

EVALUATING THE IMPLEMENTATION OF HUMAN RIGHTS LAW: A DATA ANALYTICS RESEARCH AGENDA

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ABSTRACT

Human rights law relies on national-level implementation and enforcement to give it full meaning. The United Nations' mandatory reporting process, a built-in component of all major human rights treaties, enables monitoring and evaluation of countries' progress toward human rights goals. However, the operation and effectiveness of this process have been largely under-studied. This Article lays the foundations for a data analytics research agenda that can help assess the reporting process and inform human rights law implementation. As a first step, we use a relatively new set of computational tools to evaluate the Concluding Observations issued by a human rights treaty body, the Committee on the Rights of the Child. The Concluding Observations provide both an appraisal of states' practices and a set of recommendations that act as an agenda for the state going forward. Using text and data analytics tools, we mined the text of Concluding Observations issued by the Committee on the Rights of the Child over a twenty-seven-year period to identify the topics addressed in each report and parsed the language of these reports to determine the tenor and tone of the Committee's

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discussion. We then mapped our findings by state and year, to form a detailed descriptive picture of what the Committee has said, and how the Committee has delivered its message(s), across both geography and time. In doing so, we hope to show how these data analytics tools can contribute to a deeper understanding of the Committee's work and, more broadly, of the effectiveness of the reporting process in securing and protecting human rights.

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I. INTRODUCTION

As much as any other area of law, human rights law relies on implementation to give it full meaning. Human rights treaties are drafted so that they will comport with the legal systems of nearly 200 United Nations (“U.N.”) Member States and thousands of unique cultures. Achieving widespread acceptance necessarily means that the language of international human rights law must be flexible and open to interpretation.¹ Although states parties to the various treaties are given wide latitude to interpret treaty provisions, U.N. treaty bodies—the committees charged with interpretation and oversight of each human rights treaty—play a critical role in the development of human rights law jurisprudence.² Treaty bodies do this through a combination of interpretive General Comments and other authoritative statements on the content of the treaty and their interaction with states parties through the reporting process. As Cynthia Price Cohen wrote in the children’s rights context, “The Convention on the Rights of the Child is written in the language of a constitutive instrument, meaning that it is intentionally inexplicit and amenable to interpretation. Consequently, its linguistic interpretation by the Committee on the Rights of the Child is a central element of its emerging jurisprudence.”³

Treaty bodies such as the Committee on the Rights of the Child are tasked with explicating the content of treaty provisions,⁴

¹ While states are given broad latitude to interpret treaty provisions, their interpretations must be consistent with the object and purpose of the treaty. See Vienna Convention on the Law of Treaties, art. 18, May 23, 1969, 115 U.N.T.S. 331 (“A State is obliged to refrain from acts which would defeat the object and purpose of a treaty. . . .”); *id.* at art. 31 (“A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.”).

² Cosette D. Creamer & Beth A. Simmons, *The Dynamic Impact of Periodic Review on Women’s Rights*, 81 L. & CONTEMP. PROBS. 31, 31-32 (2018) (“All major UN human rights treaties have established bodies of experts to oversee treaty implementation.”).

³ Cynthia Price Cohen, *The Developing Jurisprudence of the Rights of the Child*, 6 ST. THOMAS L. REV. 1, 5 (1993).

⁴ See, e.g., Comm. on the Rts. of the Child, General Comment No. 14: The Right of the Child to Have His or Her Best Interests Taken as a Primary Consideration, ¶¶ 1-7, U.N. Doc. CRC/C/GC/14 (May 29, 2013) (explicating how the best interests principle is a substantive right, interpretive legal principle, and a procedural right).

assessing states parties' compliance,⁵ and recommending a course of action for states to achieve full realization of the rights of all individuals covered by the relevant treaty.⁶ The reporting process is central to this work.⁷ Through the reporting process, states parties to human rights treaties submit periodic reports to the committee that oversees the particular treaty. The committee and state party then engage in a process of "constructive dialogue."⁸ That process culminates with the committee issuing Concluding Observations that evaluate the state's recent performance and outline a series of recommendations for the state to follow. In short, the reporting process establishes a mandatory monitoring and evaluation procedure.

⁵ See U.N. Secretary-General, *Implementation of Human Rights Instruments*, U.N. Doc. A/69/285, annex I (Aug. 11, 2014).

⁶ *Id.* ("The constructive dialogue [of the reporting process] offers an opportunity for States parties to receive expert advice on compliance with their international human rights commitments, which assists them in their implementation of the treaties at the national level.").

⁷ See Rep. of the Inter-Comm. Tech. Working Grp., *Harmonized Guidelines on Reporting Under the International Human Rights Treaties, Including Guidelines on a Common Core Document and Treaty-Specific Documents*, ¶ 10, U.N. Doc. HRI/MC/2006/3 (May 10, 2006):

The reporting process should encourage and facilitate, at the national level, public scrutiny of government policies and constructive engagement with relevant actors of civil society conducted in a spirit of cooperation and mutual respect, with the aim of advancing the enjoyment by all of the rights protected by the relevant convention.

⁸ See, e.g., U.N. Secretary-General, *supra* note 5:

The human rights treaty bodies consider States parties' reports by examining them through a process that includes a constructive dialogue with representatives of the State party concerned. That dialogue helps treaty bodies understand and review the human rights situation in the State party as it pertains to the treaty concerned. . . . The constructive dialogue [of the reporting process] offers an opportunity for States parties to receive expert advice on compliance with their international human rights commitments, which assists them in their implementation of the treaties at the national level.

See also Philip Alston, *U.S. Ratification of the Covenant on Economic, Social and Cultural Rights: The Need for an Entirely New Strategy*, 84 AM. J. INT'L L. 365, 370 (1990) (noting that periodic reporting function is "based on the assumption that a constructive dialogue between the Committee and the state party, in a nonadversarial, cooperative spirit, is the most productive means of prompting the government concerned to take the requisite action").

Although the importance of the reporting process is widely acknowledged,⁹ to date its operation and effectiveness have been largely under-studied. In this Article, we seek to contribute to the development of a more systematic evaluation of the human rights treaty body reporting process.¹⁰ More specifically, we demonstrate that a suite of relatively new computational tools can be deployed to

⁹ Gráinne de Búrca, *Human Rights Experimentalism*, 111 AM. J. INT'L L. 277, 302 (2017) (“[T]he reporting process appears to provide an important moment of reflection and accountability for states”); Meier & Kim, *infra* note 10, at 153 (2015) (“Rather than a bureaucratic exercise, [the reporting] process creates opportunities for governments, NGOs, and civil society to learn from past reviews and engage in substantive debates regarding national priorities, successes, and obstacles in implementing human rights.”); JULIE A. MERTUS, *THE UNITED NATIONS AND HUMAN RIGHTS: A GUIDE FOR A NEW ERA* 71 (Thomas G. Weiss ed., Routledge Glob. Insts. 2d ed. 2009) (“The reporting process can be an important impetus for review and action at the domestic level as well as at the international level.”); U.N. OFF. OF THE HIGH COMM’R FOR HUM. RTS., *MANUAL ON HUMAN RIGHTS MONITORING: HUMAN RIGHTS REPORTING*, at 4, U.N. Doc. HR/P/PT/7/Rev.1 (2011), <https://www.ohchr.org/Documents/Publications/Chapter13-MHRM.pdf> [<https://perma.cc/NQ6Z-46TQ>] [hereinafter *MANUAL ON HUMAN RIGHTS MONITORING*]:

Reporting is an essential element of the human rights monitoring cycle and a fundamental part of a field presence’s human rights work and strategy. Human rights reports constitute a primary tool to record and analyse information, present findings of monitoring and fact-finding activities, express concern about a human rights problem, engage in dialogue and advocate with authorities, and propose recommendations for corrective action.

