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James Toomey

Elisabeth Haub School of Law at Pace University

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Constitutionalizing nature's law: dignity and the regulation of biotechnology in Switzerland

James Toomey 

Harvard Law School, Cambridge, MA, USA

Corresponding author. E-mail: jtoomey@law.harvard.edu

ABSTRACT

The Swiss Constitution was amended by referendum in 1992 to include two unique provisions: Article 119, which imposes strict limits on genetic and reproductive technologies in humans in order to protect 'human dignity', and Article 120, which commits the Swiss federal government to limiting genetic technologies in non-human species on the basis of the 'dignity of the creature'. This article analyzes the role of 'dignity' as a limit on biotechnologies in the Swiss constitutional order. It concludes that the understanding of dignity the constitution embraces codifies a contestable metaphysical theory of value at the constitutional level. Specifically, the Swiss constitutional concept of dignity embraces the normative theory that the natural order is a source of moral value. Because this theory speaks directly to contested questions of the good life, Switzerland's adoption of it as a constitutional principle is analogous to the adoption of a religious theory in a constitution. The concept of dignity as understood in the Swiss constitutional order is contrary to the commitment to epistemic humility characteristic of liberal constitutions.

KEYWORDS: bioethics, constitutional law, dignity, liberalism, reproductive technology, Switzerland

† James Toomey is a Climenko Fellow and Lecturer on Law at Harvard Law School. He holds a J. D., *magna cum laude*, from Harvard Law School and a B.A. in English and Government from Cornell University. Mr Toomey clerked on the U.S. Court of Appeals for the Eleventh Circuit. His areas of interest include bioethics, political and ethical philosophy, health law, and elder law.

I. INTRODUCTION

In 1992, the Swiss constitution was amended by popular referendum to include two new articles. The first authorized the federal government to legislate on human genetic and reproductive technologies in order to protect 'human dignity'.¹ The second did the same for genetic technologies in non-human living beings in order to protect 'the dignity of the creature',² a concept unique in the world at the constitutional level.³ These dual authorizations have provided the framework for one of the world's most restrictive legal regimes of human reproductive medicine and the use of genetically modified organisms, a regime that has had concrete implications for family planning, personal freedoms, industry and the price of food in Switzerland. As biotechnology continues to develop, including as gene editing technologies such as CRISPR/cas become more widely available, the implications of the Swiss constitutional concept of dignity will only become more acute.

In this article, the first English-language study of the Swiss constitutional concept of dignity as a coherent, unified concept that restrains biotechnology in both humans and other species,⁴ I argue that the Swiss dignity concept, as enacted and operationalized, is the legal, functional and moral equivalent of the codification at the constitutional level of a religious theory. That is, the Swiss constitutional concept of dignity codifies in the constitution a practically, philosophically, theologically and *eminently* contestable worldview that is based on core normative assumptions about the moral value of nature, or, perhaps more precisely, the moral value of the biological state of the world circa A.D. 1990. This kind of decision, one about the nature and moral structure of the universe and the role of the human species and individual within it is fundamentally at odds with the philosophical commitments of liberalism. Indeed, what distinguishes a liberal state from others is that it is agnostic to its citizens' theories of the good life. Therefore, the constitutionalization of this understanding of the dignity of nature as a limit on biotechnology is at odds with Switzerland's historical commitment to liberal democracy and is objectionable from the perspective of liberal philosophy.

Outside of Switzerland, this article contributes to a larger global debate on bioethics and the appropriate regulation of biotechnology. Indeed, many European countries and international instruments similarly purport to limit biotechnologies with reference to a conception of dignity, although rarely is the concept tied so coherently to a particular worldview as it is in Switzerland and nowhere else has the dignity concept been codified to cover other species.⁵ The lesson of this article is that in regulating novel

1 See BUNDESVERFASSUNG [BV] [CONSTITUTION] Apr. 18, 1999, SR 101, art. 15 (Switz.), art. 119, para. 2.

2 See BV, *supra* note 1, art. 120, para. 2.

3 See Gieri Bolliger, *Legal Protection of Animal Dignity in Switzerland: Status Quo and Future Perspectives*, 22 ANIMAL L. 311, 313 (2016).

4 *Infra* Part III, text accompanying notes 29–146.

5 See, eg, Convention for the Protection of Human Rights and Dignity of the Human Being With Regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine, Preamble, Apr. 4, 1997, E.T.S. 164 ('The member States of the Council of Europe . . . [c]onscious that the misuse of biology and medicine may lead to acts endangering human dignity . . .'); see also Timothy Caulfield & Roger Brownsword, *Human Dignity: A Guide to Policy Making in the Biotechnology Era?* 7 NAT'L. REV. GENETICS 72 (2006) (exploring the ways in which the concept of human dignity has been used to restrict human biotechnologies). Importantly, while other legal instruments cite human dignity as a constraint on human biotechnology, Switzerland is unique in relying on a single concept of 'dignity' as a restraint on biotechnology in both humans and other species.

biotechnologies, and to the extent we agree with core principles of liberal governance, we must be cognizant of the degree to which these technologies raise fundamental questions about the good life, traditionally the domain of theology but increasingly of secular philosophy as well. Liberal governments must be prepared to tolerate divergent and sometimes radically divergent conclusions on questions raised by these new technologies. For the same reasons that they tolerate different conclusions on religious questions, liberal governments ought not simply adopt their preferred theory of the meaning of life as it implicates genetic and reproductive technologies in humans and other species.

This argument unfolds in several Parts. In Part I, I provide a brief background of some unique and salient features of the Swiss constitutional system. In Part II, I analyze the Swiss constitutional concept of dignity as a limit on biotechnologies, as well as the current regulatory framework in Switzerland. Part III argues that the constitutional concept of dignity is best viewed as a unitary one that codifies a theory of the universe based in the moral value of nature, and Part IV addresses the strongest counterarguments to that conclusion. Finally, in Part V, I make the argument that the worldview the Swiss constitution codifies in Arts. 119 and 120 is meaningfully indistinguishable from religion.

II. SWISS CONSTITUTIONAL BACKGROUND

The Swiss Confederation is a federal constitutional democracy. It is organized around 26 sub-federal entities called cantons,⁶ many of which were historically semi-autonomous city-states of the Holy Roman Empire.⁷ The cantons were politically united by a federal constitution in 1848, which was based explicitly on the model of the United States.⁸ As in the United States, the cantons delegate certain enumerated powers to the federal government and retain those that have not been delegated.⁹ In contrast to other nominally federal European states such as Germany, Switzerland has a strong cultural tradition of federalism and the cantons retain comparably wide substantive sovereign discretion.¹⁰

6 BV, *supra* note 1, art. 1 ('The People and the Cantons of Zurich, Bern, Lucerne, Uri, Schwyz, Obwalden and Nidwalden, Glarus, Zug, Fribourg, Solothurn, Basel Stadt and Basel Landschaft, Schaffhausen, Appenzell Auser rhoden and Appenzell Innerrhoden, St Gallen, Graubünden, Aargau, Thurgau, Ticino, Vaud, Valais, Neuchâtel, Geneva, and Jura form the Swiss Confederation.').

7 CLIVE H. CHURCH & RANDOLPH C. HEAD, A CONCISE HISTORY OF SWITZERLAND 34 (2013) ('All of the cantons also remained part of the Empire, and continued to accept the legal framework of lordship and privilege by which the Empire operated.').

8 See *Id.* at 160 ('What the Diet produced, essentially as a result of military victory, was a real constitution that set up a federal state, even though it used the term Confederation'); J. Wayne Baker, *The Covenantal Basis for the Development of Swiss Political Federalism: 1291–1848*, 23 PUBLIUS: THE J. FED. 19, 40 (1993) ('When the Swiss wrote their new federal Constitution in 1848, they had a federal model in the Constitution of the United States, and it is undoubtedly true that the reality of political federalism in the United States instructed the framework for the constitution of the new Swiss Confederation in 1848.').

9 See BV, *supra* note 1, art. 3 ('The Cantons are sovereign except to the extent that their sovereignty is limited by the Federal Constitution. They exercise all rights that are not vested in the Confederation.').; see also U.S. CONST. amend. X ('The powers not delegated to the United States by the Constitution, not prohibited by it to the States, are reserved to the States respectively, or to the people.').

10 See Interview with Julian Mausbach, Oberassistent für Strafrecht und Strafprozessrecht [Senior Assistant for Criminal Law and Criminal Procedure], Rechtswissenschaftliches Institut Universität Zürich [Law Institute of the University Zurich], in Zürich, Switzerland (Jan. 16, 2018), on file with author.

The Swiss government has a bicameral legislature, a seven-member executive committee known as the Federal Council and a federal judiciary.¹¹ Each member of the Federal Council oversees one of the Federal Administrative Departments, and the position of Federal President rotates among the members annually.¹²

The current Federal Constitution of the Swiss Confederation was adopted on Apr. 18, 1999.¹³ The goal of this new constitution was to reorganize and update the prior Constitution of 1874, which had become 'increasingly confusing and incoherent' as a result of persistent referenda (about which more to follow).¹⁴ While most of the substance of the new constitution was imported from the previous, it did include a number of normative additions, including the enumeration of human rights tied to and arising from the right of human dignity, which now appears under Title Two.¹⁵

The popular initiative (*volksinitiative*, *initiative populaire*, *iniziativa popolare*) is a rather unique element of direct democracy in Swiss constitutionalism.¹⁶ Any person eligible to vote in Switzerland can propose an amendment to the constitution, and if their petition gets 100,000 signatures (around 1 per cent of the Swiss population)¹⁷ the government is obliged to hold a public referendum on the amendment.¹⁸ If a simple majority of the people and the cantons approve, the amendment is entered into the constitution.¹⁹ Constitutional modification is the only direct way that the citizenry can affect policy—the Federal Assembly is otherwise responsible for passing statutes and it is not possible for statutes to be proposed by popular initiative.²⁰

The popular initiative is used regularly and gives the Swiss constitution a different character than many others.²¹ Predictably, the Swiss constitution changes more frequently than that of most Western countries, certainly more so than that of the United States.²² Many political and interest organizations prefer the simplicity of constitutional change to the long vagaries of the process of legislation, and the Swiss constitution is far lengthier and more specific than the constitutions of comparable countries.²³ In some ways, the Swiss constitution is more akin to a code of legisla-

11 See CLIVE H. CHURCH, *THE POLITICS AND GOVERNMENT OF SWITZERLAND* 104, 114–115, 123 (2004).

12 See CHURCH, *POLITICS AND GOVERNMENT*, *supra* note 11, at 113–122.

13 PATRICIA EGLI, *INTRODUCTION TO SWISS CONSTITUTIONAL LAW* 14 (2016).

14 *Id.* at 13.

15 Interview with Roberto Andorno, Rechtswissenschaftliches Institut [Jurisprudence Institute], Universität Zürich, in Zürich, Switzerland (Jan. 9, 2018), on file with author.

16 See VINCENT KUCHOLL, MIX & REMIX, *SWISS DEMOCRACY IN A NUTSHELL* 39 (2014) ('Switzerland is the best example of this rare form of democracy [semi-direct democracy] . . . Citizens have more power than in a representative democracy . . . They can propose any changes to the Constitution (initiative).').

17 See CIA World Factbook, 'Switzerland,' Jan. 17, 2018, available at <https://www.cia.gov/library/publications/the-world-factbook/geos/sz.html> (accessed Sept. 23, 2020) (putting the population of Switzerland at 8.24 million).

18 See BV, *supra* note 1, art. 139, para. 1 ('Any 100,000 persons eligible to vote may within 18 months of the official publication of their initiative request a partial revision of the Federal Constitution.').

19 See BV, *supra* note 1, art. 142, para. 2 ('Proposals that are submitted to the vote of the People and Cantons are accepted if a majority of those who vote and a majority of the Cantons approve them.').; see also BV, *supra* note 1, art. 142, para. 3 ('The result of a popular vote in a Canton determines the vote of the Canton.').

20 Interview with Julian Mausbach, *supra* note 10.

21 *Id.*

22 Interview with Jan Lucht, PhD, Project Manager, scienceindustries, in Zürich, Switzerland (Jan. 4, 2018), on file with author.

23 Interview with Julian Mausbach, *supra* note 10.

tion rather than a constitutional instrument, although it does, of course, address the structure of government and delineate fundamental rights.²⁴

As final background, Switzerland, rather uniquely, has three national languages, German, French, and Italian.²⁵ This means that every legal text is published in all three languages, and all three versions 'are considered equally authoritative'.²⁶ While the wording in each version is intended to mean the same thing,²⁷ subtle differences in terms or their connotation can create challenges in interpretation.²⁸

English is not an official language of Switzerland, and, as such, has no legal force. However, the federal government makes many legislative and legal materials available in English for convenience.

III. 'DIGNITY' AND THE CONSTITUTION

The text of the Swiss constitution refers to two distinct concepts of 'dignity': (i) human dignity (Menschenwürde/la dignité humaine/la dignità umana) and (ii) the dignity of the creature (der Würde der Kreatur/l'intégrité des organismes vivants²⁹/dignità della creatura).³⁰ The phrase human dignity also appears in two different contexts in the constitution: (i) in a background role as a fundamental right and (ii) as specifically invoked in the constitutional articles regulating assisted reproductive technologies and transplant medicine.³¹ This article is focused on the concepts of human dignity and the dignity of the creature as limits on biotechnology. However, a proper understanding of the concept of human dignity in the Swiss constitutional order in general is necessary to understand the Swiss constitution's regulation of reproductive and biological technologies.

This Part analyzes the Swiss constitutional concept of dignity, both that of humans and of the creature. First, I discuss human dignity as a limit on the use of human reproductive and genetic technologies, distinguishing it from a related but conceptually distinct constitutional idea of human dignity as an abstract fundamental right. Second, I discuss the constitutional concept of the dignity of the creature and the ways in which it has been understood to limit the use of genetic engineering in other species.

24 Interview with Julian Mausbach, *supra* note 10; see also BV, *supra* note 1, arts. 7–36.

25 See BV, *supra* note 1, art. 70, para. 1 ('The official languages of the Confederation are German, French and Italian.').

26 Joseph Voyame, *Introduction*, in INTRODUCTION TO SWISS LAW 1, 11 (F. Dessemontet & T. Ansay eds., 2004); see also EGLI, *supra* note 13, at 20 ('Legal texts on the federal level are published in the three official languages of the Federation: German, French and Italian . . . The wordings are equivalent and carry the same normative weight.'). Interview with Prof. Dr Bernhard Rütsche, Ordinarius für Öffentliches Recht und Rechtsphilosophie [Full Professor of Public Law and Philosophy of Law], Universität Luzern [University of Lucerne], in Lucerne, Switzerland (Jan. 10. 2018), on file with author.

