receptacle. In the representation of the Venn diagram, p penetrates a passive, undifferentiated

> universal other which is specified as a lack, which offers no resistance, and whose behaviour it controls completely. (23, p. 454)

Garavaso (9, p. 191) calls this "probably the most colorful reading of the relation between an Aristotelian class and its complement class" (and goes on to disagree with it). For a discussion about Plumwood's use of the phallic metaphor, see Sayadmansour (31). He argues that she refers to phallus according to a phallocentric as opposed to a phallic interpretation. That is, when she does use the words like "phallocentrism" to refer to the actual male reproductive organ (and not only to mean "patriarchy"), she adopts solely a *teleological* approach to the *geometrical* shapes of genitals. In dualist philosophy, penis is cylindrical and vagina is "tunnel-like", the latter being more of a receptacle than a shape. And, "[t]raditionally, with no shape comes no telos" (31, p. 181).

MacPherson (21) focuses on another issue regarding Plumwood's wording – her use of the lowercase p, which seems to signal Plumwood was referring to propositions. But he warns (and shows) that not every proposition is either equivalent to p or equivalent to $\neg p$. On the other hand, homogenization does appear, he admits, among predicates. As I said above, I consider a reinterpreted version, which applies to predicates.

Moreover, Plumwood (then V. Routley) and R. Routley offer much the same critique in (29), in the context of relevance challenges to classical logic, saying that, "in the case of classical negation it is otherness with respect to the universe, [but] [i]n the case of relevant negation it is otherness with respect to a much more restricted state, such that p and its negation do not exhaust the universe between then" (29, p 217). Curiously, they again use the lowercase p. However, they do offer a Venn diagram [p. 217] where uppercase letter, A, is used (unlike Plumwood in her (25), where a figure is added to the description, containing, again, p and $\neg p$).

As I claimed above, I believe a fruitful Plumwoodian stance is that a Venn diagram for negation is not appropriate only when we speak about (and in terms of) dualized or "dualizable" concepts. The fully abstract structure, shown in Figure 1, is not problematic. However, its application shown in Figure 2 is. From a colonizer's point of view, seeing themselves and their peers as civilized (or rational or objective, etc.) and all other beings and entities as being the heterogeneous, "free-floating", disorganized or "messy" *rest* of the universe is ideal. And again, they wouldn't be much worried about the possibility of reversal, whereby they become themselves the remainder.

Being the colonizer, they come with power (and mindset) to make their preferred definition the default or regular one, to the point that alternative formulations become comical or even nonsensical.

There are much better, liberatory alternatives to the Venn diagram for negation when it comes to dualized terms. One has to perhaps look no further than the record cabinet model mentioned above, or other solutions offered by R. Routley, Plumwood and others (28). But a simple fix is just to give both terms their own space in the picture. Then we have two terms that are contrary as opposed to contradictory (see Figure 3). In Figure 3, I use different terms, since the civilized/primitive dichotomy is probably unsalvageable given the pervasive negative connotations tied to the latter notion. Using contrariety can, according to Plumwood (25), be a (part of the) solution in some cases. However, even without joint exhaustivity, mutual exclusivity remains. And it can turn, in the relevant instances, to radical separation.
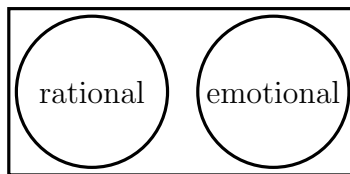

Figure 3: A partly (non-)Plumwoodian diagram of people

Radical exclusion (hyperseparation) in classical negation

The paradoxes of material implication are key to the Routleys' (philosophy of) relevant logic. However, Plumwood adds to this a feminist critique, particularly of *Ex falso*. It is a dualist tendency, she states, for "the penalty of merger" (23, p. 455) of contrasted notions to be *explosion*, the worst thing that can happen to a system. Dualism denies continuity and overemphasizes difference, as it is "the construction of a devalued and *sharply demarcated* sphere of otherness" (23, p. 442, added emphasis). It is by no means intuitive that such strong a demarcation should be a feature of the default negation. There is much more vagueness in the real world.

