

Classifying and Analyzing Analogies

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Abstract: Analogies come in several forms that serve distinct functions. Inductive analogy is a common type of analogical argument, but critical thinking texts sometimes treat all analogies as inductive. Such an analysis ignores figurative analogies, which may elucidate but do not argue; and also neglects *a priori* arguments by analogy, a type of analogical argument prominent in law and ethics. *A priori* arguments by analogy are distinctive, but—contrary to the claims of Govier and Sunstein—they are best understood as deductive, rather than a special form of nondeductive reasoning.

Résumé: Les analogies ont différentes formes et fonctions. L'analogie inductive est une forme courante d'un argument par analogie, mais des manuels de pensée critique traitent parfois toutes les analogies comme si elles étaient inductives. Une telle analyse ignore les analogies figurées, dont la fonction est parfois d'éclaircir et non d'argumenter. Cette analyse ne tient pas compte aussi des arguments *a priori* par analogie, qui s'emploient souvent en droit et en éthique. Les arguments *a priori* par analogie constituent une autre forme distincte d'analogie, et contrairement à l'avis de Govier et de Sunstein, ils sont déductifs plutôt qu'une espèce spéciale de raisonnement non-déductif.

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When disputes turn from *ad hominem* attacks and strawman distortions toward serious argument, there is no better means of convincing listeners and settling debates than by effective use of analogies. Unfortunately, it is often supposed that all analogies can be covered with a single analysis. The result is that round analogies are forced into square holes, and a powerful but complex form of reasoning is oversimplified. The first step in understanding analogies is recognizing that they come in several varieties and perform distinct functions. Evaluating one type of analogy by the standards for another makes legitimate analogies appear fundamentally flawed.

This paper will examine three types of analogies: figurative, deductive, and inductive. Failure to distinguish among these has resulted in several problems in the critical thinking literature. First, figurative analogies have been neglected, and when noted at all they are frequently treated as flawed inductive arguments by analogy. Second, the tendency to treat all analogies as inductive arguments means that deductive arguments by analogy are either ignored or analyzed as if they were inductive arguments. Misrepresentation of deductive arguments by analogy is

also the source of the third problem to be examined: Trudy Govier's influential denial of their status as deductive arguments. By emphasizing the often-tentative nature of the principles invoked in unpacking deductive arguments by analogy, Govier offers important insights into their structure; but denying their deductive status obscures the way such analogies function in argument. Finally, having defended three distinctive categories of analogy, the last section of the paper will offer guidelines for recognizing the different types.

Figurative Analogies

Critical thinking is usually concerned with analyzing *arguments* by analogy, but many important and useful analogies are not arguments.¹ Consider an analogy offered by Samuel Johnson to illustrate the difference between argument and testimony:

Argument is argument. You cannot help paying regard to their arguments, if they are good. If it were testimony you might disregard it. . . . Testimony is like an arrow shot from a long bow; the force of it depends on the strength of the hand that draws it. Argument is like an arrow from a cross-bow, which has equal force though shot by a child.²

Dr. Johnson effectively marks the difference between testimony and argument by means of a *figurative* analogy. His analogy *illustrates*—and does not *argue* for—that distinction. If you are not independently convinced that testimony depends for its reliability on its source, while argument must stand or fall on its own merits, then Johnson's analogy offers nothing to persuade you. That is not a flaw in the analogy, unless one assumes that all analogies must be arguments.

Figurative analogies do not argue,³ though they may elucidate. Experienced physicians note that interns examining symptoms often forget the most likely diagnosis, favoring instead some exotic and improbable disease they have recently studied. A popular parable describes a group of interns standing in the dark and hearing hoofbeats, then concluding that it must be a zebra. The zebra analogy is not an argument to prove that simpler diagnoses are often right; but it is a good illustration of how neophyte physicians may be tempted to overcomplicate their diagnoses, and a helpful reminder not to ignore the more mundane maladies.

Deductive Arguments by Analogy

Attempting to measure all analogies by the standards for good arguments means ignoring *figurative* analogies, which require a different yardstick. But the opposite mistake also occurs. The old saw that "analogies never prove anything"⁴ treats all analogies as if they were figurative analogies, ignoring the fact that many analogies *are* arguments. When the distinction between figurative analogies and arguments by analogy is recognized, there is still the danger of lumping distinct types of analogical argument into one muddled category. Analogical *arguments* divide into two basic types: deductive and inductive.

Perhaps the most important type of analogy for critical thinking is the deductive argument by analogy. This is the use of analogy familiar in courts of law: Is this new case really analogous to *Jones v. Smith*, or does it fit better with the precedent established in *Green v. White*? Deductive analogies also figure prominently in philosophical disputes: Think of Judith Jarvis Thomson's marvelous violinist analogy in the abortion debate,⁵ Tom Regan's analogical argument for stopping the use of animals in research,⁶ or John Searle's Chinese Room argument in opposition to computer intelligence.⁷ These are compelling images, but they are much more than that. In contrast to figurative analogies, they are powerful *arguments* that aim to settle difficult issues. And they are *deductive* arguments by analogy, not inductive. Inductive analogical arguments are important, but critical thinking texts often treat all arguments by analogy as if they were inductive. Deductive analogies cannot be understood in terms of inductive reliability, since there is not a shred of induction about them.

Consider Judith Jarvis Thomson's famous violinist analogy. You awaken one morning to discover that last night you were drugged, kidnapped, brought to a hospital, and then connected to a distinguished but gravely ill violinist. The violinist has suffered acute renal failure, and the toxins building in his bloodstream will kill him if his blood is not purified. The Society of Music Lovers discovered that you—and you alone—are the perfect blood match for the violinist, and so they kidnapped you and hooked you up with the violinist, and now your kidneys are doing double duty: purifying the blood of both you and the violinist. This process will cause you no physical harm, though it is no doubt an inconvenience.