27 See EGLI, *supra* note 13, at 20.

28 See Voyame, *supra* note 26, at 11–12 ('The fact that all three versions have the same legal value causes some problems of interpretation, because a term used in one language may not contain exactly the same shades of meaning in the other language. The judge must therefore decide which of the three versions best expresses the intention of the legislator. The 'true version' is not always the one in which the text was originally devised.').

29 *Infra* text accompanying notes 84–88.

30 *Infra* text accompanying notes 84–88.

31 Compare BV, *supra* note 1, art. 7 with BV, *supra* note 1, art. 119; 119a.

III.A. Human Dignity and Reproductive Technology

III.A.1. *The Dualistic Conception of Human Dignity*

The phrase 'human dignity' appears four times in the Swiss constitution, in two basically different contexts. First, in Article 7, human dignity is listed as the first fundamental right in the constitution's enumerated list of rights, preceded only by general structural provisions of the Confederation.³² This provision, indeed, the entire chapter detailing fundamental rights, was added during the 1999 constitutional revision.³³ The declaration of the centrality of human dignity as a fundamental right, and, in some sense, the basis of the state's legitimacy, was self-consciously modeled on the German Basic Law, which establishes the inviolability of human dignity in its first article.³⁴ In contrast to the German Basic Law, however, the Swiss purposefully did not choose to declare human dignity inviolable in Article 7.³⁵ Human dignity as a background fundamental right is cited only rarely in legislation and litigation, and its introduction in the constitution has had little concrete impact on Swiss federal policymaking.³⁶ It is seen, rather, as an underlying source of rights rather than an operationalizable or litigable principle.

The other three references to human dignity in the Swiss constitution appear in the articles governing regulation of human biotechnology.³⁷ Most relevant to our

32 See BV, *supra* note 1, art. 7 ('Human dignity must be respected and protected.').

33 See Interview with Roberto Andorno, *supra* note 15; Interview with Bernhard Rütsche, *supra* note 26.

34 See Rütsche, *supra* note 4, at 85; Interview with Bernhard Rütsche, *supra* note 26; Interview with Julian Mausbach, *supra* note 10; see also GRUNDGESETZ [GG] [Basic Law], art. 1, para. 1, translation at <https://www.btg-bestellservice.de/pdf/80201000.pdf> (accessed Sept. 23, 2020) ('Human dignity shall be inviolable. To respect and protect it shall be the duty of all state authority.').

35 See Rütsche, *supra* note 44, at 85 ('The reason for this deviation was twofold: on the one hand, it was stressed in the parliamentary debates that the inviolability of human dignity according to the German Basic Law had a very specific historical background and could not therefore be transferred into Swiss constitutional law; on the other hand, the reasoning behind it was that the State could not—and should not—enforce human dignity in an absolute way in order to prevent all kinds of violations of human dignity in everyday life (eg the defamation of politicians in the media).').

36 See *Id.* at 84 ('The Swiss Federal Court nevertheless referred to human dignity from time to time, particularly in the context of the treatment of accused persons and prisoners, but also in relation to medically assisted reproduction and with the treatment of corpses. In these cases, human dignity functioned as an abstract constitutional principle without having much practical effect either on the outcome or on the reasoning of the decisions of the court. . . . This situation did not change despite the introduction of human dignity into the text of the Swiss constitution.').; but see also, eg BGE 140 I 125 p. 126–141 (2014), available at https://www.bger.ch/ext/eurospider/live/de/php/clir/http/index.php?lang=de&type=highlight_simple_query&page=1&from_date=&to_date=&from_year=2000&to_year=2018&sort=relevance&insertion_date=&from_date_push=&top_subcollection_clir=bge&query_words=Menschenw%FCrde&part=all&de_fr=&de_it=&fr_de=&fr_it=&it_de=&it_fr=&orig=&translation=&rank=10&highlight_docid=atf%3A%2F%2F140-I-125%3Ade&number_of_ranks=58&aazacir=clir (accessed Sept. 23, 2020) (holding that overcrowding of prison cells can violate human dignity).

37 See BV, *supra* note 1, art. 118b, para. 1 ('The Confederation shall legislate on research on human beings where this is required in order to protect their dignity and privacy. In doing so, it shall preserve the freedom to conduct research and shall take account of the importance of research to health and society.').; art. 119, para. 2 ('The Confederation shall legislate on the use of human reproductive and genetic material. In doing so, it shall ensure the protection of human dignity, privacy and the family and shall adhere in particular to the following principles: . . .'); BV, *supra* note 1, art. 119a, para. 1 ('The Confederation shall legislate in the field of organ, tissue and cell transplants. In doing so, it shall ensure the protection of human dignity, privacy and health.').

analysis here, Article 119 authorizes the federal government to regulate human reproductive and genetic technologies, consistent with the principles of 'human dignity, privacy and the family',³⁸ and proclaims that '[h]umans shall be protected against the misuse of reproductive medicine and gene technology'.³⁹ Moreover, Article 119 includes a series of specific regulations on the use of biotechnologies in humans, banning (i) human cloning, (ii) germline genetic intervention⁴⁰ and (iii) the creation of human chimeras,⁴¹ while permitting (iv) medically assisted reproduction only in limited circumstances,⁴² and prohibiting (v) surrogacy⁴³ and (vi) commercial trade in human reproductive material.⁴⁴ No other country regulates human biotechnology so specifically and so strictly in its constitution.⁴⁵

These specific prohibitions are considered to be instantiations of the abstract principles referenced by Article 119—that is, human dignity, privacy and the family. Moreover, the concept of human dignity is considered the most important foundation for and unifying theme of these regulations.⁴⁶ In other words, human cloning is banned because of a judgment that it violates human dignity and always will.⁴⁷ The set of spe-

38 BV, *supra* note 1, art. 119, para. 2.

39 See BV, *supra* note 1, art. 119, para 1.

40 See BV, *supra* note 1, art. 119, para. 2, subpart a ('All forms of cloning and interference with the genetic material of human reproductive cells and embryos are unlawful.').

41 See BV, *supra* note 1, art. 119, para. 2, subpart b ('Non-human reproductive and genetic material may neither be introduced into nor combined with human reproductive material.').

42 See BV, *supra* note 1, art. 119, para. 2, subpart c ('The procedures for medically-assisted reproduction may be used only if infertility or the risk of transmitting a serious illness cannot otherwise be overcome, but not in order to conceive a child with specific characteristics or to further research; the fertilization of human egg cells outside a woman's body is permitted only under the conditions laid down by the law; no more human egg cells may be developed outside a woman's body than are required for medically-assisted reproduction.').

43 See BV, *supra* note 1, art. 119, para. 2, subpart d ('The donation of embryos and all forms of surrogate motherhood are unlawful.').; see also BGE III 312 p. 325–326 (2015), available at [https://www.bger.ch/ext/eurospider/live/de/php/clir/http/index.php?lang=de&type=highlight_simple_query&page=1&from_date=&to_date=&from_year=1992&to_year=2018&sort=relevance&insertion_date=&from_date_push=&top_subcollection_clir=bge&query_words=Menschenw%FCrde+%2B+Reproduktionsmedizindizin&part=all&de_fr=&de_it=&fr_de=&fr_it=&it_de=&it_fr=&orig=&translation=&rank=3&highlight_docid=atf%3A%2F%2F141-III-328%3Ade&number_of_ranks=934&aazacir=clir](https://www.bger.ch/ext/eurospider/live/de/php/clir/http/index.php?lang=de&type=highlight_simple_query&page=1&from_date=&to_date=&from_year=1992&to_year=2018&sort=relevance&insertion_date=&from_date_push=&top_subcollection_clir=bge&query_words=Menschenw%FCrde+%2B+Reproduktionsmedizindizin&part=all&de_fr=&de_it=&fr_de=&fr_it=&it_de=&it_fr=&orig=&translation=&rank=2&highlight_docid=atf%3A%2F%2F141-III-312%3Ade&number_of_ranks=934&aazacir=clir) (accessed Sept. 23, 2020) (the Federal Supreme Court refusing to recognize paternity of second father in gay Swiss couple that traveled to California for surrogacy on grounds of public policy; holding the biological father and surrogate the legal parents of child); BGE 141 III 328 p. 344, available at https://www.bger.ch/ext/eurospider/live/de/php/clir/http/index.php?lang=de&type=highlight_simple_query&page=1&from_date=&to_date=&from_year=1992&to_year=2018&sort=relevance&insertion_date=&from_date_push=&top_subcollection_clir=bge&query_words=Menschenw%FCrde+%2B+Reproduktionsmedizindizin&part=all&de_fr=&de_it=&fr_de=&fr_it=&it_de=&it_fr=&orig=&translation=&rank=3&highlight_docid=atf%3A%2F%2F141-III-328%3Ade&number_of_ranks=934&aazacir=clir (accessed Sept. 23, 2020) (refusing to recognize the legal relationship of a child conceived by anonymous sperm and egg donor through surrogacy in California to prospective parents as contrary to public policy).

44 See BV, *supra* note 1, art. 119, para. 2, subpart e ('The trade in human reproductive material and in products obtained from embryos is prohibited.').

45 See Rüttsche, *supra* note 4, at 84–85 ('From an international perspective, such detailed prohibition on biomedical methods at the level of the Constitution are still a singular phenomenon, which can be attributed to the Swiss system of direct democracy.').

46 See Interview with Bernhard Rüttsche, *supra* note 26; Interview with Julian Mausbach, *supra* note 10. Human dignity is seen as a foundation for each of the specific regulations in Article 119, whereas concerns about privacy and family are only implicated by some of the regulations.

47 See Interview with Julian Mausbach, *supra* note 10.

cific regulations, however, is not an exhaustive outline of human dignity.⁴⁸ That is, other technologies or practices could violate human dignity, and the fact that those practices are not included among the specific prohibitions is not evidence of their consistency with human dignity. If the federal government were to make a determination that a biotechnology implicated or violated human dignity, it would need to be regulated or banned.

This concept of human dignity as a limit on the use of reproductive and biological technologies in humans is distinct from not but not unrelated to the foundational concept of dignity as a human right in Article 7.⁴⁹ Human dignity in the context of biotechnology entered the constitution by referendum in 1992, preceding the arrival of human dignity as a foundational right by the better part of a decade.⁵⁰ Article 119 has also had a much greater influence on actual policymaking, while Article 7 has served a largely theoretical and rhetorical function.⁵¹ Moreover, human dignity in the biotechnological context serves only as a limit on what technologies are permitted, while human dignity as a human right could theoretically be the source of positive obligations to the state.⁵²

Most importantly for our purposes, human dignity in the Article 119 context is linguistically paralleled and was enacted simultaneously with a concept of the 'dignity of the creature' in Article 120, while no such parallel exists in the concept of human dignity in the Article 7, fundamental right, context.⁵³ The Arts. 119 and 7 concepts also have somewhat different scopes: Art. 119 dignity is seen to extend to embryos and the dead,

48 See Interview with Bernhard Rütsche, *supra* note 26.

49 See Rütsche, *supra* note 4, at 89 ('One of these instruments is Article 7 of the Swiss Constitution that institutes human dignity as a fundamental right. The other is Article 119 paragraph 2 that codifies human dignity as a constitutional principle. My thesis is this: As a fundamental right, human dignity protects the subjective relationship of an individual to its uniqueness, in other words, it protects the individual's self-respect, whereas human dignity as a constitutional principle protects the uniqueness of the human being as a person.').

50 See *Id.* at 84; Interview with Bernhard Rütsche, *supra* note 26; Interview with Roberto Andorno, *supra* note 15; Interview with Julian Mausbach, *supra* note 10.

51 See Rütsche, *supra* note 4, at 85 ('[H]uman dignity has become primarily important for the legislator in the field of biomedicine. In this context, the role of human dignity has consisted in justifying restrictions on fundamental rights like the freedom of scientific research, the right to health care access or the guarantee of economic freedom.'). *Id.* at 83 ('Human dignity does not play a crucial normative role in the Swiss legal system, even though it is often referred to in both political discourse and legal doctrine. The rhetorical presence of human dignity contrasts with its significance in legal practice.'). Interview with Julian Mausbach, *supra* note 10; see also Bruno Imthurn, 'Swiss Reproductive Medicine Act 2.0,' Lecture, in Basel, Switzerland (Dec. 21, 2017) [hereinafter Imthurn Lecture] (slides on file with author) (describing what is permitted and what is not permitted in reproductive medicine in Switzerland).

52 See Interview with Bernhard Rütsche, *supra* note 26; see also Imthurn Lecture, *supra* note 51; BGE (Bundesgerichtsentscheid [Decision of the Federal Supreme Court]) 90 I 29 consid. 3c p. 37; 97 I 45 consid. 3 p. 49 (imposing positive obligations on the state in the context of treatment of prisoners on the basis of human dignity).

53 See BV, *supra* note 1, art. 120, para. 2 ('The Confederation shall legislate on the use of reproductive and genetic material from animals, plants and other organisms. In doing so, it shall take account of the dignity of living beings as well as the safety of human beings, animals and the environment, and shall protect the genetic diversity of animals and plant species.').; see also Interview with Vanessa Gerritsen, lic. iur., stellvertretende Geschäftsleiterin [Deputy Managing Director], Stiftung für das Tier im Recht [Foundation for the Animal in Law], in Zürich, Switzerland (Jan. 11, 2018), on file with author.

while Art. 7 dignity protects human beings as rational persons.⁵⁴ In theoretical terms, Art. 7 establishes a concept of human dignity as a 'fundamental right', while Art. 119 codifies a related concept of human dignity as a 'constitutional principle'.⁵⁵

This article is focused on dignity in the Art. 119 context. It is important to remember, however, that the Swiss constitution has another, less legally operative concept of human dignity that was added more recently and purports, at least, to be essential to the entire constitutional order. It remains to be seen how human dignity as a foundational, fundamental right will be operationalized (if it will be) as the new constitution develops. Perhaps, someday, it will be unified in interpretation with dignity as a biotechnological limit.

