A Defence of Non-deductive Reconstructions of Analogical Arguments[1]

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1. In ethics and law, analogical arguments often (but not always) take the form of a disputed case being compared to an agreed-upon case, and one interlocutor tries to persuade another that the disputed case should be treated the same as the agreed-upon case on grounds of similarity. Some have found it tempting to reconstruct analogical arguments so that the similarity between cases is denied on pain of inconsistency. Bruce Waller has provided just such an account, stressing the importance of deductively reconstructing analogy (Waller 2001). More precisely, he distinguishes between deductive analogies – those found in ethics, law, and even metaphysics – from inductive analogies, found in empirical reasoning. This paper is a reply to Waller, pointing out the limits of his account and arguing for a reconstruction of analogy where the core of the account does not require deductive entailment. Only first order reconstructions will be dealt with in this work. Whether a second order reconstruction (of the type defended in Woods and Hudak 1989 and Woods 2002) is a topic for another paper.

1. I should point out that there is much in Waller's recent paper with which I agree. For example, he is surely correct that we need to distinguish between analogies that are used to argue for a claim and analogies that are used to illustrate or explain. Failure to make this distinction may lead interpreters to attribute wildly implausible arguments where arguments were not being offered to begin with. Moreover, there is something right about distinguishing between the kinds of analogies we find in ethics, law, and metaphysics from the kinds we find in empirical reasoning. This paper begins with a presentation of Waller's reconstruction of analogical argument as it occurs in ethics, law, and metaphysics, presents some objections to that

reconstruction, presents an alternative reconstruction, and concludes with a brief discussion of Trudy Govier's work on analogy. The focus will be on reconstructing analogical arguments as they are found in ethics and law, with empirical analogies discussed only briefly as part of a contrast between the position defended herein and Govier's work on analogy.

2. Waller does not reconstruct all analogical arguments deductively, but the kind found in ethics and law are claimed to be deductive. The following is his schema for such arguments:

1. We both agree with case *a*.
2. The most plausible reason for believing *a* is the acceptance of principle *C*.
3. *C* implies *b* (*b* is a case that fits under principle *C*).
4. Therefore, consistency requires the acceptance of *b*. (Waller 2001, 201)[2]

To see what an instantiation of this schema might look like, consider Judith Thomson's Violinist case: you are kidnapped, knocked unconscious, and when you wake up you discovered you are connected to a world famous violinist. Your kidneys are filtering his blood. You can disconnect yourself, but if you do, the violinist dies. The only way to keep the violinist alive is to stay hooked up until a suitable kidney is found for transplant, and that is expected to take about nine months.[3] Many have the intuition it is acceptable to disconnect yourself from the violinist, even if he dies. Thomson draws on this, suggesting that if it is acceptable to terminate the violinist's dependency, then it is acceptable for a woman to terminate her pregnancy, at least when it results from rape. The following is a Waller-schema reconstruction of the preceding argument.

1. We both agree that in the violinist case it is morally permissible to disconnect oneself from the violinist.

2. The most plausible reason for believing the above is that agent *S* is not obliged to sustain a life that became dependent on *S* through force. Call this the Force Principle, which we accept.
3. The Force Principle implies that a woman is not obliged to sustain a life that was conceived through rape.
4. Therefore, consistency in what we accept requires that we accept that a woman is not obliged to sustain a life that was conceived through rape.

Waller claims that the principle making the entailment possible – the Force Principle in the above reconstruction – may only be available after much reflection. We may have to go through a process of generating principles, testing them against other cases, revising or generating new principles, testing them again, and repeating this process until we arrive at a set of cases and principles that is adequate. As Govier has suggested, to concede that the principle is not available when the argument is first offered – that it is only available after much reflection – is to concede that the *initial* argument does not trade on a principle underwriting a deduction (Govier 2002, 156). I think Govier is right on that point, and I wish to draw it out further by replying to Waller's claim that "A deductive argument by analogy reminds us of a principle which (it is assumed) we all share, and demands that we draw a consistent conclusion" (Waller 2001, 213; see also 208). Many of the paradigm cases of being reminded appear to suggest that one can only be *re*minded of something that one already knew, believed, or accepted.[4] For example, if, before going to work, my spouse asks me to pick up some milk on the way home from work, and I forget all about it until I am half way home from work and see a billboard with a milk advertisement on it, and then I remember what I am supposed to do, then it makes sense to say

that the billboard *re*minded me that we need milk. If I received no instructions from my spouse regarding milk, and I had no knowledge or belief that milk was needed, then it would make no sense to say that the billboard reminded me that we need milk. An example such as the preceding suggests that if an analogy reminds us of a principle, then we must have already known, believed, or accepted the principle. As we will now see, it is problematic to interpret analogical arguments as reminding us of a principle.

