

Beyond the Principle of Proportionality: Controlling the Restriction of Rights under Factual Uncertainty

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Abstract

The principle of proportionality is considered the main legal tool to control restrictive measures of rights, both in ordinary courts and at a constitutional level. In addition to its general limitations, new shortcomings of the principle have played a central role during the pandemic, questioning the principle's efficacy in situations of factual uncertainty, especially in technically or scientifically complex contexts. This article analyses this efficacy problem and exemplifies it with specific measures adopted to prevent COVID-19. It also analyses potential ways to counter those shortcomings, such as refining the principle itself, emphasising judicial deference to legislative and executive powers, or adopting prior decisions as to the information that must be taken into account in case of uncertainty. Finally, the article proposes some additional checks that could complement the culture of justification promoted by the principle and strengthen the control of public powers when restricting rights under conditions of uncertainty.

Keywords

Proportionality, Fundamental Rights, Scientific Uncertainty

1. Introduction

The principle of proportionality has progressively become the key constitutional tool to control the restriction of rights approved by legislative or executive powers.¹ The principle itself has been expressly stated in several constitutional texts (Switzerland, Romania, Turkey, etc)², as well as in the Charter of Fundamental Rights of the European Union (Article 52).³ It has also been invoked to interpret the Human Rights Act 1998 in the UK, and the European Convention for the Protection of Human Rights and Fundamental Freedoms (ECHR) by the European Court of Human Rights (ECtHR).⁴ As for the European Economic Area, proportionality can be considered one of its fundamental principles.⁵

1. Moshe Cohen-Eliya and Iddo Porat, 'American Balancing and German Proportionality: the Historical Origins' (2010) 8(2) *I·CON* 263 <<https://doi.org/10.1093/icon/moq004>>; Vicki C Jackson, 'Constitutional Law in an Age of Proportionality' (2015) 124(8) *Yale Law Journal* 3094.
2. Víctor Ferreres Comella, 'Beyond the principle of proportionality' in Gary Jacobsohn and Miguel Schor (eds), *Comparative Constitutional Theory* (Edward Elgar 2018) 229.
3. Koen Lenaerts, 'Exploring the Limits of the EU Charter of Fundamental Rights' (2012) 8(3) *European Constitutional Law Review* 375, 391ff <<https://doi.org/10.1017/S1574019612000260>>.
4. Paul Craig, 'Proportionality and Judicial Review: A UK Historical Perspective' in Stefan Vogenauer and Stephen Weatherill (eds), *General Principles of Law: European and Comparative Perspectives* (Hart Publishing 2017) 145.
5. Carl Baudenbacher and Theresa Haus, 'Proportionality as a Fundamental Principle of EEA Law' in Carl Baudenbacher (ed), *The Fundamental Principles of EEA Law* (Springer 2017) 169.

Traditionally, scholars across the globe have focused on the advantages and limitations of the proportionality principle as a standard for constitutional review of laws, regulations, and individual measures by constitutional and other apex courts.⁶ The main discussion has centred on the balancing stage of the proportionality test based on the great margin of appreciation it leaves to the courts as opposed to legislative and executive powers.⁷ This is especially problematic in civil law countries, where case law is not a primary source of law. Solutions to these classical objections, also widely debated, have thus focused on the need to justify every step of the proportionality test.⁸ They have also analysed mechanisms to appoint judges in apex courts, the duration of their term and other institutional checks to balance democratic legitimacy with an effective and eventually counter-majoritarian constitutional control.⁹

Recently, other limitations of the proportionality principle have started to play a central role, in particular, those related to contexts of factual uncertainty, where complex and dense technical or scientific data are needed to understand reality. When public authorities and the courts do not know for sure the situation they face but still have to adopt or review restrictions to rights, the principle of proportionality seems relatively useless. This article examines these specific limitations, offering recent examples related to COVID-19 to illustrate them (section 2). It further explores eventual solutions to these weaknesses and their potential shortcomings (section 3), before proposing additional legal tools to reinforce the culture of justification promoted by the principle of proportionality (section 4). Section 5 of the article concludes.

Many of these issues have been partially addressed by scholarship before, mostly in relation to epistemic uncertainty surrounding the normative and empirical data underlying the application of the proportionality principle. Similarly, some of the potential solutions offered to the shortcomings of the principle have been tried by different apex courts, though never consistently. This article draws from all these sources, supplemented by literature focusing on risk management in the face of scientific uncertainty, in order to offer a more comprehensive account of the problem which could improve legal justification in various contexts. Despite mentioning examples drawn from different jurisdictions, both at national

6. David Beatty, *The Ultimate Rule of Law* (OUP 2004) 162; Matthias Klatt and Moritz Meister, *The Constitutional Structure of Proportionality* (OUP 2012); Robert Alexy, 'Proportionality, Constitutional Law, and Sub-Constitutional Law: A Reply to Aharon Barak' (2018) 16(3) *I•CON* 871 <<https://doi.org/10.1093/icon/moy084>>.
7. Stavros Tsakyrakis, 'Proportionality: An assault on human rights?' (2009) 7(3) *I•CON* 468, 475ff <<https://doi.org/10.1093/icon/mop011>>; Francisco J Urbina, 'A Critique of Proportionality' (2012) 57(1) *The American Journal of Jurisprudence* 49, 66; Timothy Endicott, 'Proportionality and Incommensurability' in Grant Huscroft and others (eds), *Proportionality and the Rule of Law: Rights, Justification, Reasoning* (Cambridge University Press 2014) 311. A wider critique of the rhetoric of proportionality can be found in Grégoire CN Webber, 'Proportionality, Balancing, and the Cult of Constitutional Rights Scholarship' (2015) 23(1) *Canadian Journal of Law & Jurisprudence* 179 <<https://doi.org/10.1017/S0841820900004860>>.
8. Robert Alexy, 'Balancing, constitutional review, and representation' (2005) 3(4) *I•CON* 572 <<https://doi.org/10.1093/icon/moi040>>; Malcolm Thorburn, 'Proportionality' in David Dyzenhaus and Malcolm Thorburn (eds), *Philosophical Foundations of Constitutional Law* (OUP 2016) 305; Carlos Bernal Pulido, *El principio de proporcionalidad y los derechos fundamentales* (3rd ed, Centro de Estudios Políticos y Constitucionales 2007) 199.
9. Christopher L Eisgruber, 'Constitutional Self-Government and Judicial Review: A Reply to Five Critics' (2002) 37(1) *University of San Francisco Law Review* 115, 144ff; Bernard Schlink, 'Proportionality in Constitutional Law: Why Everywhere but Here' (2012) 22(1) *Duke Journal of Comparative & International Law* 291, 301-302; Dimitrios Kyritsis, 'Whatever works: Proportionality as a Constitutional Doctrine' (2014) 34(2) *Oxford Journal of Legal Studies* 395, 396-397 <<https://doi.org/10.1093/ojls/gqt033>>. The principle of proportionality could even require a new account of the theory of the separation of powers: see further Julian Rivers, 'Proportionality and Variable Intensity of Review' (2006) 65(1) *The Cambridge Law Journal* 174, 176 <<https://doi.org/10.1017/S0008197306007082>>.

and supranational level, the analysis here is not meant to be a comparative law study. It simply tries to illustrate with recent examples a theoretical problem that may arise in any jurisdiction invoking the traditional version of the principle of proportionality.

2. Framing the Problem

2.1 Limits of the Proportionality Principle under Factual Uncertainty

Despite nuances in different jurisdictions, there seems to be a general consensus on the four main steps that structure the principle of proportionality: (i) analysing the legitimacy of the aim pursued by public powers; (ii) confirming the rational link between the restriction of a right and the intended goal; (iii) exploring if other less restrictive means could achieve the same aim; and (iv) balancing the affected right and the collective interest protected by trying to weigh the costs and benefits of the adopted measure (sometimes known as proportionality *stricto sensu*).¹⁰ This is the most widely used version of proportionality in European constitutional courts (originating from Germany),¹¹ the Court of Justice of the European Union (CJEU)¹² and the ECtHR,¹³ especially in negative rights cases.¹⁴

The first question of the proportionality test is purely theoretical or intellectual. Courts simply need to analyse constitutional provisions to confirm whether they expressly or implicitly entrust the protection of a collective interest or right to public authorities. This is a matter of plain legal interpretation that seldom raises concerns.¹⁵ However, the three subsequent questions often rest upon a factual basis. It is true that the principle of proportionality is also applied to issues that are more normative than empirical, where necessity refers to ‘moral necessity’ and balancing includes goods and harms that are purely incommensurable (eg the ‘need’ and ‘benefits’ of prohibiting prostitution in order to protect public order).¹⁶ Nevertheless, in many other cases these concepts are addressed as a technical issue depending on scientific and technical knowledge. One needs to know the specific effects of a particular measure to determine if it contributes to achieving the intended aim. Exploring alternative means to reach it and comparing their effectiveness with the restriction under

10. Robert Alexy, *Theorie der Grundrechte* (Suhkamp 1986) 100ff; Aharon Barak, *Proportionality: Constitutional Rights and their Limitations* (Cambridge University Press 2012) 243-270; Mordechai Kremnitzer and others (eds), *Proportionality in Action: Comparative and Empirical Perspectives on the Judicial Practice* (Cambridge University Press 2020).