III.A.2. *The Legal Landscape of Human Reproductive Technology in Switzerland*

The constitutional mandate of Art. 119, that '[h]uman beings . . . be protected against the misuse of reproductive medicine and gene technology'⁵⁶ with regard for the 'protection of human dignity, privacy and the family'⁵⁷ has been operationalized at the legislative level by the Reproductive Medicine Act (RMA), adopted in 2001,⁵⁸ one of the most restrictive regulatory regimes of reproductive medicine in the world.⁵⁹ This law, building on the prohibitions in the constitution, initially prohibited the cryopreservation of embryos, preimplantation genetic diagnosis, egg donation, surrogacy, reproductive cloning, embryo donation, and provided penalties for violations.⁶⁰ However, a referendum in 2000 to prohibit *in vitro* fertilization *in toto* failed resoundingly.⁶¹

There are indications that the legal regime is liberalizing somewhat with respect to the regulation of human reproduction.⁶² The federal government has been in the process of devising an alternative to prohibition for preimplantation genetic diagnosis since 2005.⁶³ A 2015 referendum modified Article 119 from permitting only the creation of the number of embryos outside a woman's body as 'immediately can be replaced' to as 'are required for medically assisted reproduction'.⁶⁴ In 2016, the Swiss population approved a modified RMA by referendum, which was more liberal in some ways than the previous one, but maintained its restrictive core. The new RMA permits

54 See Rüttsche, *supra* note 4, at 90 ('As a fundamental right, human dignity therefore protects the need of the individual to be recognized in its own, *subjective value* . . . [T]he [Article 119] protection extends no only to actually rationally and autonomous individuals but also to developing human life (embryo and fetus) and to deceased human life (dead body).'); Interview with Bernhard Rüttsche, *supra* note 26.

55 See Rüttsche, *supra* note 4, at 89 ('One of these instruments is Article 7 of the Swiss Constitution that institutes human dignity as a fundamental right. The other is Article 119 paragraph 2 which codifies human dignity as a constitutional principle.').

56 BV, *supra* note 1, art. 119, para. 1.

57 BV, *supra* note 1, art. 119, para. 2.

58 SR 810.11 Forpflanzungsmedizingesetz, FMedG [Reproductive Medicine Act, RMA] (Dec. 18, 1998); see also Imthurn Lecture, *supra* note 51.

59 See Interview with Julian Mausbach, *supra* note 10.

60 See SR 810.11; Imthurn Lecture, *supra* note 51; Interview with Julian Mausbach, *supra* note 10. The penalties for most violations are imprisonment for up to 3 years and a fine of up to 100,000 Swiss francs. See SR 810.11.

61 See Imthurn Lecture, *supra* note 51 (70% of the population voting against the proposed amendment).

62 See Interview with Julian Mausbach, *supra* note 10.

63 See Imthurn Lecture, *supra* note 51. That year, the federal Parliament officially requested the ban on PGD be lifted. *Id.*

64 See Imthurn Lecture, *supra* note 51; see also BV, *supra* note 1, art. 119, para. 2, subsection c.

preimplantation genetic diagnosis, the cultivation of more embryos, and their freezing, but maintains prohibitions on embryo donation, human cloning, surrogacy and egg donation.⁶⁵ Moreover, the conditions under the new RMA in which preimplantation genetic diagnosis may be used are tightly circumscribed: couples reproducing in the traditional manner may only use it if they are at risk of transmitting a severe genetic disease that will probably manifest before the age of 50 and for which there is no effective and appropriate therapy available;⁶⁶ couples reproducing with assisted reproductive technologies may use it, but only to screen for chromosomal abnormalities.⁶⁷

III.B. The Dignity of the Creature and Biotechnology

III.B.1. *The Constitutional Concept of the Dignity of the Creature*

When it entered the constitution by popular referendum in 1992, Art. 119 was accompanied by what is now Art. 120.⁶⁸ Art. 120, 'Non-human gene technology', reads:

- (1) Human beings and their environment shall be protected against the misuse of gene technology.
- (2) The Confederation shall legislate on the use of reproductive and genetic material from animals, plants and other organisms. In doing so, it shall take account of the dignity of living beings as well as the safety of human beings, animals and the environment, and shall protect the genetic diversity of animal and plant species.⁶⁹

This constitutional restriction on genetic technologies in other species, defined by reference to the dignity of the living creatures themselves, is unique in the world.⁷⁰

The history of Art. 120 is somewhat aberrational in Swiss constitutional law. The phrase originated with the popular Swiss writer Pirmin Meier, who along with others added it to the constitution of the Canton of Aargau by popular referendum in 1980.⁷¹ This was apparently the first time a concept of the 'dignity' of non-human organisms was codified in any legal text.⁷² In the late 1980s, there was a great deal of public discussion about genetic engineering in Switzerland (as elsewhere, with the potential for commercially available in vitro fertilization and the rise of cloning experiments in

65 See SR 810.11 (Status as of 1 Sept., 2017); Imthurn Lecture, *supra* note 51.

66 Abortion is tightly regulated in Switzerland. Abortion is legal during the first semester only to women in distress after counseling, and after that only with a showing of a threat of severe physical or psychological damage to the woman. See SR 311.0 Schweizerisches Stragesetzbuch [Swiss Criminal Code] (Dec. 21, 1937), art. 119.

67 See SR 801.11 (Status as of 1 Sept., 2017); Imthurn Lecture, *supra* note 51; Interview with Julian Mausbach, *supra* note 10.

68 See Interview with Vanessa Gerritsen, *supra* note 53.

69 BV, *supra* note 1, art. 120.

70 See Bolliger, *supra* note 3, at 313 ('Swiss protection for the dignity of living beings, including animal dignity, is unique in the world at the constitutional level.');

71 See Interview with Jan Lucht, *supra* note 22; SWISS ETHICS COMMITTEE ON NON-HUMAN GENE TECHNOLOGY AND THE SWISS COMMITTEE ON ANIMAL EXPERIMENTS, CONCERNING A MORE CONCRETE DEFINITION OF THE DIGNITY OF CREATION WITH REGARD TO ANIMALS (2006). The constitutional phrase (eg, in German 'Würde der Kreatur') is variously translated as 'dignity of the creature,' 'dignity of creation' and 'dignity of living beings.'

72 Stephan Haesler, 'Animal Protection Law and the Dignity of the Creature,' Speech (June 8, 2007).

other animals), and a consumer magazine originally proposed what would eventually become Art. 119, initially including only a series of concrete restrictions on the use of genetic and reproductive technologies in humans.⁷³

The Federal Assembly, that is, the legislature, is charged with taking the ideas of proposed initiatives and writing them in what would be a legally enforceable form.⁷⁴ Typically, they do just that.⁷⁵ In this case, however, they returned a counterproposal that included the language about human dignity and an entirely new provision limiting genetic technologies in other creatures on the basis of a parallel concept of the dignity of the creature.⁷⁶ Indeed, the Assembly made this addition *after* it had written an explanation and interpretive guide for the proposed amendment, so the phrase 'the dignity of the creature' was never explained prior to its adoption.⁷⁷ The package of proposed amendments was approved by popular initiative in 1992 and added to the constitution.⁷⁸

The phrase is also linguistically interesting. As originally adopted, it read 'Würde der Kreatur' in German, 'dignità della creatura' in Italian, and 'dignité de la créature' in French.⁷⁹ This has been variously translated into English as 'dignity of the creature',⁸⁰ 'dignity of creation'⁸¹ and 'dignity of living beings'.⁸² The Swiss German word 'Kreatur' apparently has more religious connotations than the word 'creature' does in English, more clearly implying a creator.⁸³

In 1999, when the text of the updated constitution was being composed, the French translators changed the phrase in the French version of the constitution to 'l'intégrité des organismes vivants', apparently with the implicit approval of French-speaking cantonal and federal authorities, on the grounds that the idea of the dignity of the creature did not translate appropriately into French.⁸⁴ This caused some confusion after the ratification of the new constitution because both the German and French texts have the same legal force, and it appeared that the two phrases referred to substantively different concepts.⁸⁵ The understanding was that 'integrity' ('l'intégrité')

73 See *Id.*; see also Interview with Vanessa Gerritsen, *supra* note 53.

74 See Interview with Vanessa Gerritsen, *supra* note 53.

75 See *Id.*

76 See *Id.*; Haesler, *supra* note 72.

77 See Interview with Jan Lucht, *supra* note 20.

78 See Interview with Paul Scherer, PhD, Geschäftsstelle [Managing Director], Schweizer Allianz Gentechfrei [Swiss Alliance Gentech-free], in Zürich, Switzerland (Jan. 11, 2018); Interview with Jan Lucht, *supra* note 22; Interview with Vanessa Gerritsen, *supra* note 53.

79 See Interview with Bernhard Rütsche, *supra* note 26.

80 See Interview with Jan Lucht, *supra* note 22; Interview with Isabel Hunger-Glaser, Dr. phil. Nat. Geschäftsführerin [Managing Director], Eidgenössische Fachkommission für biologische Sicherheit [Swiss Expert Committee for Biosafety], in Ittigen, Switzerland (Jan. 12, 2018), on file with author; Interview with Vanessa Gerritsen, *supra* note 53.

81 See SWISS ETHICS COMMITTEE ON NON-HUMAN GENE TECHNOLOGY [ECNH] & SWISS COMMITTEE ON ANIMAL EXPERIMENTS [SCAE], CONCERNING A MORE CONCRETE DEFINITION OF THE DIGNITY OF CREATION WITH REGARD TO ANIMALS (2006).

82 See eg, FEDERAL ETHICS COMMITTEE ON NON-HUMAN BIOTECHNOLOGY, THE DIGNITY OF LIVING BEINGS WITH REGARD TO PLANTS (2008).

83 See Interview with Vanessa Gerritsen, *supra* note 53.

84 See Interview with Bernhard Rütsche, *supra* note 26.

85 ECNH & SCAE, CONCERNING A MORE CONCRETE DEFINITION, *supra* note 81; see also Interview with Roberto Andorno, *supra* note 15.

would protect only against physical invasion, while 'dignity' ('Würde') protects against humiliation and potentially against the use of animals in unnatural ways.⁸⁶ Moreover, both 'living beings' ('organismes vivants') and 'creatures' ('Kreatur') are concepts that are ambiguous at the edges, and it is not clear whether they necessarily refer to the same categories.⁸⁷ However, legal opinion over the last two decades has come to the conclusion that the phrase in French must still be interpreted to embody the idea in German: although the French text remains different, it must be read as the 'dignity of the creature' concept that was initially voted on in the referendum.⁸⁸

III.B.2. Regulation of Biotechnology in Switzerland

The constitutional concept of the dignity of the creature has played an important role in the development of Swiss regulation of genetic technologies in non-human species. However, in contrast to the regulation of human reproductive technology, much of the regulatory framework of animal and plant biotechnology arises from other ideological and constitutional sources as well.⁸⁹

The concept of the dignity of the creature is widely interpreted to extend to all living beings, including animals, plants, fungi and microorganisms.⁹⁰ However, thus far, it has only been operationalized in legislation and litigation as it relates to animals; indeed, only vertebrates and some specified invertebrates.⁹¹ In 2005, the Federal Assembly adopted the Animal Welfare Act (AWA), which explicitly drew on, among other things, the constitutional requirement of Art. 120 that the regulation of genetic technology be conducted with an eye to protecting the dignity of the creature.⁹² Indeed, the AWA describes its purpose as 'to protect the dignity and welfare of animals.'⁹³ The statute also provided the first definition of 'dignity of the creature' as it applies to animals:

Dignity: Inherent worth of the animal that has to be respected when dealing with it. If any strain imposed on the animal cannot be justified by overriding interests, this constitutes a disregard for the animal's dignity. Strain is deemed to be present in particular if pain, suffering or harm is inflicted on the animal, if it is exposed to anxiety or humiliation, if there is major interference with its appearance or its abilities or if it is excessively instrumentalized.⁹⁴

86 See Interview with Bernhard Rütsche, *supra* note 26; Interview with Vanessa Gerritsen, *supra* note 53; see also Bolliger, *supra* note 3, at 338.

87 See Interview with Vanessa Gerritsen, *supra* note 53.

88 See Interview with Bernhard Rütsche, *supra* note 26.

89 See Interview with Paul Scherer, *supra* note 78.

90 See Interview with Vanessa Gerritsen, *supra* note 53.

91 *Id.*; see also Interview with Isabel Hunger-Glaser, *supra* note 80. The specified invertebrates include cephalopods. See Interview with Vanessa Gerritsen, *supra* note 53.

92 See SR 455 Tierschutzgesetz [Animal Welfare Act] (TSchG) (Dec. 16, 2005) ('based on Articles 80, paragraphs 1 [The Confederation shall legislate on the protection of animals] and 2 [It shall in particular regulate: a. the keeping and care of animals; b. experiments on animals and procedures carried out on living animals; c. the use of animals; d. the import of animals and animal products; the trade in animals and the transport in animals; f. the killing of animals], and 120, paragraph 2 of the Federal Constitution.');

93 SR 455 TSchG, art. 1.

94 *Id.*, art 3., para. a.

This definition reflects two key features of the concept of the dignity of the creature as it has been conceptualized in Swiss law. The first is that the 'dignity' of an organism refers to its inherent worth, that is, its worth for its own sake, irrespective of its usefulness to anyone or anything else.⁹⁵ In this way, the dignity of the creature parallels the constitutional concept of human dignity, which is also understood as reflecting the value of the individual to him or herself.⁹⁶ The second is that the dignity of the creature is to be balanced against other interests when decisions that implicate a creature's dignity are made. Indeed, a 'disregard of the animal's dignity', can only occur if the action cannot be 'justified by overriding interests'.⁹⁷

The relationship of this second aspect of the dignity of the creature to human dignity is complicated and somewhat obscure. It is often said that a legal distinction between human dignity and the dignity of the creature in Swiss constitutional law is that human dignity is inviolable and the dignity of the creature is subject to balancing with, and can possibly be outweighed by, other interests.⁹⁸ It is not clear, however, that human dignity, at least in the sense as a limit on the use of biotechnology, is actually inviolate in Swiss constitutional law. First, the idea of the primacy and inviolability of human dignity appears in reference with Art. 7, and less so, if at all, in reference to Art. 119.⁹⁹ Indeed, the text of Art. 119, by listing 'human dignity' along with 'privacy and the family', suggests that it is not the sole value relevant to the constitutionality of biotechnology, and therefore that it could potentially be outweighed by certain other interests.¹⁰⁰ The outweighing of human dignity by other values can be seen in the amended RMA, which prohibits preimplantation genetic diagnosis (PGD) except in certain circumstances. Therefore, the statute appears to take the position that PGD violates human dignity as a general matter, but that this violation can sometimes be outweighed by other interests.¹⁰¹

Second, while human dignity is clearly considered inviolable in the German Basic Law,¹⁰² on which the Art. 7, but not the Art. 119, Swiss concept was based, there is substantial evidence in the text and history of the new Swiss constitution that its Art. 7 concept of human dignity was *not* intended to import the principle of inviolability from Germany.¹⁰³ In sum, the purported distinction between human dignity and the dignity

95 See Interview with Bernhard Rütsche, *supra* note 26.

96 See Interview with Roberto Andorno, *supra* note 15.

97 SR 455 TSchG, art. 3, para. a.

98 See Interview with Vanessa Gerritsen, *supra* note 53; Interview with Jan Lucht, *supra* note 22; see also Bolliger, *supra* note 3, at 332 ('According to prevailing Swiss doctrine, one significant difference between the two concepts is that human dignity is inviolable, whereas the dignity of living beings may be violated in a legalized way to serve higher interests.').