3. Consider the following dialogue:

Jack: I think abortions are always immoral, except when a woman's life is in immediate physical danger.

Jill: What about in cases where a life was made dependent on a woman through force, like in cases of rape?

Jack: That is profoundly unfortunate, but while rape is morally objectionable, the right to life of the fetus outweighs the concern that the life of the fetus was made dependent on the woman through force.

Jill: Well, imagine that you were kidnapped, knocked unconscious, and when you woke up you discovered you were connected to a world famous violinist. Your kidneys are filtering his blood. You can disconnect yourself, but if you do so, the violinist dies. The only way to keep the violinist alive is to stay hooked up until a suitable kidney is found for transplant, and that is expected to take about nine months. Isn't it okay to disconnect yourself?

Jack: I think so.

Jill: Shouldn't you then say that abortions are morally acceptable in cases of rape?

Imagine that Jack and Jill continue this dialogue, exploring some similarities and differences between the violinist case and pregnancy resulting from rape, until Jack is persuaded that these cases should be treated in the same way. Imagine further that he is even persuaded of truth of the Force Principle. Surely it is implausible to say that Jack is *reminded* of the Force Principle if he rejected it in the third line of the dialogue. If anything, Jack is *persuaded* to believe the principle, which means he could not have believed it or have been reminded of it. While it is possible to *reinforce* an existing belief, you cannot be *persuaded* of something you already believe. The preceding suggests that the initial analogical argument does not trade on some exceptionless principle of which we are being reminded. Of course, some might be concerned that the above dialogue is contrived; I want to suggest that it is not so contrived as to be unfit for theoretical analysis. I have taught Judith Thomson's paper many times, and before getting to the Violinist, I subject students to a variety of principles, including the Force Principle, that would lead to the conclusion that abortion in cases of rape is morally acceptable. Some of those who start off by being opposed to *(a)* the acceptability of abortion in cases of rape and *(b)* the principles that support such a view end up being persuaded by the violinist argument to change their mind on the acceptability of abortion in cases of rape. The members of this persuaded group tend to fall into two classes: *(i)* those who are also persuaded of some principle they initially rejected, and *(ii)* those who, while persuaded to change their view on acceptability of abortion in cases of rape, are not prepared to endorse any principle. Those who fall into the first group are like Jack. People fall into the second group for a variety of reasons. Some are so drained by the casuistry of cases that they have simply lost interest in generating and testing moral principles, and some begin to suspect that any moral principle they state (on the subject) may have exceptions. That some of the persuaded fall into the first group suggests that the

dialogue in question is not excessively contrived, and those who begin to suspect that it may not be possible to form an exceptionless principle pertaining to the relevant subject matter may have yet another reason for doubting deductive reconstructions of analogy that turn on exceptionless principles.[5]

4. It might be claimed that there is another way to capture the idea that analogies help us to discover something that, in some sense, we already know. The argument in the preceding two paragraphs makes use of acceptings, believings, and knowings of which the agent, at some point, was aware. However, researchers in cognitive linguistics postulate grammars that are allegedly at work in our heads; these grammars are offered as partial explanations for how we process language. Moreover, these grammars are generally said to operate *tacitly*. In other words, while we are initially unaware of the grammar at work in our heads, empirical research and reflection can help us to discover the principles of whatever grammar(s) may be in our heads, or so the story goes. Might it not be the case that analogies help us to discover principles that, in some sense, are already there in our heads? While Waller does not explore this possibility, some might be tempted by it, so it is worth addressing. There are problems with the idea that substantive principles operate tacitly in analogical arguments, but it is not because postulating mental processes of which we are unaware is objectionable. Rather, when we postulate such processes, there must be empirical grounds for doing so. Humans do show the ability to make grammaticality judgements. The ability to make such judgments might be taken as empirical motivation for the claim that we have a grammar "in our heads." Even if, in the end, such an approach fails to explain our linguistic capacities, it has a kind of motivation or initial plausibility that postulating internal principles for analogical deduction does not have. Recall, in