11. Dieter Grimm, ‘Proportionality in Canadian and German Constitutional Jurisprudence’ (2007) 57(2) *The University of Toronto Law Journal* 383, 384; Afroditi Marketou, *Local Meanings of Proportionality* (Cambridge University Press 2021).

12. Davor Šušnjar, *Proportionality, Fundamental Rights and Balance of Powers* (Brill Nijhoff 2010) 163ff; Wolf Sauter, ‘Proportionality in EU Law: A Balancing Act?’ (2013) 15(1) *Cambridge Yearbook of European Legal Studies* 439, 448; Tor-Inge Harbo, *The Function of Proportionality Analysis in European Law* (Brill Nijhoff 2015) 108ff.

13. Jonas Christoffersen, *Fair Balance: Proportionality, Subsidiarity and Primarity in the European Convention on Human Rights* (Martinus Nijhoff 2009) 37ff; Adam Ramshaw, ‘The case for replicable structured full proportionality analysis in all cases concerning fundamental rights’ (2019) 39(1) *Legal Studies* 120 <<https://doi.org/10.1017/1st.2018.18>>.

14. Stephen Gardbaum ‘Positive and Horizontal Rights: Proportionality’s Next Frontier or a Bridge Too Far?’ in Vicki Jackson and Mark Tushnet (eds), *Proportionality: New Frontiers, New Challenges* (Cambridge University Press 2017) 219, 221.

15. Alec Stone Sweet and Jud Mathews, ‘Proportionality Balancing and Global Constitutionalism’ (2008-2009) 47(1) *Columbia Journal of Transnational Law* 72, 75; Martin Borowski, ‘Absolute Rechte und Verhältnismäßigkeit’ in Stephan Kirste and others (eds), *Menschenwürde im 21. Jahrhundert* (Nomos 2018) 47, 54.

16. Kira Vrist Rønn and Kasper Lippert-Rasmussen, ‘Out of Proportion? On Surveillance and the Proportionality Requirement’ (2020) 23(1) *Ethical Theory and Moral Practice* 181 <<https://doi.org/10.1007/s10677-019-10057-z>>.

review also imply knowing what these effects are. Finally, comparing the costs and benefits of the measure requires again knowing what these costs and benefits will be, at least with a reasonable degree of precision.¹⁷ After all, the benefits expected with the restriction of a right cannot be merely hypothetical or fictitious,¹⁸ if we want the principle of proportionality to be a real check on public authorities and not just a logical or rhetorical tool, as some of its critics argue.¹⁹

The problem is that not all of these factual data are always available, especially in contexts with a high level of technical or scientific complexity. There are cases in which the most reliable means of evidence available only show that the facts are dubious, controversial, or even impossible to ascertain according to the current state of knowledge. In other cases, scientific or technical evidence is simply missing, due to the unprecedented nature of the events.²⁰ In all these cases, courts and public powers cannot rely on the proportionality principle to adopt or control restrictions of rights.

2.2. Recent Examples Related to COVID-19

The COVID-19 crisis offers perfect examples to illustrate the problem. Despite the quick and commendable scientific research carried out in relation to COVID-19, the lack of data at the beginning of the pandemic or related to each new variant of Sars-COV-2, together with partial disagreement within the scientific community make it a perfect case to verify the insufficiency of the proportionality principle as an instrument of constitutional control under factual uncertainty.²¹ The fact that the legitimate aim pursued by public authorities is difficult to dispute – most constitutions mandate them to protect life, security, and public health – also facilitates our analysis.²² Besides, the intensity and scope of the restrictions in most countries make it even more pressing and useful.²³ The examples addressed in the fol-

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17. Carlos Bernal Pulido, 'The Rationality of Balancing' (2006) 92(2) *ARSP: Archiv für Rechts- und Sozialphilosophie* 195, 205; Moshe Cohen-Eliya and Iddo Porat, 'Proportionality and the Culture of Justification' (2013) 59(2) *The American Journal of Comparative Law* 463, 470; Martin Borowski, 'On Apples and Oranges. Comment on Niels Petersen' (2013) 14(8) *German Law Journal* 1409, 1415ff <<https://doi.org/10.1017/S2071832200002327>>; Raanan Sulitzeanu-Kenan and others, 'Facts, Preferences, and Doctrine: An Empirical Analysis of Proportionality Judgment' (2016) 50(2) *Law & Society Review* 348, 352 <<https://doi.org/10.1111/lasr.12203>>; Barak (n 10) 321.
 18. For some scholars, the last part of the proportionality test only rests on normative premises. See eg Mattias Kumm, 'Political Liberalism and the Structure of Rights: On the Place and Limits of the Proportionality Requirement' in George Pavlakos (ed), *Law, Rights and Discourse: The Legal Philosophy of Robert Alexy* (Hart Publishing 2007) 131, 137; Niels Petersen, 'How to Compare the Length of Lines to the Weight of Stones: Balancing and the Resolution of Value Conflicts in Constitutional Law' (2008) 14(8) *German Law Journal* 1387, 1392-1393 <<https://doi.org/10.1017/S2071832200002315>>.
 19. Endicott (n 7); Francisco J Urbina, 'Incommensurability and Balancing' (2015) 35(3) *Oxford Journal of Legal Studies* 575, 604-605 <<https://doi.org/10.1093/ojls/gqv015>>.
 20. Vern R Walker, 'The Siren Songs of Science: Toward a Taxonomy of Scientific Uncertainty for Decisionmakers' (1991) 23(1) *Connecticut Law Review* 567; Andrew Stirling, 'Risk precaution and science: towards a more constructive policy debate' (2007) 8(4) *Embo Reports* 309 <<https://doi.org/10.1038/sj.embor.7400953>>.
 21. Harry Rutter and others, 'Managing uncertainty in the covid-19 era' (2020) 370(1) *BMJ* 1 <<https://doi.org/10.1136/bmj.m3349>>; Qingmei Han and others, 'Uncertainties About the Transmission Routes of 2019 Novel Coronavirus' (2020) 14(4) *Influenza Other Respir Viruses* 470 <<https://doi.org/10.1111/irv.12735>>; Nancy H L Leung and others, 'Respiratory virus shedding in exhaled breath and efficacy of face masks' (2020) 26(1) *Nature Medicine* 676 <<https://doi.org/10.1038/s41591-020-0843-2>>.
 22. At European level, Articles 8 to 11 ECHR and Article 2 of Protocol no 4 to the ECHR (freedom of movement) also mention public health as one of the legitimate aims for the restriction of rights.
 23. A good summary of the restrictions at the beginning of the pandemic can be found in Paul R Hunter and others, 'Impact of Non-Pharmaceutical Interventions against COVID-19 in Europe in 2020: a Quasi-Experimental Non-Equivalent Group and Time Series Design Study' (2021) 26(28) *Eurosurveillance* 2001401 <<https://doi.org/10.2807/1560-7917.ES.2021.26.28.2001401>>.

lowing are drawn from different jurisdictions, both at national and supranational level. As already stated, the research here is not meant to be a comparative law analysis. It just tries to illustrate with recent examples the theoretical problem raised before. In that sense, we will largely disregard the fact that COVID-19 measures were taken according to emergency provisions in many countries.²⁴ While this ensures that legislative and executive powers are larger than usual, often involving less consultation with experts and the public, and often in a less transparent way, this does not necessarily affect *per se* the problem raised herein – ie the impact of factual uncertainty on the proportionality analysis.

In relation to the rational link between the measures adopted by public authorities and the protection of life and public health, there is currently quasi-unanimous scientific consensus on the way the coronavirus spreads, mainly through droplets and small airborne particles breathed by people at close distance, in poorly ventilated or crowded indoor settings and, more rarely, when touching eyes, nose or mouth after being in contact with surfaces contaminated by the virus.²⁵ However, at the beginning of the pandemic, the modes of transmission of the coronavirus were not so well-known. For example, potential virus transmission from animal to human was then suspected, which motivated a recommendation to avoid ‘wet’ markets and contact with animals in China.²⁶ However, airborne transmission of the virus through microdroplets was hugely controversial within the scientific community, which did not prevent public authorities from approving indoor capacity limitations.²⁷ Similarly, the transmission of the virus through substances of human origin (known as SoHo, ie blood, tissues, cells or organs) was not excluded, which led to a widespread prohibition on donating these substances after suffering from COVID-19 or, a few months later, after being vaccinated, seemingly unjustified according to subsequent evidence.²⁸ In all of these cases, the crux of the matter is not whether the modes of transmission of SARS-COV-2 were (airborne) or were not (animal and SoHo) confirmed by *ex post facto* scientific evidence, but the difficulty of ensuring that a given restriction of rights effectively contributes to protecting public health, something scientific authorities cannot always confirm at the time the restriction is adopted. Public authorities themselves acknowledged that the available data were not conclusive, which did not prevent the adoption of restrictive measures.²⁹

24. See further Joelle Grogan, ‘States of Emergency’ (2020) *European Journal of Law Reform* 338 <<https://doi.org/10.5553/EJLR/138723702021022004002>>.