99 See Interview with Bernhard Rütsche, *supra* note 26.

100 See BV, *supra* note 1, art. 119., para. 2 ('In [legislating on the use of human reproductive and genetic material], [the Confederation] shall ensure the protection of human dignity, *privacy and the family*') (emphasis added); see also Interview with Bernhard Rütsche, *supra* note 26. What would happen, for example, if protection of dignity and family cut in different ways regarding a particular technology?

101 See SR 801.11 (FMedG), art. 5a.

102 See GG, *supra* note 33, art. 1, para. 1, ('Human dignity shall be inviolable.').

103 Compare GG, *supra* note 34, art. 1., para. 1 with BV, *supra* note 1, art. 7 ('Human dignity must be respected and protected'); see also Rütsche, *supra* note 4, at 85 ('The reason for this [Swiss constitutional] deviation was twofold: on the one hand, it was stressed in the parliamentary debates that the inviolability of human dignity according to the German Basic Law had a very specific historical background and could not therefore be transferred into Swiss constitutional law; on the other hand, the reasoning behind it was that the State

of the creature based on the inviolability of the former and the balancing of the latter may not be tenable. However, it is still a clear principle of Swiss law that, in weighing interests and values against dignity, human interests are to be weighed more.¹⁰⁴

The 2005 AWA includes specific regulations on the genetic engineering of animals.¹⁰⁵ In particular, it requires anyone 'who produces, breeds, keeps, manages or trades in genetically modified animals'¹⁰⁶ to acquire a license from cantonal authorities, in compliance with regulations that the AWA authorizes the Federal Council to set.¹⁰⁷ The Federal Council set these regulations with the Animal Welfare Ordinance (AWO) in 2008.¹⁰⁸ The AWO prohibits genetic modification (or breeding) of animals in ways that result in behavioral changes preventing the animals from being able to live with others of their species,¹⁰⁹ and those causing 'pain, suffering or harm' from the absence or malformation of organs for 'species-specific use.'¹¹⁰

The second important piece of federal legislation in this field is the Act on Non-Human Gene Technology of 2003 (GTA).¹¹¹ The GTA applies on its face to genetic modifications of all 'organisms', defined as 'cellular or non-cellular biological entities capable of replication or of transferring genetic material'.¹¹² Heightened restrictions, including a dignity protection, exist for genetic modifications of animals (with vertebrates the most protected) and plants.¹¹³ As with the AWA, the GTA derives its authority, in part, from Art. 120 of the constitution.¹¹⁴ Moreover, the GTA specifically defines the legal relationship between genetic modifications and the dignity of the creature:

[V]iolation [of the dignity of the creature] is deemed to have occurred if such modification substantially harms species-specific properties, functions or habits, unless this is justified by overriding legitimate interests. In evaluating the harm, the difference between animals and plants must be taken into consideration.¹¹⁵

There are three important observations to be made about this definition. First, dignity is defined in terms of 'species-specific' qualities, suggesting a connection between 'dignity' and the 'natural'.¹¹⁶ That is, even if a species-specific property, function or habit

could not—and should not—enforce human dignity in an absolute way in order to prevent all kinds of violations of human dignity in everyday life (eg the defamation of politicians in the media).'; Interview with Bernhard Rütsche, *supra* note 26; Interview with Julian Mausbach, *supra* note 10.

104 See Interview with Vanessa Gerritsen, *supra* note 53; see also Bolliger, *supra* note 3, at 331 ('Animal dignity is a general constitutional principle, but, in contrast to human dignity is not an individual right; rather, it signifies only an obligation for humans to respect and protect animals.').

105 See SR 455 TSchG, Section 2.

106 *Id.*, art 11., para. 1.

107 See *Id.*, art. 11, para. 2–3.

108 See SR 455.1 Tierschutzverordnung (TSchV) [Animal Welfare Ordinance] (Apr. 23, 2008).

109 See SR 455.1 TSchV, art. 25, para. b.

110 See *Id.*, at art. 25, para. a.

111 SR 814.91 Bundesgesetz über die Gentechnik im Ausserhumanbereich (GTG) [Federal Act on Non-Human Gene Technology] (Mar. 21, 2003).

112 SR 814.91 (GTG), art. 5, para. 1.

113 See *Id.*, arts. 8–9.

114 See *Id.*, preamble; see also BV, *supra* note 1, art. 120, para. 2.

115 See SR. 814.91 (GTG), art. 8, para. 1.

116 See Interview with Vanessa Gerritsen, *supra* note 53; Interview with Jan Lucht, *supra* note 22.

served to decrease the well-being of the creature, modification to remove that impediment would nevertheless constitute violation of dignity (although such violation could possibly be outweighed).¹¹⁷ Second, because *any* contemplated genetic modification will presumably modify a 'species-specific propert[y], function[] or habit[]' (otherwise there would be little point in doing it), the law creates a presumption that genetic modification is a violation of dignity.¹¹⁸ That is, although the violation of dignity can be outweighed by other interests, the GTA takes the position that genetic modifications of animals and plants that have phenotypic effects are considered to violate the dignity of the creature. Third, the GTA draws a clear line between animals and plants from the perspective of their dignities, '[i]n evaluating the harm, the difference between animals and plants must be taken into consideration.'¹¹⁹ The GTA (along with the fact that there is an Animal Welfare Act but no Plant Welfare Act), supports the view that there is a hierarchy of dignity in the world, or at least in Switzerland—animals have greater dignity than plants and are therefore afforded greater legal protections.¹²⁰

The GTA further elaborates on the procedure for weighing interests against the dignity of the creature as being determined 'on a case-by-case basis',¹²¹ with the harm 'suffered by animals or plants'¹²² weighed against an enumerated list of 'legitimate interests':¹²³ (i) 'human and animal health';¹²⁴ (ii) 'guaranteeing food security';¹²⁵ (iii) 'the reduction of harm caused to the environment';¹²⁶ (iv) 'the preservation and improvement of environmental conditions';¹²⁷ (v) 'securing substantial economic, social or environmental benefit for society';¹²⁸ and (vi) 'increasing knowledge'.¹²⁹ Willful violation of the dignity of the creature through genetic violation is punishable by up to 3 years imprisonment and fines.¹³⁰

In addition, the GTA prohibits genetic modifications of vertebrates for purposes other than research, precluding the creation or importation of genetically modified animals for agriculture or recreational purposes.¹³¹ Genetic modification of vertebrates for research purposes, and modification of invertebrates and plants, requires a license issued by the Federal Office of the Environment after consultation with both the Swiss Committee for Biosafety and the Federal Ethics Committee for Non-human

117 See Interview with Vanessa Gerritsen, *supra* note 53.

118 *Id.* There will not be a violation in all cases because such a deviation must be 'substantial.'

119 SR 814.91 GTA, art. 8, para. 1.

120 See Interview with Vanessa Gerritsen, *supra* note 53.

121 SR 814.91 GTA, art. 8, para. 2; see also Bolliger, *supra* note 3, at 337–38 ('According to the Federal Council, a more precise legal definition of *animal dignity* currently is not possible, and decisions regarding protection for dignity must instead be determined on a case-by-case basis after a balancing of interests.').

122 *Id.*

123 *Id.*

124 *Id.*, art. 8, para. 2, subpara. a.

125 *Id.*, art. 8, para. 2, subpara. b.

126 *Id.*, art. 8, para. 2, subpara. c.

127 *Id.*, art. 8, para. 2, subpara. d.

128 *Id.*, art. 8, para. 2, subpara. e.

129 *Id.*, art. 8, para. 2, subpara. f.

130 *Id.*, art. 35, para. 1, subpara. a.

131 *Id.* art. 8, para. 9 ('Genetically modified vertebrates may only be produced and put into circulation for purposes of research, therapy, or diagnostics in human or veterinary medicine.');

see also Interview with Paul Scherer, *supra* note 78.

Biotechnology.¹³² In the license application, researchers are required to indicate that they considered the dignity of the creature in their proposal.¹³³

Commercial cultivation of genetically modified plants has been banned by moratorium since 2004.¹³⁴ Although originally intended to be temporary, this measure has been extended repeatedly with declining controversy.¹³⁵ Indeed, it was most recently extended in 2017 until 2021, with little public debate.¹³⁶ The moratorium has a variety of justifications, the most important of which is probably a public concern for safety.¹³⁷ Despite the overwhelming scientific evidence of the safety of commercial genetically modified organisms for human consumption, the belief that they are somehow dangerous to health remains widespread and persistent in Switzerland.¹³⁸ Another more pragmatic concern is the perception that it would be impossible to cultivate genetically modified crops on the small plots characteristic of Swiss agriculture without cross-pollination of traditional crops, something that would violate the GTA's principle of 'freedom of choice'¹³⁹ as concerns growing or ingesting genetically modified foods. Support for the moratorium also comes from the perceived connection between genetically modified crops and global agribusiness, which is seen as antithetical to Swiss pastoralism.¹⁴⁰ However, behind all these reasons is a clear attitude that the 'natural' is good, interference with it inherently carries risks and that Switzerland ought to respect it.¹⁴¹

Antipathy to the production of genetically modified crops is not unique to Switzerland and exists all over Europe.¹⁴² However, other European countries import large

132 See SR 814.91 GTA, arts. 10–14, 22, 23; see also Interview with Jan Lucht, *supra* note 22; Interview with Paul Scherer, *supra* note 78; Interview with Isabel Hunger-Glaser, *supra* note 80.

133 See Interview with Jan Lucht, *supra* note 22; Interview with Isabel Hunger-Glaser, *supra* note 80.

134 See Interview with Paul Scherer, *supra* note 78; Interview with Jan Lucht, *supra* note 22; Interview with Isabel Hunger-Glaser, *supra* note 80.

135 See Interview with Paul Scherer, *supra* note 78; Interview with Jan Lucht, *supra* note 22; Interview with Isabel Hunger-Glaser, *supra* note 80.

136 See Interview with Paul Scherer, *supra* note 78; Interview with Jan Lucht, *supra* note 22.

137 See Interview with Jan Lucht, *supra* note 22; Interview with Paul Scherer, *supra* note 78; Interview with Isabel Hunger-Glaser, *supra* note 80.

138 See Interview with Jan Lucht, *supra* note 22; Interview with Isabel Hunger-Glaser, *supra* note 80; but see Jan Lucht, *Public Acceptance of Biotechnology and GM Crops*, 7 *VIRUSES* 4254 (2015) ('An analysis of the data from the Eurobarometer survey series suggest that it is this absence of perceptible benefits, rather than perceived possible risks, that are at the root for low [European] acceptance of GM food.').

139 See Interview with Paul Scherer, *supra* note 78; see also SR 814.91 GTA, art. 7 ('Genetically modified organisms may be handled only in such a way that they, their metabolic products or wastes do not impair production that does not involve genetically modified organisms, or limit consumers' freedom of choice.').

140 See Interview with Paul Scherer, *supra* note 78; see also Lucht, *Public Acceptance of Biotechnology*, *supra* note 138, at 4271 ('GM crops have become a lightning-rod for negative emotions caused by everything that is considered bad in modern society, feelings of limited individual self-determination *versus* the increasing influence of large corporations, and concerns about misguided economic developments, globalization, and growing inequality.').

141 See Interview with Jan Lucht, *supra* note 22; Interview with Paul Scherer, *supra* note 78; Interview with Isabel Hunger-Glaser, *supra* note 80; see also Lucht, *Public Acceptance of Biotechnology*, *supra* note 138, at 4263 ('A very important factor seems to be the personal importance of the naturalness of a product . . . Attitudes to nature, to technology, to skepticism about new kinds of food, the degree of feelings of alienation from the marketplace and the appraisal of one's own knowledge strongly influence the perception and processing of factual information, resulting in different outcomes depending on the preexisting value set.').

142 See Interview with Jan Lucht, *supra* note 22; Interview with Paul Scherer, *supra* note 78; Interview with Isabel Hunger-Glaser, *supra* note 80; see also Lucht, *Public Acceptance of Biotechnology*, *supra* note 138, at

amounts of genetically modified crops for animal feed.¹⁴³ In Switzerland, although importing genetically modified crops for feed is not prohibited, the GTA's requirement that meat products fed with genetically modified crops be labeled and the population's hostility to genetic engineering have ensured that no food with genetically modified agricultural products at any point in the chain of production is sold in Switzerland.¹⁴⁴ That is, while companies legally could import genetically modified feed, they never have.¹⁴⁵ Most observers from both sides of the debate believe that the Swiss consensus against genetically modified plants, and the legal regime it has produced, is likely to persist for the foreseeable future.¹⁴⁶

IV. MINDFULNESS OF CREATION AND THE CONSTITUTIONAL THEORY OF THE UNIVERSE

The Preamble of the Swiss federal constitution begins 'In the name of Almighty God! *The Swiss People and the Cantons*, mindful of their responsibility towards creation.'¹⁴⁷ The explicit reference to God as the opening of the document was debated vigorously during the 1999 constitutional redesign, because the Swiss federal government is a secular one.¹⁴⁸ Indeed, the Preamble has no legal force, and freedom of religion is explicitly guaranteed as a fundamental right in Art. 15 of the operative text.¹⁴⁹ The reference to God in the Preamble was retained out of respect for history.¹⁵⁰

The phrase 'mindful of their responsibility towards creation', however, has a different genesis. Indeed, it was *added* to the Preamble during the 1999 revisions.¹⁵¹ Although there was no reference to human dignity or the dignity of the creature in debates regarding the introduction of this phrase,¹⁵² a mindfulness of creation—that is, an appreciation for and humility of what is naturally given to our species and others—

4256 ('Due to a highly restrictive regulatory environment, just a single GM plant, the insect resistant Bt maize MON810, is authorized for cultivation in the EU. Spain is the only country with significant plantings of this GM crop.').

143 See Interview with Jan Lucht, *supra* note 22; Interview with Isabel Hunger-Glaser, *supra* note 80; see also Lucht, *Public Acceptance of Biotechnology*, *supra* note 138 ('Even reportedly GM skeptical Europe imports and uses very large amounts of genetically modified feedstuff, which eventually contributes to food production.').

144 See Interview with Jan Lucht, *supra* note 22; Interview with Isabel Hunger-Glaser, *supra* note 80; Interview with Paul Scherer, *supra* note 78.

145 See Interview with Jan Lucht, *supra* note 22; Interview with Isabel Hunger-Glaser, *supra* note 80; Interview with Paul Scherer, *supra* note 78.