¹⁰ For examples of prior work evaluating the reporting process and human rights law implementation, see Benjamin Mason Meier & Yuna Kim, *Human Rights Accountability Through Treaty Bodies: Examining Human Rights Treaty Monitoring for Water and Sanitation*, 26 DUKE J. COMPAR. & INT’L L. 141 (2015); Ayelet Levin, *The Reporting Cycle to the United Nations Human Rights Treaty Bodies: Creating a Dialogue Between the State and Civil Society – The Israeli Case Study*, 48 GEO. WASH. INT’L L. REV. 315 (2016); Valentina Carraro, *Promoting Compliance with Human Rights: The Performance of the United Nations’ Universal Periodic Review and Treaty Bodies*, 63 INT’L. STUD. Q. 1079 (2019); Cosette D. Creamer & Beth A. Simmons, *The Proof is in the Process: Self-Reporting Under International Human Rights Treaties*, 114 AM J. INT’L L. 1, 3 (2020); Benjamin Mason Meier, Hanna Huffstetler & Judith Bueno de Mesquita, *Monitoring and Review to Assess Human Rights Implementation*, in *FOUNDATIONS OF GLOBAL HEALTH & HUMAN RIGHTS* 155 (Lawrence O. Gostin & Benjamin Mason Meier eds., Oxford Univ. Press 2020); Jasper Krommendijk, *The (In)Effectiveness of UN Human Rights Treaty Body Recommendations*, 33 NETH. Q. HUM. RTS. 194 (2015). See generally Annjanette Rosga & Margaret L. Satterthwaite, *The Trust in Indicators: Measuring Human Rights*, 27 BERKELEY J. INT’L L. 253 (2009) (examining “the use of indicators by U.N. bodies charged with monitoring State compliance with human rights treaties”); Katharina Rall et al., *Data Visualization for Human Rights Advocacy*, 8 J. HUM. RTS. PRAC. 171 (2016) (explaining the ways for human rights advocates to “communicate their messages through data visualization”).

evaluate the reporting process, and thus improve assessments of the impact of human rights law.

In this Article, we lay the foundations of a data analytics research agenda that can help evaluate and inform human rights law implementation. As a first installment, we analyze the Concluding Observations of a human rights treaty body, the Committee on the Rights of the Child. While children's rights are broadly supported globally—indeed, the Convention on the Rights of the Child is the most widely-ratified human rights treaty in history—violations of children's rights persist in all countries.¹¹ After more than thirty years of the Convention on the Rights of the Child ("CRC"), and even longer for other treaties (e.g., both the International Covenant on Civil and Political Rights and International Covenant on Economic, Social and Cultural Rights were adopted more than 55 years ago), the continuation of human rights violations raises important questions about human rights law's implementation and enforcement. The Concluding Observations of the CRC Committee (or any other human rights treaty body) provide arguably the most consistent evaluation of states' practices and compliance with human rights law. It is essential, therefore, that we develop a deeper understanding of the functioning of the reporting process, its limitations, and its effectiveness. In short, if the reporting process is designed to help ensure that human rights law is working, then we need to evaluate whether the reporting process is doing its job.

Using data analytics tools, we mined the text of the Committee on the Rights of the Child's Concluding Observations over a twenty-seven-year period to identify the topics addressed in each report, and to parse the language to determine the tenor and tone of the Committee's discussion. We then mapped our findings by state and year to form a detailed descriptive picture of what the Committee has said, and how the Committee has delivered its message(s), across both geography and time. In doing so, we hope to show how these data analytics tools can play a role in developing a deeper understanding of the Committee's work and, more broadly, of the effectiveness of human rights reporting processes and the implementation of human rights law.¹²

¹¹ THE OXFORD HANDBOOK OF CHILDREN'S RIGHTS LAW 1-2 (Jonathan Todres & Shani M. King eds., Oxford Univ. Press 2020).

¹² We do not suggest that text mining and other computational tools should replace other evaluations of the human rights treaty bodies' work. Qualitative assessments and other research methods remain important. However, we believe

Part II of this Article briefly introduces the CRC, the Committee on the Rights of the Child (“the Committee”), and the CRC’s reporting process, including the new simplified reporting procedure. Part III describes our data, methods, and the analytical framework for our assessment of the reporting process. Part IV presents our findings. Part V then discusses the implications of our results and directions for future research.

II. THE REPORTING PROCESS AS BUILT-IN MONITORING AND EVALUATION MECHANISM

a. Human Rights Law: The CRC as a Case Study

As noted above, the CRC is the most widely ratified human rights treaty in history.¹³ Adopted in 1989, it was the first legally binding human rights instrument covering the full panoply of rights that children possess – civil, political, economic, social, and cultural rights.¹⁴ The CRC affirmed that rights previously recognized as held by adults – from freedom of expression and protections against torture to rights to health care and an adequate standard of living – also belong to children.¹⁵ And it recognized additional rights unique to children and their stage of development, such as the right to know and be cared for by one’s parents.¹⁶

In the more than thirty years since the adoption of the CRC, the treaty’s comprehensive legal mandate has helped to spur changes in numerous countries. For example, a growing number of states parties to the CRC now address children’s rights in their

that data analytics tools can help fill gaps in the literature and contribute to a more comprehensive assessment of the effectiveness of the reporting process.

¹³ THE OXFORD HANDBOOK OF CHILDREN’S RIGHTS LAW, *supra* note 11, at 1.

¹⁴ Earlier general children’s rights instruments were declarations, not treaties. *See, e.g.*, G.A. Res. 1386 (XIV), Declaration of the Rights of the Child (Nov. 20, 1959); Geneva Declaration of the Rights of the Child, *Resolutions and Recommendations Adopted on the Reports of the Fifth Committee*, 21 LEAGUE OF NATIONS O.J. SPEC. SUPP. 38, 43 (1924).

¹⁵ Convention on the Rights of the Child, arts. 13, 24, 27, 37, Nov. 20, 1989, 1577 U.N.T.S. 3 [hereinafter CRC].

¹⁶ *Id.* art. 7.

constitutions and in their national legislation.¹⁷ States parties have adopted legislation aimed at improving children's access to health care and education, strengthening protections against child labor and trafficking, reforming juvenile justice, and addressing other threats to children's rights.¹⁸ This array of new laws and policies provide important protections for children's rights and well-being.

In addition, since the advent of the CRC, the world has become a better place for millions of children, suggesting that the children's rights movement, informed significantly by the CRC framework, is making a difference. Infant mortality has declined by approximately six million children annually since 1990, the year the CRC entered into force.¹⁹ The number of school-aged children out of school has been reduced significantly.²⁰ And the prevalence of child labor has dropped.²¹

Although it is difficult to establish causation, as other issues such as economic development have contributed to the progress made, the CRC's mandate helped elevate both children and children's issues in numerous countries as well as on the global stage.