25. World Health Organization, ‘Coronavirus Disease (COVID-19): How is it Transmitted?’ (23 December 2021) <www.who.int/news-room/questions-and-answers/item/coronavirus-disease-covid-19-how-is-it-transmitted> accessed 31 December 2022. Unless otherwise stated, all subsequent URLs have been accessed on the same date (31 December 2022).

26. European Centre for Disease Prevention and Control, ‘Risk assessment: Outbreak of acute respiratory syndrome associated with a novel coronavirus, Wuhan, China; first update’ (22 January 2020) 5-8 <www.ecdc.europa.eu/sites/default/files/documents/Risk-assessment-pneumonia-Wuhan-China-22-Jan-2020.pdf>; European Centre for Disease Prevention and Control, ‘Outbreak of acute respiratory syndrome associated with a novel coronavirus, China: first local transmission in the EU/EEA—third update’ (31 January 2020) 6 <www.ecdc.europa.eu/sites/default/files/documents/novel-coronavirus-risk-assessment-china-31-january-2020_0.pdf>.

27. Nick Wilson and others, ‘Airborne Transmission of Covid-19: Guidelines and Governments Must Acknowledge the Evidence and Take Steps to Protect the Public’ (2020) 370(1) *BMJ* 1 <<https://doi.org/10.1136/bmj.m3206>>; Lidia Morawska and Donald K. Milton, ‘It Is Time to Address Airborne Transmission of Coronavirus Disease 2019 (COVID-19)’ (2020) 71(9) *Clinical Infectious Diseases* 2311 <<https://doi.org/10.1093/cid/ciaa939>>.

28. Jeremy W Jacobs and others, ‘Refusing blood transfusions from COVID-19-vaccinated donors: are we repeating history?’ (2021) 196(3) *British Journal of Haematology* 585 <<https://doi.org/10.1111/bjh.17842>>; European Centre for Disease Prevention and Control, ‘Novel coronavirus disease 2019 (COVID-19) pandemic: increased transmission in the EU/EEA and the UK – sixth update’ (12 March 2020) 19 <www.ecdc.europa.eu/sites/default/files/documents/RRA-sixth-update-Outbreak-of-novel-coronavirus-disease-2019-COVID-19.pdf>.

29. World Health Organization, ‘Transmission of SARS-CoV-2: implications for infection prevention precautions’ (9 July 2020) <https://apps.who.int/iris/bitstream/handle/10665/333114/WHO-2019-nCoV-Sci_Brief-Transmission_modes-2020.3-eng.pdf?sequence=1&isAllowed=y>.

Some of the measures adopted against COVID-19, such as curfews, were even later found to be counterproductive in some countries due to behavioural patterns of the population.³⁰ In this kind of scenario, the first part of the proportionality test simply cannot be completed when the restrictions are adopted, at least not with enough certainty.

Concerning the necessity of each restriction, at the beginning of the pandemic or with each new variant of the coronavirus it was not easy to determine if less restrictive measures could achieve the same result, as the degree of effectiveness of every single protective measure remained largely unknown.³¹ In fact, scientific authorities could only provide different scenarios with risks ranging from small to the most extreme ones hypothetically requiring different measures in each case, but without knowing for sure the actual situation of every country or region (and the courts could know it even less when reviewing each measure).³² A simple divergence between the scenario assumed by public authorities and the actual scenario could lead to measures stricter than needed at a given point in time. This was particularly the case with general lockdowns adopted by several countries, a measure never tested before, and the effectiveness of which in comparison to softer restrictions is still contested.³³ Similar concerns can be raised in relation to the varying physical distances imposed at different moments during the pandemic, directly impacting the maximum capacity of buildings or social and cultural venues (thus restricting freedom of enterprise or freedom of religion among other rights).³⁴ The general obligation to use face masks even in outdoor settings adopted by some countries also remains controversial.³⁵

Finally, as far as balancing or proportionality *stricto sensu* is concerned, scientific uncertainty directly affected, for example, the partial or total closures of educational establishments, one of the most common restrictive measures adopted by more than 150 countries during the pandemic.³⁶ In this case, the contribution of the measure to public health protection was not and still is not clear at all, nor was the exact burden imposed, as the effects of school closures on children and adolescents' mental health, social and personal development or education continue to be analysed.³⁷ How, then, do we assess whether the beneficial

30. David García-García and others, 'Assessing the effect of non-pharmaceutical interventions on COVID-19 transmission in Spain, 30 August 2020 to 31 January 2021' (2022) 27(19) *Eurosurveillance* 2100869 <<https://doi.org/10.2807/1560-7917.ES.2022.27.19.2100869>>.
31. Hendrik M Wendland, 'When Good is not Good Enough: A Comparative Analysis of Underinclusiveness and the Principle of Coherence under Proportionality Review' (2018) 25(3) *Maastricht Journal of European and Comparative Law* 332, 353 <<https://doi.org/10.1177/1023263X18769500>>; Gloria Lopera Mesa, 'Principio de proporcionalidad y control constitucional de las leyes penales' in Miguel Carbonell (ed), *El principio de proporcionalidad y la argumentación constitucional* (Ministerio de Justicia y Derechos Humanos 2008) 269, 282.
32. European Centre for Disease Prevention and Control (n 28) 8ff.
33. Mario Coccia, 'The relation between length of lockdown, numbers of infected people and deaths of Covid-19, and economic growth of countries: Lessons learned to cope with future pandemics similar to Covid-19 and to constrain the deterioration of economic system' (2021) 775(1) *Science of the Total Environment* 1, 7-8 <<https://doi.org/10.1016/j.scitotenv.2021.145801>>.
34. The varying social distances established by different countries could even be arbitrary according to the current state of knowledge: see University of Cambridge, 'Two-metre COVID-19 rule is "arbitrary measurement" of safety' (23 November 2021) <www.cam.ac.uk/research/news/two-metre-covid-19-rule-is-arbitrary-measurement-of-safety>.
35. World Health Organization, *Mask use in the context of COVID-19: Interim guidance* (1 December 2020) 10-11 <<https://apps.who.int/iris/handle/10665/337199>>.
36. UNICEF, 'COVID-19 and School Closures: One year of education disruption' (March 2021) 5 <<https://data.unicef.org/resources/one-year-of-covid-19-and-school-closures/>>.
37. Russell M Viner and others, 'School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review' (2020) 4(5) *Lancet Child & Adolescent Health* 397 <[https://doi.org/10.1016/S2352-4642\(20\)30095-X](https://doi.org/10.1016/S2352-4642(20)30095-X)>; Tone Bjordal Johansen and others, 'Infection prevention guidelines and considerations for paediatric risk groups when reopening primary schools during COVID-19 pandemic, Norway, April 2020' (2020) 25(22) *Euro Surveillance* 1, 5 <<https://doi.org/10.2807/1560-7917.ES.2020.25.22.2000921>>.

effects of this restriction outweigh the burden imposed, if both ends of the scales remain scientifically uncertain?³⁸

This is not to say that all the aforementioned measures were not constitutionally valid under the exceptional circumstances that existed during the pandemic, especially if we consider that emergency law varies in each country. As explained in the introduction, the point is simply to show how the principle of proportionality may not be sufficient to control the restriction of rights under conditions of uncertainty. Even if it is a useful tool to structure legal reasoning in these cases and an effective check on certain measures (those that are clearly inappropriate, unnecessary or disproportionate), it cannot be the only check available on legislative and executive powers when exercising legal and constitutional review.

3. Potential Solutions and their Shortcomings

3.1 Completing the Proportionality Test or the Weight Formula

Some suspect that the principle of proportionality conceals the subjective preferences of judges when addressing the balance of rights and interests, in line with the postulates of legal realism.³⁹ In cases of factual uncertainty, especially related to complex technical or scientific issues, the difficulty for the courts to understand the information at their disposal, or their reluctance to deal with great complexity, may lend credence to this suspicion.⁴⁰ During the pandemic, the urgency of the decisions and the limited time to hear third-party experts may have accentuated the problem.⁴¹ However, if the principle of proportionality aspires to be a real and objective check on public authorities also under those circumstances, the problem identified in the previous section should be addressed in a timely manner. In the following, three potential solutions for this purpose are explored.