So, the most liberated version of the Venn diagram for negation in the case of dualized notions would be the one proposed in Figure 4 (cf. (29)).
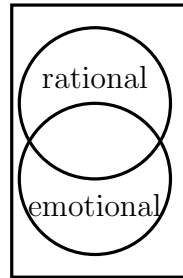
Figure 4: A Plumwoodian diagram of people

Note that this also makes intuitionist logic a logic of domination/colonization, *when applied in dualized contexts*, since *Ex falso* holds in this logic. To "liberate" intuitionist mathematical constructions, it is enough, on the propositional level, to exclude the *Excluded middle* from the list of theorems. But for the liberation of dualized groups, a still less rigid – less *oppositional* – negation is needed.

Having discussed all the oppressive features that involve negation, let me here briefly discuss another problem with exhaustive and exclusive negation. Some may recognize the dualist tendencies of western philosophy, but still insist that we make use the (extended) tools of classical logic. Perhaps liberation may be still brought upon just by making central what once was peripheral, e.g., taking P to stand for 'emotional' and defining everything else relative to that. However, Plumwood advises against such a strategy. The danger here is not that the oppressed will become the oppressors (this would, of course, also be wrong, but dualism is not so fragile, having resisted such strategies before) but that some members of the group previously designated as Other would join the privileged Absolute or One. Plumwood here refers to de Beauvoir's (3) seminal insight that women, in order to become (fully) human, had to extend the category of *male* – to join the "brotherhood". This may bring liberation to some women, but it doesn't address the ongoing inferiorization of the feminine or the feminine-coded.

3.3 Plumwood's critique of other classical features

Instrumentalization (objectification) in classical logic

Dualism instrumentalizes the inferiorized properties in as much as – in Russell's recount of Plumwood's description – "the values of the superior side

dominate; their interests are taken as ends in themselves. The inferior side is assessed in terms of virtues that make them useful to the superior side" (30, p. 10).

When it comes to instrumentalization in classical logic – although Plumwood's (23) argument is quite brief – I think what she proposes is similar to what is said above about relational definition. This interpretation is maybe supported by her critique of the classical feature of "truth interchangeability, in which any truth can be substituted for any other truth while preserving implicational properties" (23, p. 455). This statement is surely meant to reflect her relevantist critique of classical logic (cf. (26; 28)). Here, it is not the negation, but rather the implication of classical logic that is the problem. Even so, analogous problem can happen as in the case of mutual definability by negation – some truths can be suppressed, made not so readily available. Dualist reasoning may proceed, e.g., by using devalued concepts only in its arguments' premises, leaving the privileged place of conclusions to be expressed by "centralized" notions. Any truth can replace any other, but not all will in practice.

Backgrounding in classical logic

Backgrounding generally, as the name suggests, is a process whereby "the master's view is set up as universal, and it is part of the mechanism of backgrounding that it never occurs to him that there might be other perspectives from which he is background" (23, p. 448). When it comes to classical logic, backgrounding is connected to truth suppression (and so is instrumentalization, the truth interchangeability being "closely related" (23, p. 455) to truth suppression). "The suppression of premises on condition of their truth", Plumwood argues, "gives formal expression to the dualistic condition of backgrounding, in which the contribution of the other to the outcome is relied upon but denied or ignored" (23, p. 455). Admittedly, this sounds quite similar to instrumentalization. And perhaps one could argue that some of the five features are mutually definable or are instances of a larger phenomenon. This is a task for another occasion. I here instead want to focus on what Plumwood says about backgrounding in a brief footnote (23, p. 455, n. 16).