Everyone present (the kidnappers have done their dirty work and fled) agrees that you have been badly wronged and your rights violated by the kidnappers. But now if you unhook yourself, the violinist will die. Therefore—the hospital staff inform you—you must remain attached to the violinist until a machine is built that will cleanse the violinist's blood (construction will require about nine months). Since unhooking yourself will result in the death of the violinist, if necessary they will compel you to remain attached to the violinist. If you say—as most people will—that such compulsion is wrong, then you must (on the basis of this deductive analogy) also conclude that it is wrong to compel a woman pregnant as a result of rape to remain “hooked up” to the fetus. If you have a right to unhook yourself from the violinist to whom you were involuntarily linked (even though the violinist-person will die), then a woman who is pregnant as a result of rape has a right to an abortion (even though the fetus-person will die).⁸

Deductive arguments by analogy have the following form:

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*.

Deductive arguments by analogy force us to think hard about the principles we hold, and how they apply to other circumstances. *Why* do you believe you have a right to unhook yourself from the violinist? If your answer is (the principle that) we do not have an obligation to save or sustain a life when we have done nothing to take on that obligation, then your own principle also implies that a woman who is pregnant as a result of rape does not have an obligation to save or sustain the life of the fetus (has a right to an abortion).

One might dispute this argument in two ways: by disagreeing with the principle (“I believe I *do* have an enforceable obligation to stay hooked up to the violinist”); or by claiming that the two cases don’t fit under the same principle and thus that the analogy is flawed (“The principle that justifies detaching myself from the violinist doesn’t apply to the woman pregnant as a result of rape”). But note two things. First, this is certainly an *argument*. It claims that logical consistency requires a specific conclusion. And second, it is a *deductive* (not inductive) argument. It does not suggest that since people generally believe they have a right to unhook themselves from violinists, thus (inductively) they are also likely to hold that rape victims have the right to unhook themselves from fetuses. (In fact, Thomson may well believe that many people are inconsistent in their beliefs on this issue, not having reflected on what their principles require; recall the slogan that “if men could become pregnant, abortion would be a sacrament”.) There is no induction in Thomson’s argument, but instead a deduction from principle.

Inductive Arguments by Analogy

Alice and Barbara are true soulmates, and in every area they have explored—foods, sunsets, cars, architecture, poems, movies—they have similar tastes. Alice may (perhaps correctly) conclude that she and Barbara are similar in all their tastes; and she further concludes—on the basis of their similar tastes—that since Alice likes Penelope Fitzgerald novels, Barbara will like them also. In that case, Alice’s inductive argument by analogy⁹ would look something like this: We share tastes in cars, foods, movies, and poems; such tastes are relevantly similar to tastes in novels; so Barbara will also share my fondness for Penelope Fitzgerald novels.

The structure of inductive analogical arguments can be represented as follows:

1. *D* has characteristics *e*, *f*, *g*, and *h*.
2. *E* also has characteristics *e*, *f*, *g*, and *h*.
3. *D* also has characteristic *k*.
4. Having characteristics *e*, *f*, *g*, and *h* is relevant to having characteristic *k*.¹⁰
5. Therefore, *E* will probably also have characteristic *k*.

This is very different from a deductive argument by analogy, for there is no implication that Barbara *must* like Fitzgerald novels in order to be consistent (the claim made in a deductive argument by analogy). Suppose that Barbara surprises

Alice, and hates the novel Alice recommended. Alice may be disappointed, perhaps shocked; but Alice will not conclude that Barbara is being hypocritical, or that she has some fundamental inconsistency in her belief set. After all, when she recommends the novel to Barbara on the basis of their similar tastes, she is not claiming that in order to be consistent—in order to follow some shared principle of what constitutes an enjoyable novel—Barbara *must* like this novel.

Consider another example. Alice wants to save the whales, ban nukes, stop acid rain, and promote civil rights: basic value commitments she shares with her friend Barbara. So it is a reasonable inference—by inductive analogy—that since Alice is a vegetarian, Barbara is also. If Barbara is a dedicated carnivore, that will surprise Alice; but the inductive analogy does not imply that consistency compels a vegetarian diet for Barbara. In contrast, when Alice offers Barbara a deductive argument by analogy in favor of vegetarianism (“Look, you believe that it would be wrong for smarter and stronger extraterrestrials to slaughter us for dietary delicacies, right? So . . .”) then Alice is claiming that Barbara’s failure to embrace a vegetarian diet is a logical inconsistency, and not just an inductive surprise. To see this from another angle, consider Barbara’s response if she rejects Alice’s inductive argument, and affirms her taste for animal flesh: “How surprising! We finally found a point in which our views do not match.” Her rejection of the principle behind a deductive argument by analogy will be quite different: “No, I think you’re wrong: if someone really is stronger and smarter, then they have every right to use the weak and stupid for their dining pleasure.”

Important differences are obscured if inductive analogies are analyzed under the same pattern used for deductive analogies. Framing the principle implied by a deductive analogy is often difficult, but it may be possible to state it precisely and fully; with inductive analogies, specifying the relevant similarities is a much tougher task, requiring empirical research. In drawing an inductive analogy between a horse’s race last week and its upcoming race, it will be important to note that last week the horse raced under “similar conditions” to those of today; but does that imply exactly the same humidity, wind speed, lead ponies, and crowd noise? Formulating the principle behind a deductive argument by analogy also poses challenges, but the challenges are of a different sort than the challenges in determining what is relevant to an inductive argument by analogy. In the former we are trying to determine *why* we believe something (Why do we believe it wrong for extraterrestrials to slaughter us? Why do I have a right to unhook myself from the violinist?). That is not the sort of investigation required to determine what factors are relevant to a runner’s chances in the upcoming race. Determining relevance for an inductive argument requires empirical knowledge of what factors are strongly associated. (The author of the book is strongly relevant to whether Barbara is likely to enjoy it; the color of the dust jacket is not—but that is a fact we learned through experience, not deduction.) Furthermore, adding relevant characteristics to the inductive analogy will strengthen the argument, while considering different cases may help to narrow and specify the principle in a deductive argument by

analogy but (given the principle) additional cases do not strengthen the argument. And the conclusion of a deductive argument by analogy is required by consistency (rejecting the conclusion while accepting the premises involves contradiction), while an inductive analogical conclusion is supported by degrees of probability.