¹⁷ See UNITED NATIONS CHILD.'S FUND [UNICEF], 25 YEARS OF THE CONVENTION ON THE RIGHTS OF THE CHILD: IS THE WORLD A BETTER PLACE FOR CHILDREN? 11 (2014), https://www.unicef.org/media/85681/file/CRC_at_25_Anniversary_Publication_compilation_5Nov2014.pdf [<https://perma.cc/97GR-4QRR>]; UNICEF INNOCENTI RSCH. CTR., LAW REFORM AND IMPLEMENTATION OF THE CONVENTION ON THE RIGHTS OF THE CHILD 5 (2007), https://www.unicef-irc.org/publications/pdf/law_reform_crc_imp.pdf [<https://perma.cc/5KX8-HWVN>] (analyzing the extent to which States party to the convention have implemented the general measures established by the convention). See generally INCORPORATING THE UN CONVENTION ON THE RIGHTS OF THE CHILD INTO NATIONAL LAW (Ursula Kilkelly, Laura Lundy & Bronagh Byrne eds., Intersentia 2021) (exploring how selected countries have incorporated the rights established by the CRC into national law).

¹⁸ See UNICEF INNOCENTI RSCH. CTR., *supra* note 17, at 39-90; UNICEF INNOCENTI RSCH. CTR., THE GENERAL MEASURES OF THE CONVENTION ON THE RIGHTS OF THE CHILD: THE PROCESS IN EUROPE AND CENTRAL ASIA 4-13 (2006), <https://www.unicef-irc.org/publications/pdf/crcmeasures.pdf> [<https://perma.cc/4J4U-QPMZ>].

¹⁹ See UNICEF, *supra* note 17, at 7-15.

²⁰ See UNESCO, EFA GLOB. MONITORING REP., YOUTH AND SKILLS: PUTTING EDUCATION TO WORK 2 (2013). The latest data show that number further declined to fifty-eight million as of 2012. See UNESCO INST. FOR STAT. & UNICEF, FIXING THE BROKEN PROMISE OF EDUCATION FOR ALL: FINDINGS FROM THE GLOBAL INITIATIVE ON OUT-OF-SCHOOL CHILDREN 13 (2015), <https://files.eric.ed.gov/fulltext/ED560017.pdf> [<https://perma.cc/7WHY-SAJU>].

²¹ See INT'L LAB. OFF. [ILO], MARKING PROGRESS AGAINST CHILD LABOUR: GLOBAL ESTIMATES AND TRENDS 2000-2012, at 1-4 (2013), https://www.ilo.org/wcmsp5/groups/public/---ed_norm/---ipecc/documents/publication/wcms_221513.pdf [<https://perma.cc/4LUW-T26A>].

Furthermore, the CRC has spurred recognition of children as *rights holders*, and not merely objects of charity.

The reporting process has helped to maintain focus on children's rights and well-being by requiring states to account regularly for their progress (or lack thereof) on implementing children's rights. Yet, despite the significant progress made over the past three decades, children's rights remain an unfinished project. Millions of children experience rights violations on a daily basis. Understanding where those rights violations are occurring, and why, is vital, and the reporting process offers a unique means to evaluate progress on children's rights and human rights more generally.

b. Treaty Bodies and the Reporting Process

Human rights treaty reporting mechanisms have been the subject of skepticism.²² Some scholars have questioned what incentives states have to take the reporting process seriously if the treaty body has no power to sanction states for failing to comply with a treaty's mandate.²³ Those arguments ignore three key points. First, international law, particularly human rights law, is enforced differently from domestic law; among the various enforcement mechanisms, public scrutiny before the international community compels many governments to follow the mandate of human rights law.²⁴ Second, the value of reporting process is in the evaluation

²² See Yvonne M. Dutton, *Commitment to International Human Rights Treaties: The Role of Enforcement Mechanisms*, 34 U. PA. J. INT'L L. 1, 5 (2012) (noting that "many international human rights treaties have nonexistent or weak enforcement mechanisms--often only requiring that states self-report compliance").

²³ See *id.* at 12; see also Pamela Quinn Saunders, *The Integrated Enforcement of Human Rights*, 45 N.Y.U. J. INT'L L. & POL. 97, 113 (2012) ("[M]ost human rights treaties continue to utilize some sort of reporting or monitoring system, and treaties' utilizing adjudicative tribunals remain the exception. This remains true despite the fact that human rights advocates have long been concerned that 'toothless' reporting regimes offer no direct relief for victims.").

²⁴ See, e.g., Sandeep Gopalan, *Alternative Sanctions and Social Norms in International Law: The Case of Abu Ghraib*, 2007 MICH. ST. L. REV. 785, 795 (2007) ("States are not isolated entities--they are members of international institutions, clubs, and other organizations It is this enmeshment in groups that presents conditions ripe for the deployment of shame sanctions."); Louis Henkin, *Human Rights and State "Sovereignty"*, 25 GA. J. INT'L & COMP. L. 31, 44 (1996) ("We have also revolutionized law enforcement. States can be shamed, and

itself—that is, the identification of what is working and what is not. Third, and specific to the CRC, a reporting process centered on children ensures that governments focus on children’s interests.

The treaty body reporting process is similar across the major human rights treaties.²⁵ We now briefly describe the reporting process under the CRC and the recently-adopted simplified reporting process, which the Committee on the Rights of the Child first made available to states in September 2019.²⁶ We then discuss the function of the states parties’ reports and the Concluding Observations.

Under the traditional reporting process, the review begins with the government submitting its report to the Committee on the Rights of the Child.²⁷ Non-governmental organizations (NGOs) with expertise on the subject matter then develop and submit an “alternative report” (or “shadow report”). The NGO alternative report serves as a check on the assertions made in the government’s report, and provides additional on-the-ground insights into human rights practices in the state party. In some instances, more than one alternative report is submitted with respect to a particular state party, but typically there is a lead alternative report. Next, the Pre-Session Working Group is held.²⁸ This session provides the Committee with an opportunity to meet and have dialogue with selected NGO representatives and pose questions to individuals who are particularly familiar with children’s rights issues in the

the system resorts increasingly to mobilizing shame.”); *see also* Saunders, *supra* note 23, at 100:

While enforcement via reporting and monitoring has often been criticized, such critiques fail to consider the ways in which reporting may work in tandem with other types of enforcement. . . . [T]he strengths of reporting mechanisms, though different from the strengths of adjudicative mechanisms, can be leveraged by courts to significant advantage.

²⁵ *See, e.g.*, Joanne Pedone & Andrew R. Kloster, *New Proposals for Human Rights Treaty Body Reform*, 22 J. TRANSNAT’L L. & POL’Y 29, 33 (2013); Creamer & Simmons, *supra* note 2.

²⁶ *See* Comm. on the Rts. of the Child, *Simplified Reporting Procedure*, OHCHR, <https://www.ohchr.org/EN/HRBodies/CRC/Pages/ReportingProcedure.aspx> [<https://perma.cc/MRY9-7Sh9>].

²⁷ This description of the reporting process is drawn from Jonathan Todres, *A Child Rights Framework for Addressing Trafficking of Children*, 22 MICH. ST. INT’L L. REV. 557, 574–77 (2014). *See also* Comm. on the Rts. of the Child, *Working Methods*, ¶ III, <https://www.ohchr.org/Documents/HRBodies/CRC/WorkingMethodsCRC.doc> [<https://perma.cc/RNT5-PE54>].