Backgrounding as truth suppression, she states in the footnote, is most clearly expressed in the following principle:

$$(p \wedge ((p \wedge q) \to r)) \to (q \to r),$$

which is, she continues, related[4] to *Exportation*:

$$((p \wedge q) \rightarrow r) \rightarrow (p \rightarrow (q \rightarrow r)).$$

For that reason, the former principle can be called "*Exploitation*" (23, p. 455, n. 16). Unfortunately, she says nothing more about these theorems in (23) and (24).

Exportation, however, is the topic of Plumwood's paper "Some false laws of logic", published for the first time in this issue (26). In the paper, she defends two principles which are violated by *Exportation*: the *Suppression Principle* and the *Joint Force Principle* (see also (28)). The principles are there defended from a *relevantist* perspective, to address "loss of meaning connection" (26, p. 12) allowed for in classical logic. The *Joint Force Principle* implies *Suppression Principle* but not vice versa (26, p. 7). I here speak only about the former.

According to *Joint Force*, "two propositions may, taken together, have consequences which neither proposition on its own has" (26, p. 7). This principle has an obvious feminist interpretation (so it is that much more unfortunate that Plumwood doesn't expand on the idea in (23) and in (24)). The two dualized poles can and should cooperate since there are benefits to all if they do. However, in a dualism, there's not even a talk of merger, let alone of cooperation (or appreciation of the contributions of the underclass).

In the previous section, I quoted Russell saying/admitting that "[t]here [is] conservative logic, and environmental logic, and even evil logic – logic for promoting evil ends" (30, p. 95). I argued against this (because by that logic, among other things, too many inanimate objects would become "political") and in favor of making visible also the more literal interpretation when it comes to "feminist logic". Now, regarding politics, consider this place in R. Routley et al.:

> [R]ather intuitive [is the] principle of the joint force of premisses, that two true statements may, taken together, have consequences which neither has on its own – that is, in true Socialist fashion, they can co-operate to produce something which neither can produce alone. (28, p. 269)

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[4]Plumwood (23, p. 455, n. 16) uses the word "related", but it can be shown that *Exploitation* follows from *Exportation*. Here is a proof. We can represent *Exportation* as a proposition of the following form: $A \rightarrow (B \rightarrow C)$, where $A = (p \wedge q) \rightarrow r$, $B = p$, and $C = q \rightarrow r$. From $A \rightarrow (B \rightarrow C)$ we get $(A \wedge B) \rightarrow C$. Finally, by instantiating the formula $(A \wedge B) \rightarrow C$, we get *Exploitation*.

From this, we can see the "politicality" of the principle. It can be called socialist not only because it can be applied or appear in a socialist's argument, but also because it expresses a socialist principle about cooperation. The exact same can be said about the Joint Force Principle being *non-dualist* or *feminist*. It is quite *literally* so. And if we can say that a principle is *literally* socialist, externalism about logic and politics (like that about logic and feminist theory) is incorrect.

Accordingly, the following classically valid principle, which denies the Joint Force Principle (26, p. 7, n. 7), is anti-feminist:

$$((p \wedge q) \to r) \to ((p \to r) \vee (q \to r)).$$

The reverse also holds, so we can talk about (or rather against) the following, classically valid equivalence:

$$(p \wedge q) \to r \equiv (p \to r) \vee (q \to r).$$

The above equivalence, applied in the context of dualist philosophy, makes synergy impossible. To a suggestion of a cooperative act, the follower of the "anti-synergy principle" responds: "Well, someone will do it. It could be me, it could be you". And, given that our (western) canon, culture, society, science, logic, etc. displays dualist (patriarchal) tendencies, the division of (epistemic) labor will be done in a way that serves the powers that be (guess who will do the dirty work). Those on the underside can expect to hear "It wasn't me, you could have done it!" when a negatively coded deed is done, and "I could have done it, can you prove I couldn't have?!" when the deed done is positively coded.

Conclusion

In this paper, I argued in favor of Plumwood's feminist logic program. I first argued against the stance that feminist theory has nothing to say about logic proper and the corresponding view that there is not, in the literal sense, any such thing as "feminist logic". In the second part, I offered an interpretation of Plumwood's feminist critique of classical logic.