A Priori Arguments by Analogy are Deductive

The claim above is that deductive arguments by analogy are a distinctive species of analogical argument that must be analyzed and understood separately from inductive analogical arguments. But this interpretation of deductive arguments by analogy also faces challenges from the opposite direction. Many writers attempt to lump deductive analogical arguments with inductive analogies; in contrast, Trudy Govier¹¹ favors an analysis of deductive arguments by analogy that not only distinguishes them from inductive analogies, but also sets them apart from deductive arguments in a special *a priori* but *nondeductive* category.¹²

Govier, building on the work of John Wisdom and Stephen F. Barker, offers important insights into analogical arguments, and discusses at length her motives for placing “deductive” analogical arguments under a special “nondeductive *a priori*” rubric. The points she makes are valuable, but they do not provide grounds for denying the deductive status of such arguments by analogy.

The analogical arguments that I have called deductive arguments by analogy are classified by Govier as *a priori* nondeductive arguments by analogy. Since both sides agree that the arguments are *a priori* (the question is whether such arguments are deductive or instead form a special nondeductive *a priori* category) I shall use the neutral phrase “*a priori* arguments by analogy” to refer to this contested type. Govier’s argument for denying the deductive status of *a priori* analogical arguments turns on two main points. First, casting *a priori* analogical arguments as deductive requires discovery of an underlying universal principle which may not actually be known, and in any case the principle may be more obscure than the analogy (and so does not contribute to better understanding of the logical force of the analogy). Second, when we analyze *a priori* analogies as deductive, we lose the distinctive force—and charm—of the analogical argument, transmogrifying it into something less persuasive. Her many insights notwithstanding, Govier’s arguments turn on a deep misconception of the role of underlying principle in *a priori* arguments by analogy.

Govier does not deny that underlying principles are an important element of *a priori* arguments by analogy; instead, the dispute is over precisely what role such principles play. Consider again Thomson’s violinist analogy (an *a priori* analogy that Govier discusses at length). You believe that you have a right to unhook yourself from the violinist; thus consistency requires that you also acknowledge the right of a woman pregnant as a result of rape to unhook herself from (abort) the fetus.

How are we to understand that *a priori* argument by analogy? Those (such as myself) who regard it as a deductive argument claim that it contains an essential underlying principle. Analysis of the argument goes something like this: You believe you have the right to unhook yourself from the violinist, don't you? *Why* do you have that right? Because (the underlying principle) we do not have an obligation to save or sustain a life if we have done nothing to take on that obligation (have made no promises, done no wrongs, nor received any favors from the imperilled person). But a woman who is pregnant as a result of rape could cite precisely that principle to justify her right to abort the fetus. Thus consistency demands that you admit the raped woman's right to an abortion.

Govier offers a different analysis. True, such a principle may be *implied* by the analogy; but the principle is not really an element of the analogical argument. This may seem a small difference, but it is very important to Govier. Why such reluctance to count the "implied" principle as an actual element of the argument? Her first and most basic reason is described thus:

My position, then, is that some U-claim [universal principle] is implied when we reason from case to case. But we often do not know exactly what the U-claim is. And very often, we can evaluate the argument without raising the issue, just by sticking to the cases at hand. We can point out relevant differences between A and B and show how they undermine the conclusion without addressing the U-claim as such. The U-claim is, in many cases, hard to formulate, and inserting it as a missing premise of the argument is neither required nor, in many cases, critically useful.¹³

That paragraph contains important insights, but they do not justify the exclusion of an underlying universal principle from *a priori* analogical argument. It is true that often the principle is "hard to formulate"; but no one ever suggested that thinking critically would be easy. And in some cases we can indeed evaluate the analogical argument without ascertaining the underlying principle. But when we deal with tougher cases, that will not always be possible. If one person claims that a difference in the two cases invalidates the *a priori* analogical argument, and a second disputant insists that the difference is irrelevant to the force of the analogy, then resolution of that dispute may well require attempting to formulate the underlying principle. Suppose someone maintains that since the rape victim and the fetus are biologically related, and the kidnap victim and violinist are not, therefore the analogy fails. Without an explicit examination of *why* we believe we have a right to unhook ourselves from the violinist, the dispute is likely to gutter in conflicting "intuitions" that are affirmed with increasing vehemence.

To understand why Govier resists counting the universal principle as a substantive part of *a priori* analogical argument, we must turn to hints in the paragraph preceding the one quoted above. That paragraph begins with this revealing line:

The trick about analogies—and their charm as well, I think—is that we are often able to see or sense important resemblances between cases without being able to spell them out exhaustively.¹⁴

And Govier then notes that:

. . . the problem is that we often *don't* know that it is in virtue of just these specific aspects that the analogy is to be drawn. But moving from A and B to a U-claim, we presume that we have a pat solution to this problem.¹⁵

But in fact we often do not have such “a pat solution” readily available (the principle may be “hard to formulate”), and thus—Govier concludes—*a priori* analogies do not always involve underlying universal principles.

Certainly Govier is right that often we do not immediately recognize a clear universal principle that will cover both cases in an *a priori* analogy. To the contrary, formulating such a principle is typically a difficult and contentious matter: The principles are not out there somewhere, eternal verities set in stone, awaiting our certain discovery. But that brings us to the basic reason why Govier rejects the deductive analysis of *a priori* analogies. What Govier finds distasteful is the notion that underlying each *a priori* analogical argument there must be some fundamental principle waiting to be discovered, a principle that provides a “pat solution” to all questions concerning the analogy. What Govier (and Wisdom and Barker) object to in the deductivist analysis of *a priori* analogies is the nature of the underlying principles, rather than the deductive process itself. Govier is not really opposed to deductivism so much as the exalted status of the universal principle from which the analogical deduction proceeds. She acknowledges that *a priori* analogical arguments *imply* an underlying universal principle, but firmly denies that the principle “is assumed, or presupposed, or an implicit premise.” She denies it because treating the underlying principle as part of the argument suggests “a kind of priority—logical or epistemic—and I don’t think this priority typically exists.”¹⁶ So Govier rejects any underlying universal principle that is logically and epistemically prior, a principle that is somehow complete and fixed, a principle that provides a “pat solution,” a principle that is out there waiting to be discovered by astute critical thinkers.

