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# GUNS, ANALOGIES, AND CONSTITUTIONAL INTERPRETATION ACROSS CENTURIES

*Frederick Schauer*\* & *Barbara A. Spellman*\*\*

## INTRODUCTION—ANALOGY IN CONTEXT(S)

In *New York State Rifle & Pistol Ass’n v. Bruen*, the Supreme Court acknowledged the difficulties in applying its constitutional originalism to the question of firearms regulation.<sup>1</sup> After all, the fully automatic assault rifles whose sale, possession, and use lie at the center of many contemporary debates about gun control and the Second Amendment simply did not exist in 1791, when the Second Amendment was ratified. Nor did they exist in 1868, when the Fourteenth Amendment, the vehicle for applying the Second Amendment to the states, was added to the Constitution.<sup>2</sup> The firearms that existed in 1791 were largely the heavy, slow, cumbersome, and wildly inaccurate single-shot muskets that made up the arsenals on both sides in the Revolutionary War. And the “arms” envisaged in 1868 would have been predominantly the flintlock muzzle-loading long rifles of the Civil War. Even

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1 See 142 S. Ct. 2111, 2134 (2022) (quoting *Heller v. District of Columbia*, 670 F.3d 1244, 1275 (D.C. Cir. 2011) (Kavanaugh, J., dissenting)).

2 *McDonald v. City of Chicago*, 561 U.S. 742, 805–06 (2010). On the theoretically interesting issue (at least for originalists) of identifying the relevant “original” date for the incorporated provisions of the Bill of Rights, the *Bruen* Court noted the issue but found no reason to resolve it, concluding that there was no relevant difference on these facts between the practice in 1791 and the practice in 1868. *Bruen*, 142 S. Ct. at 2138. And so too for Justice Barrett, concurring. *Id.* at 2163 (Barrett, J., concurring). See generally Jay S. Bybee, *The Congruent Constitution (Part One): Incorporation*, 48 *BYU L. REV.* 1, 52 (2022); Lawrence B. Solum, *Incorporation and Originalist Theory*, 18 *J. CONTEMP. LEGAL ISSUES* 409, 435–46 (2009).

the Colt revolvers of the so-called Wild West were still at the time of the ratification of the Fourteenth Amendment using black powder (as opposed to modern gunpowder)—weapons that were almost unimaginably slower and less accurate than today's handguns and automatic or even semiautomatic rifles.

The *Bruen* Court recognized the chasm between the arms that existed at the time of the original document and those whose regulation are at issue now. And it recognized an equally large chasm between the regulatory approaches to those arms in earlier times and the regulatory approaches being proposed and considered today. Yet the *Bruen* 6–3 majority, with its opinion written by Justice Thomas,<sup>3</sup> was nevertheless committed to an originalist methodology.<sup>4</sup> Acknowledging the difficulty of applying an originalist approach across such a long temporal gap, Justice Thomas's opinion in *Bruen* relied on the simultaneously empowering yet constraining notion of “reasoning by analogy.”<sup>5</sup> The judicial task, Justice Thomas offered, was to identify “not a historical *twin*” but a “well-established and representative historical *analogue*.”<sup>6</sup>

## I. THE STRUCTURE OF ANALOGICAL REASONING (AND ARGUMENT)

The approach endorsed by Justice Thomas, plainly designed to strike the balance between (judicial) freedom and constraint long lauded by celebrants of the common law,<sup>7</sup> exemplifies one of the dominant forms of reasoning by analogy.<sup>8</sup> What Justice Thomas failed to articulate, even as he cited to our observations about similarity in his

3 Justice Breyer, joined by Justices Sotomayor and Kagan, issued a dissenting opinion. 142 S. Ct. at 2163 (Breyer, J., dissenting). Justices Alito, Kavanaugh, and Barrett each filed a concurring opinion, although all joined the opinion of the Court as well. *Id.* at 2156 (Alito, J., concurring); *id.* at 2161 (Kavanaugh, J., concurring); *id.* at 2162 (Barrett, J., concurring).

4 The problems we address here exist under the now-ascendant “original public meaning” version of originalism as well as under the formerly dominant “original intent” originalism; thus, there is no need for us to choose between the two here. *See generally* ILAN WURMAN, *A DEBT AGAINST THE LIVING: AN INTRODUCTION TO ORIGINALISM* (2017); Lawrence B. Solum, *The Public Meaning Thesis: An Originalist Theory of Constitutional Meaning*, 101 B.U. L. REV. 1953 (2021); Randy E. Barnett & Lawrence B. Solum, *Originalism After Dobbs, Bruen, and Kennedy: The Role of History and Tradition*, 118 NW. U. L. REV. 433 (2023).

5 *Bruen*, 142 S. Ct. at 2132.

6 *Id.* at 2133.

7 Among the more prominent celebrations of the common law, celebrations that often focus on the tensions between empowerment and flexibility, on the one hand, and constraint, on the other, are MELVIN ARON EISENBERG, *THE NATURE OF THE COMMON LAW* (1988), EDWARD H. LEVI, *AN INTRODUCTION TO LEGAL REASONING* (2013), and DAVID A. STRAUSS, *THE LIVING CONSTITUTION* (2010). *See also* DOUGLAS E. EDLIN, *COMMON LAW JUDGING: SUBJECTIVITY, IMPARTIALITY, AND THE MAKING OF LAW* (2016); Douglas E. Edlin, *Introduction to COMMON LAW THEORY I* (Douglas E. Edlin ed., 2007).