the third line of the dialogue in the previous paragraph, Jack rejects the Force Principle and he rejects treating *Rape* according to the Force Principle. If the Force Principle was at work in his head and underwriting some of his moral views, why would he reject it upon hearing it and reject treating a case like Rape as falling under it? If you ask adult users of English whether "he" is a complete sentence and they answer in the negative, and you ask them whether "The cat sat on the mat" is a complete sentence and they answer in the affirmative, you might be inclined to postulate that a rule like, "A complete sentence requires a noun phrase and verb phrase" is at work in their heads. Given Jack's initial position on *Rape*, and given that it took a fair bit of persuasion to get him to accept the Force Principle, we have some reason to believe that the Force Principle was not tacitly at work in his head from the beginning of the dialogue or before. If it is, some sort of motivation for that view needs to be provided.

5. Moreover, even if the motivation in question could be provided, there would still be a problem. At best, the tacit principles might play a role in the theory of analogical reasoning, but it does not follow that such principles could be ascribed as premises in an argument reconstruction. Such reconstructions are interpretations of an argument that are generally intended to be of use in argument evaluation. If Jack has explicitly rejected (or can reasonably be expected to reject) the Force Principle, it would make no sense to ascribe that principle as a premise in the argument because Jack would regard such a premise as false. In other words, even if, unbeknownst to Jack, the Force Principle is encoded in his head and is used in cognition of which he was unaware, there is still insufficient reason for ascribing the principle as a *premise* in the argument that persuaded him. Arguments give us reasons to accept, believe, or act. A claim of which a rational agent is unaware and which that agent would be inclined to *sincerely*

publicly reject cannot be a reason to believe for that agent, at least not if reasons are understood as intersubjective in nature or open to public scrutiny. There is no denial here of the usefulness of ascribing unstated premises in argument reconstruction, but such ascriptions are useful precisely when they aid in understanding and evaluating arguments, not when they lead to the problematic result of ascribing disavowed claims to agents.

6. To see another one of the limits of the schema in paragraph three, let us consider Kimberly Crenshaw's analysis of *DeGraffenreid vs. General Motors* (Crenshaw 1998). In that case, a group of black women sued General Motors for discriminatory hiring practices. Their argument was *not* that GM had failed to hire woman; that would not have worked because GM had hired many white woman. Their argument was *not* that GM had failed to hire blacks, because they had hired many black men. Rather, their argument was that GM had not hired enough people who were *both* female and black. The case was dismissed on the grounds that the relevant statute identified gender as grounds for discrimination, and it identified race as grounds for discrimination, but it did not explicitly identify compound classes – such as race *and* gender – as grounds for discrimination. Crenshaw points out that there is another interesting type of case involving compound classes, the type where white men sue for reverse discrimination. In these cases, the companies being sued may have hired white woman and black men, but the point is that they have discriminated against people who happen to be *both* male *and* white. Crenshaw points out that no such "reverse discrimination" case has been dismissed on the grounds that the relevant statute does not identify compound classes – such as race and gender – as a basis for a discrimination charge. Crenshaw compares the treatment of *DeGraffenreid* with the treatment of reverse discrimination cases and concludes that either

P: the courts should not have dismissed *DeGraffenreid* (thus, giving it the same treatment as reverse discrimination cases),

or

Q: that the courts should have dismissed both DeGraffenreid and the relevant reverse discrimination cases.

The point is that the two types of cases should be treated in the same way. Notice, Crenshaw is not endorsing *P*; nor is she endorsing *Q*; rather, she is endorsing the exclusive disjunction *P* or *Q*. Asserting one of the disjuncts is not required to support her further claim that there is evidence of discriminatory practices against black women by the United States judiciary; the disjunction will do. Her argument trades on an analogy, but it does not require that there be agreement on some specific principle *C*, as Waller's reconstruction requires. For example, after reading Crenshaw's work, Huey might think that all cases involving compound classes should be dismissed. After reading the same work, Dewey might think no case involving compound classes should be dismissed. But they would both be agreeing with Crenshaw that the cases in question should be treated the same way. They recognize that the cases are similar or analogous, but what they do with that similarity is different. Moreover, *pace* Waller (see the first claim of his reconstruction), Huey and Dewey do not need to agree on how to treat either the *DeGraffenreid* case or reverse discrimination cases. All they need to agree to in order to

appreciate the force Crenshaw's analogical argument is that these cases should be treated in the same way.