²⁸ Comm. on the Rts. of the Child, *Working Methods*, *supra* note 27, ¶ III.A; *see also* Todres, *supra* note 27, at 576.

country in question. The alternative reports and pre-session working group meetings ensure that NGOs play a meaningful role in the review process.

After the Pre-Session Working Group meeting, the Committee produces its List of Issues. The List of Issues is a set of follow-up questions for the state under review, typically noting where there may be gaps in the government's report and requesting additional information. The government has a designated period to respond to the Committee, after which the official Committee session with the government delegation is held. This session is open to the public, to ensure transparency.

Finally, after the session with the government, the Committee publishes its Concluding Observations, which include its summary of the country's progress and recommendations to the government for further action to ensure children's rights and well-being.²⁹ As Ayelet Levin explains:

[The Concluding Observations] are an indispensable feature of the reporting cycle; they aim to present a constructive critique of the situation on the ground in the reporting state, including suggestions and recommendations for progress in implementing the Conventions. Although the tone of these recommendations is usually restrained, they often provide clear directives to the legislative and executive branches of the state.³⁰

Under the simplified reporting procedure, a state no longer has to submit an initial report. Instead, the Committee on the Rights of the Child "sends to the State party . . . a request for specific information, known as List of Issues Prior to Reporting (LOIPR) containing up to 30 questions."³¹ The state then responds to those questions, and the constructive dialogue between the state and committee takes place after that. NGOs still have an opportunity to submit their own reports, and at the conclusion of the constructive dialogue, the Committee publishes its Concluding Observations.

²⁹ See Comm. on the Rts. of the Child, *Working Methods*, *supra* note 27, ¶ III.C; see also Todres, *supra* note 27, at 577.

³⁰ Ayelet Levin, *The Reporting Cycle to the United Nations Human Rights Treaty Bodies: Creating A Dialogue Between the State and Civil Society—the Israeli Case Study*, 48 GEO. WASH. INT'L L. REV. 315, 323 (2016).

³¹ Comm. on the Rts. of the Child, *Simplified Reporting Procedure*, *supra* note 26.

States parties that report after September 1, 2019, have the option to opt into the simplified reporting process.³²

Although the simplified reporting procedure may help streamline the reporting process and reduce backlogs,³³ it also increases the likelihood that the review process will be less comprehensive, given the thirty-question limitation.³⁴ In addition, it eliminates the requirement that the government undertake the initial self-evaluation required to develop a report, thus reducing opportunities to identify important issues.³⁵ Although it is too early to assess the impact of the simplified reporting procedure, it creates the potential that certain issues will be marginalized and not fully vetted in the reporting process. We believe the introduction of this streamlined process further heightens the need to understand more deeply what occurs during the review process to ensure that the Committee's system of monitoring and evaluation is effective.

III. DATA, METHODS, AND ANALYTICAL FRAMEWORK

As noted in the Introduction, this Article is the first installment in a data analytics project that seeks to evaluate the reporting process under the Convention on the Rights of the Child – both the Committee's and states parties' practices. By better understanding the reporting process, we hope to identify opportunities to improve the only mandatory evaluation process that aims to advance implementation of the Convention on the Rights of the Child. These tools can then be applied to other human rights treaties. In this Article, we begin the project by evaluating the Committee's role in the reporting process, and in particular its Concluding Observations.

We start in Section A with a discussion of the project's data and methods. Then in Section B, we identify core components of an

³² Comm. on the Rts. of the Child, *Simplified Reporting Procedure*, *supra* note 26.

³³ See Hum. Rts. Comm., *Simplified Reporting Procedure*, Rep. of the Working Grp., ¶ 56, U.N. Doc. CCPR/C/123/3 (Dec. 6, 2018).

³⁴ See Jonathan Todres, *Making Children's Rights Widely Known*, 29 MINN. J. INT'L L. 109, 133 (2020).

³⁵ See Creamer & Simmons, *supra* note 10, at 34 ("The self-reporting process prompts a government to collect and share information it might not otherwise have gathered, thereby promoting self-assessment capacity. The capacity to conduct a self-assessment potentially brings more critical eyes to the status quo, ultimately revealing previously unnoticed gaps in rights protections.").

effective evaluation process. In subsequent Parts, we use computational tools to test the Committee's Concluding Observations on these criteria. Throughout, we aim to show the utility of these computational tools and map a research agenda for further data analytics work on human rights law implementation.

a. Data and Methods

The subject of our study is 544 Concluding Observations issued by the Committee on the Rights of the Child beginning in 1993, when the Committee first began reviewing states parties' reports, through July 2019, when we assembled our corpus for analysis. We gathered our set of Concluding Observations by scraping all available documents labeled as CRC Concluding Observations from the United Nations Office of the High Commissioner for Human Rights' Treaty Body Database.³⁶ The original scrape produced 552 documents, eight of which we dropped from the corpus as mislabeled or unreadable for purposes of text analysis.³⁷

³⁶ U.N. Treaty Body Database, U.N. HUM. RTS. TREATY BODIES, https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/TBSearch.aspx?Lang=en [https://perma.cc/JK2D-FYJM]. For this initial study, we did not include Concluding Observations issued by the Committee under the first two Optional Protocols to the CRC (on the sale of children, child prostitution, and child pornography, and on the involvement of children in armed conflict, respectively). We commend the United Nations for making the work of its treaty bodies freely, comprehensively, and publicly accessible. The U.N.'s data and document access system is far ahead of the United States judiciary, which locks court data and documents behind paywalls and in systems that do not permit bulk access. See Charlotte S. Alexander & Mohammad Javad Feizollahi, *On Dragons, Caves, Teeth, and Claws: Legal Analytics and the Problem of Court Data Access*, in COMPUTATIONAL LEGAL STUDIES: THE PROMISE AND CHALLENGE OF DATA-DRIVEN RESEARCH 95-96 (Ryan Whalen ed., Edward Elgar Publ'g 2020); see also Adam R. Pah et al., *How to Build a More Open Justice System*, SCIENCE, July 10, 2020, at 134, 134.

³⁷ Four of the seven were corrigendum, or lists of corrections to the Committee's previously-issued Concluding Observations (Grenada, Thailand, France, Mauritania); one was a submission to the Committee by the Government of Morocco, mislabeled as a Concluding Observation; one failed to download from the U.N. site due to a U.N.-side server error (Concluding Observations on the Combined Third and Fourth Periodic Reports of Morocco 2004); one was in an unreadable format for text analysis purposes (Mexico 1994); and one was a duplicate of another document (Concluding Observations, Mexico, 1999). Only two of these documents, Morocco and Mexico, were in fact Concluding Observations that should have been included in our corpus. These missing Concluding Observations represented one out of three for Morocco and one out of four for Mexico.