The critical thinking debate over the analysis of *a priori* analogical arguments corresponds to a long-running battle in legal theory between the “formalists” and the “realists”; and while this is not the place for a discussion of formalism vs. realism, we can better appreciate Govier’s qualms about the deductivist model by examining them writ large in the realist critique of formalism. The formalists characterize legal reasoning as operating from basic precedents that point to fixed underlying universal principles by which all legal disputes can be resolved; and it is that view of legal reasoning that the “realists” reject. The formalists view reasoning from analogical precedents as appeal to eternal legal verities, the judge’s only task being to discover those hidden truths. As Oliver Wendell Holmes so elegantly described it, the formalists represent the underlying principles that govern judicial reasoning—the principles that guide analogical reasoning from precedents—as a

“brooding omnipresence in the sky.”¹⁷ In challenging formalism, the realists (and more recently, the critical realists) argue that the underlying principles are human constructions, not transcendent truths.

Govier is right to reject such a fixed, complete, transcendent status for the underlying principles of *a priori* analogical arguments (and the legal realists would concur); indeed, her rejection of that understanding of underlying universal principles is one of the many insights that make her work on analogies distinctive and important. But just as the legal realists’ rejection of a “brooding omnipresence in the sky” did not lead them to reject a deductivist account of the analysis of analogical argument from precedents, in like manner it should not lead to a rejection of deductivism in critical thinking. To the contrary, when we appreciate Govier’s real contribution to the analysis of the underlying principles in *a priori* analogies, then we can better understand both the value and the process of deductively analyzing *a priori* arguments by analogy.

Analyzing an *a priori* analogy is not a matter of finding the fixed and final universal principle that rightly governs the analogy; but underlying universal principles are an integral part of *a priori* analogies, and should not be banished to the fringes of “merely implied.” Govier acknowledges that “at least sometimes, we might know the universal better than the particular.”¹⁸ And she is also correct in insisting that sometimes we may have a clearer sense of the legitimacy of the analogy than we do of the underlying principle. Thus neither the principle nor the particulars have a superior logical or epistemic status; rather, both are essentially involved in *a priori* analogies, and both are useful in analyzing and understanding such analogies. Their relation is one of mutual adjustment, rather than strict hierarchy.

Consider once again the Thomson analogy. It is powerful and persuasive, and I imagine that anyone who has used it in class has observed students who question, modify, or even reject some deeply held beliefs after feeling the full impact of Thomson’s *a priori* analogy. Sometimes (as Govier emphasizes) students are convinced by the analogy immediately: They sense the legitimacy of the analogy without examining or even thinking about any underlying general premise. But there are also students who do not have a sense of the analogy’s force until they begin to analyze it more carefully. These students may not find the initial encounter with the analogy persuasive; but when they probe deeper—“*Why* do you insist that you have a right to unhook yourself from the violinist?”—they find that their reason (the underlying general principle) also covers the woman who is pregnant as a result of rape. (For example, they may formulate the underlying universal principle as “No one has an obligation to sustain another’s life if he or she has been wrongly forced into that life-sustaining situation,” or “No one has an obligation to save another if he or she has done nothing to take on that obligation; it might be nice to voluntarily save the life, but you can’t legitimately be compelled to do so.” And then they realize that the principle they acknowledge as their own also covers the woman who is pregnant as a result of rape.)

Notice two things about this process of finding the underlying principle. First, the principle is not a transcendent truth waiting to be found. It is not a principle that is enshrined among the Platonic Forms, it is not a “brooding omnipresence in the sky,” it is not always logically and epistemically prior. Rather, the principle is one that we formulate, and there is no “absolutely right” single way of stating it (though of course some formulations will clearly be better than others: the universal principle is *not* that we have a special obligation to distinguished string players). The analogy instead forces us to think hard about principles we hold, and about their further implications. The underlying principle is an integral element of the argument, but the analogical argument does not argue for that principle. Fred Johnson rightly notes that “the base [the analogy] does not *establish* the principle; rather, the base [analogy] is used to get the audience to recognize the principle.”¹⁹ Thus the analogy helps us recognize a principle that we already hold. There is no appeal to some principle engraved in stone; rather, the force of *a priori* analogies is that they are often so intimate: “*You* believe you have a right to unhook yourself from the violinist, right? Well, why do you believe that?” Rather than discovering an eternal verity or absolute truth, you are simply acknowledging your own deep beliefs and values.

Second, the principle is *not* logically or epistemically prior to the particular cases. Instead, the process of evaluating and understanding *a priori* analogies requires thoughtful mutual adjustment. Jerry Fodor describes a similar process for distinguishing neurological subsystems in the brain: psychological theorists propose functional systems, and neurological theorists then seek structures that correspond to those functional systems; but neurological research may cause functional accounts to be modified or rejected.²⁰ In like manner, formulating a general underlying principle may provide a strong reason for a particular judgment in an *a priori* analogy; but further particulars can also lead to modification of the underlying principle.

To observe this mutual adjustment process, consider an analogical argument developed by John Martin Fischer²¹ in response to Thomson’s violinist analogy. Thomson’s analogy pushes us toward a position of minimalist obligation: I am not obligated to save the life of another if I have done nothing to voluntarily take on that obligation. Fischer’s analogy pulls us in the opposite direction. In Fischer’s analogy, you are beginning a long vacation of blessed solitude. Taking many good books, you have arranged to be left in a well-supplied but totally isolated mountain cabin, where you will be completely cut off from the outside world: no phones, no mail, and no roads or paths through this trackless wilderness. The helicopter flies away, promising to return in nine months, but leaving you until that time in solitary peace. On your first full day in the cabin there is a soft knock at the door. You open it to discover an exhausted and starving but quite innocent and harmless person who was kidnapped, robbed, and left in the wilderness to die. As luck would have it, this unfortunate soul stumbled onto your cabin. You are faced with a stark choice, for the bitter winter is rapidly approaching: You can take this

person in, where the two of you will live in comfort until the helicopter returns months later, but at the expense of considerable bother to yourself (your longed-for solitude is shattered); or you can send the poor devil back to the wilderness to perish. Just as in Thomson's violinist analogy, you have done nothing that places you under any special obligation to this person. And yet many people—I hope and trust the great majority of people—would feel that they do have an obligation to save the life of the stranger at their cabin door. Not a legal obligation, perhaps, and in that way the conclusion is consistent with the Thomson analogy; but at least a strong moral obligation—a moral obligation that was not felt in response to the Thomson analogy.²²