7. The next objection is, I think, the most serious to be raised thus far. Argument reconstructions are interpretations, and these interpretations are used to understand and evaluate arguments. If the reconstruction of an argument fails to capture a feature essential for evaluation, then that reconstruction fails. I will argue that analogical arguments come in varying degrees of strength, and that the schema presented in paragraph three cannot capture the required degrees of strength. The abbreviation *Violinist* will be used to refer to Thomson's famous violinist scenario, and *Rape* will be used to refer to cases of pregnancy resulting from rape.

8. Analogical arguments trade on the similarity between cases, and cases can be more or less similar. For example, students I have exposed to Crenshaw's argument find it very powerful. The similarity between black woman suing for discrimination and white man so suing is great, with few apparent salient differences. While there are similarities between *Rape* and *Violinist*, there also appear to be some salient differences, reducing the extent of overall similarity.[6] That is not to say that *Rape* and *Violinist* are not sufficiently similar to be treated in the same way; rather, my claim is that *if* they are similar enough to be treated in the same way, then that similarity is not as great as the similarity between the cases in Crenshaw's argument. *Assuming* that both the Thomson (*Violinist* and *Rape*) and Crenshaw (*DeGraffenreid* and reverse discrimination) arguments are rationally acceptable, we can still say that one is stronger (or weaker) than the other. Moreover, even if both were rationally unacceptable, it still would make sense to say that one is stronger (or weaker) than the other. The same can be said for analogical

arguments in the law. In one dispute, the precedent cited by the prosecution may be very similar to the case at hand, leading to the judgement that the prosecution has a very strong case. In another case, the precedent cited by the prosecution may only be somewhat similar to the disputed case, but still more similar than precedent cited by the defence, which might lead to the judgement that the prosecution has presented an adequate (but not very strong) case. A reconstruction of analogical argument needs to allow for degrees of strength.[7]

9. There are two ways in which these degrees of strength can be reflected in an argument reconstruction. First, the link between the premises and conclusion can have varying degrees of strength. Second, the premises can have varying degrees of strength (or acceptability). Once again, let us consider the following schematization:

1. We both agree with case *a*.
2. The most plausible reason for believing *a* is the acceptance of principle *C*.
3. *C* implies *b* (*b* is a case that fits under principle *C*).
4. Therefore, consistency requires the acceptance of *b*. (Waller 2001, 201)

Clearly, the inferential link between claims 1 and 2 is not deductive. As we have already seen (in paragraph three and in the second note), by calling his reconstruction deductive, Waller is referring to what happens with claims 2 through 4. Claims 2 and 3 are interpreted as entailing 4. Degrees of strength cannot be captured by the second inferential link since it is maximally strong. Entailment does not admit of degrees of strength. The first inferential link, while not being maximally strong, does not capture what we need either. To see this, consider the analogical legal arguments mentioned in the previous paragraph, one of which is very strong, and the other which is simply adequate (but not very strong). If we reconstruct both with the stated schema, here is what we get. Assume the very strong argument starts with a precedent that the

prosecutor and judge agree on, and an inference is made to a principle. In the adequate (but not very strong) case, assume that the prosecutor and judge also start with a precedent that the prosecutor and judge agree on, and an inference is made to a general principle. Moreover, assume that the precedents in both the very strong and adequate arguments are of equal pedigree (i.e. decided by the same level of court – for example, Supreme – and with the same level of conviction – for example, unanimous opinions for both precedents, or equal numbers of dissenting judges for both precedents). It is not clear how the inferential link from one case to a general principle in the strong argument can be stronger than the inferential link from one case to a principle in the simply adequate argument. In both arguments, an inference is made from *one* case, and the case in each argument (by hypothesis) is of equal pedigree. Consequently, the first inferential link in the above schema cannot allow for the required degrees of strength. Since the link is equally strong in the very strong and adequate cases, it would appear to follow that acceptability of claim 2 in each argument is equally strong because they are arrived at in the same way (as an inference from one case). Consequently, the second premise cannot be the source of varying degrees of strength between the two arguments. Claim 3 is a statement of implication, so it must be equally strong in both arguments, not allowing for varying degrees of strength in either argument. If neither the inferential links nor the premises allow for varying degrees of strength, then we do not have an account of varying degrees of strength.