146 See Interview with Jan Lucht, *supra* note 22; Interview with Paul Scherer, *supra* note 78; Interview with Isabel Hunger-Glaser, *supra* note 80.

147 BV, *supra* note 1, preamble.

148 See Interview with Bernhard Rütsche, *supra* note 26.

149 See BV, *supra* note 1, art. 15 ('Freedom of religion and conscience is guaranteed. Every person has the right to choose freely their religion or their philosophical convictions, and to profess them alone or in community with others . . . No person may be forced to join or belong to a religious community, to participate in a religious act, or to follow religious teachings.').

150 See Interview with Bernhard Rütsche, *supra* note 26.

151 Compare BV, *supra* note 1, preamble with Bundesverfassung, Constitution fédérale, May 29, 1874, AS 1, RO 1 [BV 1874, Cst 1874], preamble (Switz.) ('In the Name of Almighty God, the Swiss Confederation, with the intent of strengthening the alliance of Confederates and of maintaining and furthering the unity, strength and honor of the Swiss nation, has adopted the following Federal Constitution.').

152 See Interview with Bernhard Rütsche, *supra* note 26.

is perhaps the best way to describe what the concept of dignity in Arts. 119 and 120 is all about.

In this Part, I argue that, taken together, the concept of human dignity as a limit on biotechnology in humans, the concept of the dignity of the creature, and the Preamble's idea of 'mindful[ness] . . . of creation'¹⁵³ are a *single* concept, a coherent, discrete moral theory inextricable from a single, discrete worldview. That theory is that 'nature' as it currently presents itself is morally valuable, and that worldview is one in which the natural order is morally valuable for its own sake. To make this point, I argue first that the concepts of human dignity and the dignity of the creature arise from the same theoretical foundation. Second, I argue that foundation is the moral value of nature. Finally, I describe the specific hierarchy of the moral value of nature codified in the Swiss constitutional concept of dignity, taken as a whole.

There is nothing inherently obvious or true about the worldview adopted by the Swiss constitution. It is one that has become increasingly popular, especially in Europe, over the past half-century or so.¹⁵⁴ But that hardly makes it the right one. There are perhaps infinite alternatives, infinite other ways we can find or reject meaning in religion, philosophy or nihilism. Indeed, later in this article, I argue that this worldview is meaningfully indistinguishable from traditionally religious ones. It is not one that liberal states should endeavor to adopt because liberal states should not adopt any one.

IV.A. Dignity Is a Single Concept

It may not be immediately obvious that 'human dignity' in Art. 119 and the 'dignity of the creature' in Art. 120 arise from the same philosophical foundation.¹⁵⁵ They appear to regulate very different things, the former human reproductive technologies and the latter, presumably, primarily genetic modification in agriculture. It is true that these two bodies of regulation need not and do not always have a common philosophical justification in practice. There is nothing inherently inconsistent someone's being opposed, for example, to human cloning but in favor of GMO crops, or vice versa. Indeed, objection to human reproductive technologies, often associated with the abortion debate and the moral value of the human soul, is perhaps most associated with the political right,¹⁵⁶

153 BV, *supra* note 1, preamble.

154 See, eg, Ana Delicado, *Anti-Nuclear Mobilization and Environmentalism in Europe: A View from Portugal (1976–1986)*, 22 ENV'T AND HIST. 497, 501 (2016) ('Generally speaking, political scientists have tended to represent anti-nuclear mobilization and environmentalism as a manifestation of the increased importance of post-materialist values, and effect of the unprecedented growth and democracy enjoyed by Western Europe in the preceding period.'). URSULA GOODENOUGH, *THE SACRED DEPTHS OF NATURE* xv (1998) ('That we need a planetary ethic is so obvious that I need but list a few key words: climate, ethnic cleaning, fossil fuels, habitat preservation, human rights, hunger, infectious disease, nuclear weapons, oceans, ozone layer, pollution, population Without a common religious orientation, we basically do not know where to begin, nor do we know what to say or how to listen, nor are we motivated to respond.'). Kenneth A. Manaster, *Law and the Dignity of Nature: Foundations of Environmental Law*, 26 DEPAUL L. REV. 743, 745 (1977) ('In popular magazines, scholarly journals, high school students' essays and noted ecologists' books, the point has been made that it is time for humanity to realize it is a part of nature and that all life forms are intertwined.').

155 But see, Bolliger, *supra* note 3, at 329 ('The similarities are obvious: both human dignity and the dignity of living beings are based on a defense against arrogance of power, and both terms cannot be legally defined in all their details.').

156 See generally PRESIDENT'S COUNCIL ON BIOETHICS, *BEYOND THERAPY: BIOTECHNOLOGY AND THE PURSUIT OF HAPPINESS* (2003) (President George W. Bush's Council on Bioethics, composed largely of

while objection to GMO agriculture, associated with environmentalism and hostility towards globalization, may be concentrated on the political left.¹⁵⁷

In the case of the Swiss constitution, however, there are good reasons to believe that both categories of regulation arise from the same theoretical foundation. First, as discussed, Arts. 119 and 120 were added at the same time in the same referendum.¹⁵⁸ Second, as initially voted on and subsequently interpreted, both articles use the same word, 'dignity', to restrain biotechnologies in both humans and other creatures.¹⁵⁹ In Switzerland, as elsewhere, there is an interpretive presumption that the same word means the same thing throughout the constitution.¹⁶⁰ Third, these concepts have been interpreted in similar, if not identical, ways.¹⁶¹ Fourth, the subsequent addition of the Preamble supports the argument that these three provisions arise from a consistent ideology—it frames the entire constitutional project as based on a theory of the universe that Arts. 119 and 120 can be seen as codifying.¹⁶² Finally, there is a plausible and coherent theoretical framework that can unite the ideas of dignity in these two articles.

IV.B. The Concept of Dignity and Nature as a Source of Value

'Dignity', of course, is a vague and malleable term that plays an important and contested role in bioethical debates, particularly in Europe.¹⁶³ While the concept is most commonly invoked by opponents of biological and genetic technologies,¹⁶⁴ it is no

otherwise conservative political theorists and ethicists such as Leon Kass, Francis Fukuyama and Mary Ann Glendon arguing forcefully against human genetic engineering).

157 See, eg Vandana Shiva, *Epilogue: Beyond Reductionism*, in *BIOPOLITICS: A FEMINIST AND ECOLOGICAL READER ON BIOTECHNOLOGY* 267–84 (Vandana Shiva and Ingunn Moser, eds., 1995); Chaia Heller, *McDonald's, MTV and Monsanto: Resisting Biotechnology in the Age of Information Capital* in *REDESIGNING LIFE? THE WORLDWIDE CHALLENGE TO GENETIC ENGINEERING* 405–21 (2001); JEREMY RIFKIN, *DECLARATION OF A HERETIC* 48 (1985) ('Each new synthetic introduction is tantamount to playing ecological roulette. That is, while there is only a small change of it triggering an environmental explosion, if it does, the consequences can be thunderous and irreversible.').

158 See Interview with Bernhard Rütsche, *supra* note 26; Interview with Vanessa Gerritsen, *supra* note 53; Interview with Julian Mausbach, *supra* note 10.

159 See Interview with Bernhard Rütsche, *supra* note 26.

160 See Interview with Bernhard Rütsche, *supra* note 26; Bolliger, *supra* note 3, at 331–32 ('[A]ccording to a general legislative principle that requires uniform terminology in order to avoid legislative contradictions, a term cannot have fundamentally different meanings within the same law.'). Of course, in this case, this presumption can be overcome as regards the distinction between the Art. 7 and Art. 119 concepts of human dignity, but in that case there are strong historical reasons for interpreting them differently. No such case can be made for a distinction between Arts. 119 and 120.

161 For example, it appears that both regard the inherent value of an entity to itself, are subject to a weighing of interests, and presume alterations from the natural are a violation of dignity. See Interview with Julian Mausbach, *supra* note 10; Interview with Vanessa Gerritsen, *supra* note 53.

162 See BV, *supra* note 1, preamble.

163 See Interview with Roberto Andorno, *supra* note 15; see also *UNDERSTANDING HUMAN DIGNITY* (Christopher McCrudden, ed., 2014); Steven Pinker, *The Stupidity of Dignity*, *THE NEW REPUBLIC* (May 28, 2008) ('Whatever that [dignity] is. The problem is that 'dignity' is a squishy, subjective notion, hardly up to the heavyweight moral demands assigned to it.'). Caulfield & Brownsword, *supra* note 5, at 72 ('[D]espite its frequent use [in bioethical debates], a practical definition of human dignity remains elusive.').

164 See generally *THE PRESIDENT'S COUNCIL ON BIOETHICS, HUMAN DIGNITY AND BIOETHICS: ESSAYS COMMISSIONED BY THE PRESIDENT'S COUNCIL ON BIOETHICS* (2008); see also MICHAEL SANDEL, *THE CASE AGAINST PERFECTION* 24 (2007) ('It is commonly said that enhancement, cloning, and genetic engineering pose a threat to human dignity.'). *PRESIDENT'S COUNCIL ON BIOETHICS, BEYOND*

simple matter of definition that respect for 'dignity' requires ethical skepticism or legal limitation of these technologies. Dignity, in the relevant sense, means 'the quality or state of being worthy, honored, or esteemed'.¹⁶⁵ Dignity is not itself what *makes* people or animals valuable, rather, it is a descriptive term used to refer to those things that do.¹⁶⁶ There is *necessarily* an interpretive step from an assertion that 'human dignity' or the 'dignity of the creature' must be protected to substantive legal proscriptions of any kind. What is required is a determination of what it is about 'humans' or 'creatures' that make them worthy of protection and constitutes their dignity.

The gravity of this 'interpretive' question, requiring as it does a judgment about not only what makes us human, indeed, not only about what makes us *valuable*, but also judgments about the essential features cows or lettuce that make them valuable *as what they are*, makes clear that it is not a simple matter of reading the text that leads from the constitutional concepts of human dignity and the dignity of the creature to a restrictive legal posture towards biotechnology.¹⁶⁷ These are deep, contested questions of moral philosophy. On the much more discussed question of human dignity, there is a voluminous literature arguing that the use of human genetic technologies may in fact be compelled, or is at least permissible, by respect for the things that make us valuable.¹⁶⁸ There is no agreement, moreover, on the method by which we should go about determining what it is that makes us (or anything else) valuable. What is required for a concept of 'dignity' to be legally operative, as it is in Switzerland, is a *theory of value*; that is, a framework that explains and allocates value.

The theory of value behind the Swiss constitutional concept of dignity is that moral value is derived from nature. This theory is based a normative assumption that the natural is the good and interference with it is bad.¹⁶⁹ More concretely, the Swiss constitutional theory of value assumes that the biological layout of the world circa A.D. 1990 is the morally optimal one or at least one ethically entitled to defense against interference. This background understanding of value is manifest in the ways in which the dignity concept has been operationalized through both Arts. 119 and 120. The definition of genetic modification in other creatures in the GTA makes explicit

THERAPY: BIOTECHNOLOGY AND THE PURSUIT OF HAPPINESS 290–293 (2003); FRANCIS FUKUYAMA, OUR POSTHUMAN FUTURE: CONSEQUENCES OF THE BIOTECHNOLOGY REVOLUTION 148–71 (2002); JÜRGEN HABERMAS, THE FUTURE OF HUMAN NATURE 29–37 (2003).

165 *Dignity* 2, Merriam-Webster Online, <https://www.merriam-webster.com/dictionary/dignity> (accessed Feb. 25, 2018); *accord Dignity* 2, dictionary.com, <http://www.dictionary.com/browse/dignity> (accessed Feb. 25, 2018) ('nobility or elevation of character; worthiness'); *Dignity* 1, English Oxford Living Dictionaries, <https://en.oxforddictionaries.com/definition/dignity> (accessed Feb. 25, 2018) ('The state or quality of being worthy of honor or respect.').

166 See Roberto Andorno, *Human Dignity and Human Rights*, in HANDBOOK OF GLOBAL BIOETHICS 54 (2014) ('Human dignity is not a magic word that, when uttered, will immediately solve all the complex dilemmas posed by medical technology. This is why the abstract principle of human dignity normally operates through other much more concrete notions . . . which are usually formulated using the terminology of rights.').

167 Of course, taken in context, it is clear that the constitutional concepts of dignity were intended as limits on biological technologies. That is exactly the point, however. It is not that dignity does not mean anything, or could mean anything, in Swiss law, but that as intended and interpreted the concept embeds contestable assumptions about the way the world works.

168 See generally, eg INGMAR PERSSON and JULIAN SAVULESCU, UNFIT FOR THE FUTURE: THE NEED FOR MORAL ENHANCEMENT (2012); ALLEN BUCHANAN, BEYOND HUMANITY? (2011); JOHN HARRIS, ENHANCING EVOLUTION: THE ETHICAL CASE FOR MAKING BETTER PEOPLE (2007).

169 See Interview with Bernhard Rütsche, *supra* note 26; Interview with Isabel Hunger-Glaser, *supra* note 80.

reference to the natural: 'Genetically modified organism means organisms in which the genetic material has been altered in a way that does not occur under *natural conditions by crossing or natural recombination*.'¹⁷⁰ Regardless, therefore, of whether such a feature could evolve over the course of millennia and regardless of whether it would be a good or a bad thing from the perspective of the creature, a change is presumptively a violation of the dignity of the creature if it represents genomic interference in the creature as it occurs *naturally right now*.¹⁷¹ Indeed, genetic modification in other creatures is presumed to violate the dignity of the creature *because* it interferes with its 'natural form',¹⁷² even if the intervention would give the creature features otherwise associated with greater dignity: perhaps higher intelligence, more wisdom, love, or an appreciation for fine wines.

All of the specific prohibitions on human reproductive and genetic technologies in Art. 119 are similarly based in a conception of the natural as a source of value.¹⁷³ The constitution prohibits 'interference' with human reproductive material.¹⁷⁴ That is, interference with the *natural*, quasi-spontaneous ways in which reproductive materials are produced and combined without our conscious knowledge and independent of our will. Similarly, humans do not naturally reproduce asexually, nor can they viably combine their reproductive materials with animals the old-fashioned way, and both are prohibited.¹⁷⁵ Surrogacy violates the 'natural' human family.¹⁷⁶ The prohibition on egg donation, while sperm donation is permitted, is justified on the grounds that natural human intercourse is literally a donation of sperm while no analogous natural process exists for egg donation.¹⁷⁷

The Swiss constitutional theory of value based on the moral status of the natural order is not the only one. Many people derive their theories of value from religion.¹⁷⁸ Others use intuition.¹⁷⁹ Some believe human value can be deduced more or less scientifically from evolutionary psychology.¹⁸⁰ There is not an agreed upon method

170 SR 814:91 GTA, art. 5, para. 2 (emphasis added); see also Interview with Isabel Hunger-Glaser, *supra* note 80.

171 See Interview with Isabel Hunger-Glaser, *supra* note 80.

172 See Interview with Isabel Hunger-Glaser, *supra* note 80.

173 See Interview with Bernhard Rütsche, *supra* note 26.

174 BV, *supra* note 1, art. 119, para. 2, subpara a.

175 See BV, *supra* note 1, art. 119, para 2, subpara. a–b.

176 See BV, *supra* note 1, art. 119, para 2, subpara. d.; see also Interview with Julian Mausbach, *supra* note 10.

177 See Interview with Bernhard Rütsche, *supra* note 26.

178 See generally, eg, PIER GIORGIO AUSTRIACO, O. P., BIOMEDICINE AND BEATITUDE: AN INTRODUCTION TO CATHOLIC BIOETHICS (2011); MICHAEL YECHIAL BARILAN, JEWISH BIOETHICS: RABBINIC LAW AND THEOLOGY IN THEIR SOCIAL AND HISTORICAL CONTEXTS (2014).