What shall we make of this? Here are two powerful and persuasive analogies that pull us in opposite directions. One possibility is that Thomson and Fischer have simply tapped into inconsistent beliefs that we simultaneously hold. After all, few people are consistent throughout their entire belief systems (ferently held religious doctrines that contradict the principles governing one's workaday life are an obvious example). But by critical examination of the analogies—and with special attention to the actual principle underlying those analogies—it may be possible to resolve this conflict. Not by seeking the ultimate true eternal principle behind the analogies, but rather by making mutual adjustments between particular analogies and the universal principles underlying them. Thomson's analogy compels us to think hard about how a principle we hold applies in another context; Fischer's analogy pushes us to think hard about *exactly* why we think we have a right to unhook ourselves from the violinist. Initially, we formulated the universal principle thus: We are not obligated to save the life of another if we have done nothing to voluntarily take on that obligation. But Fischer's wilderness cabin case requires sharpening the focus of the underlying principle. It is too broad to say that we have no obligation to save another's life if we have done nothing to voluntarily take on that obligation; rather, the actual principle we hold is more like this: We have no obligation to let another use our bodies to sustain his or her life if we have done nothing to voluntarily take on that obligation. And that does seem a more satisfactory way of framing it: a principle that accentuates our strong sense of a special right of bodily integrity.²³ (When we modify the principle in light of Fischer's case, we are not unpacking *ceteris paribus* clauses hidden in the principle. That is, the original principle was not really something like: No one has an obligation to save another if he or she has done nothing to take on that obligation, *unless* the lifesaving can be done at minimum inconvenience, or *unless* the lifesaving opportunity occurs in the wilderness, or *assuming that* the person to be saved is not a crime victim. Rather, there is a revised principle that is designed to cover all the accepted cases, including new ones.)

In this instance attention to a particular case leads to modification of the universal principle, but the adjustment can also run in the opposite direction. Sometimes when people encounter Thomson's analogy, and consider carefully a principle to which they are deeply and genuinely committed, the result is revision

in how they view the particular case of a woman pregnant as a result of rape (they may now allow that abortion is legitimate in such cases).

This mutual adjustment account of *a priori* analogies eliminates Govier's main concern about the deductivist model: the concern that such a model requires fixed principles that always enjoy epistemic and logical priority. More positively, there are good reasons for thinking that *a priori* analogies are better understood on the deductivist model that includes the underlying general principle as an integral part of a *a priori* analogical argument. As the discussion of the Thomson-Fischer analogies indicates, careful attention to the universal principle will often be an important step in better understanding such arguments. Furthermore, if we are to think critically—rather than relying on rough intuitions—about the legitimacy of *a priori* analogies, then we must examine the underlying principle. So long as everyone agrees that an analogy is effective and accurate, then perhaps intuitive grasp of relevant similarities will suffice. But if there is dispute over whether an *a priori* analogy is legitimate or faulty, or concerning whether a point of difference in the analogical cases is trivial or fatal, then scrutiny of the underlying universal principle is essential. For how do we decide (when our intuitions are in conflict) whether B is *a priori* analogous to A? Only by asking what underlying principle justifies A, and then determining whether the same principle applies to case B. Or if we are trying to decide (after intuitions have failed us) whether a difference between A and B is important or irrelevant, how can we determine that except by asking whether that difference in detail places the case outside the scope of the universal principle? It is of course often quite difficult to determine exactly what that principle is, a point that Govier legitimately emphasizes. Formulating the principle may require revisions and re-revisions in light of new particulars, and we may never be certain that we have it exactly right (perhaps—as the legal realists insist—the notion of getting the principle “exactly right” is nonsense). If the universal principles are shaped through a process of mutual adjustment (and they are not fixed eternal truths that we discover), then recognizing that the principles are often difficult to formulate will occasion neither surprise nor alarm. But *a priori* analogical arguments are important and powerful, both in law and (as Thomson's argument demonstrates) in dealing with a wide range of controversial issues. The formidable difficulties they pose should not be grounds for shirking their careful analysis.

Though his focus is on legal reasoning, Cass Sunstein has recently voiced concerns similar to Govier's. Like Govier, Sunstein is reluctant to call *a priori* analogical reasoning deductive:

Some people think that analogical reasoning is really a form of deduction, but this is a mistake. To be sure, analogical reasoning cannot proceed without identification of a governing idea B a principle, a standard, or a rule B to account for the results in the source and target cases. . . . But the governing idea is not given in advance and applied to the new case. Instead, analogical reasoning helps identify the governing idea and is indispensable to the iden-

tification; we do not know what the idea is until we have assessed the cases. Analogy and disanalogy are created or discovered through the process of comparing cases, as people discern a principle that makes sense of their considered judgments.²⁴

Sunstein and Govier share a common reluctance to call *a priori* analogical reasoning deductive; and their reluctance is rooted in a common aversion to absolutism, a common fear of absolute principles that are given in advance. As already noted, that fear of absolutes is justified; but it is not a justification for denying that *a priori* analogical arguments are deductive in form. As Sunstein notes, the principles involved in such arguments are not “given in advance,” and are certainly not dictated by some “brooding omnipresence”; to the contrary, “[a]nalogy and disanalogy are created or discovered through the process of comparing cases, as people discern a principle that makes sense of their considered judgments.” So the principles involved in *a priori* analogical arguments are developed, revised, modified; they are shaped by a careful and judicious reasoning process that attempts to make coherent sense of our scattered judgments. But from the fact that the principles are not fixed and permanent, it does not follow that the reasoning process invoking such principles is not *deductive*.