10. What went wrong? Cases have similarities *and differences*. Even if two cases are similar enough to be treated in the same way, there may still be some relevant differences, but the similarities may outweigh the differences. The source of varying degrees of strength in analogues comes from the relative weight of the similarities and differences. In the very strong

legal analogy, the relevant differences between the analogues would be few and not weighty. In the merely adequate legal analogy, the relevant differences are either more weighty or greater in number (or both). The problem with the schema we just examined is *not* that it does not *mention* differences; it is that neither the inferences nor the premises appear to *allow for* gradation as a result of differences. Because the inference from1 to 2 considers only one case, the strength of that inference cannot be assessed as a function of the similarities and differences between the two cases in question. After 2, the game is up, since the rest of the argument works by entailment.

11. I propose the following as the core of the kinds of analogical arguments we have considered so far.

1. *a* has features $\boldsymbol{f_1, f_2, \ldots f_n}$.
2. *b* has features $\boldsymbol{f_1, f_2, \ldots f_n}$.
3. *a* and *b* should be treated or classified in the same way with respect to $\boldsymbol{f_{n+1}}$.

Through much of this paper, the values of *a* and *b* are referred to as cases. I use the term "cases" very broadly. The values of *a* and *b* could be actions, entities (whether physical or abstract), or states of affairs. By citing features (the $\boldsymbol{f_i}$) I in no way wish to suggest that evaluating analogical arguments is simply about counting features. Sometimes, one relevant dissimilarity, if of sufficient importance, may be enough to outweigh many relevant similarities. An important property of this type of reconstruction is that the first two claims do not entail the third. Even if the premises are taken as initially establishing the conclusion, there is room to argue for one or more differences that may weaken or even defeat the conclusion. In short, the inferential link

from 1 and 2 to the conclusion allows for degrees of strength. While differences may not be mentioned in the premises, *both* cases have been mentioned in the premises, so it would be perfectly natural to consider the differences (and even unmentioned similarities) between the cases in assessing the inference to the conclusion. This means that even if both the very strong and merely adequate legal analogies are working with precedent cases of equal pedigree, there is still room to explain the differences between the two: in the strong analogy, there are few if any weighty differences between the disputed case at hand and the precedent, but in the merely adequate analogy, the preceding is not the case. The reason for including $\boldsymbol{f_{n+1}}$ in claim 3 is to make it clear the respect in which the cases should be treated in the same way. For example, in the Crenshaw argument, it is not being claimed that the cases should be treated as similar in every way. For example, it is not being claimed that they both should be treated in the same way with respect to whether they are instances of affirmative action or instances of discrimination. Rather, it is being claimed that they should be treated in the same way with respect to whether they should be allowed to proceed in the courts (without making a claim one way or another). In other words, the cases could count as analogous in some respects, but not in others. Of course, this core schema can be extended in different ways. For Thomson's argument we could add the following (where *Violinist* is *a*, *Rape* is *b*, the f_i are the appropriate commonalities, and $\boldsymbol{X}$ is a specific classification such as *morally acceptable*):

4. *a* is $\boldsymbol{X}$ in virtue of $\boldsymbol{f_1, f_2, \ldots f_n}$.
5. Therefore, *b* is $\boldsymbol{X}$.

It is worth noting that instantiations of this schema are such that the third and fourth claims entail the fifth. However, not all analogical arguments develop in this way. Crenshaw's argument has

no need of 4 and 5. It depends simply on the view that the cases in question should be treated in the same way, without arguing for some specific classification of those cases, though a reconstruction of her argument (for which, see below) would contain other claims.

12. I take the similarities cited in the above schema ($f_1, f_2, \ldots f_n$) to be *relevant* similarities. It is trivially true that two cases have some similarities, but the point is to cite similarities that will make a difference to the conclusion that is being argued for. I have not included the term "relevant" in the above reconstruction since it appears to be common practice not to include relevance claims in argument reconstruction. For example, in the reconstruction of non-deductive arguments we do not explicitly include the claim that the premises are relevant to the conclusion. Moreover, even when a non-deductive argument depends on citing specific properties, its reconstruction does not include the claim that the features are relevant. For example, why might we think that rats exposed to high levels of lead live a shorter than normal life span? Well, an experiment might be cited where one rat was exposed to high levels of lead and lived a shorter than normal life span, and same was true of a second rate, and of a third rat, and so on for n rats. Something along the following lines would appear to be an acceptable reconstruction.