The first option to counter factual uncertainties when applying the principle of proportionality would be to complement the principle or to make it more accurate. Courts would continue to apply it but with certain changes. Robert Alexy, one of the leading scholars dealing with the principle of proportionality, is aware of its shortcomings under factual uncertainty. That is why he tried to supplement his ‘first law of balancing’ (or ‘substantive law of balancing’), used by most constitutional courts to carry out the last step of the proportionality test,⁴² in cases of ‘empirical epistemic discretion’.⁴³ To this end he developed a ‘second law of balancing’ (or ‘epistemic law of balancing’) according to which ‘the more heavily an interference in a constitutional right weighs, the greater must be the certainty of its underlying premises’.⁴⁴

38. Balancing not only considers the abstract weight of rights and interests, but also their concrete weight depending on the specific circumstances at stake: Matthias Klatt, ‘An egalitarian defense of proportionality-based balancing: A reply to Luc B. Tremblay’ (2015) 12(4) *I·CON* 891 <<https://doi.org/10.1093/icon/mou061>>; Aleardo Zanghellini, ‘Raz on Rights: Human Rights, Fundamental Rights, and Balancing’ (2017) 30(1) *Ratio Juris* 25 <<https://doi.org/10.1111/raju.12156>>.

39. Victoria Nourse and Gregory Shaffer, ‘Varieties of New Legal Realism: Can a New World Order Prompt a New Legal Theory’ (2009) 95(1) *Cornell Law Review* 106, 106–107; Kai Möller, ‘Balancing and the structure of constitutional rights’ (2007) 5(3) *I·CON* 453, 463–465 <<https://doi.org/10.1093/icon/mom023>>; Schlink (n 9) 299–301.

40. David L Faigman, ‘Judges as “Amateur Scientists”’ (2006) 86(1) *Boston University Law Review* 1207, 1225; Paola Monaco, ‘Science at the Italian Bar: The Case of Hydroxychloroquine’ (2021) 7(1) *The Italian Law Journal* 271, 281–282.

41. Lindsay F Wiley, ‘Public health law and science in the community mitigation strategy for Covid-19’ (2020) 7(1) *Journal of Law and the Biosciences* 1, 2 <<https://doi.org/10.1093/jlb/lsaa019>>.

42. Alexy (n 8) 573.

43. Robert Alexy, ‘Formal principles: Some replies to critics’ (2014) 12(3) *I·CON* 511, 519–520 <<https://doi.org/10.1093/icon/mou051>>.

44. In the weight formula proposed by Alexy, a reliability variable would be included to achieve a ‘refined complete

This second law could result in a refined or more complete ‘weigh formula’, as developed by Alexy himself, or at least introduce an additional question into the proportionality test. The courts would ask themselves (before addressing the suitability, necessity and proportionality *stricto sensu* criteria) whether there exists sufficient empirical – and normative – reliability to justify restrictive measures so intense as those under review. This would attempt to strike a difficult balance. On the one hand, public powers sometimes need to restrict fundamental rights even when there is no complete certainty on the threat to collective interests. On the other hand, it is equally necessary to prevent potential excesses of public powers, which should not be allowed to restrict rights in the face of any kind of threat, no matter how light.⁴⁵

The problem with Alexy’s approach is that it fails to take into account potentially catastrophic risks whose scale and probability remain largely unknown but cannot be excluded (or even known low-probability risks with potentially catastrophic effects – the so-called ‘black swans’). These risks would require highly anticipatory measures.⁴⁶ This is precisely what happened with COVID-19, where high-intensity early interventions saved large numbers of lives.⁴⁷ Such interventions would probably not meet the standard set by the epistemic law of balancing due to the low reliability of their premises and the large intensity of the restrictions, potentially hindering the much-needed early prevention of certain risks.

A similar option to that proposed by Alexy could focus on the probability and magnitude of the potential threat to a collective interest rather than on the intensity of the restriction. In that sense, the greater the probability of a risk, the extent of the expected damages and the reliability or likelihood of the premises, the lower the other two variables may be to allow the intervention of public authorities (ie to confirm the validity of the restriction of rights).⁴⁸ These variables could be supplemented by others, such as the proximity of the expected damages, assuming that the more imminent those damages are, the more justified the restriction of rights would be. That way, potentially catastrophic and highly probable events could be more easily prevented, even when there is low confidence in the empirical premises or a low reliability of their accuracy (such as COVID-19 when the impact of human-to-human transmission of the virus was still unknown and impossible to quantify).⁴⁹

Once the possibility for public powers to intervene would be stated, the traditional first law of balancing could be applied to consider the abstract and concrete weights of the collid-

weight formula’: *ibid* 514. This is analysed in Matthias Klatt and Johannes Schmidt, ‘Epistemic discretion in constitutional law’ (2012) 10(1) *I-CON* 69 <<https://doi.org/10.1093/icon/mor056>>; and Jorge Alexander Portocarrero Quispe, *La ponderación y la autoridad en el Derecho. El rol de los principios formales en la interpretación constitucional* (Marcial Pons 2016) 141ff.

45. The first option – insufficient intervention – would be typical from 19th-century liberal States and a strict application of the principle *in dubio pro libertate* (n 73). The second option – excessive intervention – would be reminiscent of what some scholars have called the ‘State of Prevention 2.0 [*Prävention-II*]’: see Erhard Denninger, ‘Die Polizei im Verfassungsgefüge’ in Hans Liskén and Erhard Denninger (eds), *Handbuch des Polizeirechts: Gefahrenabwehr, Strafverfolgung, Rechtsschutz* (5 ed, C H Beck 2012) 65-67.

46. Eliezer Yudkowsky, ‘Cognitive Biases Potentially Affecting Judgment of Global Risks’ in Nick Bostrom and Milan M Ćirković (eds), *Global Catastrophic Risks* (OUP 2008) 95.

47. Daniel K Goyal and others, ‘Early Intervention Likely Improves Mortality in COVID-19 Infection’ [2020] *Clinical Medicine* 248 <<https://doi.org/10.7861/clinmed.2020-0214>>; Marissa L Childs, ‘The impact of long-term nonpharmaceutical interventions on COVID-19 epidemic dynamics and control: the value and limitations of early models’ (2021) *Proceedings of the Royal Society: Biological Sciences* 1, 12 <<https://doi.org/10.1098/rspb.2021.0811>>.

48. Alexy (n 43) 515; Neil A Manson, ‘Formulating the precautionary principle’ (2002) *Environmental Ethics* 263, 267; Udo Di Fabio, *Risikoentscheidungen im Rechtsstaat* (J C B Mohr 1994) 159.

49. World Health Organization (n 29) 5.

ing principles.⁵⁰ In practice, this would mean that public authorities have the onus to prove that sufficient evidence exists for them to restrict certain rights, unless the expected damages, though uncertain, are so high and probable as to justify the shift of the burden of proof. Two examples can illustrate this solution:

- (i) The complete lockdown imposed by several countries at the beginning of the pandemic (eg the case in Italy and Spain) may be considered legitimate given that the high initial uncertainty as to the premises (scenarios, existing cases, speed of transmission etc) was compensated by potentially catastrophic damages with a high probability if the premises were confirmed. Once considered legitimate, traditional balancing applied on the assumed premises would probably have validated the measure;⁵¹
- (ii) Instead, despite its overall beneficial effects, a ban on smoking exclusively based on COVID-19 (such as the one imposed at the beginning of the pandemic in India or South Africa) would not be legitimate from the outset, since high scientific uncertainty on the effects of tobacco on Sars-COV-2 infections was coupled with a limited probability of preventing damages (the effects were worse on long-term smokers, a condition that cannot change with a provisional ban on smoking) and a smaller impact in terms of public health (being a smoker could increase the severity of the illness, but not the number of infections).⁵² Thus, the ‘first law of balancing’ would not be applied because excessive uncertainty would have prevented public powers from acting.

3.2 Emphasising Judicial Deference

A second option to ameliorate the shortcomings of the proportionality principle as a constitutional standard under factual uncertainty is to grant legislative and executive powers some discretion to determine the conditions underlying each restrictive measure.⁵³ That is to say, they would be granted a margin of appreciation to assess the facts prior to the implementation of the principle, thus limiting the extent of judicial review. This solution could even be modulated depending on the level of factual, scientific or technical uncertainty: the higher the uncertainty surrounding the facts is, the greater judicial deference to other powers could be.⁵⁴ It can also be affected by emergency provisions that usually grant larger discretion to legislative and executive powers.

50. The impact of scientific uncertainty on the structure of balancing during the COVID-19 crisis is analysed in Fabrizio Cafaggi and Paola Iamiceli, ‘Uncertainty, Administrative Decision-Making and Judicial Review: The Courts’ Perspectives’ (2021) 12(4) *European Journal of Risk Regulation* 792, 807–816 <<https://doi.org/10.1017/err.2021.47>>.

51. Shuxian Zhang and others, ‘COVID-19 containment: China provides important lessons for global response’ (2020) 14(2) *Frontiers of Medicine* 215 <<https://doi.org/10.1007/s11684-020-0766-9>>; European Centre for Disease Prevention and Control (n 28) 7, 12ff.