As I hope to have shown, Plumwoodian feminist logic deserves to be called a logic in the proper sense as much as intuitionist logic or relevant logics do. Each of these logics is a continuation of a particular philosophy.

If "feminist logic" is not understood literally, I argued, the urgent discussion about whether some features of logic taken as a discipline can be oppressive is postponed or ignored. A Plumwoodian understanding of "feminist logic", for instance, opens up a space for a (philosophically substantiated) critique of some classically valid principles, like *Ex falso* and *Exportation*.

Regarding Plumwood's critique of classical logic, I offered an interpretation that I believe evades the critiques of Plumwood put forward by MacPherson (21), Russell (30) and Garavaso (9). As I argued, Plumwood's (23; 24; 25) view can be understood as saying that oppression is internal to classical logic *only when this logic is applied in relevant contexts.* Classical logic is not oppressive *always and everywhere*, but there are important areas of life – reflected in the prevailing "dualisms" of a given society and culture – where classical logic reflects and perpetuates oppressive forms of differentiation. When we address these sensitive domains, "logic as usual" won't do. It is true that in a theory, oppressions can be imported (e.g., via unconscious biases), but oppressive elements of a theory can also be reflected in its underlying, usually classical logic (e.g., banning all merger and continuity between the differentiated pairs).

To conclude, let me mention the notion of logical reform. Plumwood's stance has been labeled as *reformism* (e.g., in (30) and by myself above), but I am reluctant to use the term amply since I don't believe it to be completely accurate. In an important sense, as I understand her, Plumwood *doesn't* call for a reform of classical logic but only for the restriction on its use, i.e., against the "defaultness" of classical logic. Her position would perhaps be more accurately described as *feminist logical pluralism* or *feminist logical anti-(classical)-monism*, especially because she offers only general guidelines for a feminist logic. There can be many feminist logics, and all of them are logics, literally. There is nothing to reform in classical logic – a feminist course is to leave it alone and use our own (formal) tools to promote our cause.

References

[1] Aristotle (2019) *Generation of Animals & History of Animals I, Parts of Animals I.* Hackett Publishing (translated by C. D. C. Reeve).

[2] Ayim, M. (1995) "Passing through the needle's eye: Can a feminist teach logic?". *Argumentation* 9, 801–820.

[3] de Beauvoir, S. (1956) *The Second Sex*. Jonathan Cape.

[4] Brouwer, L. E. J. (1975) "Consciousness, philosophy and mathematics". In A. Heyting (Ed.), *L. E. J. Brouwer Collected Works Vol. I: Philosophy and Foundations of Mathematics* (pp. 480–494). North-Holland Publishing.

[5] Brouwer, L. E. J. (1975) "The effect of intuitionism on classical algebra of logic". In A. Heyting (Ed.), *L. E. J. Brouwer Collected Works Vol. I: Philosophy and Foundations of Mathematics* (pp. 551–554). North-Holland Publishing.

[6] Brouwer, L. E. J. (1981) "Historical introduction and fundamental notions". In D. van Dalen (Ed.), *Brouwer's Cambridge Lectures on Intuitionism* (pp. 1–20). Cambridge University Press.

[7] Collins, R. W. (2021) "Modeling gender as a multidimensional sorites paradox. *Hypatia* 36(2), 302–320.

[8] Eckert, M., & Donahue, C. (2020) "Towards a feminist logic: Val Plumwood's legacy and beyond". In D. Hyde (Ed.), *Noneist explorations II: The Sylvan jungle – Volume 3 with Supplementary Essays* (pp. 421–446). Springer Nature.

[9] Garavaso, P. (2016) "The woman of reason: On the re-appropriation of rationality and the enjoyment of philosophy". In M. C. Amoretti & N. Vassallo (Eds.), *Meta-Philosophical Reflection on Feminist Philosophies of Science* (pp. 185–202). Springer International Publishing.