1. Rat one was exposed to high levels of lead and lived a shorter than normal life span.
2. Rat two was exposed to high levels of lead and lived a shorter than normal life span.

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n. Rat n was exposed to high levels of lead and lived a shorter than normal life span.

n+1. All rats exposed to high levels of lead live a shorter than normal life span.

Whether the feature cited (being exposed to high levels of lead) is relevant must be taken into consideration in this argument. If we were to run a similar argument but replaced "high levels of lead" with "high levels of vitamin C" or "having very short fur" we might be more suspicious of the conclusion. Whether being exposed to high levels of lead (or vitamin C or having very short fur) is relevant to rats living a shorter than normal life span matters for the evaluation of the argument, but we do not claim within any of the above premises 1 to n (or, for that matter, as an extra premise) that the feature in question is relevant. Moreover, there may be a general account available for why we do not include relevance claims in argument reconstruction. One of the background conditions guiding sincere argumentative discourse is that arguers are trying to make claims that are relevant to their conclusions. As a general rule, we do not include the background conditions for discourse as premises in argument reconstruction (but that does not preclude the possibility that someone has violated one of those conditions in attempting to present an argument). Some colleagues have pressed me on why I have not included the claim that the features cited in analogical arguments are relevant. Surely, it is insisted, the $f_1, f_2, \ldots f_n$ in the reconstruction from the previous paragraph must be referring to *relevant* similarities and not *mere* similarities. Just so. However, it does not follow that the argument reconstruction must include a relevance claim. Of course, even if I am wrong on this point, even if arguments from analogy are a special case and their reconstructions require the inclusion of one or more relevance claims, it would be a simple fix. Notice, though, that including a claim that the $f_1, f_2, \ldots f_n$ are relevant similarities would *not* make the core of the reconstruction a deductive entailment (since there may be relevant dissimilarities that could defeat the conclusion.)

13. Interestingly enough, part of the argument in the previous paragraph is an argument by analogy. The source case, the one I am working from, is a run-of-the-mill reconstruction of an inductive argument. The target case, the one I am working to, is a reconstruction of analogical arguments. I am claiming that they should be treated in the same way with respect to whether relevance claims are included. (There are other respects in which these cases are not analogues, but those respects are not at issue.) I have claimed that because we do not include relevance claims in the source reconstruction, we should not include them in the target reconstruction. While the focus of this paper is analogies in ethics in law, analogies of a type similar to those in ethics and law can be found in other domains as well, and the argument in the preceding paragraph is an example of this. Govier's 1985 is an excellent discussion of the use of analogies in logic.

14. My views on analogical arguments, while very much inspired by Govier's views, are not identical to her views. Govier distinguishes between two types of analogical arguments, *a priori* and inductive. Her reconstruction of *a* priori analogical arguments goes as follows:

1. A has x,y,z.
2. B has x,y,z.
3. Ais W.
4'. It is in virtue of x,y,z, that A is W.
5. Therefore, B is W. (Govier 1989, 144; 1999, 142)

This cannot capture the type of analogical argument that Crenshaw has given us, since that argument does not depend on classifying two cases in some specific manner (where the classification is indicated by Govier's W). It only requires acceptance of the claim that two

cases should be treated in the same way. A second point of difference between my position and Govier's comes in the understanding of the differences between different types of analogical arguments. Both Thomson's and Crenshaw's arguments are *a priori* analogical arguments. An example of an inductive analogical argument would be the claim that humans consuming large amounts of saccharine may suffer from an increased risk (relative to the non-saccharine users) of certain health problems, where this claim is backed by the further claims that rats have an anatomy similar to ours, and that rats consuming the same amount of saccharine as humans (relative to body weight) suffered an increased risk of health problems (relative to non-saccharine consuming rats). According to Govier, a *priori* and inductive analogical arguments are said to differ in the following respects. First, inductive analogies are said to be predictive (think of the human-rat analogy), whereas *a priori* analogies are not making predictions. Rather, "we *decide* to describe or treat the primary subject in some way. The basis of *a priori* analogies is an appeal to handle relevantly similar cases in relevantly similar ways" (Govier 1989, 142-143). Second, with inductive analogies, it is possible (in principle) to acquire evidence for and evaluate the conclusion being predicted in a way that is independent of the similarities cited in the analogical argument. However, with *a* priori arguments from analogy, it is claimed they do not "depend on the truth of empirical observations about the analogue case and the conclusion isn't one which could someday be conclusively verified or falsified by empirical observation." For example, the prediction that humans consuming specified quantities of saccharine will develop health problems at a higher rate than non-saccharine users is a claim which can be empirically assessed independent of the human-rat analogy (for example, by a double-blind, multi-site clinical trial that directly evaluates the effects of saccharine use in human populations). Third, in *a priori* analogies, "the analogue need not be a real case. It can be entirely hypothetical