In total, our set of 544 Concluding Observations covered 200 reporting parties. This includes 193 of the 196 countries that have ratified the Convention on the Rights of the Child.³⁸ The three most recent ratifiers—Somalia (2015), South Sudan (2015), and the State of Palestine (2014)—are missing, either because they had not yet filed their initial report at the time of our study, or because the Committee had not yet issued its related Concluding Observations. Six additional reporting parties are territories or dependencies that participate in the CRC monitoring and evaluation process independent of their associated United Nations Member Nation: Hong Kong,³⁹ Macao,⁴⁰ the United Kingdom Overseas Territories,⁴¹ the United Kingdom Crown Dependencies,⁴² Netherlands (Antilles), and Netherlands (Aruba). The final reporting party, Yugoslavia, was the subject of a Concluding Observation in 1996, prior to its division into independent states, each of which now engages separately in the reporting process.

Table 1 shows the number and percent of Concluding Observations in each subregion, as defined by the United Nations. We note that the Northern America subregion contains only

³⁸ *Frequently Asked Questions on the Convention on the Rights of the Child: Your Questions on the Convention Answered*, UNICEF, <https://www.unicef.org/child-rights-convention/frequently-asked-questions> [<https://perma.cc/L694-S7MT>]:

The Convention on the Rights of the Child is the most rapidly ratified human rights treaty in history. More countries have ratified the Convention than any other human rights treaty in history—196 countries have become State Parties to the Convention as of October 2015. Only the United States of America has not ratified the Convention. By signing the Convention, the United States has signalled its intention to ratify, but has yet to do so.

³⁹ Given the time period covered, Hong Kong is present in the corpus both in its former status as a British colony and its present status as part of China. We note in the sections below whether we have included or excluded Hong Kong and the other five non-states parties in each analysis. Although we sometimes count all reporting entities (states parties and non-states parties alike) for purposes of evaluating the reporting process, we do not take or imply any position on any claims for independence. *See infra* Section III.A.

⁴⁰ Given the time period covered, Macau is present both in its former status as a Portuguese colony and its present status as part of China.

⁴¹ *Guidance: Overseas Territories Governments on the Web*, U.K. FOREIGN AND COMMONWEALTH OFFICE <https://www.gov.uk/government/publications/overseas-territories-governments-on-the-web/overseas-territories-governments-on-social-media> (last updated Feb. 25, 2019) (listing fourteen overseas territories).

⁴² DAVID TORRANCE, *THE CROWN DEPENDENCIES*, BRIEFING PAPER 1, 4 (2019), <https://commonslibrary.parliament.uk/research-briefings/cbp-8611/> [<https://perma.cc/6DCL-WD7T>] (listing three crown dependencies).

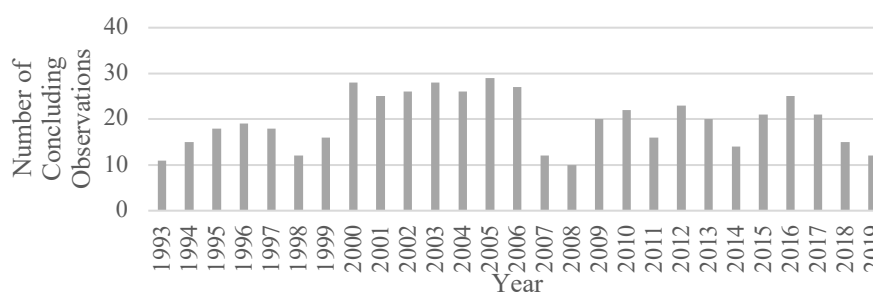
Canada, as the United States has signed but not ratified the Convention on the Rights of the Child and Mexico falls within the United Nations' Latin America and the Caribbean subregion.⁴³

Figure 1, in turn, shows the number of Concluding Observations per year during our twenty-seven-year study period.

Table 1: Number and Percent of Concluding Observations per Subregion

<i>Subregion</i>	<i>Frequency</i>	<i>Percent</i>
Sub-Saharan Africa	112	21%
Northern, Southern, Western Europe	108	20%
Latin America and the Caribbean	100	18%
Western Asia	52	10%
South-eastern Asia	29	5%
Eastern Europe	29	5%
Oceania	29	5%
Southern Asia	28	5%
Eastern Asia	23	4%
Northern Africa	17	3%
Central Asia	14	3%
Northern America	3	1%

Figure 1: Number of Concluding Observations per Year, 1993-2019



⁴³ *Methodology: Standard Country or Area Codes for Statistical Use (M49)*, U.N. STAT. Div., <https://unstats.un.org/unsd/methodology/m49/> [<https://perma.cc/4CSE-8L7J>].

The preceding figure and table show variation by subregion and year in the number of Concluding Observations issued by the Committee. Variations across regions are largely due to the number of countries in each region, while the variations over time may be the result of a number of factors, including the states parties' different ratification years and entry into the reporting process, the timing of states parties' submissions, the Committee's calendar, and other factors. As Part IV.A below explains in further detail, the treaty requires that states parties first engage in the reporting process within two years of ratification and make a report to the Committee every five years after that.⁴⁴ Therefore, the number of Concluding Observations in any given year depends on how many states parties are subject to reporting requirements, where they are in their five-year reporting cycle, the timelines of states' submissions to the Committee, and the Committee's schedule.

The Concluding Observations' uneven distribution is also explained by some states' missing one or more of their scheduled reporting years, and then later submitting combined reports (e.g., combining their third and fourth report to the Committee into a single report), to which the Committee issued a single response.⁴⁵ The Committee has permitted this practice in recent years as a way of allowing states parties to catch up on their reporting obligations.⁴⁶ For purposes of our study, we consider these combined reports as a single report, because the states submitting combined reports do not delineate reporting periods. And the Concluding Observations issued by the Committee in response to combined reports tended to evaluate the states parties' submissions as an undifferentiated

⁴⁴ Not all states began reporting on time, however, further contributing to imbalances in the Committee's production of Concluding Observations, year over year. Concluding Observations issued to Turkmenistan in 2006, for example, stated, "The Committee, while noting the delay of almost 10 years in its submission, welcomes the State party's initial report." Comm. on the Rts. of the Child, Consideration of Reports Submitted by States Parties under Article 44 of the Convention: Concluding Observations: Turkmenistan, ¶ 2, U.N. Doc. CRC/C/TKM/CO/1 (June 2, 2006).

⁴⁵ For example, the Committee's Concluding Observation regarding the Syrian Arab Republic, issued in 2012, covered "the combined third and fourth periodic reports" filed by the state party. Comm. on the Rts. of the Child, Consideration of Reports Submitted by States Parties under Article 44 of the Convention: Concluding Observations: Syrian Arabic Republic, ¶ 1, U.N. Doc. CRC/C/SYR/CO/3-4 (Feb. 9, 2012).

⁴⁶ Rep. of the Comm. on the Rts. of the Child, U.N. GAOR, 67th Sess., Supp. No. 41, at 17, U.N. Doc A/67/41, annex II (2012) ("For States parties whose reports are delayed, the Committee will continue to allow combined periodic reports.").

whole—that is, as a single evaluation and not two evaluations of distinct time periods. As a result, the number of Concluding Observations per subregion and year in our study set is unevenly distributed.

We note here that the Committee's practice of allowing catch-up reporting through combined reports may cause harm beyond mere skewed data. Although some reporting is better than none, states parties' submissions of combined reports means that the Committee is not able to review and evaluate a state every five years as the treaty mandates.⁴⁷ Indeed, in our review of the 544 Concluding Observations, over one quarter addressed combined reports.⁴⁸ Such sporadic monitoring and evaluation for a relatively large percentage of the states parties raises concerns about the efficacy of the reporting process, a subject to which we return in more detail below.