52. Richard N van Zyl-Smit and others, ‘Tobacco Smoking and COVID-19 Infection’ (2020) 8(7) *Lancet Respiratory Medicine* 664 <[https://doi.org/10.1016/S2213-2600\(20\)30239-3](https://doi.org/10.1016/S2213-2600(20)30239-3)>; Emily J Grundy and others, ‘Smoking, SARS-CoV-2 and COVID-19: A review of reviews considering implications for public health policy and practice’ (2020) 18(1) *Tobacco Induced Diseases* 58 <<https://doi.org/10.18332/tid/124788>>. Smoking bans of different intensity were adopted in South Africa, India and Spain.

53. Caroline Henckels, ‘Proportionality and the separation of powers in Constitutional Review: examining the role of judicial deference’ (2017) 45(1) *Federal Law Review* 181, 192–193.

54. This is the solution traditionally accepted in Germany since 1979: see BVerfG 1 March 1979 1 BvR 532/77 [131]. Some scholars have proposed that the more intense a restriction of rights, the stricter judicial review should be, regardless of the degree of scientific uncertainty: see eg Rivers (n 9) 202–206. The German Federal Constitutional Court has recently combined both standards to uphold mandatory vaccination of health professionals. According to the court, the margin of appreciation granted to lawmakers should be lower if the restriction is more intense or affects certain fundamental rights, while being larger in case of factual complexity: see BVerfG 27 April 2022 1 BvR 2649/21 [187].

In fact, deference of the courts to parliaments, government or administrative bodies has been repeatedly invoked by apex courts during the pandemic, based on different legal foundations. They have sometimes resorted to direct democratic legitimation of lawmakers and regulators and their political discretion to justify a linked secondary power to assess factual issues (the level of risk for a protected interest, the economic and material capacity to fight it, feasibility of alternative measures, side effects and indirectly affected values).⁵⁵ Reference has also been made to the greater technical capacity of other powers to determine the facts underlying their decisions, ie their better means, preparation, advice and experience compared to the courts.⁵⁶ In a broader sense, courts have invoked the presumption of validity of laws, regulations and administrative measures to justify a greater degree of judicial deference in cases of factual, scientific or technical uncertainty.⁵⁷ Some scholars even refer to a ‘presumption of proportionality’.⁵⁸ Finally, more recently, judicial deference has been strengthened on the basis of emergency constitutional states or regulations that would grant lawmakers and executive powers an even wider scope of action in comparison to ordinary times, including a wider margin of appreciation to establish the facts.⁵⁹

However, this solution poses several problems. Firstly, despite their proclaimed deference to other powers, apex courts rarely stop there. They take deference as a starting point to apply the proportionality test later. That is why they have declared some regulations and measures void for being disproportionate in spite of acknowledging the existence of factual uncertainties concerning their adequacy or their necessity.⁶⁰ In that sense, it would be strange to replace the balancing of rights and interests carried out by legislative and executive powers – something controversial to review if we consider their direct democratic legitimacy and political discretion – while respecting their margin of appreciation concerning the facts – something the courts usually review outside the context of proportionality, even if to a limited extent.⁶¹ To shift the burden of proof to those whose rights have been restricted

55. In the EU, see Case C-221/09 *AJD Tuna Ltd* [2011] ECR I-1655, paras 79-81. In Germany, directly related to COVID-19, see BVerfG 12 May 2020 1 BvR 1027/20 [5]; BVerfG 13 May 2020 1 BvR 1021/20 [10]; BVerfG 19 May 2020 2 BvR 483/20 [8]. In France, see Conseil Constitutionnel 2020-803 DC 9 July 2020 CSCL2017844S [13] and no. 2020-808 DC of 13 November 2020 CSCL2031201S [6]. In Spain, see Tribunal Constitucional 99/2019 18 July 2019 BOE-A-2019-11911 [6A] and 112/2021 of 13 May [8]. In the United States, this solution has also been applied by the Supreme Court (eg *Gonzales v Carhart*, 550 US 124 (2007) 33-36), though quite inconsistently: see Caitlin E Borgmann, ‘Rethinking Judicial Deference to Legislation Fact-Finding’ (2009) 84(1) *Indiana Law Journal* 1, 7ff.
56. In the EU, see Case T-74/00, *Artegodan GmbH v Commission* [2002] ECR II-494, paras 197-200 and Case T-392/02, *Solvay Pharmaceuticals BV v Council of the European Union* [2003] ECR II-04555, paras 125-126. It has been referred to as an administrative ‘margin of appraisal’: Silvere Lefevre and Miro Prek, ‘“Administrative Discretion”, “Power of Appraisal” and “Margin of Appraisal” in Judicial Review Proceedings before the General Court’ (2019) 56(2) *Common Market Law Review* 339 <<https://doi.org/10.54648/cola2019027>>.
57. John Mark Keyes, ‘Judicial Review of COVID-19 Legislation – How have the Courts Performed?’, *Ottawa Faculty of Law Working Paper*, 2022-15, 8 <<http://dx.doi.org/10.2139/ssrn.4170180>>.
58. Laura Clérico, ‘El principio de proporcionalidad: entre el por acción y la insuficiencia por omisión o defecto’ in Miguel Carbonell (ed), *El principio de proporcionalidad y la argumentación constitucional* (Ministerio de Justicia y Derechos Humanos 2008) 153; Julian Rivers, ‘The Presumption of Proportionality’ (2014) 77(3) *The Modern Law Review* 409 <<https://doi.org/10.1111/1468-2230.12072>>. In Germany, BVerfG 12 May 2020 1 BvR 1027/20 [8].
59. Cafaggi and Iamiceli (n 50) 795; Jan Petrov, ‘The COVID-19 emergency in the age of executive aggrandizement: what role for legislative and judicial checks?’ (2020) 8(1-2) *The Theory and Practice of Legislation* 71, 81 <<https://doi.org/10.1080/20508840.2020.1788232>>; Gilad Abiri and Sebastián Guidi, ‘The Pandemic Constitution’ (2021) 60(1) *Columbia Journal of Transnational Law* 68. However, higher judicial deference did not entail a complete lack of judicial review: see Tom Ginsburg and Mila Versteeg, ‘The Bound Executive: Emergency Powers During the Pandemic’ (2021) 19(5) *J-CON* 1498 <<https://doi.org/10.1093/icon/moab059>>.
60. For example, in Germany, BVerfG 26 February 2020 2 BvR 2347/15 [238] [256] [271], in relation to assisted suicide or, in the United States, *Stenberg v Carhart* (*Carhart I*) 530 US 914 [2000] 19, in relation to partial birth abortion and medical uncertainty.
61. Paul Daly, ‘Facticity: Judicial Review of Factual Error in Comparative Perspective’ in Peter Cane and others (eds),

does not seem convincing either, since it would entail a negative proof almost impossible to achieve. They would have to prove with enough certainty the disproportionate character of measures expressly adopted under uncertainty.⁶²

Secondly, deference to legislative or executive powers to determine the facts would transform the principle of proportionality into a mandate for public powers instead of a judicial standard of control. The control of the adopted measures would turn into a reasonableness or non-arbitrariness standard, thus declaring void only those laws, regulations or measures that are manifestly inadequate, unnecessary or disproportionate.⁶³ This can lead to a distortion in cases where scientific or technical knowledge rapidly evolves. In such cases, the moment to apply the proportionality test would not be clear. On the one hand, it could be based on the knowledge existing when the measure under review was adopted, thus resembling a reasonableness standard of control as it would require public powers to adopt a justifiable decision based on the information available at the time. On the other hand, it could be based on the knowledge existing when the judicial review takes place, in which the evolution of science may have shown the inadequacy, lack of necessity or disproportionate character of the measures under review. This way, courts would prevent unconstitutional laws or measures remaining valid, even if their initial adoption could be deemed reasonable.⁶⁴ We believe this solution to be more accurate. However, deference to lawmakers, regulators or administrative agencies would be problematic in that scenario.

Finally, if judicial deference to parliaments, governments or the administration is based on their greater technical capacity to assess and determine the facts underlying a restriction of rights, we must ensure that this is truly the case in order to avoid a blind spot for judicial control.⁶⁵ This would require increased motivation, justification and transparency standards, together with deeper *ex ante* evaluations of any law, regulation or measure even in cases of emergency.⁶⁶ Suppressing or softening those requirements when urgent measures are needed, as has happened in many countries during the pandemic, while extending judicial deference may lead to arbitrary or ill-considered restrictions of rights devoid of effective control⁶⁷. An example of good practice can be found in the famous *Cannabis* case before the

The Oxford Handbook of Comparative Administrative Law (OUP 2021) 901; Klaus Meßerschmidt, 'Evidence-based review of legislation in Germany' (2016) 4(2) *The Theory and Practice of Legislation* 209, 216 <<https://doi.org/10.1080/20508840.2016.1249676>>.