and may, in fact, be positively fanciful" (Govier 1989, 142). Presumably, inductive analogies cannot work from hypothetical cases. While I think Govier is very much on to something with the first two points of difference between *a priori* and inductive analogies, the second point is in need of clarification in light of arguments like Crenshaw's, and the third point is questionable. Let us see why.

15. Consider the following partial reconstruction of Crenshaw's argument.

1. In *DeGraffenreid v. General Motors*, women are suing based not on gender discrimination alone, and not on race discrimination alone, but on both gender and race discrimination.
2. In cases of reverse discrimination, the men are suing based not on gender discrimination alone, and not on race discrimination alone, but on both gender and race discrimination.
3. *DeGraffenreid v. General Motors* and cases of reverse discrimination should be treated in the same way with respect to whether they should be allowed to proceed or not.
4. As a matter of fact, when it comes to whether these cases should be allowed to proceed, the U.S. courts have not treated these cases in the same way.
5. The differential treatment favoured white men over black women (since *DeGraffenreid* was thrown out on the grounds that it involved compounding race and gender, but reverse discrimination cases were allowed to proceed even though it involved a similar compounding).

6. There is evidence that the U.S. courts treated cases in such a way as to disadvantage black women.

This is an argument that depends on an analogy. It is about legal matters and would appear to fall under the heading of *a priori* analogy, but empirical details are relevant to the evaluation of this argument. After all, a full evaluation of the fourth claim is impossible without empirical evidence. Empirically obtained information is relevant to other premises as well. Is Govier's second point of difference between *a priori* and inductive analogies in jeopardy? Charitably interpreted, I think not. The first three claims of the reconstructed version of Crenshaw's argument constitute what I have called the *core* of this type of analogical argument. There does not appear to be any way of evaluating the third claim – an analogical inference – on empirical grounds that are independent of the cited analogy (which makes it quite different from the rat-human analogy). To be sure, whether the cases in question have the properties they are purported to have in the first two premises is an empirical issue, but it is impossible to evaluate the third claim in a wholly empirical manner, which is to say independent of concerns over whether the cited similarities really are relevant similarities, and whether there may be relevant differences that outweigh the similarities, and (in general) whether these cases *ought* to be treated in the same way. Moreover, the third claim in the reconstruction is not making a prediction, so the first point of difference between inductive and *a priori* analogies referred to in the previous paragraph appears to hold as well. The third point of difference is that a priori analogies can make use of hypothetical cases, whereas inductive analogies presumably cannot. Here we have a problem. It is crucial, in some so called *a priori* analogies, that the source analogue be an actual case. *Whether the source analogue needs to be actual depends on how the analogy is being used*. It is crucial to Crenshaw's argument that the source cases – reverse

discrimination cases – be actual because she wants to go on to use discrepant treatment of *real* similar cases to argue for the *actual* problematic treatment of black women by the U.S. courts. At this point, it might be replied that perhaps all that was intended was that sometimes *a priori* analogies can make use of hypothetical cases, whereas inductive analogies cannot make use of them at all. This reply does not work. Some inductive analogies work just fine even when the source analogue is hypothetical. For example, the kinetic theory of gases was originally conceived by thinking of the behaviour of real gases as being similar to the behaviour of perfectly elastic, uncharged particles. There is an analogy here between real gases and an idealized model, and the analogy yields many useful predictions. Of course, physicists do not believe that perfectly elastic particles exist (making them hypothetical), and gas molecules often *do* carry a charge, but there is enough similarity between ideal and real gases that the analogy, within limits, yields accurate predictions. If we take ideal gases (with their uncharged, perfectly elastic particles) as our source analogue, and we take real gases as our target, and we recognize that this analogy is used for the purpose of generating predictions, and we appreciate that this has been considered a paradigm of good science for some time, it looks like we have little choice but to acknowledge that so-called inductive analogies (at least sometimes) make use of a hypothetical or non-actual source analogue. This is not to say that are no differences between what Govier called *a priori* and inductive analogies, but there may not be as many differences as has been suggested. My terminological preference is to refer to the function or purpose of the analogy in argument when classifying it. What Govier referred to as *a priori* analogies and Waller as deductive, I prefer to call *classificatory*, since the point of these analogies appears to be to suggest that two (or more) cases be *classified* or *treated* in the same way. Govier's inductive analogies I call *predictive*. There may well be analogies that serve other roles in

argument besides (a) supporting a judgment regarding how a case should be treated or classified or (b) supporting a prediction. Since this possibility has not been ruled out, I do not claim that classificatory and predictive analogical arguments exhaust the kinds of analogical arguments.