Returning to our data and methods: We adopted each of the Concluding Observations as our unit of analysis and used a variety of text analytics methods to study the form and content of the Committee's language. All analysis was performed using R, a statistical computing software environment, and Python, a programming language. We note the specific R and Python packages used throughout the analysis below.

⁴⁷ For example, Italy submitted its initial report in 1994 and periodic reports in 2000, 2009, and 2017, resulting in only four evaluations by the Committee during a period of time when it should have been evaluated six times. Guinea submitted its initial report in 1996 (instead of 1992, the required two years after ratification) and then periodic reports in 2009 and 2017. The 2017 submission was counted as its combined "third through sixth report," even though it provided the Committee with only its third opportunity to evaluate Guinea since 1992. Thus, Guinea has been evaluated three times, rather than the scheduled six. See *U.N. Treaty Body Database*, *supra* note 3632 (searching "CRC" under "Filter by Committee" and "State Party's Report" under "Filter by Document Type"). Finally, in a more extreme example, Tonga ratified the CRC in 1995, but did not submit its initial report until 2018 (23 years after ratification). In the Committee's one and only evaluation of Tonga, issued in 2019, the Committee, in characteristically diplomatic speak, discussed further in Part III.F below, remarked, "[T]he Committee regrets that the report was submitted with considerable delay, which prevented the Committee from reviewing the implementation of the Convention by Tonga earlier." Comm. on the Rts. of the Child, Concluding Observations on the Initial Report of Tonga, ¶ 2, U.N. Doc. CRC/C/TON/CO/1 (July 2, 2019).

⁴⁸ We generated this figure by searching the text for the words "combined" and "reports" within a ten-word window and manually reviewing the output. This one quarter figure may in fact be an undercount, as the Committee sometimes referred to combined reports as "consolidated reports," which our method would have missed. One of the unreadable Concluding Observations that we excluded from the set of 544 also responded to a combined report, Concluding Observations on the Combined Third and Fourth Periodic Reports of Morocco.

b. Analytical Framework

Like that of all human rights treaty bodies, the Committee on the Rights of the Child's assessment of states' practices is intended to provide a vital evaluation of states' progress in implementing the Convention on the Rights of the Child. Our work, in turn, evaluates the evaluators. We do so with the following set of propositions as a starting point. We use this set of propositions to illustrate how data analytics research can help contribute to the evaluation of the work of human rights treaty bodies and human rights law implementation more broadly. The inclusion of the set of propositions below and the omission of others do not suggest any ranking as to their importance. Indeed, we believe there are many other important questions that can be probed using the computational tools we employ in this study.

First, the reporting process should be timely, to ensure regular monitoring and evaluation. As noted above, substantial gaps in states parties' reporting mean that the Committee—the sole human rights body charged with overseeing treaty compliance⁴⁹—is in the dark about the state of children's rights for many countries for many years. As the United Nations' Manual on Human Rights Monitoring puts it, "Prompt reporting on a human rights problem is crucial to the effectiveness of the human rights field presence, not only in raising concerns with the authorities and other stakeholders in a timely manner, but also in improving the chances of a positive impact, in serving as an early warning mechanism and in preventing future violations."⁵⁰ We measure Concluding Observations' timing and timeliness in Part IV.A.

Second, the Concluding Observations should reflect the principle of the equality of rights. As proclaimed in the Vienna Declaration, which was issued as part of the 1993 World Conference on Human Rights, "All human rights are universal, indivisible and interdependent and interrelated."⁵¹ This notion of equality among

⁴⁹ Although many other entities—both governments and NGOs—regularly monitor human rights compliance, the Committee on the Rights of the Child and other human rights treaty bodies are the only monitoring mechanism that is legally mandated.

⁵⁰ See MANUAL ON HUMAN RIGHTS MONITORING, *supra* note 9, at 7.

⁵¹ World Conference on Human Rights, *Vienna Declaration and Programme of Action*, ¶ 5, U.N. Doc. A/CONF. 157/24 (Oct. 13, 1993), *reprinted in* 32 I.L.M. 1661 (1993); *see also* The Maastricht Guidelines on Violations of Economic, Social and

rights has been reaffirmed repeatedly.⁵² For example, the Maastricht Guidelines confirm that, "It is now undisputed that all human rights are indivisible, interdependent, interrelated and of equal importance for human dignity."⁵³ The Committee on the Rights of the Child has recognized this principle.⁵⁴ Therefore, evaluations of states' progress in implementing the CRC should reflect this recognition of the equality of rights and should cover progress and obstacles with respect to all rights of the child. We recognize that some issues (e.g., child poverty) might be more pressing in certain countries, and thus the Committee's focus and depth of coverage should reflect the most pressing issues in the specific country under review. That said, while the Committee's discussion of children's rights might not be identical across states parties, given the emphasis on the equality and interdependence of rights, one might expect that at a minimum all rights are addressed in each review. We analyze the Committee's focus across children's rights topics in Part IV.B.

Third, we might expect to see both geographic consistency and responsiveness in the Committee's assessments: consistency in the sense that all countries should receive a thorough evaluation of all topics covered by the treaty, and responsiveness in the sense that issues particular to any country or subregion should receive targeted attention. In undertaking this assessment, we do not

Cultural Rights ¶4, reprinted in OFF. OF THE U.N. HIGH COMM'R FOR HUM. RTS, ECONOMIC, SOCIAL AND CULTURAL RIGHTS: HANDBOOK FOR NATIONAL HUMAN RIGHTS INSTITUTIONS 117, U.N. Sales No. E.04.XIV.8 (2005) [hereinafter Maastricht Guidelines].

⁵² See, e.g., Philip Alston, *Economic and Social Rights*, 26 *STUD. TRANSNAT'L LEGAL POL'Y* 137, 147 (1994) (stating that "support for the notion that the two sets of rights [civil and political and economic, social and cultural rights] are interdependent is widespread and is clearly reflected in international human rights instruments"); Craig Scott, *Interdependence and Permeability of Human Rights Norms: Towards A Partial Fusion of the International Covenants on Human Rights*, 27 *OSGOODE HALL L.J.* 769, 779 (1989) ("The standard expression of the interrelationship among human rights in UN parlance take the following form: '[A]ll human rights and fundamental freedoms are indivisible and interdependent.'" (alteration in original)); Jonathan Todres, *Rights Relationships and the Experience of Children Orphaned by AIDS*, 41 *U.C. DAVIS L. REV.* 417, 459-63 (2007) (examining the relationships between the right to education for children orphaned by AIDS and the specific issues of survival and development, discrimination, health, exploitation, and family environment).

⁵³ Maastricht Guidelines, *supra* note 51.

⁵⁴ Comm. on the Rts. of the Child, General Comment No. 6: Treatment of Unaccompanied and Separated Children Outside Their Country of Origin, ¶ 6, U.N. Doc. CRC/CG/2005/6 (Sept. 1, 2005) ("This acknowledges that all human rights, including those contained in the Convention, are indivisible and interdependent.").

suggest that it is possible to create objective targets for the amount of coverage each issue should receive in the Committee's Concluding Observations. However, it is possible to measure Committee attention by counting the number, diversity, and similarity of words used in Concluding Observations by topic and subregion. These analyses, which are possible with these computational tools, can help us understand what is happening and inform how we think about the Committee's coverage of children's rights issues. Part IV.C presents the results of these analyses.