179 Compare LEON KASS, LIFE, LIBERTY, AND THE DEFENSE OF DIGNITY (2002) (relying on 'the wisdom of repugnance' to outline a theory of human value) with HARRIS, ENHANCING EVOLUTION, *supra* note 168, at 136 ('I wish for the possibility of removing limits from our bodies and minds. I believe this may become fully possible without abandoning a life of indefinite extent full 'of love and friendship, song and dance, speech and deed, working and learning' and of course much fuller of these wonderful things than Kass's stunted lives could ever be. I personally am not much attracted to 'revering and worshipping'; to me these dispositions are entirely devoid of dignity, human or personal, but Kass may indulge in them, and welcome.').

180 See FUKUYAMA, OUR POSTHUMAN FUTURE, *supra* note 164, 105–181; but see STEVEN PINKER, THE BLANK SLATE: THE MODERN DENIAL OF HUMAN NATURE 150 (2002) ('[N]o matter how convincingly you show that something is true, it never follows logically that it *ought* to be true. Moore noted that it is sensible to ask, "This conduct is more evolutionarily successful, but is it good?" The mere fact that the question makes sense shows that evolutionary success and goodness are not the same thing.').

for adjudicating between these theories of value. There may well be a right answer, we all, presumably, think we are on to it, and it may as well be the Swiss view of the value of nature as anything else, but there are *many* plausible theories of value in the world available. By incorporating a particular worldview based on the moral value of nature, the Swiss constitution has incorporated one possible theory of value and foreclosed a wide range of plausible, defensible and passionately believed alternatives.

IV.C. Switzerland's 'Hierarchical Biocentric' Theory of Value

Moreover, the Swiss constitutional theory of value is not even the only plausible one based on the moral status of nature. The constitutional theory of value is a hierarchical one.¹⁸¹ That is, although it is not obvious from the text of Arts. 119 and 120, different creatures are afforded different degrees of dignity in Swiss law. Human dignity is the highest level, accompanied in Art. 119 by a number of specific activities considered *per se* to be violations of dignity.¹⁸² There is no analogous list corresponding to the Art. 120 'dignity of the creature', and, as discussed above, such dignity is always subject to a weighing of interests.¹⁸³

Moreover, the concept of the dignity of the creature has been interpreted to assume that different creatures have different levels of dignity.¹⁸⁴ Primates have the greatest legal protections because they are considered to have the highest level of dignity.¹⁸⁵ Only vertebrates and cephalopods are protected under the AWS and AWO because they are considered categorically to have greater dignity than invertebrates.¹⁸⁶ While the constitutional promise of statutory protection for the dignity of plants has not been operationalized, the Federal Ethics Committee on Non-human Biotechnology has issued a non-binding interpretation of the dignity of the creature as it applies to plants and concluded that plants do have dignity and that it is immoral to destroy them arbitrarily or merely for one's own pleasure.¹⁸⁷ However, the only statutory

181 See Interview with Vanessa Gerritsen, *supra* note 53.

182 See *Id.*; Interview with Julian Mausbach, *supra* note 10; Interview with Bernhard Rütsche, *supra* note 26.

183 Compare BV, *supra* note 1, art. 119 with BV, *supra* note 1, art. 120; see also Interview with Vanessa Gerritsen, *supra* note 53.

184 Compare FEDERAL ETHICS COMMITTEE ON NON-HUMAN BIOTECHNOLOGY & FEDERAL COMMITTEE ON ANIMAL EXPERIMENTS, THE DIGNITY OF ANIMALS (2011) with FEDERAL ETHICS COMMITTEE ON NON-HUMAN BIOTECHNOLOGY, THE DIGNITY OF LIVING BEINGS WITH REGARD TO PLANTS, *supra* note 82; see also Interview with Vanessa Gerritsen, *supra* note 53.

185 See BGE 135 II 405 p. 415 (2009), available at https://www.bger.ch/ext/eurospider/live/de/php/clir/http/index.php?lang=de&type=highlight_simple_query&page=1&from_date=&to_date=&from_year=1992&to_year=2018&sort=relevance&insertion_date=&from_date_push=&top_subcollection_clr=bge&query_words=W%FCrde+der+Kreatur&part=all&de_fr=&de_it=&fr_de=&fr_it=&it_de=&it_fr=&orig=&translation=&rank=1&highlight_docid=atf%3A%2F%2F135-II-405%3Ade&number_of_ranks=4&azacclr=clir (accessed Sept. 23, 2020) ('This closeness between the dignity of the creature and human dignity is particularly evident in non-human primates.'). SWISS COMMITTEE ON ANIMAL EXPERIMENTS & SWISS ETHICS COMMITTEE ON NON HUMAN BIOTECHNOLOGY, RESEARCH ON PRIMATES—AN ETHICAL EVALUATION (2007).

186 See SR 455 TSchG, art. 2 ('This Act applies to vertebrates. The Federal Council decides to which invertebrates it applies and to what extent. In doing so, it is guided by scientific knowledge on the sensitivity of invertebrate animals'); see also Interview with Vanessa Gerritsen, *supra* note 53.

187 See FEDERAL ETHICS COMMITTEE ON NON-HUMAN BIOTECHNOLOGY, THE DIGNITY OF LIVING BEINGS WITH REGARD TO PLANTS, *supra* note 82, at 23.

protections of the dignity of plants are the requirements of the GTA.¹⁸⁸ Finally, while the constitutional concept of the dignity of the creature has been interpreted to, in theory, cover all living beings, including fungi and microbes, the concept has not been extended this way in legislation nor has it been a real subject of discussion.¹⁸⁹

The Swiss constitutional theory of value is a 'hierarchical biocentric' one: value is conceived of ultimately derived from *life*, not, for example, sentience or reason, but sentience plays a role in determining *how much* dignity a given creature has.¹⁹⁰ This view is contrasted with the alternatives of asserting that only humans have value or that all creatures have the same value, among others.¹⁹¹ Even if we were to assume, then, that the Swiss constitution were definitively right in selecting nature as its moral criterion, there are still a number of defensible and defended ways in which that criterion could be defined. The Swiss constitutional concept of dignity codified *one* of them.

In the remainder of this article, I argue that this adoption in constitutional law of a theory of the dignity of life grounded in nature is meaningfully indistinguishable from adopting a theory grounded in religion. First, however, I will address briefly important counterarguments to the conclusion that the Swiss constitution codifies a specific worldview.

V. COUNTERARGUMENTS

In this Part, I address three counterarguments to the conclusion that the Swiss constitution adopts a specific worldview in its provisions regulating genetic and reproductive technologies. First, I argue that the concept of dignity in the constitution is not sufficiently specific to act as ordinary positive law regardless of its theoretical origins. Second, I argue that the constitutional concept of dignity is not based on science in any direct or inevitable way. Third, I argue that the fact that the subjective rationales of Swiss people in adopting these articles were divergent and often areligious is beside the point.

V.A. Dignity and Positive Law

Those skeptical of the conclusion that the constitutional concept of dignity is meaningfully indistinguishable from a religious concept might point to the fact that many laws have religious origins, or, to many people, a fundamentally religious justification.¹⁹² But to describe a prohibition on murder or a redistributive tax system as 'meaningfully indistinguishable from a religious concept' would be absurd. The distinction, however, is that ordinary legislation regulates certain practices that are justifiable under a number

188 See SR 814.91 GTA; see also Interview with Jan Lucht, *supra* note 22.

189 See Interview with Vanessa Gerritsen, *supra* note 53.

190 See Bolliger, *supra* note 3, at 357 ('The Swiss legislature justifies . . . the legal discrimination against invertebrates—which constitute approximately 97% of all known animal species . . .—with a lack of unambiguous scientific evidence demonstrating that these animals possess conscious perception and the ability to experience pain and suffering.').

191 See Interview with Vanessa Gerritsen, *supra* note 53; Bolliger, *supra* note 3, at 355 ('On the contrary, biocentric animal protection finds its justification in the animal's mere existence and recognizes an inherent moral value in all living beings, regardless of their sentience or lack thereof.').

192 See Interview with Vanessa Gerritsen, *supra* note 53.

of worldviews, whereas the establishment of religion codifies the worldview itself.¹⁹³ Moreover, the Swiss constitutional concept of dignity is not, in fact, specific positive law. As discussed, it is accompanied by enumerated prohibitions only in Art. 119 and not 120. The specific content of the concept of the dignity of the creature, therefore, was left *entirely* to the political branches and the judiciary to fill in over time.¹⁹⁴ Moreover, despite its association with a view of the moral value of nature and its role as a limit on what can be done with biological technologies, there is no consensus in the Swiss population on what the concept of dignity means in its specifics, how far it extends, and where it comes from.¹⁹⁵ To a large extent, the referendum left the ways in which the general philosophical proposition would be operationalized in positive law to the legislature, executive, and philosophers.¹⁹⁶ Whatever the constitutional concept of dignity has going for it, it is *vague*.¹⁹⁷ This vagueness, and the role that philosophers and the philosophical preconceptions of Swiss lawmakers plays in giving the concept substance in the positive law is in fact part of what makes the concept so closely analogous to a religious one.

V.B. Dignity and Science

One striking feature of the governmental discourse on dignity in Switzerland, particularly as it applies to the dignity of the creature, is the frequent invocation of recent developments in science and the implications of biological facts on the constitutional concept of dignity.¹⁹⁸ This priority given to science may seem out of place in the

193 There is an important theoretical debate on where this line is to be drawn. When is regulating certain practices so tied up with a specific view of the world that it is in effect an adoption of the worldview? See, eg MAXWELL J. MEHLMAN, *THE PRICE OF PERFECTION: INDIVIDUALISM AND SOCIETY IN THE ERA OF BIOMEDICAL ENHANCEMENT* 45–48 (2009); PATRICK DEVLIN, *THE ENFORCEMENT OF MORALS* (1965); H. L. A. HART, *LAW, LIBERTY AND MORALITY* (1963); see also eg, David A. Strauss, *Abortion, Toleration, and Moral Uncertainty*, 1992 SUP. CT. REV. 1 (1992). In the case of Switzerland's regulation of biotechnology, however, and as argued in this article, the constitution adopts the *worldview itself*.

194 See Interview with Bernhard Rütsche, *supra* note 26.

195 See Interview with Jan Lucht, *supra* note 22; Interview with Bernhard Rütsche, *supra* note 26; Interview with Vanessa Gerritsen, *supra* note 53; Interview with Julian Mausbach, *supra* note 10; Interview with Paul Scherer, *supra* note 78; Interview with Isabel Hunger-Glaser, *supra* note 80; Interview with Roberto Andorno, *supra* note 15.

196 See Bolliger, *supra* note 3, at 328 ('Since its inclusion in 1992, the concept of the dignity of living beings has been a topic of passionate discussions. Addressing the new principle, philosophers, ethicists, and legal scholars initially mostly debated the questions of the meaning of the term *dignity* and which living beings the concept would include. While some academics still argue about whether animals (and other non-human beings) have dignity or not, the Swiss legislature takes it as a given that they do.').

197 See Interview with Jan Lucht, *supra* note 22; Interview with Roberto Andorno, *supra* note 15.

198 See Interview with Jan Lucht, *supra* note 22; Interview with Isabel Hunger-Glaser, *supra* note 80; FEDERAL ETHICS COMMITTEE ON NON-HUMAN BIOTECHNOLOGY, *THE DIGNITY OF LIVING BEINGS WITH REGARD TO PLANTS*, *supra* note 82, at 16 ('Not quite half of the members are doubtful, based on current knowledge, that plants are sentient. A group of equal size considers this question unanswerable on the basis of current knowledge, while the smallest minority in the committee considers this question fundamentally unanswerable.'); FEDERAL ETHICS COMMITTEE ON NON-HUMAN BIOTECHNOLOGY, *PRELIMINARY OPINION ON THE GEN-LEX TEMPLATE ACCORDING TO THE PROPOSED ART. 29i (USG) AS WELL AS ALREADY APPLICABLE ART. 29 H (USG) (1998)* ('The demand for protection of the intrinsic value of a plant is, according to the present state of the discussion, legally ultimately not feasible, since plants cannot be spoken in the true sense of 'individuals.' This is especially true for plants that reproduce clonally. The 'dignity of the creature' is therefore understood by the mentioned majority (6) in plants as protection of the continuance of the respective plant species.');

Beat Sitter-Liver, *On the Status of Creatures—A Political*

interpretation of a concept that I am claiming is meaningfully indistinguishable from religion. Indeed, many have claimed that the concept of dignity (mostly as it extends to creatures) is an inescapable conclusion of modern science.¹⁹⁹ That is, Darwinian evolution and the moral equality of our and other species it suggests, along with an increased awareness of the capacity of animals to (presumably) subjectively feel pain, *require* animals have some moral status in law. The argument is that codifying the concept of the dignity of the creature in the constitution is no more 'indistinguishable from religion' than codifying the factually true assumption that humans are capable of feeling pain in a prohibition on 'cruel and unusual punishment'.²⁰⁰

This argument is based on erroneous premises and may or may not be relevant even if it were true. First, it is not immediately clear that from a legal perspective codifying a materialistic, scientific worldview is meaningfully distinguishable from codifying a religious one.²⁰¹ We might have the same discomfort with constitutionalizing the proposition that the universe is materially intelligible as we would with the establishment of traditional religion.²⁰² On the other hand, science can be meaningfully distinguished from religion in a number of ways.²⁰³ This debate is far beyond the scope of this article, but it is worth raising the possibility that *even if* the constitutional concept of dignity were genuinely derived from science it may still be meaningfully indistinguishable from religion.