8 *See infra* Appendix.

opinion,<sup>9</sup> is that two things (e.g., items, ideas, events, situations, cases) can be very *similar* to each other without being *analogous* to each other; if they are analogous, they must be in some respects similar, but if they are similar, they are not necessarily analogous. Analogy requires a certain type of similarity: a similarity based on relations, and not simply on features, as we shall explain presently,<sup>10</sup> and as is presented in a more formal and abstract way in the Appendix.

Analogies can be used to, among other things, explain, understand, educate, test, discover, predict, and persuade. The form of analogical reasoning used in *Bruen* starts with a target analog—a problem, event, situation, case, etc., that is not well understood or accepted by the reasoner or by the addressee of an analogical argument. The reasoner then attempts to *retrieve* potentially useful source (or “base”) analogs from memory, from a textbook, or from a Westlaw or Lexis search. This process of retrieval may locate anywhere from zero to many well-known and well-understood (either to the reasoner or to the addressee of an analogical argument) potential source analogs. Having located the field of potential source analogs, the analogizer then engages in *mapping*—evaluating how relationally similar the two (source and target) situations are and considering whether the similarity is sufficient for the source to be applicable in helping to understand, support, use (*extend* or *generalize*), etc., the target.<sup>11</sup>

A favorite analogical example for cognitive scientists is the question, “What is the movie *West Side Story* like?”<sup>12</sup> Neither *Gangs of New York* nor *In the Heights* are good answers. Rather, *Romeo and Juliet* is in important ways the “right” answer. And that is not because the streets of mid-twentieth-century New York City are similar to “fair Verona” of the (perhaps) sixteenth century. Nor because rich families living in grand houses are like immigrants living in tenements. Such featural similarities, or lack thereof, are not relevant to an analogy.<sup>13</sup> Simply to identify similarities is not to draw an analogy. What matters are the relations. Who is related to whom? Who is feuding with whom? Who loves whom? Who has killed whom? Circa 1992, the second author took an eager group of young cognitive psychology Ph.D. students,

9 *Bruen*, 142 S. Ct. at 2133.

10 See Dedre Gentner & Arthur B. Markman, *Structural Alignment in Comparison: No Difference Without Similarity*, 5 PSYCH. SCI. 152, 152 (1994).

11 See Dedre Gentner & Keith J. Holyoak, *Reasoning and Learning by Analogy: Introduction*, 52 AM. PSYCH. 32, 32 (1997).

12 See, e.g., James K. Kroger, Keith J. Holyoak & John E. Hummel, *Varieties of Sameness: The Impact of Relational Complexity on Perceptual Comparisons*, 28 COGNITIVE SCI. 335, 336 (2004); Charles M. Wharton, Keith J. Holyoak, Paul E. Downing, Trent E. Lange, Thomas D. Wickens & Eric R. Melz, *Below the Surface: Analogical Similarity and Retrieval Competition in Reminding*, 26 COGNITIVE PSYCH. 64, 65 (1994).

13 See Wharton et al., *supra* note 12, at 65.

who had never seen either film, and first showed them *Romeo and Juliet* and then showed them about half of *West Side Story* (1961). The video was halted and the students were asked to predict what would happen to four of the characters. They got most predictions correct.<sup>14</sup> That is reasoning by analogy.

Consider also an example pervasive in the modern literature on analogical reasoning in law,<sup>15</sup> the 1896 New York Court of Appeals decision in *Adams v. New Jersey Steamboat Co.*<sup>16</sup> Adams was a passenger on a steamboat with overnight sleeping cabins. On the night in question, Adams had retired to his room after what we suspect was an evening of gambling and drinking. When he awoke the following morning, he discovered that someone had entered his room and removed his wallet, which contained a large amount of cash.<sup>17</sup>

Adams sued the steamboat company, seeking to hold it responsible for the theft. Memorably, the case turned into one of dueling analogies. Adams argued that a room on a steamboat was analogous to a room in an inn or hotel, and thus the New York law making innkeepers strictly liable for thefts was applicable.<sup>18</sup> But the steamboat company argued that the room on the steamboat was, rather, like a sleeping berth on a train, where under the applicable New York law the railroad was liable only if its negligence could be established, as it could not here.<sup>19</sup>

In *Adams*, the events on the steamboat constituted the target, and the court's task was to identify and retrieve the appropriate source analog. Especially in the context of litigation, but also in any other context in which analogical argument is deployed to support a particular outcome, the reasoning does not start with seeking the *best* source and identifying its implications. On the contrary, in *Adams* and most other examples of analogical argument in law, we start with knowing what we want the implications to be, and then attempt to find a source that would best support those implications. And we often explicitly specify the *mapping* that connects the source and the target, and which then

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14 The prediction that they all got wrong was that, like Juliet, Maria would die at the end of the movie.

15 See LLOYD L. WEINREB, *LEGAL REASON: THE USE OF ANALOGY IN LEGAL ARGUMENT* 41–45, 111–15 (2005); Scott Brewer, *Exemplary Reasoning: Semantics, Pragmatics, and the Rational Force of Legal Argument by Analogy*, 109 HARV. L. REV. 923, 1003–07, 1013–16 (1996); Richard A. Posner, *Reasoning by Analogy*, 91 CORNELL L. REV. 761, 761 (2006) (reviewing WEINREB, *supra*).

16 45 N.E. 369 (N.Y. 1896).

17 *Id.* at 369.