62. As stated in some cases by the German Federal Constitutional Court (eg in relation to assisted suicide or life imprisonment) or the French Council of State (eg in relation to visa suspension during the COVID-19 pandemic), factual uncertainty should not play against the affected rightholders: (BVerfG 21 June 1977 1 BvL 14/76 [174]; BVerfG 26 February 2020 2 BvR 2347/15 [238]; Conseil d'État 21 January 2021 no. 447878 ECLI:FR:CEORD:2021:447878.20210121 [18]).

63. See inter alia Filippo Borriello, 'Principle of Proportionality and The Principle of Reasonableness' (2020) 13(2) *Review of European Administrative Law* 155 <<https://doi.org/10.7590/187479820X15930701852292>>; Paul Craig, 'Reasonableness, Proportionality and General Grounds of Judicial Review: A Response' (2021) 2(1) *Keele Law Review* 1 <<https://keelelawreview.com/volume-2>>; Jud Mathews, 'Reasonableness and Proportionality' in Peter Cane and others (eds), *The Oxford Handbook of Comparative Administrative Law* (OUP 2021) 917.

64. Barak (n 10) 346; BVerfG 27 April 2022 1 BvR 2649/21 [167] – [170].

65. Paul Horwitz, 'Three Facts of Deference' (2007) 83(3) *Notre Dame Law Review* 1061, 1085; John O McGinnis and Charles W Mulaney, 'Judging Facts Like Law' (2008) 25(1) *Constitutional Commentary* 69, 71.

66. For instance, this argument made the Austrian Constitutional Court annul some restrictions that had not been expressly justified in the regulatory dossier prior to their approval: see Verfassungsgerichtshof, 14 July 2020 V 4111/2020-17 [78] – [80].

67. In Italy, for example, the Constitutional Court has established 'scientific reasonableness' (*ragionevolezza scientifica*) as an additional standard of judicial control over legislative discretion, obliging lawmakers to gather and analyse the available scientific data before passing some laws: Simone Penasa, 'Il dato scientifico nella giurisprudenza della Corte costituzionale: la ragionevolezza scientifica come sintesi tra dimensione scientifica e dimensione assiologica' (2015) 46(2) *Politica del Diritto* 271.

German Federal Constitutional Court in which the court reviewed the medical and scientific data considered by the legislature to sanction the possession of cannabis, but also updated them, to verify the existence of irreducible factual uncertainties and only then grant judicial deference to the parliamentary decision.⁶⁸

3.3 Establishing Prior Rules to Decide which Information Shall Prevail

A third option to deal with factual uncertainties before applying the principle of proportionality is to adopt a prior decision on the information that public powers must include in the proportionality test. As explained in section 2, we do not refer to problems related to the standard of evidence applicable or the election between contradictory pieces of evidence. Such problems are relatively easy to solve by resorting to external experts and detailing the standards of proof applicable.⁶⁹ Courts can have recourse to leading expert bodies and agencies at the national level to assess certain facts, as has been the case during the pandemic in Germany with the Robert Koch Institute, or the creation of an *ad hoc* scientific committee by the Public Health Code in France.⁷⁰ Rather, the problem in focus here arises when those experts, or the available information obtained through other means, recognise their own limits. They cannot determine with full certainty or at least with a minimum degree of confidence what the facts are, or they offer contradictory conclusions that remain unresolved within the scientific community.

In those cases, one could think that the only rule available is to adopt the most probable alternative as the starting scenario to apply the proportionality test or the one that has a wider support within the scientific community, ie the more reliable information in comparison with alternatives according to the experts. However, it is not the only rule available. For example, one could prioritise the information that, if confirmed, would entail higher damages for legally protected interests, damages more difficult to reverse, or a more imminent threat (even if those scenarios were deemed less likely than others or depended upon less reliable information *a priori*). All these rules are content-based and depend on a political choice that can be made beforehand by lawmakers, regulators or the courts themselves. The decision to adopt one rule or another does not derive from a scientific decision.⁷¹ Among these rules, two have continuously clashed over the past decades:

- (i) A rule obliging public powers to include in the proportionality test the most optimistic information available so that the less restrictive measure is finally adopted. That means including the information that assumes the lowest level of risk to prioritise individual rights and liberties pending new or more reliable information, and

68. BVerfGE 9 March 1994 2 BvL 43, 51, 63, 64, 70, 80/92, 2 BvR 2031/92 [124], [143] – [153]. See further Klatt and Schmidt (n 44) 78ff; Alexy (n 43) 520ff.

69. In these cases, a non-expert judge settles the disagreement between the experts, following the expressive Latin aphorism related to scientific and technical evidence: *iudex peritus peritorum* (ie the judge is the expert on the experts).

70. In Germany, see eg BVerfG 1 May 2020 1 BvQ 42/20 [10]; BVerfG 9 June 2020 1 BvR 1230/20 [18]; BVerfG 28 September 2020 1 BvR 1948/20 [4]; BVerfG 16 November 2020 2 BvQ 87/20 [20] [61]. In France, see Conseil Constitutionnel 2020-849 QPC 17 June 2020 CSCX2015317S [23]–[24]; Conseil d’État 13 June 2020 no. 440846 (ECLI:FR:CEORD:2020:440846.20200613) [14]. These bodies are also designed to give advice to lawmakers and regulators, thus being an additional ‘institutional check’ in case of scientific uncertainty: BVerfG 19 November 2021 1 BvR 781/21 [191].

71. Michelle Emerson and Ellen Vos, ‘The Scientification of Politics and the Politicisation of Science’ in Michelle Emerson and Ellen Vos (eds), *Uncertain Risks Regulated* (Routledge 2009) 1; Sheila Jasanoff, *Science and Public Reason* (Routledge 2012).

- (ii) A rule obliging public powers to include in the proportionality test the most pessimist information available, ie the information assuming the highest level of risk to anticipate public intervention, even when that entails an early restriction of individual rights.⁷²

The former rule is inspired by the traditional principle of constitutional interpretation *in dubio pro libertate*.⁷³ The latter rule would be an expression of the more recent but well-established precautionary principle, especially in the European context, by which scientific uncertainty shall not prevent public powers from taking protective measures against certain risks.⁷⁴

To illustrate the potential solution proposed in this section, again using an example related to COVID-19, scientific authorities could not ascertain at the beginning of the pandemic whether asymptomatic people could spread the virus. If they could, the risk of virus transmission was considered very high with major potential damages. In the event they could not, the risk of transmission was considered low to very low.⁷⁵ In view of this extreme uncertainty, impossible to resolve with the scientific knowledge existing at the time, the proportionality of restrictive measures on asymptomatic people or the general public would completely depend on the baseline information adopted, consisting of equally likely alternatives. If the most pessimistic scenario was prioritised, restrictive measures would surely be considered proportionate and thus constitutionally valid; instead, if the most optimistic scenario was adopted under the principle *in dubio pro libertate*, the same measures would be deemed void.

Taking a prior decision on this point by means of a clear and stable rule (eg a common rule for a whole sector, or when the same rights are at stake), instead of an *ad hoc* decision depending on particular circumstances, may favour a more effective application of the proportionality principle. It would also favour its consistency, avoiding disparate restrictions to prevent similar risks, or equivalent measures for substantially different situations. Finally, it would encourage legislatures to take this political decision, instead of leaving it to the executive power or to expert agencies, thus strengthening the democratic legitimacy of the decision as well as legal certainty and the rule of law.⁷⁶

72. Klatt and Meister (n 6) 115.

73. Peter Schneider, 'In dubio pro libertate' in Ernst von Caemmerer and others (eds), *Hundert Jahre deutsches Rechtsleben: FS zum hundertjährigen Bestehen des Deutschen Juristentages 1860-1960*. Bd. 2 (Müller 1960) 263ff; Konrad Hesse, *Grundzüge des Verfassungsrechts der Bundesrepublik Deutschland* (20 ed, CF Müller 1999) 28; Friedrich Müller and Ralph Christensen, *Juristische Methodik I* (10 ed, Duncker & Humblot 2009) 416.

74. See inter alia Birger Arndt, *Das Vorsorgeprinzip im EU-Recht* (Mohr Siebeck 2009); Jonathan B Wiener and others (eds), *The Reality of Precaution. Comparing Risk Regulation in the United States and Europe* (Routledge 2010); Nicolas De Sadeleer, 'Le principe de précaution dans le droit de l'Union européenne' (2017) 33(6) *Revue française de droit administratif* 1025; Silvia Delgado del Saz, *Vorsorge als Verfassungsprinzip im europäischen Umweltverbund: Rechtsvergleichende Überlegungen am Beispiel der Risiken der Mobilfunkstrahlung* (Mohr Siebeck 2017); Borja Sánchez Barroso, *El principio de precaución en España* (Congreso de los Diputados 2021).