More importantly, however, the primacy of science in debates about the dignity of the creature is illusory. The concept is not actually based in science. Most scientists think the concept of the dignity of the creature, especially as it applies to plants, is difficult to justify.²⁰⁴ Moreover, the concept of the dignity of the creature has been interpreted to apply at least in part at the level of the *species* (indeed, this is an assumption required if the concept of dignity is interpreted to limit germline modifications that

Issue, 59 ZEITSCHRIFT FÜR POLITIK, NEUE FOLGE 376 (2012) ('[The discourse is] is based on the 'modern concepts of biology . . . Plants have their own good, formally comparable to people and animals.').

199 See Interview with Jan Lucht, *supra* note 22; Interview with Isabel Hunger-Glaser, *supra* note 80; Florianne Koechilin et al., *Pflanzen neu entdecken: Rheinauer Thesen zu Rechten von Pflanzen*, 4 JOURNAL FÜR VERBRAUCHERSCHUTZ UND LEBENSMITTELSICHERHEIT 407 (2009) (arguing that the dignity of the creature as it pertains to plants extends beyond that agreed upon by the Federal Ethics Committee on Non-human Biotechnology on the basis of certain scientific observations, eg 'Knowing that all living things have a common origin'; 'Environmental factors can influence the expression of genes to stably inherit new properties without altering DNA sequences.').

200 U.S. CONST., amend. VIII.

201 See generally JOSEPH MARGOLIS, *THE UNRAVELING OF SCIENTISM: AMERICAN PHILOSOPHY AT THE END OF THE TWENTIETH CENTURY* (2003) (arguing that faith in science is meaningfully indistinguishable from faith in traditional religion); but see generally eg, KARL R. POPPER, *THE OPEN SOCIETY AND ITS ENEMIES* (1950); see also STEVEN PINKER, *ENLIGHTENMENT NOW: THE CASE FOR REASON, SCIENCE, HUMANISM, AND PROGRESS*, 385–409 (2018).

202 See Nelson Tebbe, *Nonbelievers*, 97 VA. L. REV. 1111, 1173 n. 243 (2011) ('From time to time, [American] courts have commented in dicta that an effort to cleanse the public sphere of references to religion could constitute an 'establishment' of atheism—something they would have assumed would be unconstitutional [as equally objectionable under the First Amendment's promise of freedom of religion as the establishment of traditional religion].').

203 See eg, PINKER, *ENLIGHTENMENT NOW*, *supra* note 201, at 385–409.

204 See Interview with Jan Lucht, *supra* note 22; Interview with Isabel Hunger-Glaser, *supra* note 80.

affect only creatures that do not yet exist),²⁰⁵ an indefensible non sequitur from the conclusion of evolutionary biology that species are temporary categories necessarily fuzzy at the edges.²⁰⁶

Finally, it would arguably be impossible to derive a moral theory of dignity from a scientific (or otherwise) descriptive account of the universe. To do so would run afoul of the 'naturalistic fallacy' that holds that it is impossible to derive judgments about value from facts about the universe, to move from 'is' to 'ought'.²⁰⁷ While an absolute form of the fallacy of has been criticized on philosophical grounds,²⁰⁸ few believe in the reverse, that it is *always* or even *often* possible to make moral claims about the universe based on facts about its pieces.

In short, the scientific rhetoric of its proponents notwithstanding, the Swiss constitutional concept of dignity is not simply a recognition of scientific facts at the constitutional level. It is vision of value in the universe. It is one thing to say that plants or animals have 'needs', 'feel pain' or even 'are sentient'. It is quite another to say that they have a 'dignity' that ought to be recognized in a constitution.

V.C. Dignity for Other Reasons

Notwithstanding the difficulties of imputing a distinctive motivation to an entire population, it seems very likely, as discussed, that the subjective motivations of the majority of Swiss people in adopting Arts. 119 and 120 was not to codify some kind of spiritual metaphysics.²⁰⁹ Rather, especially as concerns genetic engineering of other species, the primary fear appears to have been safety.²¹⁰ One response to the argument of this article, then, is that the metaphysical gloss I am reading into the concept of dignity does not accord with the understanding of the concept as actually voted into the constitution. The Swiss just wanted to ban reckless genetic engineering because they thought it was dangerous and the Federal Assembly threw in the word 'dignity' to make that happen.²¹¹ However, this response does not bear on my argument for two reasons.

First, if the Swiss people had intended only to narrowly ban particular practices, they could have. If they disagree with the broader implications of the concept of dignity, they could repeal it just as easily as they added it. Instead, however, the Swiss affirmatively adopted the concept of dignity, with all its fraught interpretational questions and

205 Without the assumption of dignity at the level of the species, such a conclusion would run afoul of philosopher Derek Parfit's 'non-identity problem.' See DEREK PARFIT, REASONS AND PERSONS 359 (rev. ed. 1987); see also I. Glenn Cohen, *Beyond Best Interests*, 96 MINN. L. REV. 1187–2182 (2012).

206 See, eg, CHARLES DARWIN, ON THE ORIGIN OF SPECIES BY MEANS OF NATURAL SELECTION, OR THE PRESERVATION OF FAVOURED RACES IN THE STRUGGLE FOR LIFE 48, 59 (1859) ('I was much struck how entirely vague and arbitrary is the distinction between species and varieties No one definition [of species] has satisfied all naturalists; yet every naturalist knows vaguely what he means when he speaks of a species. Generally the term includes the unknown element of a distinct act of creation.').; see also Massimo Pigliucci, *Species as Family Resemblance Concepts: The (Dis-)Solution of the Species Problem?*, 25 BIOESSAYS 596, 596 (2003) ('[T]he species problem is not primarily an empirical one, but it is rather fraught with philosophical questions that require—but cannot be settled by—empirical evidence.').

207 See PINKER, THE BLANK SLATE, *supra* note 180, at 150.

208 See FUKUYAMA, OUR POSTHUMAN FUTURE, *supra* note 164, at 114–128.

209 See Interview with Jan Lucht, *supra* note 22; Interview with Paul Scherer, *supra* note 78.

210 See Interview with Jan Lucht, *supra* note 22; Interview with Paul Scherer, *supra* note 78.

211 See Interview with Paul Scherer, *supra* note 78.

invitation of the metaphysical.²¹² Indeed, Art. 120 does not, by its text, actually ban *anything* in particular. The entire regulatory force of the article in the positive law has come through the operationalization of the concept of the dignity of the creature, along with the other guarantees of the article.²¹³ Similarly, the list of specific prohibitions in Art. 119 is not an exhaustive list of the concept of human dignity as it restrains biological technologies; the concept of dignity still does its own work.²¹⁴ That residual *objective concept* of dignity operates independently from the subjective motivations of the people that voted for it.²¹⁵ I am not arguing that the population *intended* to codify a concept they knew to be religious, but rather that the concept that they did codify is meaningfully indistinguishable from religion. If, for example, the Swiss had enacted a provision that 'practices contrary to God's law' were to be banned, it would be no defense to a charge of theocracy that one could prove that they had intended to ban only murder.

Second, it is not clear that the assertion that the people were not consciously aware of or clearly manifesting a particular worldview in adopting the articles in question is actually true.²¹⁶ For one thing, the concern about the safety of genetically modified crops is spurious and has been known to be so for many years.²¹⁷ A populace concerned only with the practical consideration of safety would presumably have repealed the moratorium on GMO cultivation, if not Art. 120, by now. The alternative argument that it would be impossible to avoid contamination of non-GMO crops on Swiss small plot farming²¹⁸ is illusory as well, because it assumes that there is something wrong and different about GMO crops, or at least that it is reasonable to believe that there is, and

212 See Interview with Bernhard Rütsche, *supra* note 26.

213 See Bolliger, *supra* note 3, at 368 ('Everyday practices of human-animal relationships in Switzerland demonstrate that the constitutional mandate to protect animal dignity—even if declared as a main purpose of national animal welfare law—is not sufficiently implemented into national legislation.').

214 See Interview with Bernhard Rütsche, *supra* note 26.

215 This is largely consistent with prevailing Swiss legal approaches to constitutional interpretation. See EGLI, *supra* note 13, at 19–20 ('There are four widely acknowledged elements of interpretation: grammatical, systematic, historical and teleological. . . . The grammatical approach is the starting point of every interpretation. . . . The subjective historical approach is consistent with the idea of the separation of powers but is also beset by practical difficulties, particularly those related to determining who the drafters of a constitutional provision were. Constitutional amendments, it may be said, have multiple authors as they are usually first drafted by experts, possibly but not necessarily from within the federal administration. They then become the subject of public consultation and are debated in parliamentary committees as well as in both chambers of parliament, before finally being submitted to a compulsory referendum requiring a double majority (people and cantons). Thus, many parties are involved in the development of a constitutional provision.').

216 See Bolliger, *supra* note 3, at 372 ('In 1989, the Swiss Federal Supreme Court stated that only a comprehensive life protection for animals meets the ethical expectations of Swiss society.').; see also 115 BGE IV 248 (1989), available at http://relevancy.bger.ch/php/clir/http/index.php?highlight_dcid=atf%3A%2F%2F115-IV-248%3Ade&lang=de&type=show_document&zoom=IN (accessed Sept. 23, 2020) ('Only a comprehensive protection of the life of animals can do justice to today's ethical ideas. . . .').

217 See Interview with Jan Lucht, *supra* note 22; Interview with Isabel Hunger-Glaser, *supra* note 80; see also Lucht, *Public Acceptance of Biotechnology*, *supra* note 138, at 4255 ('In 2014, genetically modified (GM) crops were grown by 18 million farmers in 28 countries on a total surface of 181.5 million hectares, which correspond to already 13% of the world's arable surface. . . . Even reportedly GM skeptical Europe imports and uses very large amounts of genetically modified feedstuff, which eventually contributes to food production.').

218 See Interview with Paul Scherer, *supra* note 78.

that avoiding contamination is a legally cognizable aspiration of the state. Moreover, a romantic conception of agriculture as pastoral harmony between a farmer and his crops is prevalent in Switzerland, is a common feature of Swiss national iconography, and is something of an aspect of Swiss national identity.²¹⁹ Upon arrival in Zürich Airport, travelers are greeted by mooing cows projected on a train-tunnel wall.

The safety rationale similarly fails to explain at all the text and interpretation of Art. 119. For example, there is nothing less safe about IVF in a lesbian couple than there is in heterosexual one. An understanding of dignity based on the sanctity of nature can explain that prohibition. Safety simply cannot. In short, if the Swiss people were truly after something other than the codification of a particular worldview, if they were worried *only* about safety or the growing influence of agrobusiness, they likely would have adopted different provisions. Something else probably was, and is, at play. On the subjective level too, nature probably morally matters.

VI. THE CONSTITUTIONAL CONCEPT OF DIGNITY AND LIBERALISM

In this Part, I argue that the codification of the concept of dignity and the worldview of the moral value of nature it involves in the Swiss constitution is equivalent to the codification of a religious theory from the perspective of the state. For the same reasons that a liberal society ought not constitutionalize the worldview of a particular religion, Switzerland's codification of the concept of dignity is objectionable from a liberal perspective.

In his tract on the ethics of human bioengineering, Michael Sandel observed that 'modern philosophers and political theorists tend to shrink' from bioethical questions '[s]ince these questions verge on theology'.²²⁰ In the following years, a voluminous literature has been produced arguing every position on the prospect of widespread biotechnology between hyperbolic condemnation²²¹ and near hysterical optimism.²²² Different people, it is clear, have different beliefs about threshold questions of value: the value of nature, the value of human progress, and the moral quality of human characteristics such as ambition, humility, control and submission. These beliefs are so reflexive as to be intuitions and for that reason go largely unexamined and undebated. But intuitions come from somewhere. The contested intuitions of bioethics arise from worldviews; the worldviews that all of us carry around with us and which tell us how to value our lives and the lives of others, how to understand the mysteries around and within us and what we can and ought do. These are our religions. Sandel understated the case. Bioethical questions do not merely 'verge on' theology. They are theology.

To claim that something is 'meaningfully equivalent to religion', we need a definition of the salient features of religion, a concept notoriously hard to define. Many scholars

219 See Interview with Isabel Hunger-Glaser, *supra* note 80; see also generally JOHANNA SPYRI, HEIDI (1881).

220 SANDEL, THE CASE AGAINST PERFECTION, *supra* note 164, at 9–10.

221 See, eg, GEORGE J. ANNAS, WORST CASE BIOETHICS: DEATH, DISASTER, AND PUBLIC HEALTH 261–267 (2010) (proposing the international adoption of a 'Convention on the Preservation of the Human Species' to prevent human germline engineering to avoid what he terms 'genetic genocide').

222 See, eg PERSSON & SAVULESCU, UNFIT FOR THE FUTURE, *supra* note 168, at 2 ('We shall suggest that there are in principle no philosophical or moral objections to the use of such biomedical means of moral enhancement—moral bioenhancement, as we shall call it—and that the current predicament of humankind is so serious that it is imperative that scientific research explore every possibility of developing effective means of moral bioenhancement, as a complement to traditional means.').

tend to point to the ritualistic aspects of religions often emphasized by sociologists.²²³ An alternative understanding, and the one I using here, is that religion is a kind of worldview, a kind of belief or faith.²²⁴ It is in this latter sense both that the Swiss constitutional concept of dignity is comparable to religion and that the concerns that justify the principle of freedom of conscience are implicated.

This article has, thus far, largely assumed that the political philosophy of liberalism is the normatively correct way in which states should organize their constitutions. Indeed, it is only from this perspective that the constitutionalization of the Swiss understanding of dignity is 'objectionable' rather than idiosyncratic. Though perhaps predominant in the West, this assumption is not universally held and some philosophers argue that constitutions may or even should be based on principles other than liberal principles.²²⁵ This debate—between liberalism and its discontents as a general matter—is necessarily outside the scope of this article. As concerns the particular liberal principles of freedom of conscience, however, there are two reasons to hold Switzerland to liberal values with respect to its constitutional regulation of biotechnology.

The first is simply that Switzerland, especially as compared to its neighbors, has a long history of liberalism in general and an enduring historical commitment to freedom of conscience in particular. Indeed, the modern federal state of Switzerland is the product of religious compromise—the 1848 constitution that definitively united the cantons into a robust federal state on the American model was written in the immediate wake of the Sonderbund War, a brutal civil war between conservative Catholic and liberal Protestant cantons.²²⁶ That constitution guaranteed '[t]he free exercise of religious worship . . . to the acknowledged Christian professions throughout the whole extent of Switzerland'²²⁷ at a time when such a notion was still radical. And although Swiss tolerance has had a long way to go, and the country's contemporary forays into illiberalism with respect to Islam have been roundly condemned both inside and outside of Switzerland,²²⁸ it has never pursued French *laïcité* or German *Kulturkampf* or struggled like Italy with the separation of Church and State. In this context, it is not

223 See, eg EMILE DURKHEIM, *THE RELIGIOUS LIFE*, TRANS. J. W. SWAIN (1915) (defining religion as 'a unified system of beliefs and practices relative to sacred things, that is to say things set apart and forbidden, beliefs and practices, which unite into one single moral community, called a Church, all those who adhere to it').