Fourth, in most human rights treaties, there are umbrella provisions that apply to all substantive rights in the treaty. In the case of the CRC, the General Principles (articles 2, 3, 6, and 12, covering non-discrimination, the best interests of the child, the right to life, survival and development, and the child's right to be heard, respectively) are widely recognized as relevant to all other CRC provisions.⁵⁵ Therefore, the umbrella provisions of a treaty should receive substantial consideration in any evaluation. We test this proposition in Part IV.D by studying the extent to which the Committee analyzes states' compliance with the four General Principles, in contrast to a set of comparator topics.

Fifth, in addition to administering the reporting process, issuing affirmative treaty interpretations is one of treaty bodies' core functions. We would therefore expect to see any treaty body's substantive interpretations of the treaty's content, known as General Comments, inform its evaluation of states parties' implementation. The General Comments are designed to "clarify the reporting duties of State parties with respect to certain provisions and suggest

⁵⁵ See OHCHR, Fact Sheet No. 10 (Rev. 1), *The Rights of the Child* (June 25, 1993), <https://www.ohchr.org/Documents/Publications/FactSheet10rev.1en.pdf> [<https://perma.cc/N7VC-U7BK>]; Comm. on the Rts. of the Child, General Comment No. 5: General Measures of Implementation of the Convention on the Rights of the Child, ¶ 22, U.N. Doc. CRC/GC/2003/5 (Oct. 3, 2005) [hereinafter General Comment No. 5]; Laura Lundy & Bronagh Byrne, *The Four General Principles of the United Nations Convention on the Rights of the Child: The Potential Value of the Approach in Other Areas of Human Rights Law*, in *CHILDREN'S RIGHTS LAW IN THE GLOBAL HUMAN RIGHTS LANDSCAPE: ISOLATION, INSPIRATION, INTEGRATION?* 52 (Eva Brems, Ellen Desmet & Wouter Vandenhoele eds., Routledge 2017); cf. Karl Hanson & Laura Lundy, *Does Exactly What It Says on the Tin?: A Critical Analysis and Alternative Conceptualisation of the So-called "General Principles" of the Convention on the Rights of the Child*, 25 INT'L J. CHILD.'S RTS. 285, 286 (2017) ("Articles 2, 3, 6 and 12 collectively provide a set of 'general principles' that guide the interpretation and implementation of the rest of the Convention.").

approaches to implementing treaty provisions.”⁵⁶ Part IV.E thus analyzes the impact of selected General Comments on the text of the Committee’s Concluding Observations.

Sixth, the reporting process and its products should be clear and accessible, producing Committee evaluations that are understandable to the target audiences.⁵⁷ As the United Nations’ Manual on Human Rights Reporting advises, Concluding Observations’ “content, form, level of detail, language and style” should “ensure that the underlying message is conveyed properly . . . to the readers.”⁵⁸ This is an inherently challenging goal, as the Concluding Observations in theory should speak to a breadth of audiences including government leaders, NGO advocates who work on children’s rights, communities that are affected by children’s rights violations, and children themselves who are the subjects of the treaty.⁵⁹ Part IV.F uses readability

⁵⁶ *What Are General Comments of the Human Rights Treaty Bodies?*, DAG HAMMARSKJÖLD LIBRARY, <https://ask.un.org/faq/135547> [<https://perma.cc/AW6Q-M9MH>].

⁵⁷ See e.g., LAURA THEYTAZ BERGMAN, ROISIN FEGAN & LISA MYERS, THE REPORTING CYCLE OF THE COMMITTEE ON THE RIGHTS OF THE CHILD: A GUIDE FOR NGOS AND NHRIS 32, https://www.ohchr.org/Documents/HRBodies/CRC/GuideNgoSubmission_en.pdf [<https://perma.cc/BB48-WBHQ>] (“The Concluding Observations are public documents that will be made available on the website of the Committee soon after the session and are also sent to both the State party and the United Nations General Assembly.”); Denise Allen, *The Use of Concluding Observations for Monitoring the Implementation of the Convention on the Rights of the Child 1* (CRIN-NGO Grp., Working Paper No. 2, 2005), <http://www.childrightsconnect.org/wp-content/uploads/2013/10/WPConcludingObs.pdf> [<https://perma.cc/7AEF-UJR4>] (“The Concluding Observations . . . can be an effective tool for civil society and a means of engaging with governments, primarily responsible for implementation.”); OHCHR, A PRACTICAL GUIDE FOR CIVIL SOCIETY: HOW TO FOLLOW UP ON UNITED NATIONS HUMAN RIGHTS RECOMMENDATIONS 3 (2013), <https://www.ohchr.org/Documents/AboutUs/CivilSociety/HowtoFollowUNHRRRecommendations.pdf> [<https://perma.cc/YN4D-GTQL>] (“Civil society, in particular, can play a crucial role in following up on human rights recommendations.”); Rebeca Rios-Kohn, *The Convention on the Rights of the Child: Progress and Challenges*, 5 GEO. J. ON FIGHTING POVERTY 139, 150 (1998) (The Concluding Observations “identif[y] the positive factors and the main areas of concern related to children in the specific country, and provide[] a series of recommendations in the broad and diplomatic language commonly used by human rights treaty bodies.”).

⁵⁸ See MANUAL ON HUMAN RIGHTS MONITORING, *supra* note 9, at 5.

⁵⁹ For example, the Committee’s often uses diplomatic language in its Concluding Observations. Although this language might communicate effectively with states, such language might be viewed by NGOs and survivors of children’s rights violations as inadequate. See, e.g., Comm. on the Rts. of the Child,

measures to assess the complexity of the language used in the English version of the Committee's Concluding Observations. We also analyze the extent to which the Committee uses clear, directive, and intense language to communicate its message(s) to states parties.

Seventh, and most fundamentally, the reporting process should work, in that it should improve human rights outcomes. Of course, an evaluation of states practices – whether conducted by a human rights treaty body or a national-level entity – cannot change human rights practices on its own, but it can provide the impetus for positive change. Whether the reporting process under the CRC does this cannot be answered by analyzing only the Concluding Observations, as we do here. However, we are able to track the similarity between Concluding Observations across years, and count the Committee's use of language that reiterates its earlier conclusions and recommendations. Unchanging language over time, in addition to frequent instances of the Committee referring to earlier Concluding Observations and repeating itself, could suggest that the Committee observes little progress in states parties' implementation. This lack of significant progress, then, would raise concerns about the effectiveness of the reporting process on the whole. We summarize these results in Part IV.G.

Consideration of Reports Submitted by States Parties under Article 44 of the Convention: Concluding Observations: Tanzania, ¶ 56, U.N. Doc. CRC/C/15/Add.156 (July 9, 2001) ("The Committee notes with regret the reported incidents of sexual abuse and exploitation of girls within the school environment."); Comm. on the Rts. of the Child, Consideration of Reports Submitted by States Parties under Article 44 of the Convention: Concluding Observations: Jordan, ¶ 59, U.N. Doc. CRC/C/15/Add.125 (June 28, 2000) ("The Committee regrets that no new developments in the area of juvenile justice have occurred since the initial State party report was submitted in 1994."); see also René Provost, *Anne F. Bayefsky, Ed., The UN Human Rights [Treaty] System in the 21st Century*, 47 MCGILL L.J. 693, 694 (2002) (noting that across the human rights treaty bodies, the "committees' concluding observations are always framed in tame diplomatic language no matter how egregious the violations of human rights . . ."); Creamer & Simmons, *supra* note 10, at 31 ("Since confrontation and harsh exhortation are likely to lead to backlash, treaty bodies are often careful to maintain a respectful posture toward states parties, using diplomatic and increasingly technical language. Problem-solving language is common, suggesting an effort to cultivate a cooperative relationship while inculcating international procedural and substantive norms.").