18 *Id.*

19 *Id.* at 370.

enables us to generalize—to make the source a source for other targets.<sup>20</sup>

As should be clear by now, Justice Thomas’s analysis of the general problem in *Bruen* fits this characterization. He proposes, conventionally, treating the current problem as the target, and then seeks to retrieve the historical event or practice that would provide the foundation for the analogical argument from the historical source to the contemporary target. This approach is more or less typical, and in itself not controversial. In applying this approach, however, a court runs the risk of making various kinds of mistakes, two of which we explore here.

## II. THE ERROR OF SUPERFICIAL RESEMBLANCE

There are things that look like guns but are not. Toy guns most obviously. And there are things that do not look like guns but have an equivalent capacity to cause harm. Take modern crossbows, for example. Assuming for the moment that “arms” as used in the Second Amendment is roughly synonymous with “guns” or “firearms” as a matter of original public meaning,<sup>21</sup> we can imagine someone focusing on the visual difference between a crossbow and a handgun or rifle to conclude that crossbows and firearms are members of different categories, and thus that the right to keep and bear arms protected by the Second Amendment was not the right to keep and bear crossbows.

What is missing in the hypothesized nonapplication of the Second Amendment to crossbows is a deeper analysis of the *relations* that distinguish analogies from mere similarities. Guns are subject to law *X* not because of what they look like but because of relations (or *functions*). Guns are regulated and/or protected not on account of what they look like but because of what they can *do* and cause. And if we focus on what guns can do, we can see how both gun protection and gun control might be understood as analogous to crossbow protection and crossbow regulation.

Being concerned about the distractions of superficial visual similarity is, when applied to firearms, somewhat of a reach. But it is worth noting that the problem is real in other contexts. Consider, for example, the relatively recent Supreme Court case of *Lozman v. City of Riviera Beach*.<sup>22</sup> The issue was whether Lozman’s more or less permanently docked houseboat was a house or a boat, such that its being a boat would have made the case suitable for federal courts exercising

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20 See *infra* Appendix ex. 3.

21 Probably not, but that is for another day.

22 568 U.S. 115 (2013). This should not be confused with the even more recent case of *Lozman v. City of Riviera Beach*, 138 S. Ct. 1945 (2018).

admiralty jurisdiction, but its being a house would relegate the litigation to the state courts.<sup>23</sup>

In determining that Lozman's houseboat was a house and not a boat, Justice Breyer, writing for the majority, spent almost no time talking about the history, purpose, or point of federal admiralty jurisdiction. And he spent almost no time talking about why it is that control over nonnavigable bodies of water is, to oversimplify, left to the states. Rather, he announced that the central issue was whether Lozman's structure was a house or a boat, and he explained why this mattered.<sup>24</sup> And he then described the characteristics of houses and boats in some detail, offered pictures of Lozman's houseboat,<sup>25</sup> and then concluded, with the assistance of the pictures, that Lozman's houseboat was more like a house than a boat.<sup>26</sup>

Because he focused so much on surface appearance and not nearly as much on the functions of houses and boats, Justice Breyer engaged in a form of analogical reasoning more characteristic of novices than experts. If two things seem on the surface to be similar to each other, then lay analogizers are especially likely to use that similarity to provide the basis for an analogy, as opposed to experts, who are more likely to look beneath surface-feature similarity to identify deeper structural or functional relations.<sup>27</sup>

Of course, Justice Breyer, who we suppose saw himself as an expert in law and legal reasoning but not in floating vessels, was not an expert in the underlying differences between houseboats and more conventional watercraft. In that sense he can hardly be faulted for relying on surface rather than structural (or functional) similarity, and it is possible that judges, who tend to be novices with respect to the empirical aspects of the objects of their judging,<sup>28</sup> are best understood as pervasively nonexpert.

Insofar as judges are pervasively and systematically nonexpert in just this way, then the *Bruen* Court's faith in analogical reasoning as a way of controlling and constraining the application of 1791 (or 1868) weapons (and the methods of regulating them) could well be misplaced. As we acknowledged above, it is unlikely that there would be

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23 *Lozman*, 568 U.S. at 118–19.

24 *Id.* at 118.

25 *Id.* at 132–33.

26 *Id.* at 130.

27 See Isabelle Blanchette & Kevin Dunbar, *How Analogies Are Generated: The Roles of Structural and Superficial Similarity*, 28 MEMORY & COGNITION 108, 108 (2000); Keith J. Holyoak & Kyunghee Koh, *Surface and Structural Similarity in Analogical Transfer*, 15 MEMORY & COGNITION 332, 338 (1987). For more general information about expert/novice problem-solving differences, see Michelene T.H. Chi, Paul J. Feltovich & Robert Glaser, *Categorization and Representation of Physics Problems by Experts and Novices*, 5 COGNITIVE SCI. 121 (1981).

28 And that is why we have expert witnesses.

differences among weapons and their methods of regulation that would be nearly as susceptible to the surface-versus-structure errors as was the case of *Lozman's* houseboat. But the larger point is that changes in the nature of firearms over 232 or even 155 years are likely to present important differences not apparent to those who are not experts in firearms or even firearms regulation. The Court in *Bruen* noted—and relied on—the fact that analogical reasoning has long been a central characteristic of the common law.<sup>29</sup> But if analogical reasoning, to be done well, requires more genuine knowledge about the actual features, both apparent and hidden, of what is being compared to what than appellate judges are likely to possess, then perhaps the Court's faith in analogical reasoning is misplaced.

### III. THE ERROR OF EXCESS SKEPTICISM

#### A. *The Argument Explained*

*Lozman* represents the error of analogizing by reference to surface features, not relational or structural ones. But a different error has become pervasive in the legal literature, the error of excess skepticism about the possibility of analogical reasoning in law, a skepticism born of excess skepticism about the possibility of analogical reasoning generally—or at least the view that analogical reasoning, whether in law or generally, is not *reasoning* at all.