[10] Garavaso, P. (2018) "What is analytic feminism?". In P. Garavaso (Ed.), *The Bloomsbury Companion to Analytic Feminism* (pp. 3–16). Bloomsbury Publishing.

[11] Garry, A. (2018) "Why analytic feminism?". In P. Garavaso (Ed.), *The Bloomsbury Companion to Analytic Feminism* (pp. 17–36). Bloomsbury Publishing.

[12] Gould, S. J. (2001) "Nonoverlapping magisteria". In R. T. Pennock (Ed.), *Intelligent Design Creationism and Its Critics* (pp. 737-749). MIT Press.

[13] Harding, S. (1991) *Whose Science? Whose Knowledge? Thinking from Women's Lives*. Cornell University Press.

[14] Hass, M. (1998) "Feminist readings of Aristotelian logic". In C. A. Freeland (Ed.), F*eminist Interpretations of Aristotle* (pp. 19–40). Pennsylvania State University Press.

[15] Hass, M. (1999) "Can there be a feminist logic?". In E. Bianchi (Ed.),

Is Feminist Philosophy Philosophy? (pp. 190–201). Northwestern University Press.

[16] Hass, M. (2002) "Fluid thinking: Irigaray's critique of formal logic". In R. J. Falmagne & M. Hass (Eds.), *Representing Reason: Feminist Theory and Formal Logic* (pp. 71–88). Rowman & Littlefield Publishers.

[17] Hass, M., & R. J. Falmagne (2002) "Introduction". In R. J. Falmagne & M. Hass (Eds.), *Representing Reason: Feminist Theory and Formal Logic* (pp. 1–7). Rowman & Littlefield Publishers.

[18] Jay, N. (1981) "Gender and dichotomy". *Feminist Studies*, 7(1), 38–56.

[19] LeNabat, M. (2005) *Feminism and Formal Logic*. Master's Thesis, University of Alberta.

[20] Lloyd, G. (1984) *The Man of Reason: "Male" and "Female" in Western Philosophy*. University of Minnesota Press.

[21] MacPherson, B. (1999) "Three misrepresentations of logic" *Informal Logic* 19(3–4), 185–199.

[22] Nye, A. (1990) *Words of Power: A Feminist Reading of the History of Logic*. Routledge.

[23] Plumwood, V. (1993) "The politics of reason: Towards a feminist logic" *Australasian Journal of Philosophy* 71(4), 436–462.

[24] Plumwood, V. (1993) *Feminism and the Mastery of Nature*. Routledge.

[25] Plumwood, V. (2002) "Feminism and the logic of alterity". In R. J. Falmagne & M. Hass (Eds.), *Representing Reason: Feminist Theory and Formal Logic* (pp. 45–70). Rowman & Littlefield Publishers.

[26] Plumwood, V. "Some false laws of logic". This issue (pp. 97–137).

[27] Rooney, P. (2017) "Rationality and objectivity in feminist philosophy". In A. Garry, S. J. Khader, & A. Stone (Eds.), The Routledge Companion to Feminist Philosophy (pp. 243–255). Routledge.

[28] Routley, R., Plumwood, V., Meyer, R. K., & Brady, R. T. (1982). *Relevant Logics and Their Rivals 1: The Basic Philosophical and Semantical Theory*. Ridgeview.

[29] Routley, R., & Routley, V. (1985) "Negation and contradiction". *Revista Columbiana de Matematicas* 19(1–2), 201–231.

[30] Russell, G. (2020) "Logic: A feminist approach". In M. M. Shew & K. K. Garchar (Eds.), *Philosophy for Girls: An Invitation to the Life of Thought* (pp. 79–98). Oxford University Press.

[31] Sayadmansour, A. (2022) "Feminist facing up to the logical foundation of dualist philosophy: A sequentialist approach". *Axiomathes* 32(2), 173–193.

[32] Tauchert, A. (2002) "Fuzzy Gender: Between female-embodiment and intersex". *Journal of Gender Studies* 11(1), 29–38.