224 See Barbara Abercrombie, *Drama, Mystery, and the Episcopal Church* in FAITH: ESSAYS FROM BELIEVERS, AGNOSTICS, AND ATHEISTS 147, 153–54 (Victoria Zackheim, ed. 2015) ('My brother maintains I became an Episcopalian because of the drama—and he's right, of course. But why do I stay in the church and love it so fiercely, while at the same time there is so much in it that I do not believe, do not understand? . . . Maybe faith is being able to abide with the mystery while not knowing the answers. Maybe the answers cannot come through your head but only through your heart. Maybe religion is, after all, to be felt, not analyzed. Maybe part of the mystery is how faith can renew itself over and over.').

225 See generally, eg MICHAEL J. SANDEL, *LIBERALISM AND THE LIMITS OF JUSTICE* (2010).

226 See CHURCH & HEAD, *supra* note 7, at 160.

227 Bundesverfassung [Constitution] Sept. 12, 1848, Art. XLIV, available at <https://archive.org/details/federalconstitutionofswitzerland> (accessed Sept. 23, 2020).

228 See Dina Wyler, *The Swiss Minaret Ban Referendum and Switzerland's International Reputation: A Vote with an Impact*, 37 J. MUSLIM MINORITY AFF. 413, 418 (2017) ('However, when in 2009 the Swiss electorates voted in favor of a nationwide ban of the construction of minarets, the status of Switzerland as an ambassador for diplomacy and neutrality was questioned. Not only the 350,000 Muslims living in Switzerland saw this vote as an affront, but so did the Muslims and non-Muslims around the world; they expressed their disappointment in the Swiss people, and accused them of being intolerant and against peaceful coexistence.').

unreasonable to hold the country of Jean Calvin and Ulrich Zwingli,²²⁹ of all places, to the liberal principle of freedom of conscience.

Second, the liberal principle of freedom of conscience is a good idea and its justifications apply with equal force to the theories of the universe implicated by biotechnologies as they do to traditional religions. There are basically four justifications for why we care about freedom of religion and why it is a canonical principle of liberalism that the state not decide theological questions for individuals. Importantly, each of these justifications supports freedom of religion-as-worldview, but not necessarily freedom of religion-as-ritual. Moreover, none is necessarily limited to traditional, institutionalized religions. The Swiss constitution's codification of its understanding of dignity is objectionable under each of them. Taken together, and to the extent they are philosophically persuasive, these arguments powerfully condemn this constitutional project.

The first justification assumes that one theory of the universe is true, or at least that some are truer than others.²³⁰ The reason for freedom of belief, in this view, is that the government in selecting a religion based on the prevailing religious, scientific, moral and aesthetic majoritarian preferences of the day is vanishingly unlikely to select the correct one.²³¹ Moreover, it is crime loathsome beyond reckoning for a state to prevent people from living according to the dictates of the truth of the universe.²³² Declining to establish a religion, then, is an important commitment to a posture of epistemic humility on the part of the state. This theory further argues the state is not likely to be any better than individuals at determining the true theory of the universe, and individuals, at least, are more flexible in response to new information and have only themselves to blame for their possible damnation. Therefore, any comprehensive, unprovable-one-way-or-the-other theory of value and the good life in our universe must be tolerated by a liberal government.

A second justification comes from the Rawlsian social contract tradition. This view holds that since, in an 'original position', people could not be sure of what their religious convictions would be, they would agree to a principle of freedom of conscience *ex ante*.²³³ As Rawls himself recognized, what holds for traditional religions here holds for theories of the universe in general.²³⁴

229 See CHURCH & HEAD, *supra* note 7, at 73–103.

230 See Michael Stokes Paulsen, *The Priority of God: A Theory of Religious Liberty*, 39 PEPP. L. REV. 1159, 1161 (2013) ('[W]e protect the free exercise of religion for all (or as many as possible) and prohibit the establishment of any—not because of skepticism about the possibility of religious truth but because of the conviction that religious truth is a possibility and because of an agreement that such truth is more important than anything else.').

231 *Id.* at 1161 ('We value *freedom* of religion precisely because, if society gets these things wrong (as experience tells us it is quite likely to do), such errors, where backed by the power of the state, will tend to endanger religious truth.').

232 *Id.* at 1160 ('At bottom, what justifies religious liberty—the only thing that makes it at all sensible as a liberty distinct from other liberties—is some shared sense that *true religious obligation is more important than civil obligation*, and that, consequently, civil society must recognize this truth.').

233 See, eg JOHN RAWLS, *POLITICAL LIBERALISM* 247 (1996) ('[I]n recognizing others' comprehensive views as reasonable, citizens also recognize that, in the absence of a public basis of establishing the truth of their beliefs, to insist on a comprehensive view must be seen by others as their insisting on their own beliefs.').

234 See, John Rawls, *The Idea of Public Reason Revisited* in JOHN RAWLS: *COLLECTED PAPERS* 573, 591 (Samuel Freeman, ed., 1999) ('[R]easonable comprehensive doctrines, religious or nonreligious, may be introduced in public political discussion at any time, provided that in due course proper political reasons—and not

Third, there is a utilitarian justification: regardless of the truth of any particular worldview, being able to choose one's own (intimately connected as that is to questions of how to live one's life) is a valuable experience, and since people are attached to these theories, they are better off, all else equal, living as they choose.²³⁵ Similarly, being able to choose one's worldview has these benefits even if that worldview is not derived from an institutionalized religion.

Finally, there is a pragmatic historical consideration that religions are things people willingly kill and die for. Liberalism and its core commitment to freedom of conscience are, at least in part, compromises that states make as a way to prevent civil war.²³⁶ The questions about the nature of the universe raised by biotechnology, too, are 'one of the few things in a politics of the future that people are likely to rouse themselves to fight over.'²³⁷

Based on the justifications for the principle of freedom of conscience, the features of religions most meaningful from a constitutional perspective are that they are (i) comprehensive theories of the universe that purport to answer questions (ii) of value, (iii) of the role and purpose of the human species in the universe and (iv) of the good life on an individual level.²³⁸ Because the answers to these questions can only come from theoretical assumptions that are, at least at present and for the foreseeable future,

reasons given solely by comprehensive doctrines—are presented that are sufficient to support whatever the comprehensive doctrines introduced are said to support.’).

235 See, eg Brian Leiter, *Why Tolerate Religion*, 25 CONST. COMMENT. 1, 6 (2008) (‘Many of the arguments [for religious liberty] trade, at bottom, on a simple idea: namely, that *being able to choose what to believe and how to live . . .* makes for a better life. Being told *what you must believe* and *how you must live*, conversely, makes life worse.’).

236 *Id.* at 3 (‘Much that has the appearance of principled toleration is nothing more than pragmatic, or we might say, ‘Hobbesian’ compromise: one group would gladly stamp out the others’ beliefs and practices, but has reconciled itself to the practical reality that they cannot get away with it, at least not without the intolerable cost of the proverbial ‘war of all against all.’).

237 FUKUYAMA, OUR POSTHUMAN FUTURE, *supra* note 164, at 158.

238 Accord GOODENOUGH, THE SACRED DEPTHS OF NATURE, *supra* note 154, at xiv (‘In the end, each of these religions addresses two fundamental human concerns: How Things Are and Which Things Matter. How Things Are becomes formulated as a Cosmology or Cosmos: How the universe came to be, how humans came to be, what happens after we die, the origins of evil and tragedy and natural disaster. Which Things Matter becomes codified as Morality or Ethos: the Judaic Ten Commandments, the Christian Sermon on the Mount, the Five Pillars of Islam, the Buddhist Vinaya, the Confucian five pillars. The role of religion is to integrate the Cosmology and the Morality, to render the cosmological narrative so right and compelling that it elicits our allegiance and our commitment to its emergent moral understandings.’); PETER W. EDGE, RELIGION AND LAW: AN INTRODUCTION 32 (2006) (defining religion as ‘statements concerning metaphysical [read, valuable] reality’); DAVID CHIDESTER, PATTERNS OF ACTION RELIGION AND ETHICS IN COMPARATIVE PERSPECTIVE 4 (1987) (defining religion as ‘that dimension of human experience engaged with sacred [read, valuable] norms’); *Thomas v Review Bd. Of Indiana Employment Sec. Division*, 450 U.S. 707, 715 (1981) (holding that idiosyncratic beliefs could qualify for First Amendment religious protection in part on the grounds that ‘the guarantee of free exercise is not limited to beliefs that are shared by all of the members of a religious sect . . . [I]t is not within the judicial function and judicial competence to inquire whether the petitioner or his fellow worker more correctly perceived the commands of their common faith. Courts are not arbiters of scriptural interpretation.’); *United States v Ballard*, 322 U.S. 78, 86 (1944) (‘Freedom of thought, which includes freedom of religious belief, is basic in a society of free men . . . It embraces the right to maintain theories of life and death and of the hereafter, which are rank heresy to the followers of the orthodox faiths . . . The religious views espoused by respondents might seem incredible, if not preposterous, to most people. But if those doctrines are subject to trial before a jury charged with finding their truth or falsity, they enter a forbidden domain.’).

eminently contestable (indeed, the truth or usefulness of which we do not have a widely agreed upon methodology for assessing), people choose their religions on the basis of (v) faith or belief; comprehensive theories of the universe are not possibly things people *know* to be true.²³⁹

The Swiss constitutional concept of dignity and the worldview based on the value of the natural it embodies has all five of these characteristics. First, as discussed in Part III, the concept of dignity is a coherent and comprehensive theory of the universe. Second, it is a theory of value. It tells us *what* is valuable as well as *why*. Third, it addresses the role of the human species in the universe. Specifically, it places us at the top of a moral hierarchy that includes the rest of creation in value diminishing in proportion to its similarities to us. Fourth, the constitutional concept of dignity provides a great deal of guidance as to what the good life is. Or, perhaps more obviously, it tells us what the good life is *not*: aspiring to enhance our children through germline genetic interventions, aspiring as anything other than a heterosexual couple to have genetically related children, aspiring to grow herbicide-resistant maize or befriending a genetically modified teacup pig.

Finally, the Swiss constitutional concept of dignity is only one theory of the universe out of a near-infinite universe of possible ones. We simply cannot know, we do not know how to know, whether it is more or less true than any of its alternatives. Certainly, many people believe it. Many others disagree, without and, presumably, within Switzerland. This fact explains why the dignity concept should not be in the Swiss constitution to the extent it aspires to embrace the liberal principle of freedom of conscience. The other four features would make a strong case, if there were no concept of dignity in the constitution that the worldview it embodies ought to be protected from interference for those who believe it. But, it is the fact that we simply do not and cannot know (or agree) whether the theory of the nature as a source of value is true that demonstrates what is wrong with codifying it in the constitution: *all of its alternatives can make the same claim to truth*. To codify in the constitutional law, a dignity based on the moral value of nature is an act of faith. It can be nothing else.

VII. CONCLUSION

There is no doubt that for many Swiss people, nature has a moral value. It matters for its own sake, and they live their lives keeping that in mind. They enacted their

239 See, eg BGE 129 I 68 p.70 (2002), available at https://www.bger.ch/ext/eurospider/live/de/php/clicr/http/index.php?lang=de&type=highlight_simple_query&page=1&from_date=&to_date=&from_year=1999&to_year=2018&sort=relevance&insertion_date=&from_date_push=&top_subcollection_clir=bge&query_words=Gewissensfreiheit&part=all&de_fr=&de_it=&fr_de=&fr_it=&it_de=&it_fr=&orig=&translation=&rank=1&highlight_docid=atf%3A%2F%2F129-I-68%3Ade&number_of_ranks=20&aazaclir=clir (accessed Sept. 23, 2020) (discussing the legal implications of an individual's attempt to leave the state church of the canton of Lucerne but not the faith of Catholicism; '[T]his withdrawal concerns only the state church of the canton of Lucerne and not the Roman Catholic Church, to which I still feel a part as a Catholic.');

VINCENT J. CORNELL, VOICES OF ISLAM 8 (2007) (discussing the foundational importance of the belief and its recitation that '[t]here is no god but God. Muhammad is the messenger of God' to Sunni Islam); C. S. LEWIS, MERE CHRISTIANITY 24–39 (1952) (discussing the foundational beliefs that define Christianity); INA ROSEN, I'M A BELIEVER—BUT I'LL BE DAMNED IF I'M RELIGIOUS: BELIEF AND RELIGION IN THE GREATER COPENHAGEN AREA: A FOCUS GROUP STUDY (2009) (describing the increasing individualization of metaphysical and religious beliefs in the contemporary west).

worldview by majority vote into the Swiss constitution. In some sense, this is direct democracy in action, and more power to the activists able to convince a majority of citizens and cantons. But where democracy clashes with liberalism (and there is little more foundational to the liberal promise than individual freedom of belief),²⁴⁰ it is the majority and not the foundational principles of liberalism that ought bend.²⁴¹ As Steven Pinker put it, '[a] free society disempowers the state from enforcing a conception of dignity on its citizens.'²⁴²

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240 See, eg Michael J. Perry, *Liberal Democracy and the Right to Religious Freedom*, 71 THE REV. OF POLITICS 621, 622 (2009) ('It is widely agreed that the right to religious freedom is a sine qua non of liberal democracy.');

see also James W. Nickel, *Rethinking Rawls's Theory of Liberty and Rights*, 69 CHICAGO-KENT L. REV. 763, 765 (1994) ('Primary goods [basic liberties to be protected by a liberal state] are social conditions and all-purpose means that people generally must have in order successfully to form, revise, and pursue their conceptions of the good and to develop and exercise a sense of justice.');

Dov Samet & David Schmidler, *Between Liberalism and Democracy*, 110 J. ECON. THEORY 213, 214 (2003) ('[I]t is acceptable nowadays in liberal democracies that questions regarding the reading of certain books should not be decided by a majority of any form, and should be left to the individual's discretion.').

241 See, eg JAMES MADISON, FEDERALIST 51 ('It is of great importance in a republic not only to guard the society against the oppression of its rulers, but to guard one part of the society against injustice of the other part.');

Fareed Zakaria, *The Rise of Illiberal Democracy*, 76 FOREIGN AFF. 22 (1997) ('Democracy without constitutional liberalism is not simply inadequate, but dangerous, bringing with it the erosion of liberty, the abuse of power, ethnic divisions, and even war.').

242 Pinker, *The Stupidity of Dignity*, *supra* note 163.