Sunstein makes a compelling case against the view—often associated with legal formalism—that legitimate legal reasoning must involve high-level principles derived from large-scale theories. Such theories and principles may have their uses, and Sunstein is not opposed to them; quite the contrary: “If judges can agree on a high-level theory, and if the theory can be shown to be a good one, judicial acceptance of a high-level theory is hardly troubling; on the contrary, it is an occasion for celebration.”²⁵ But Sunstein’s insight is that high-level theory is not necessary for effective legal reasoning, and in most cases—where there is no settled higher-level principled agreement—we are better off avoiding disputes about overarching theories, instead resolving issues through the use of “small-scale, low-level principles.” Such low-level principles are sufficient for resolving many issues satisfactorily in the absence of consensus about larger theoretical perspectives, and that is the basic importance (of what Sunstein christens) “incompletely theorized agreements” (incomplete because the low-level principles they invoke are not in turn supported by accepted high-level theory). These agreements based on low-level principles involve careful reasoning, resolve cases effectively, avoid unnecessary controversy, and are the heart and soul of actual judicial decision-making; that being the case, “we ought not to think of incompletely theorized agreements on particulars as a kind of unfortunate second-best, adapted for a world in which people disagree, are confused or biased, and have limited time.”²⁶

All of this is profoundly insightful, and demonstrates the benefits of careful critical attention to the actual process of judicial decision-making. But rather than challenging the importance of deductive analogical arguments in the law, it instead affirms the fundamental role of such arguments. Reasoning from mid-level principles is still deductive reasoning, and principles are required for the process to

work: "To say that one case is like another, we need a reason or a principle, but often, at least, we can offer a reason or a principle that operates at a low level of ambition."²⁷ So judicial *a priori* analogical reasoning typically involves low-level principles that are not grounded in higher-level theories nor prescribed by a "brooding omnipresence," and the principles invoked are subject to change, and when changes occur they may involve *either* rejection of particular case precedents or modification of principle (in Sunstein's words, "The abstract deserves no priority over the particular; neither should be treated as foundational.")²⁸ But unless we suppose that deductive arguments require fixed high-level principles based on established high-level theories, there is no reason to push such mid-level analogical reasoning outside the deductive rubric.²⁹

We now turn to the second of Govier's objections to the deductivist analysis of *a priori* analogies: that such an analysis destroys their distinctive force and charm. Govier seems to fear that by digging deep into the underlying principles of *a priori* analogies, we "murder to dissect". When we are considering *a priori* analogies, Govier notes, a significant part of "their charm . . . is that we are often able to see or sense important resemblances between cases without being able to spell them out exhaustively in so many words."³⁰ And there is important truth in Govier's point. Thomson's analogy has a charm—and a psychological power to persuade—that is lost in the bare statement of principle. We should not, however, exaggerate either the charm or the persuasiveness. After all, general principles can also be charming, even inspiring ("Love thy neighbor as thyself"); and as noted before, sometimes moving from the particular case to the statement of principle can have special persuasive force. But there is no denying that *a priori* analogies can be powerfully convincing; and at least part of that power comes from their capacity to motivate careful thought about what we believe and how it applies in different contexts ("What would I think if someone said I was compelled to stay attached to the violinist? Would I think it wrong if super powerful, super intelligent extraterrestrials decided to raise and slaughter humans as delicacies for their tables?") But in the mutual adjustment analysis offered here, that important persuasive function is not sacrificed; to the contrary, it may be enhanced by the use of principles that persons recognize as their own and then apply in ways they had not previously considered.

In sum, deductive arguments by analogy are an important type of analogy, and they must not be confused with figurative or inductive analogies. Deductive arguments by analogy require their own analysis, and nothing is gained by trying to force them into a more comprehensive and elegant explanatory model that obscures their distinctive force. But neither is it useful to multiply distinctions beyond necessity, and treat *a priori* analogies as falling outside the deductive process.³¹ The value and force of *a priori* analogies is not diminished by critical examination of their deductive structure.

Distinguishing Analogy Types

The first step in effective critical examination of analogies is distinguishing among the different analogical types, but failure to draw such distinctions is a common problem in textbooks on critical thinking and argumentation. For example, Brooke Noel Moore and Richard Parker³² treat all analogies as inductive. M. Neil Browne and Stuart Keeley³³ consider only figurative analogies, but then evaluate them as if they were arguments (not surprisingly, fallacious arguments). Gary Kirby and Jeffrey R. Goodpaster³⁴ lump all analogies into the inductive category (though their examples are better understood as figurative analogies), and then assert that “No analogy can be used to ‘prove’ something because no two things are identical in every respect”; so the best we can do in analyzing analogies is to favor analogies “in which the similarities are striking”. Lumping all analogies into the category of inductive argument is also the approach taken by Douglas Ehninger,³⁵ by Royce P. Jones,³⁶ and by Robert J. Fogelin and Walter Sinnott-Armstrong.³⁷ John McKay³⁸ offers a valuable analysis of deductive analogies, and he deplores the tendency of critical thinking textbooks to squeeze all analogies into the inductive mold; but he ignores the distinctive nature of figurative analogies, and thus critiques figurative analogies as flawed deductive arguments by analogy. James H. Kiersky and Nicholas J. Caste distinguish figurative analogies from arguments by analogy, but treat all analogical arguments as inductive arguments that are problematic because “no two objects, ideas, or situations are ever exactly alike”.³⁹ Russell T. Church and Charles Wilbanks⁴⁰ follow the same pattern by distinguishing figurative analogies from “literal” (argumentative) analogies, but then treat all arguments by analogy as inductive; and a similar strategy is adopted by Ausin J. Freeley.⁴¹

It would be helpful if all analogies carried clear identifying features marking them as deductive, inductive, or figurative. Unfortunately, they do not. Like most of critical thinking, such distinctions require looking at the full context of the analogy, rather than focusing on isolated words or phrases. The key to distinguishing analogies lies in examining what the analogy is designed to accomplish. A figurative analogy uses more familiar images to help us understand something that is complex, confusing, or unfamiliar; but it does not offer reasons for a conclusion. 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. An inductive argument by analogy makes a probable projection based on relevant similarities. The categorization of these analogies turns on what function they are designed to serve (analogies are, after all, artifacts; they do not occur in nature).

Correctly identifying analogy types requires considering their appropriate function. But that categorization does not depend on how one would *like* to use the analogy. In explaining the Freudian theory of neurotic behavior, a standard figurative analogy is the safety valve on a steam engine. Releasing excess steam through the safety valve accomplishes no work—it does not drive the piston—but it prevents the boiler from exploding; analogously, neurotic behavior accomplishes no

positive work, but it releases pressure and prevents explosion into psychosis. One may wish to use that figurative analogy as a deductive argument by analogy, but that will be a *misuse*. For example, on the basis of the (figurative) analogy between safety valves on a steam engine and neuroses in a person, one might (fallaciously) argue that since you believe safety valves are essential for steam engines likewise you must conclude that neuroses are required by humans. That attempt to use an figurative analogy as a deductive argument by analogy involves miscategorizing two distinctly different types and functions of analogies. The steam engine analogy draws a useful picture, but does not point to any underlying principle. In like manner (figurative analogy) I can try to enter the family sedan in the Indianapolis 500, but that doesn't transform it into an effective race car; and I might be able to hitch a wheelbarrow behind two horses, but that doesn't turn this valuable construction tool into a workable chariot.