The skeptical view has been articulated most prominently and most influentially by Judge Richard Posner<sup>30</sup> and Professors Larry Alexander<sup>31</sup> and Peter Westen.<sup>32</sup> As articulated in one form or another by all of those just named, the skeptical challenge starts with the idea, itself not controversial, that no two items in the universe are identical. Moreover, and related, is that any two items in the universe are in at least one respect the same, and any two items in the universe are in at

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29 N.Y. State Rifle & Pistol Ass'n v. Bruen, 142 S. Ct. 2111, 2132 (2022).

30 Posner, *supra* note 15, at 774; see also RICHARD A. POSNER, HOW JUDGES THINK 180–81 (2008); RICHARD A. POSNER, OVERCOMING LAW 518–22 (1995); RICHARD A. POSNER, THE PROBLEMS OF JURISPRUDENCE 86–92 (1990).

31 Larry Alexander, *Bad Beginnings*, 145 U. PA. L. REV. 57, 58 (1996); see also LARRY ALEXANDER & EMILY SHERWIN, THE RULE OF RULES: MORALITY, RULES, AND THE DILEMMAS OF LAW 128–35 (2001); Larry Alexander, *The Banality of Legal Reasoning*, 73 NOTRE DAME L. REV. 517, 524–26 (1998); Larry Alexander, *Incomplete Theorizing: A Review Essay of Cass R. Sunstein's Legal Reasoning and Political Conflict*, 72 NOTRE DAME L. REV. 531, 536–37 (1997) (book review).

32 Peter Westen, *On "Confusing Ideas": Reply*, 91 YALE L.J. 1153, 1163–64 (1982). And see also, making roughly the same point, KENT GREENAWALT, LAW AND OBJECTIVITY 200 (1992); and Richard Warner, *Three Theories of Legal Reasoning*, 62 S. CAL. L. REV. 1523, 1552–55 (1989).



least one respect different. And from these banal observations follows the conclusion that something being the same, or, more accurately, *similar* to something else requires the introduction of a rule, principle, or something of that order determining which similarities matter and which do not. The person who analogizes Saddam Hussein to Adolf Hitler starts with the premise that something about the two constitutes a relevant similarity.<sup>33</sup> As a strictly logical matter, the fact that Saddam Hussein and Adolf Hitler were similar with respect to their facial hair—both had mustaches and no beards—is irrelevant in most contexts, but the fact that both had territorially expansionist aspirations and small regard for human suffering is highly relevant. Accordingly, the person who uses Hitler as the source analog to argue that forms of intervention justifiable for Hitler were, or would have been, justifiable for Saddam is saying that having territorially expansionist aspirations and little regard for human suffering is what makes the two cases relevantly similar, and not the presence of certain facial hair styling.

The example is obviously silly, but is designed to make the point, or at least Posner's point, that what appears to be an analogical argument gains its purchase from a principle making some features in both sides of the analogical argument relevant while other features are not. And the next step in the Posner/Alexander/Westen argument is not only that what we might call a *rule of relevance* is a necessary component of an analogical argument, but also that the rule of relevance both can and does supplant what appears to be a distinct form of argument. Rather, the rule of relevance, a necessary component of a successful analogical argument, operates just like any other rule. To continue with the same example, what appears to be a distinctly analogical argument can be reduced to, or translated as, a rule or principle justifying intervention against leaders with territorially expansionist motivations who have little or no regard for human suffering in the service of those motivations.

Essential to the skepticism of the Posner et al. argument is the idea that nothing about the particulars on either side of the analogical argument generates the rule of relevance. It must come from elsewhere, and without it the analogical argument makes no sense. To the skeptic, a successful analogical argument goes from the "lower order," or more particular, source analog to and through the rule of relevance to the also "lower order," but different, target analog. The argument moves from the particular up to the general and then back down to a

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33 On the cognitive science of this example of analogical reasoning, an example prominent at the time of the first Gulf War, see Barbara A. Spellman & Keith J. Holyoak, *If Saddam Is Hitler Then Who Is George Bush?: Analogical Mapping Between Systems of Social Roles*, 62 J. PERSONALITY & SOC. PSYCH. 913 (1992); and see also KEITH J. HOLYOAK & PAUL THIAGARD, *MENTAL LEAPS: ANALOGY IN CREATIVE THOUGHT* 101–09 (1994).

different particular. And it is the general—the rule—that does all the work. Or so the skeptics argue.

To bring this abstract argument back to the question of firearms control under the Second Amendment, the Court in *Bruen* imagines that in some future case a court will identify a historical analog for some current regulation. If the current regulation at issue is, for example, a prohibition on firearms with silencers, then the question would be whether there was a historical analog to silencers, given that silencers, as we know them, did not exist in either 1791 or 1868. One possibility is that the point of a silencer is to make the use of a firearm less detectable to others in the vicinity, and if that is the case then the analogous instance might be a small and quiet weapon—a small cross-bow, for example. But another possibility is that the point of a silencer is to muffle the sound of an explosion, a technology that simply did not exist in earlier times. Accordingly, one possibility is that the historical analog is nonregulation, and another is that there is no historical analog at all, thus arguably making regulation not inconsistent with the Second Amendment. Faced with these alternatives, the skeptic says that nothing about the “particulars” demands one or the other of these alternatives, leaving the question entirely open.