16. I have argued that an adequate account of analogy should allow us to understand different types of analogical arguments as well as the degrees of strength such arguments have. To be sure, much more needs to be said about analogical arguments and analogical reasoning. Specifically, the issue of how we make judgments of similarity and how they can be better evaluated needs greater exploration. More work is also needed on exactly what makes two (or more) cases analogues; many things are similar, but not all things that are similar (even very similar) are said to be analogous. It is hoped that the views defended herein will serve as a basis for the examination of the preceding and other questions regarding the nature of analogical argumentation.

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End Notes

[1] For comments on an earlier version of this paper, I wish to thank Ralph Johnson, Robert Pinto, Jon Ringen, and the participants of the Association for Informal Logic and Critical Thinking session at the 2005 Central American Philosophical Association Conference.

[2] Clearly, the move from the first claim to the second is non-deductive. By calling this reconstruction deductive, Waller must have in mind the move from premises 2 and 3 to the conclusion, 4. Strictly speaking, even this second move does not instantiate a deductively valid form. However, suitably interpreted – see the instantiation provided in the third paragraph – claims 2 and 3 can be seen as entailing 4. Moreover, the schema could be rewritten so that it does instantiate a valid form. Finally, it is worth noting that Waller suggests a kind of generate-and-test approach to arriving at principles; if the principle we arrive at fails to give answers that are appropriate in other important cases, then perhaps other cases can be used to generate new principles. Waller's position has interesting similarities with the views expressed in Brewer 1996, though Brewer refers to his own reconstruction as *abductive*.

[3] I am being more specific than Thomson, specifying an exact length of time. See Thomson 1971 for the original discussion of the violinist. Also, I do not want to suggest that sole purpose of the violinist scenario is to run an argument by analogy. Thomson uses the scenario to make a number of points.

[4] Plato saw the need to give an account of how we originally acquired that which we are (allegedly) *re*membering. While he claims that coming to know is a kind of recollection, a key part of that story is that the soul was exposed to the Forms before being placed into a body. Incarnation triggers a forgetting from which we recover through sustained dialectic. While

Plato's account of remembering or recollecting may not be taken seriously today, paragraphs five and six of this paper discuss what might be thought of as a modern variant on the idea of implicit or tacit knowledge. I am open to the possibility that there may be ways of being reminded that differ from the paradigm discussed in paragraph 3. However, the key is not only to argue that we are being reminded of *something*, but that (a) we are being reminded of a specific *principle*, and (b) it makes sense to attribute that principle to an agent in argument reconstruction. As will be shown, this is not easy to do.

[5] While I will not explore the issue of whether it is possible to always state an exceptionless principle pertaining to the subject matter at hand, it is worth noting that skepticism over the possibility of doing so is part of what motivated a move away from such principles in some work in law and artificial intelligence. The locus classicus of such work is arguably Kevin Ashley's 1990. In legal philosophy, Edward Levi (1949), Charles Fried (1981), Cass Sunstein (1993), and Gerald Postema (2002) have all argued that at least in some domains of legal thought, critical legal reasoning may continue in the absence of exceptionless principles. Albert Jonsen and Stephen Toulmin (1988) and Jonathan Dancy (1993) have made related arguments in moral philosophy.

[6] For example, since the violinist is conscious, he would know everything you do for nine months, a grievous invasion of privacy. The fetus could not violate a woman's privacy in the same way.

[7] Throughout most of this paper, I am assuming that we are usually dealing with analogies that involve only two cases. This is a simplification, made for the purpose of highlighting a particular set of problems. Analogical arguments frequently involve many cases; for example, lawyers will often cite many precedents, not just one. Multiple analogies lead to still other

problems with existing analyses of analogical arguments, but those problems require a separate paper for proper treatment.