75. European Centre for Disease Prevention and Control, Outbreak of acute respiratory syndrome associated with a novel coronavirus, China: first local transmission in the EU/EEA – third update (31 January 2020) 4 <www.ecdc.europa.eu/sites/default/files/documents/novel-coronavirus-risk-assessment-china-31-january-2020_0.pdf>.

76. Gregor Kirchhof, 'The Generality of the Law' in Klaus Meßerschmidt and A Daniel Oliver-Lalana (eds), *Rational Lawmaking under Review: Legisprudence According to the German Federal Constitutional Court* (Springer 2016) 89, 92ff; Joelle Grogan and Julinda Beqiraj, 'The Rule of Law as the Perimeter of Legitimacy for COVID-19 Responses' in Joelle Grogan and Alice Donald (eds), *Routledge Handbook of Law and the COVID-19 Pandemic* (Routledge 2022) 201. The shift of parliamentary powers to the executives for the restriction of rights during the pandemic, especially in France and Italy but also in Germany and the United Kingdom, has been analysed in Angelo Golia and others, 'Constitutions and Contagion. European Constitutional Systems and the COVID-19 Pandemic' (2022) 81(1) *Heidelberg Journal of International Law* 147.

4. Additional Controls on Lawmakers and Regulators under Factual Uncertainty

The shortcomings of the principle of proportionality under factual uncertainty may be compensated by additional legal tools. This is at least if we assume that the principle's main objective is to develop a common methodological framework to foster deliberation and justification of public decisions, and if we want it to correct some of the dysfunctions of the democratic process (neglected minorities, the capture of the majority by spurious interests, inconsistent decision-making, excessive individual hardship provoked by the defence of collective interests, over-politicization and polarization, etc).⁷⁷ The duty of legislatures and executive powers to comply with the whole content of modern normative constitutions (and any other law or regulation for governments and administrative bodies) already entails, as is obvious, many other checks and controls besides the principle of proportionality (eg the principle of legality, the intrinsic nature of basic rights, formal procedures, etc). The following only addresses some potential controls specifically designed to counter factual uncertainty and complement the application of the principle of proportionality, thus facilitating the judicial review of any restriction of rights in that context.

First, the introduction of procedural controls prior to the decision of public authorities may increase their accountability and the subsequent control of their decisions under uncertainty. Many of them already exist in the case of singular administrative decisions as a direct influence of the precautionary principle, as interpreted by the CJEU. Indeed, although mostly criticised for its substantive content,⁷⁸ the precautionary principle has a procedural dimension that tries to structure and rationalise public decision-making under conditions of scientific uncertainty.⁷⁹ The procedural steps inspired by this principle could be adapted and extended to be applied to any situation of factual uncertainty, not necessarily of scientific or technical nature, as well as to any general provision established by lawmakers and regulators – not only administrative decisions – thereby complementing *ex ante* assessments in line with the principles for better regulation and a better legislative technique.⁸⁰

77. See inter alia Jackson (n 1) 3142; Beatty (n 6) 167; Cohen-Eliya and Porat (n 17) 466ff; Mattias Kumm, 'The Idea of Socratic Contestation and the Right to Justification: The Point of Rights-Based Proportionality Review' (2010) 4(2) *Law & Ethics of Human Rights* 141 <<https://doi.org/10.2202/1938-2545.1047>>; Niels Petersen, *Proportionality and Judicial Activism* (Cambridge University Press 2017) 9-12; Matthias Klatt and Moritz Meister, 'Proportionality: a Benefit to Human Rights? Remarks on the I•CON Controversy' (2012) 10(3) *I•CON* 687 <<https://doi.org/10.1093/icon/mos019>>; Robert Alexy, 'The Absolute and the Relative Dimensions of Constitutional Rights' (2017) 37(1) *Oxford Journal of Legal Studies* 31, 39 <<https://doi.org/10.1093/ojls/gqw013>>.

78. Philippe Kourilsky and Geneviève Viney, *Le Principe de précaution: rapport au Premier ministre* (Odile Jacob 2000) 139; Giandomenico Majone, 'The Precautionary Principle and its Policy Implications' (2002) 40(1) *Journal of Common Market Studies* 89 <<https://doi.org/10.1111/1468-5965.00345>>; Gary E Marchant and Kenneth L Mossman, *Arbitrary and Capricious: The Precautionary Principle in the European Union Courts* (The AEI Press 2004); Cass R Sunstein, *Laws of Fear: beyond the precautionary principle* (Cambridge University Press 2005) 115ff; Gérald Bronner and Étienne Géhin, *L'inquiétant principe de précaution* (Presses Universitaires de France 2010).

79. See eg Case T-13/99 *Pfizer Animal Health v Council*, judgment of 11 September 2002 (ECLI:EU:T:2002:209) paras 142ff; Case T-70/99, *Alpharma Inc. v Council*, judgment of 11 September 2002 (ECLI:EU:T:2002:210) paras 161ff; Case C-343/09, *Afton Chemical Limited v Secretary of State for Transport*, judgment of 28 August 2010 (ECLI:EU:C:2010:419) paras 60ff; Case C-282/15, *Queisser Pharma GmbH & Co. KG v Bundesrepublik Deutschland*, judgment of 19 January 2017 (ECLI:EU:C:2017:26) paras 55-66; Case T-584/13, *BASF Agro and others v European Commission*, judgment of 17 May 2018 (ECLI:EU:T:2018:279) paras 60ff; Case C-663/18, *B. S. and C. A.*, judgment of 19 November 2020 (ECLI:EU:C:2020:938) paras 90-92.

80. See eg Organisation for Economic Cooperation and Development (OECD), *OECD Guiding Principles for Regulatory Quality and Performance* (OECD 2005) 3-4; Interinstitutional Agreement between the European Parliament, the Council of the European Union and the European Commission on Better Law-Making [2016] OJ L 123/1, 4ff; Bernardo Delogu, *Risk Analysis and Governance in EU Policy Making and Regulation: An Introductory Guide* (Springer 2016) 217ff; OECD, *OECD Regulatory Policy Outlook 2021* (OECD Publishing 2021) 49ff; European Commission, 'Better regulation: Joining forces to make better laws' COM(2021) 219 final 2-4, 13ff; European

In particular, some of the procedural checks that could be established before adopting any restriction of rights and applying the proportionality test under factual uncertainty would be the following:

- (i) Express and detailed identification of the adverse effects the restriction of a right aims to prevent. This not only implies identifying the legitimate purpose of public authorities' intervention as part of the proportionality test (eg protection of public health or protection of life), but also detailing the exact threat existing against these collective interests.
- (ii) In-depth assessment of the existing threat and the objective sought, trying to characterise and quantify them as much as possible. This also entails analysing potential side-effects (both in case of action – finally deciding to restrict a right – and in case of inaction). In the event of scientifically related risks, this assessment shall be conducted by scientific experts, whose participation in the law-making process is not always easy, contrary to individual administrative decisions. If the threat to a collective interest is not related to science, the duty to consult experts in other fields, to take into consideration their assessment and to expressly accept or reject it before the restriction of a right should still be imposed on public authorities. Courts could thus control, as they have done sometimes in highly complex contexts, if the advisory bodies are acting according to their own constituent rules. They could also assess if the conclusions they reach are duly justified and internally consistent.⁸¹ Moreover, they could check if they take into account all the available evidence. Finally, they can also review if they respect certain principles traditionally associated with expert objectivity (eg excellence, independence and transparency).⁸²
- (iii) Explicit analysis of the expert assessment by public authorities in order to check that they have understood it correctly, that their decision is consistent with the available data, and that their political decision on the measures to be adopted and the necessary restriction of rights is not arbitrary or capricious, but evidence-based. This would be the equivalent in non-scientific contexts to the stage of 'risk-management' under the precautionary principle.⁸³

Secondly, a new principle of temporariness could complement the current principle of proportionality in cases of factual uncertainty. Recently, apex courts have applied time as an internal factor of proportionality *stricto sensu*. The fact that restrictions of rights were declared to be provisional by the legislature or the executive powers during the pandemic led most apex courts to uphold them, considering they had a lower concrete weight in their balancing.⁸⁴ However, both issues should be conceptually separated.

Commission, 'Commission Staff Working Document: Better Regulation Guidelines' SWD (2021) 305 final; Kasey McCall-Smith, 'Good better best? Human rights impact assessment in crisis lawmaking' (2022) *The International Journal of Human Rights* 1 <<https://doi.org/10.1080/13642987.2022.2057955>>; Secretariat to the Parliamentary Business and Legislation (PBL) Cabinet Committee, *Guide to Making Legislation* (Cabinet Office 2022) 113–118.

81. *Solvay* (n 56) paras 162–163; *Artegoda* (n 56) para 200.

82. See Case T-475/07 *Dow AgroSciences Ltd and Others v European Commission* [2011] ECR-2011 II-05937 para 153; and Case T-257/07 *French Republic v European Commission*, judgment of 9 September 2011 (ECLI:EU:C:2013:46) paras 87–89.