For the skeptic, the open-endedness of the set of potential rules of relevance makes an analogical argument—any analogical argument—highly manipulable. And this manipulability not only makes the alleged analogy an illusion, but also permits the decisionmaker to make the decision on other grounds not constrained by the analogy at all. To Judge Posner, for example, the mask of the analogical argument disguises what are typically (and, ideally, to Posner) policy arguments based on efficiency. Thus, the seeming analogy is being used not only to suggest more constraint than actually exists but also to obscure the role of the judge as a policymaker.

### *B. Challenging the Skeptic—The Role of Psychological Realism*

In the hands of Judge Posner and others, the skeptical argument about the possibility and constraint of argument from analogy has more than a whiff of legal realism. The judge makes a decision on extralegal grounds and dresses up—rationalizes<sup>34</sup>—the decision in rules, precedent, and the other devices of traditional legal reasoning in order to make the outcomes appear more law-based and less judge-based than they actually are. Indeed, Judge Hutcheson, among the most prominent of the “early” realists, explicitly included analogical reasoning as one of the disingenuous devices that judges could (and

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34 On rationalization in just this sense, see especially JEROME FRANK, *LAW AND THE MODERN MIND* 32–34, 112 (1930).

did) use to disguise a legally unconstrained but outcome-driven judgment. The judge “pass[es] in review” all of the rules, principles, legal “categories[,] and concepts which he may find useful *directly or by analogy*, so as to select from them that which in his opinion will support his desired result.”<sup>35</sup>

Although the skeptical arguments of Posner, Alexander, Westen, and others sound in legal realism, in fact they are inconsistent with what we might call psychological realism. The flexibility and open-endedness of the set of potential rules of relevance may indeed make it possible for judges to make outcome-driven policy decisions rationalized as being a product of analogical reasoning, but we know from at least a generation of psychological experimental research that real people (presumably including real judges) often perceive analogies directly without the conscious mediation of rules of relevance. Rather than moving from source to rule of relevance to target, they move from source to target without going through the steps of perceiving, creating, and applying a rule of relevance. Rules of relevance may lurk invisibly in the background, but they are not part of the conscious reasoning processes in many instances of analogical reasoning.<sup>36</sup> Thus, when William James observed almost a century and a half ago that “a native talent for perceiving analogies is . . . the leading fact in genius of every order,” he offered with little evidence a conclusion that has now been supported by a considerable amount of serious experimental research—that drawing analogies involves a process of perceiving a direct connection between the source and the target, a connection that often does not require that the analogizer consciously construct or even perceive a rule of relevance explaining why one thing is analogous to another.<sup>37</sup>

We do not wish to overstate the case. There is definitely “automatic” analogical transfer for things with which we are familiar, which are well learned, and which are simple. But novel and complex (and distant) analogies need to be worked out and created. The physicist “sees” the congruence between a complex set of pulleys and a simple one; the novice has to work it out slowly. Judges/lawyers can “see” the ones with which they are familiar with and “see” what they hope given

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35 Joseph C. Hutcheson, Jr., *The Judgment Intuitive: The Function of the “Hunch” in Judicial Decision*, 14 CORNELL L.Q. 274, 286 (1929) (emphasis added).

36 See generally, e.g., MELANIE MITCHELL, ANALOGY-MAKING AS PERCEPTION: A COMPUTER MODEL (1993); Ann L. Brown, Mary Jo Kane & Carolyn Long, *Analogical Transfer in Young Children: Analogies as Tools for Communication and Exposition*, 3 APPLIED COGNITIVE PSYCH. 275 (1989); John Clement, *Observed Methods for Generating Analogies in Scientific Problem Solving*, 12 COGNITIVE SCI. 563 (1988).

37 MITCHELL, *supra* note 36, at 1 (omission in original) (quoting 1 WILLIAM JAMES, THE PRINCIPLES OF PSYCHOLOGY 530 (photo reprint, 1950) (1890)).

their approach. Our point here is only, contra Posner et al., that analogical reasoning does not necessarily collapse into rule-based or policy-based decision-making, and that in at least some cases the analogical reasoning that Justice Thomas envisages is not simply the process of consciously determining what the best result would be as a matter of policy.

This is not the place to describe all of the psychological research on what is technically described as “analogical transfer.” The point here is only that the typical process of moving from source to target, or even from target to source, can sometimes be more a matter of direct perception than it is one of intentional or conscious reasoning. And to the extent that this is so, to the extent that people “see” analogies rather than create them, the skeptical belief that analogies are typically or even necessarily created in order to serve larger or instrumental purposes appears to be inconsistent with a great deal of research in the cognitive sciences.

This is not to say that someone tasked with drawing an analogy might not *decide* to select an analogy in order to serve larger instrumental purposes. If Judge Posner, for example, decided that he wanted to permit (or not permit) a particular form of firearms control, he could consciously search out analogies that would support his preferred outcome while nominally following the methodology set out in *Bruen*. But the same could be said about rules, precedents, authorities, original intentions, original public meaning, or any of the other alleged sources of legal guidance and legal constraint. None of them are completely constraining, but that does make the most extreme forms of legal realism sound. Indeed, as Judge Posner has on other occasions opined,<sup>38</sup> many (most?) judges become judges because they enjoy the process of judging and enjoy the process of deciding according to the rules, principles, traditions, habits, and devices of legal reasoning. Obviously, this preference must compete against various outcome preferences, and outcome preferences with high salience and high ideological valence are likely to dominate preferences for legal reasoning traditionally understood. A judge’s views about abortion or capital punishment or even the scope of executive power are likely to have more of an effect on a judge’s outcome preferences in a particular case than a judge’s views about the proper interpretation of the statute of limitations for an action to enforce the Federal Insecticide, Fungicide, and Rodenticide Act.<sup>39</sup> But unless we are willing to adopt the extreme

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38 See Richard A. Posner, *Social Norms and the Law: An Economic Approach*, 87 AM. ECON. REV. 365, 365 (1997); see also Richard A. Posner, *What Do Judges and Justices Maximize? (The Same Thing Everybody Else Does)*, 3 SUP. CT. ECON. REV. 1 (1993).