Distinguishing among analogy types is no easy task, and it is complicated by the fact that some analogies can function as either figurative analogies or as deductive arguments by analogy. Consider a marvelous analogy offered by a wise old quarry man, the leader of a team of highly skilled craftsmen who cut large blocks of beautifully veined marble from an Italian quarry. The craftsmen cut the blocks and carve them into sculptures fitting the shape and dimensions specified by a sculptor; the sculptor supplies a model and specifies the size but never touches the actual marble sculpture, and perhaps does not even see the marble sculpture before it is completed. "So who is the artist," the man was asked; "Is it the person who supplies the model, or the craftsmen who actually sculpt the marble?" The reply was in the form of an analogy:

The artist is the composer of the symphony. He does not waste time trying to play all the parts. If he uses the orchestra, or workmen, he can make the most beautiful music. We are not creators. We are proud to be executors.

What type of analogy is that? I think it works best as a figurative analogy: if you think of the artist who draws up elaborate instructions for the craftsmen to execute as being like a composer who writes an extensive score for musicians to follow, then it is easier to picture how the designer who never holds a chisel is the artist, just as the composer who never holds a bow is the composer. (Both the musicians and the craftsmen have wonderful creative skills, but neither are the creators of the artistic work.) But one could also employ it as a deductive argument by analogy: You agree that a composer who never performs his own score is still the composer, right? You believe that because you accept the principle that the creator of an artistic work need not actually execute the finished product; and the same principle applies to a sculptor who designs a sculpture but does not actually bring into existence the work itself. So some analogies can function either figuratively or deductively. But that should not obscure the genuine differences between the two types of analogy. After all, a heavy flashlight can function effectively as both a light and a club, but that does not eliminate the difference between lights and clubs: the difference remains, and remains important, as will be immediately

clear to anyone who tries to use a shillelagh for illumination or a chandelier for assault.

In addition to examining the function of the analogies, another useful guide for distinguishing types of analogies is by degree of familiarity. Thomas J. McKay⁴² notes that “analogies often use familiar subject matter to clarify an idea about something less well known,” and that is a good description of *figurative* analogies. But it applies only to *figurative* analogies, and not to all uses of analogy; in particular, it is not true of *deductive* arguments by analogy. A abortion is more familiar than being hooked up to a strange violinist, but Thomson’s analogy does not aim at a more familiar image of complex phenomena; instead, her violinist analogy is a deductive *argument* that compels us to examine our principles and their implications. Consider this standard analogical argument against killing and eating farm animals: If extraterrestrials of higher intelligence and greater power discovered that they enjoyed the delicacy of human rib roasts, that would not justify them in slaughtering us for their dining pleasure. So since you think it would be wrong for the more powerful and intelligent extraterrestrials to place us in their factory farms, you must also conclude—by deductive analogy, and from the same principle that justifies your condemnation of the extraterrestrial abattoirs—that it is wrong for humans to raise and slaughter animals as culinary luxuries. This deductive argument by analogy forces us to consider one of our basic moral principles (it’s wrong to inflict suffering on the weaker in pursuit of trivial pleasures) and how it applies, but the effectiveness of the analogy does not depend on its relative familiarity. Most of us are better acquainted with eating a leg of lamb than with being slaughtered by extraterrestrials.

Thus effective figurative analogies employ cases that are more familiar than what they explain (if they fail to do that, then they are guilty of attempting to explain the obscure by the more obscure). In contrast, deductive arguments by analogy may effectively offer quite fanciful cases.⁴³ Thomson’s analogy is effective because it starts with a case sufficiently different from our everyday experiences that our preconceptions do not distort our view: thus we can think about what principles we hold without the heat and passion and entrenched doctrines that swirl around the question of abortion. Falling somewhere between the familiar figurative analogies and the fanciful deductive analogies are inductive arguments by analogy. Inductive arguments by analogy must be empirically based, and the cases compared must be similar in degree of familiarity. After all, for the inductive analogy to be effective one must be familiar with the common analogical characteristics of both cases. (If object A has characteristics a, b, c, and d, but we don’t know enough about object B to know whether it has those characteristics or not, then obviously an inductive analogy based on characteristics a-d will not be very reliable.)

Analyzing an analogy requires two steps: first, identifying the type and appropriate function of the analogy (figurative, deductive, or inductive); and second, evaluating the effectiveness of that specific analogy. It would be philosophically

more elegant if there were a single model that explained all uses of analogy, and we could unify all analogies under one set of rules. Analogies are not that simple. But recognizing the different types of analogy will save us from struggling to squeeze inductive analogies into deductive analyses and from striving to pack figurative analogies into argumentative boxes.

Notes

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¹ A point clearly noted by Charles Fethe in "Analogy as a Guide to Philosophical Thinking," *Teaching Philosophy*, vol. 16, no. 1 (March, 1993), p. 63.

² Samuel Johnson, *Life*, May 19, 1784.

³ Russell T. Church and Charles Wilbanks make this point in *Values and Policies in Controversy: An Introduction to Argumentation and Debate* (Scottsdale, Arizona: Gorsuch Scarisbrick, Publishers, 1986), pp. 239-40.

⁴ Susan Stebbing offers the classic statement of this view, in *Thinking to Some Purpose* (London: Pelican Books, 1938). William R. Brown, in "Two Traditions of Analogy," *Informal Logic*, Vol. 11, no. 3 (Fall, 1989), pp. 161-172 notes an echo of this view in Sylvan Barnet and Marcia Stubbs, *Practical Guide to Writing*, 6th ed. (Glenview, IL: Scott, Foresman, 1990), p. 505.

⁵ Judith Jarvis Thomson, "A Defense of Abortion," *Philosophy and Public Affairs*, vol. 1, no. 1 (1971), pp. 47-66.