83. *Pfizer* (n 79) paras 363, 410; *Alpharma* (n 79) paras 176, 323; *BASF Agro* (n 79) paras 74–75.

84. In Germany, see BVerfG 19 November 2021 (n 70) [233]; in France, see Conseil Constitutionnel 2020-800 DC 11 May 2020 CSCL2011683S [76]; in Italy, see Corte Costituzionale no. 213/2021 (ECLI:IT:COST:2021:213) [11.4] – [11-7]; in Spain, see Tribunal Constitucional 148/2021 14 July 2021 BOE-A-2021-13032 [9]. In the UK, temporariness was accepted by the High Court as an argument in favour of proportionality in *R (Hussain) v Secretary of State for Health and Social Care* [2020] EWHC 1392 (Admin) [13], but it was rejected in *Reverend Dr William J U Philip* [2021] CSOH 32 [121]. See further Guy Baldwin, 'The Coronavirus Pandemic and Religious Freedom: Judicial Decisions in the United States and United Kingdom' (2021) 26(4) *Judicial Review* 297, 311–314 <<https://doi.org/10.1080/10854681.2021.2057719>>.

On the one hand, though generally focusing on the reduction of the scope of application of a fundamental right's norm, the intensity of a restriction can indeed take time into account in three main ways: considering the duration of the restriction (the longer the restriction, the more intense it is), its imminence or speed (the quicker the restriction will be applied, the more difficult to react or adapt to it and thus the more intense it can be), and its frequency of application (the more it is implemented, the more intense a restriction should be considered).⁸⁵

On the other hand, these variables do not answer every question related to time when restrictions are put in place. In particular, these variables do not address which duration, speed or frequency shall be considered reasonable or justified under the existing circumstances (eg it is not the same to ask whether a two-week curfew is 'light' enough in comparison to the number of lives it would save than to ask if a period of two weeks is an arbitrary duration or not). Nor do they address cases in which a provisional restriction, albeit short in time, could amount to a total loss (eg a ten-minute restriction on the fundamental right to private and family life, which includes informed consent,⁸⁶ by forcefully vaccinating someone, or on freedom of religion, by preventing a chaplain from assisting a dying person, may be considered a low-intensity restriction from a temporal point of view and eventually pass the proportionality test, and yet seems at least questionable).

Time variables included in the weight formula or the final balancing of the proportionality test fail to consider the main issue at stake in those cases, while a complementary principle of temporariness could do so. In fact, it would be closely related to the principles governing so-called sunset clauses and experimental legislation.⁸⁷ It may imply, for example, the possibility to introduce a duty to update the factual data available in fixed periods of time or as often as necessary depending on the case.⁸⁸ It may also lead to include *ex post* assessments in laws and regulations whose impact is currently dubious or partially unknown.⁸⁹ All of them would complement the principle of proportionality under conditions of factual uncertainty.

85. Jorge Silva Sampaio, 'Proportionality in Its Narrow Sense and Measuring the Intensity of Restrictions on Fundamental Rights' in David Duarte and Jorge Silva Sampaio (eds), *Proportionality in Law: An Analytical Perspective* (Springer 2018) 104.

86. Buelens Wannes and others, 'The view of the European Court of Human Rights on competent patients right of informed consent: research in the light of articles 3 and 8 of the European Convention on Human Rights' (2016) 23(5) *European Journal of Health Law* 481 <<https://doi.org/10.1163/15718093-12341388>>.

87. Rob van Gestel and Gijs van Dijck, 'Better Regulation through Experimental Legislation' (2011) 17(3) *European Public Law* 539 <<https://doi.org/10.54648/euro2011037>>; Sophia Ranchordás, *Constitutional Sunsets and Experimental Legislation: A Comparative Perspective* (Edward Elgar 2014); Antonios Kouroutakis, *The Constitutional Value of Sunset Clauses: An Historical and Normative analysis* (Routledge 2016); Ittai Bar-Siman-Tov, 'Temporary legislation, better regulation, and experimentalist governance: An empirical study' (2018) 12(2) *Regulation & Governance* 192 <<https://doi.org/10.1111/rego.12148>>.

88. See Case C-241/01 *National Farmers' Union v Secrétariat général du gouvernement*, Opinion of AG Mischo of 2 July 2002 (EU:C:2002:415) para 51; Julien Cazala, *Le principe de précaution en Droit international* (Anthemis 2006) 103-105; Case C-528/16 *Case Confédération paysanne and Others*, Opinion of AG Bobek of 2018 (ECLI:EU:C:2018:20) paras 139-141.

89. See Koen van Aeken, 'From Vision to Reality: Ex Post Evaluation of Legislation' (2011) 5(1) *Legisprudence* 41 <<https://doi.org/10.5235/175214611796404859>>; Paul Stephenson, 'Why Better Regulation Demands Better Scrutiny of Results' (2017) 19(1) *European Journal of Law Reform* 97 <<https://doi.org/10.5553/EJLR/138723702017019102006>>; Franklin De Vrieze and Philip Norton 'The significance of post-legislative scrutiny' (2020) 26(3) *The Journal of Legislative Studies* 349 <<https://doi.org/10.1080/13572334.2020.1780008>>; Irmgard Anglmayer and Amandine Scherrer, 'Ex-post evaluation in the European Parliament: an increasing influence on the policy cycle' (2020) 26(3) *The Journal of Legislative Studies* 405 <<https://doi.org/10.1080/13572334.2020.1782057>>.

These controls could be inspired, again, by the precautionary principle. As it is well known, this principle has been repeatedly invoked by EU and national institutions over the past decades to adopt restrictive measures against scientifically uncertain risks (eg mad cow disease, some GMOs, new chemical substances, food safety, etc). To do so, EU institutions and case law have developed several requirements that differ from the steps of the proportionality test and could supplement it – or maybe even substitute it. These requirements are: first, to give precedence to the protection of health or the environment over economic interests; second, to entrust scientific experts with the task of identifying potentially adverse effects and assigning, when possible, probabilities and magnitudes to it; and third, to update the available data and deal with them in an independent, objective and transparent manner, etc.⁹⁰ These requirements would be similar to the additional checks explained in this section.

5. Conclusion

The principle of proportionality is considered the key legal tool to control the restriction of individual rights and liberties for the protection of collective interests. However, as shown in this article with recent examples related to COVID-19, apart from the traditional objections against the proportionality principle, factual uncertainties pose new challenges for an effective and consistent application of the principle. This is especially the case in highly complex scientific or technical contexts. In such situations, where no sufficient data are available or the experts within the scientific community cannot agree on the facts, the proportionality test cannot be completed, at least with a sufficient degree of certainty. According to the state of knowledge, neither public authorities nor the courts can ascertain whether the restrictive measures adopted are adequate or not, if other less restrictive means are available to reach the aim pursued by public powers, or if the burden imposed compensates the expected benefits.

To address these limitations, the article has explored different potential solutions in order to strengthen the effectiveness of the principle of proportionality as a standard of constitutional review. The first option would require refining the proportionality test with a reliability variable following Alexy's proposals or including additional questions in the proportionality test: are the available data reliable enough to justify a restriction as intense as that under review? Or do the magnitude and probability of the potential threat against a collective interest make up for the low reliability of the available information?

The second option would emphasise judicial deference to the legislature, the government or administrative agencies, granting them not only political discretion on the applicable measures and balancing, but also a margin of appreciation on the facts underlying their decisions and limiting judicial control over matters of fact. This solution is not without its problems and should entail, above all, more stringent requirements as to justificatory reasoning and transparency by public authorities, as well as better technical tools to conduct *ex ante* factual assessments.

Finally, the third potential solution would be to adopt a prior decision on the information that shall prevail under uncertainty, depending on the sector or the rights at stake. This decision may not necessarily imply assuming the most likely information available. In fact,

90. Case T-584/13, *BASF Agro BV and Others* (n 79) paras 58-68; Klaus Meßerschmidt, 'COVID-19 legislation in the light of the precautionary principle' (2020) 8(3) *The Theory and Practice of Legislation* 267 <<https://doi.org/10.1080/20508840.2020.1783627>>.

the two main competing rules existing are content-based instead of focusing on formal reliability. One of them, inspired by the precautionary principle, would oblige public powers to adopt the most pessimistic information at their disposal. The other, in turn, would make them accept the most optimistic information available to adopt the least restrictive measures possible on the basis of the principle *in dubio pro libertate*.

Together with these potential solutions, other additional legal tools could help promote legal justification and judicial review of public powers' restrictions under conditions of factual uncertainty. In particular, procedural steps designed to apply the precautionary principle under scientific uncertainty could be adapted to apply the principle of proportionality under any kind of factual uncertainty. They could also improve law-making and regulatory procedures to take into account uncertainty as part of the requirements of better regulation and legislative technique. The implementation of a new principle of temporariness would also be useful to control the restriction of rights even when factual premises remain partial or totally unknown, or irremediably controversial.

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