39 Federal Insecticide, Fungicide, and Rodenticide Act, ch. 125, 61 Stat. 163 (1947) (codified as amended at 7 U.S.C. §§ 136–136y).

realist position that outcomes are all that matter and the devices of legal reasoning never matter, then there is no reason to believe that analogies, directly perceived and without reference to their effect on outcomes, cannot be selected and applied in much the way that Justice Thomas and his colleagues supposed in *Bruen*.

### C. But . . .

If it is in fact the case that people, including but not limited to judges, just “see” analogies,<sup>40</sup> then we must ask the question about what it is that leads people to perceive the analogies they perceive, to perceive some similarities and not others. And it is at this point that we must realize that the analogies that people perceive are likely to be a function of the education, experiences, background, and other attributes of the analogizer.<sup>41</sup> A hairdresser is likely to see two different hair colors styled with the same cut as similar just as the lay person might see the different hair colors as more salient than the style, and thus see the two heads of hair as different and not similar. And although it is almost certainly not true that the Inuit have fifty words for snow,<sup>42</sup> what is probably only an urban legend caught on precisely because people understand the way in which knowledge, experience, environment, and perspective influence what we see and what things we perceive as similar to and different from other things.

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40 See HOLYOAK & THAGARD, *supra* note 33, at 5 (observing that analogical thinking may be guided by the analogizer’s goals, and may be guided by the analogizer’s sense of structural similarity between the items that are analogized, but that it is also “guided to some extent” by a perception of “direct similarity” between the analogized particulars); see also Robert L. Goldstone & Ji Yun Son, *Similarity*, in THE CAMBRIDGE HANDBOOK OF THINKING AND REASONING 13, 13 (Keith J. Holyoak & Robert G. Morrison eds., 2005) (“Similarity thus plays a crucial role in making predictions because similar things usually behave similarly.”).

41 And this is true for most other forms of reasoning as well. See Barbara A. Spellman, Heidi Eldridge & Paul Bieber, *Challenges to Reasoning in Forensic Science Decisions*, 4 FORENSIC SCI. INT’L: SYNERGY 1, 1 (2022).

One of us once had a mathematician father-in-law, now long deceased, who thought the following joke was tellingly funny: A physicist is talking to the carpenter while the carpenter is taking a measurement with a carpenter’s ruler. The physicist says, “They now have electronic micrometers that can accurately measure length to one ten-thousandth of a millimeter.” “That’s all well and good in the laboratory,” responds the carpenter, “but in my business we have to be exact.”

42 GEOFFREY K. PULLUM, THE GREAT ESKIMO VOCABULARY HOAX AND OTHER IRREVERENT ESSAYS ON THE STUDY OF LANGUAGE 164 (1991). The topic remains contested. See David Robson, *There Really Are 50 Eskimo Words for ‘Snow,’* WASH. POST (Jan. 14, 2013, 3:41 PM), [https://www.washingtonpost.com/national/health-science/there-really-are-50-eskimo-words-for-snow/2013/01/14/e0e3f4e0-59a0-11e2-bcee-6e38f5215402\\_story.html](https://www.washingtonpost.com/national/health-science/there-really-are-50-eskimo-words-for-snow/2013/01/14/e0e3f4e0-59a0-11e2-bcee-6e38f5215402_story.html) [<https://perma.cc/XC7H-A2F2>].

Perhaps most relevantly here, people with expertise are likely precisely because of that expertise to see similarities and differences, and therefore analogies, that people without that expertise (“novices,” in the technical sense used by cognitive psychologists) will not perceive.<sup>43</sup> A particularly good example, even if not a real one, comes from the movie *My Cousin Vinny*, where the character played by Marissa Tomei demonstrates her genuine expertise about cars by identifying consequential differences between two very otherwise-similar cars that those without her expertise failed to recognize.

Much the same applies to legal expertise. To repeat two examples we have used previously,<sup>44</sup> consider whether decomposed snails are analogous to the wheel on an automobile. To a layperson, the comparison seems ludicrous, but not so to the lawyer knowledgeable about products liability and its history, for both are central items in the development of the law regarding liability in the absence of privity between manufacturer and consumer.<sup>45</sup> Knowledge of precisely this aspect of the law will enable the knowledgeable expert to see a similarity, and therefore a potential analogy, that others would think baffling.

Or consider the relationship between Nazis and the civil rights demonstrators in the United States in the 1960s. Most lay people would find the comparison peculiar, or offensive, but to the American lawyers knowledgeable about the First Amendment, the two are similar precisely in being formative examples of the American approach to marches, parades, and demonstrations, an approach that treats the political content of the march, parade, or demonstration as being irrelevant to its legal and constitutional permissibility.<sup>46</sup>

The point should now be clear. Drawing analogies is a knowledge-dependent process, such that people with a certain kind of knowledge will see analogies that those without that knowledge will not.<sup>47</sup> But how

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43 See Barbara A. Spellman, *Judges, Expertise, and Analogy*, in *THE PSYCHOLOGY OF JUDICIAL DECISION MAKING* 149, 149 (David E. Klein & Gregory Mitchell eds., 2010).