⁶ Tom Regan, "Ill-Gotten Gains," in Donald Van DeVeer and Tom Regan (Eds.), *Health Care Ethics: An Introduction* (Philadelphia: Temple University Press, 1987).

⁷ John R. Searle, "Minds, Brains, and Programs," *Behavioral and Brain Sciences*, vol. 3 (1980), pp. 417-458.

⁸ For other analyses of deductive analogies employing the same model of reasoning from unstated principles, see Bruce N. Waller, *Critical Thinking: Consider the Verdict* (Englewood Cliffs, N.J.: Prentice-Hall, 1988), pp. 208-217; Fred Johnson, "Analogical Arguments and Explainings," *Informal Logic*, vol. 11, no. 3 (Fall, 1989), pp. 154-160 (Johnson characterizes the underlying principle as a "hidden conditional," but it seems to function as an underlying principle); and the classic — but difficult — study of legal reasoning by Edward H. Levi, *An Introduction to Legal Reasoning* (Chicago: The University of Chicago Press, 1948).

⁹ William R. Brown, *op. cit.*, p. 162 prefers to call these "predictive analogies," which is a nice descriptive name for them; however, "inductive analogy" seems more common.

¹⁰ Some such principle is clearly needed if the inductive argument is to be cogent (a point noted by Thomas J. McKay, "Analogy and Argument," *Teaching Philosophy*, vol. 20, no. 1 (March, 1997), pp. 56-57); but a detailed account of the principle leads deep into the tangle of issues surrounding inductive justification, and is well beyond the scope of this essay and the capacities of this author.

¹¹ Trudy Govier, "Analogies and Missing Premises," *Informal Logic*, Vol. 11, no. 3 (Fall, 1989), pp. 141-152.

¹² Evelyn M. Barker concurs with Govier in rejecting the categorization of all analogical arguments as either deductive or inductive. See her "Beardsley's Theory of Analogy," *Informal Logic*, Vol. 11, no. 3 (Fall, 1989), pp. 185-194.

¹³ Govier, *op. cit.*, p. 148.

¹⁴ *Ibid.*

¹⁵ *Ibid.*

¹⁶ *Ibid.*

¹⁷ Southern Pacific Company v. Jensen, 244 U.S. 205, 218 (1917) (Holmes, J., dissenting).

¹⁸ Govier, *op. cit.*, p. 148.

¹⁹ F. Johnson, *op. cit.*, p. 157; Johnson credits W. D. Ross with this insight.

²⁰ Jerry A. Fodor, *Psychological Explanation* (New York: Random House, 1968), pp. 108-111.

²¹ John Martin Fischer, "Abortion and Self-Determination," *Social Philosophy*, Vol. 22, no. 2 (Fall, 1991), pp. 5-13.

²² Of course, Thomson will feel no such obligation in response to the hungry stranger. She insists that if Henry Fonda could save my life by placing his caring hand on my fevered brow, Henry Fonda is under no *obligation* to provide that healing touch. It would certainly be nice of him to do so, but he is not morally obligated. So Fischer's analogy will require no adjustments for Thomson. But few of us, I suspect, are such rugged individualists as Thomson, and thus we do feel the force of Fischer's analogy.

²³ This is not the moral that Fischer himself draws from his analogy.

²⁴ Cass R. Sunstein, *Legal Reasoning and Political Conflict* (New York: Oxford University Press, 1996), pp. 65-6.

²⁵ *Ibid.*, p. 56.

²⁶ *Ibid.*, p. 57.

²⁷ *Ibid.*, p. 62.

²⁸ *Ibid.*, p. 52.

²⁹ Judges are often reluctant to specify the principle involved in their deductive analogical arguments from precedents. That is not, however, because there is no principle to specify; rather, it is because stating the principle tends to bind future judges to that principle and thus makes it more difficult to develop a newly modified interpretation of the principle in light of changing circumstances.

³⁰ Govier, *op. cit.*, p. 148.

³¹ This paper rejects Govier's special *nondeductive* status for *a priori* analogies, and instead classifies analogical *arguments* into the traditional inductive and deductive categories. That does not imply that *all* arguments are either deductive or inductive. In Chapter 3 of *Problems in Argument Analysis and Evaluation* (Dordrecht: Foris Publications, 1987) Govier claims that the traditional categorization of all arguments as either deductive or inductive has a stifling effect on argument analysis; and that may well be the case, even if *a priori* analogical arguments *are* best understood as deductive.

³² Brooke Noel Moore and Richard Parker, *Critical Thinking*, 3rd ed. (Mountain View, CA: Mayfield, 1992).

³³ M. Neil Browne and Stuart Keeley, *Asking the Right Questions*, 6th ed. (Upper Saddle River, NJ: Prentice Hall, 2001).

³⁴ Gary Kirby and Jeffrey R. Goodpaster, *Thinking* (Englewood Cliffs, NJ: Prentice Hall, 1995), pp. 164-5.

³⁵ Douglas Ehninger, *Decision by Debate*, 2nd ed. (New York: Harper & Row, 1978).

³⁶ Royce P. Jones, *Foundations of Critical Thinking* (Orlando FL: Harcourt College Publishers, 2001), pp. 81-2.

³⁷ Robert J. Fogelin and Walter Sinnott-Armstrong, *Understanding Arguments: An Introduction to Informal Logic*, 6th ed. (Orlando FL: Harcourt College Publishers, 2001).

³⁸ McKay, *op. cit.*

³⁹ James H. Kiersky and Nicholas J. Caste, *Thinking Critically* (Minneapolis/St. Paul, MN: West Publishing Company, 1995), p. 279.

⁴⁰ Church and Wilbanks, *op. cit.*, p. 240.

⁴¹ Ausin J. Freeley *Argumentation and Debate: Rational Decision Making*, 2nd ed. (Belmont, California: Wadsworth, 1966).

⁴² McKay, *op.cit.*, p. 49.

⁴³ A point made very clearly by Govier, 1989, *op. cit.*, p. 142. Fred Johnson, *op. cit.*, p. 153, claims that in analogical *arguments* “the arguer expects his or her audience to be more familiar with the base than with the target”; but while that is true of figurative (nonargumentative) analogies, it is not the case for either deductive arguments by analogy (where the base may be much more fanciful than the target) or inductive arguments by analogy (where level of familiarity between the cases will be roughly parallel).

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