44 Frederick Schauer & Barbara A. Spellman, *Precedent and Similarity*, in *PHILOSOPHICAL FOUNDATIONS OF PRECEDENT* 240, 250 (Timothy Endicott, Hafsteinn Dan Kristjánsson & Sebastian Lewis eds., 2023); Frederick Schauer & Barbara A. Spellman, *Analogy, Expertise, and Experience*, 84 U. CHI. L. REV. 249, 264 (2017).

45 See, e.g., *Donoghue v. Stevenson* [1932] AC 562 (HL) (appeal taken from Scot.) (finding liability even in the absence of privity between the seller in a café of a bottle of ginger beer and the consumer who became ill after ingesting a decomposed snail that was in the bottle); *MacPherson v. Buick Motor Co.*, 111 N.E. 1050, 1053 (N.Y. 1916) (finding liability even in the absence of privity between car manufacturer and consumer injured on account of a defective wheel).

46 See, e.g., *Gregory v. City of Chicago*, 394 U.S. 111, 112 (1969) (civil rights demonstration); *Edwards v. South Carolina*, 372 U.S. 229, 237 (1963) (same); *Collin v. Smith*, 578 F.2d 1197, 1201 (7th Cir. 1978) (proposed march by American Nazi party).

47 See *infra* Appendix exs. 3, 4.

then does this square with the *Bruen* Court's anticipated reliance on analogical reasoning as a way of negotiating between its commitment to originalism and its setting forth an approach to be followed in subsequent cases? More particularly, if analogical reasoning at its best is expertise- and experience-dependent, then what is the relevant expertise and experience of judges making Second Amendment decisions?

Let us add a bit of detail to the question we just raised. We now live in an era in which the technological aspects of even traditional firearms are changing rapidly, in which it is possible to produce a deadly nonmetal handgun with a computer and a 3D printer, in which anyone with access to the internet can purchase at low cost a device that will convert a semiautomatic rifle into a fully automatic one, and in which almost countless other technological innovations make the world of firearms unimaginably different from the world of firearms in 1791 or 1868. Given this world, and given that understanding much of what was just noted is far beyond the expertise of almost all ordinary people and far beyond the understanding and expertise of almost all lawyers and almost all judges, just how are judges to engage in the analogical reasoning that lies at the heart of the *Bruen* approach?

In *Bruen*, Justice Thomas describes what he and the majority believe will now be required as involving a determination by a court about whether the defenders of a government restriction on firearms have "affirmatively prove[d] that its firearms regulation is part of the historical tradition that delimits the outer bounds of the right to keep and bear arms."<sup>48</sup> In evaluating a government's attempt to satisfy this burden, a court is expected to engage in "reasoning by analogy—a commonplace task for any lawyer or judge."<sup>49</sup> Although "commonplace," analogical reasoning is not independent of the kinds of empirically informed judgments that judges of appellate courts are not necessarily comparatively trained or qualified to make.<sup>50</sup> As such, analogical reasoning is more "judge-empowering"<sup>51</sup> than the Court appears willing to acknowledge. Insofar as the Court's suggestion of a commonplace

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48 N.Y. State Rifle & Pistol Ass'n v. Bruen, 142 S. Ct. 2111, 2127 (2022).

49 *Id.* at 2132.

50 We stress "appellate" courts here, and by implication trial courts making legal as opposed to factual determinations. Of course, whether with or without juries, trial courts make factual determinations all the time. Sometimes these determinations are based in the "common knowledge" that judges and jurors are thought likely, unassisted, to possess. But when a factual determination at the trial level must go beyond common knowledge, a long tradition of using expert witnesses will typically fill this gap. When reaching conclusions of law, however, courts have long been reluctant to rely on expert assistance, even against the cautions of some judges, and perhaps Justice Breyer most prominently. See Stephen Breyer, *Science in the Courtroom*, ISSUES IN SCI. & TECH., Summer 2000, at 52, 52–53.

51 This being the epithet the *Heller* Court used to describe interest balancing and means-end weighing. *District of Columbia v. Heller*, 554 U.S. 570, 634 (2008).

practice is aimed at supporting the view that the typical analogizing judge is relying solely or substantially on the training and experience common to judges qua judges, we disagree. Analogizing contemporary firearms or contemporary methods of firearms control to those existing in the distant past requires judges to go beyond their judicial qualifications, their judicial training, and their judicial experience and into the realm of empirically grounded knowledge and experience that judges do not necessarily share just by virtue of being judges.

It is not surprising that the approach offered by the Court in *Bruen* has not fared well in the recent literature. But most of the criticism has focused on the Court's historical analogy method as being less constraining and more manipulable than its proponents are willing to acknowledge.<sup>52</sup> Insofar as most originalists, including those who constituted the *Bruen* majority, defend their originalism, in part, by claiming that it constrains judges to some considerable extent, these criticisms have a point. But our point here is different. It is not that originalism by use of analogy is not as constraining as its proponents advertise, but, rather, that there is constraint, although it is from a different source. Because analogizing requires use of empirical knowledge, and because judges vary considerably in their backgrounds, education, and experience, they are likely to vary considerably as well in their knowledge base. And it is this variability among judges that undercuts at least some of the claims made for originalism-by-analogy.

Much of the criticism of the *Bruen* methodology has had something of a legal realist flavor. The critics tend to believe that the underconstrained judge will then proceed to make the decision that she finds most morally, politically, pragmatically, or otherwise congenial. But that critique ignores the constraining effect, even if not always consciously perceived, of a judge's education, experiences, and much else. It may be an exaggeration to say that judges are prisoners of their own backgrounds, but it is equally an exaggeration to say that judges can easily transcend those backgrounds. It is not that reliance on analogy is a false constraint. It is that judges are constrained by their own experiences, and *this* constraint is as present in analogical reasoning as it is anywhere else. This is a real constraint, and a judge constrained by the analogies she sees and does not see is not free to make the decision she prefers, the law, the history, and the analogies apart. Instead, a judge faithfully doing what the *Bruen* Court mandates will nevertheless be, at least in part, trapped in her own view of the empirical world and all that has contributed to it. Originalism-by-analogy, rather than

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52 The most extensive example of the genre is Joseph Blocher & Eric Ruben, *Originalism-by-Analogy and Second Amendment Adjudication*, 133 YALE L.J. 99, 105 (2023).



transcending the knowledge, experiences, and particular characteristics of individual judges, does little more than reinforce and legitimate them.

## APPENDIX

This Appendix illustrates and formalizes some important characteristics of analogical reasoning using the standard format of  $A : B :: C : D$ —read as “ $A$  is to  $B$  as  $C$  is to  $D$ .” The items can be pictures, numbers, words, letters, events, stories, and, of course, cases—though the examples here are of the simpler kind.<sup>53</sup>

1. Analogies can be used in many ways. They can also be tested and evaluated in many ways. For example:
  - a. Generative  
**Bird : Nest :: Bear : ?**  
 Find a good analog to fill in this incomplete analogy (from memory, literature search, or creativity).
  - b. Evaluative (single)  
**Bird : Nest :: Bear : Cave**  
 Is that a good analogy? (Note: “den” would be a better word than “cave” but for its strong alternate meaning.)
  - c. Evaluative (comparative)  
**Bird : Nest :: Bear : ?**  
 Which forms a better analogy? Cub, Fish, Nest, Cave?
2. The type of similarity that matters to analogy is “relational” similarity not “feature” similarity. That is, the  $A$  and  $C$  terms need not be similar to each other, nor do the  $B$  and  $D$  terms. For example, using the verbal analogy above: is a small fragile structure, constructed yearly by a flying animal using primarily twigs, grass, and leaves, similar to a large enduring nature-formed opening in a solid mountain face? Feature-wise, nests and caves are not similar in size, looks, construction, etc. (Of course, they do have some exceedingly general, and therefore rarely useful, featural similarities, e.g., located on earth, affected by gravity, weather, seasons, and other earthly characteristics.) But relation-wise they are similar, and those similarities are evoked when placed in the  $A : B :: C : D$  format. For example, birds take refuge in nests :: bears take refuge in caves; birds produce and nurture their young in nests :: bears produce and nurture their young in caves.

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<sup>53</sup> The organization of this Appendix is based on Keith J. Holyoak, Nicholas Ichien & Hongjing Lu, *From Semantic Vectors to Analogical Mapping*, 31 CURRENT DIRECTIONS IN PSYCH. SCI. 355, 358 (2022).

3. Analogical generation can be ambiguous and, therefore, so can evaluative comparison. Consider:  $2 : 4 :: 3 : ?$  What are some potential *D* terms?

4—because it's another number (or a bigger number);  
 5—because 2 is related to 4 by adding 2;  
 6—because 2 is related to 4 by doubling it;  
 9—because 2 is related to 4 by multiplying it by itself;  
 27—because you understand exponents.

Which is the best analogy? For children, it might depend on what they learned at school that week; similarly, for adults, their knowledge base can affect their preferences. However, there are general characteristics that make some analogies seem better than others.

4. Analogies are more constrained when they have more complicated “structure”—that is, more underlying and interconnected relations within and between the source and target. An early computer model of analogy used letter-string analogies that were also tested on humans who generated the *D* term and rated the answers.<sup>54</sup> Consider:  $abc : abd :: kji : ?$

The internal “structure” of *abc* can be thought of as a three-item forward sequence in which subsequent letters follow each other by one “step.” But what is its relation to *abd*? (Change the final to *d*? Add an extra step “down” from the middle letter?)

Compared to *abc*, *kji* has a similar internal structure—a three-item sequence but in backward order. Given this problem, people generate several different answers:

$abc : abd :: kji : kjd$

This answer is rarely generated and mostly disliked. It merely uses a rigid rule “turn the last item to *d*” and takes no advantage of the internal structures and similarity of *abc* and *kji*.

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54 MITCHELL, *supra* note 36, at 11–16.

$abc : abd :: kji : \mathbf{kjj}$

This answer is frequently generated. It takes into account the relation between the last two items—*c* moves down to *d*, so *i* moves down to *j*.

$abc : abd :: kji : \mathbf{kjh}$

This answer is also frequently generated and better liked. It uses more of the structure—that the original sequence (*abc*) is going downward and *abd* adds another step in the same direction (a relation). Thus, *kji* is going upward and *kjh* adds another step in the same direction.

$abc : abd :: kji : \mathbf{lji}$

This answer is rarely generated (though more often than *kjd*) but is liked very much. It takes an even more abstract view of the structure—*abc* goes to *abd* by taking the item that is furthest down the alphabet and moving it one more step further (without regard to the written order).

5. People prefer analogies with more deep/relational similarities between the internal structures of the source and target. Featural similarity can enhance preferences, and can certainly make a potential analogy more likely to be retrieved from memory, but relational similarity is the key to what makes a good analogy.