IV. FINDINGS

The sections below present the results of our evaluation of the Committee on the Rights of the Child's Concluding Observations. Throughout, we explain our use of text and data analytics to demonstrate the potential of this set of tools in assessing the reporting process and, we hope, establish the foundation for a computationally- and data-informed human rights research agenda.⁶⁰

a. Timing and Timeliness of the Review Process

Evaluation of states' human rights practices must be regular and ongoing to be effective. The drafters of the CRC and other human rights treaties recognized this principle by building in a regular, mandatory reporting process for states parties. As noted above, the Convention mandates that states report to the Committee within two years of ratification and every five years thereafter.⁶¹

During our study period of twenty-seven years, the Committee issued an average of just over twenty Concluding Observations per year, with a high of twenty-nine in 2005 and a low of ten in 2008. Figure 1 in Part III.A above shows the number of Concluding Observations issued per year.

By examining the timing of Concluding Observations over the life of the Committee, we can evaluate how "on schedule" both states and the Committee have been and whether the reporting process is producing a regular review of states' practices. Our benchmark here is the requirement that states parties submit an initial report within two years after ratifying the CRC and every five years thereafter.

Given that only three states parties (Somalia, South Sudan, and Palestine) ratified after 2006, all other states parties should have been reviewed at least three times on this schedule between 2000 and 2019.⁶² Yet only thirty-four percent of them (sixty-five states

⁶⁰ As noted earlier, we do not suggest that data analytics research should replace other research on human rights law implementation, but rather that it can complement, fill gaps, and extend existing research on human rights law.

⁶¹ CRC, *supra* note 15, art. 44(1).

⁶² States parties are required to report within two years of ratification and every five years after that. *Id.*

parties) have met this minimum. Conversely, 128 states parties (sixty-six percent) were reviewed two or fewer times during this period.⁶³

Moreover, as Table 2 below shows, the median and mean number of years between ratification and issuance of the initial Concluding Observation are six and seven, respectively. This is two to three times longer than the expected two- or three-year period—two years if the Committee issues its Concluding Observation in the same calendar year as the states party’s initial report, and three years if the Committee’s review process is completed in the next calendar year.

Table 2: Number of Years Between Treaty Ratification and First Concluding Observation

<i>Measure</i>	<i>Number of Years</i>
Minimum	2
Maximum	24
Median	6
Mean	7

In addition, looking at the most recent complete five-year period covered by our study (given that states are required to report every five years), we see that the Committee issued 104 Concluding Observations covering 104 states parties during 2014-2018. This represents fifty-two percent of states parties. Taking the most productive five-year period in terms of Concluding Observations issued, we find that in both of the Committee’s most productive five-year periods (2001-2005 and 2002-2006), the Committee issued 136 Concluding Observations, covering 131 states parties.⁶⁴ Thus, at its most productive point, the Committee reviewed approximately two-thirds of states in a five-year period. Said another way, at the reporting process’ peak volume, over thirty percent of states did not undergo a review every five years as required.

⁶³ Delays in submission of states’ reports has significant implications, as research suggests that consistent, repeated reporting leads to improvement in human rights reporting. See Creamer & Simmons, *supra* note 10, at 34.

⁶⁴ In the 2001-2005 period, the Committee reviewed Denmark twice. In the 2002-2006 period, the Committee reviewed Lebanon twice. In both periods, the Committee issued separate Concluding Observations for Netherlands (Antilles), Netherlands (Aruba), Hong Kong, and Macau, each of which are not separate states parties to the CRC.

We further estimated the number of missing Concluding Observations, measuring from states' date of ratification through December 2018, the most recent complete year in our data set. Assuming on-time reporting without permitting states to combine reports (and allowing for Concluding Observations to be issued in the calendar year following when states were scheduled to report), there should have been 1,047 Concluding Observations issued. During this period, however, the Committee issued 534 Concluding Observations,⁶⁵ a shortfall of 513. While this does not account for combined reports (which allow states to combine their reports, but still result in a single evaluation), it does indicate that 513 separate evaluations did not occur.

We believe this analysis helps shed light on an important and substantial shortcoming in the reporting process. As noted elsewhere, these analytic tools do not explain the reasons underlying these and other outcomes, nor do we express a view. However, we believe these analytic tools can help identify critical areas where further research is needed in order to understand and improve the human rights treaty body reporting process. While the United Nations has been aware of the delays in the reporting process and there is general awareness that a number of factors – from lags in states parties' reporting to the Committee's limited resources⁶⁶ – inevitably affect the Committee's ability to complete its reviews, this data-centric view reveals the extent of the problem. As noted above, over one-quarter of Concluding Observations appear to address combined states parties' reports, suggesting that reporting backlogs and catch-ups are far from rare. Further mining of the data could identify the mean and median length of time between reviews of states. It could also examine whether delays are different across regions or subregions, whether certain states parties have experienced much lengthier delays, and whether there are variations in length of review by the Committee.

Beyond that, further research is needed to decipher whether reporting is behind because states do not take their obligations

⁶⁵ This figure includes the Mexico and Morocco Concluding Observations that were unreadable and thus excluded from our database.

⁶⁶ Blanca Romero García, *Is Self-Reporting Effective?: An Analysis on the Effectiveness of the Self-Reporting Process Within the U.N. Nations Treaty Monitoring System 15* (Apr. 2020) (unpublished B.A. Thesis, Comillas Pontifical University) (on file with Comillas Pontifical University), <https://repositorio.comillas.edu/xmlui/handle/11531/40764> [https://perma.cc/KV8J-4ME9].

seriously, because they are under-resourced and have trouble compiling reports, or due to other reasons. Setting aside the possibility of indifference by states as a possible factor, this analysis shows that at its most productive, the Committee has not been able to evaluate all states that are due to be reviewed. At a minimum, this raises questions as to whether there are embedded design flaws—such as insufficient capacity—in an evaluation process that is intended to serve as a cornerstone of implementation efforts.⁶⁷ As such, this type of analysis could help in identifying where additional resources are needed at a Committee or state level to strengthen the review process.

b. Equality of Rights

As noted above, the Vienna Declaration, the Maastricht Guidelines, human rights treaty bodies, and numerous human rights scholars all have affirmed the importance of equality of all human rights.⁶⁸ Despite widespread recognition of this idea, the reality is that, from government action to media coverage, certain human rights issues receive more focus than others.

In this section, we measure the Committee’s consistency of focus by counting words, measuring lexical diversity (the number of unique words used), and computing the similarity of the Committee’s language across topics. Assessing the Committee’s coverage of issues has taken on greater importance because the U.N. has emphasized a desire to reduce the length of documents in the human rights treaty reporting process,⁶⁹ including the length of

⁶⁷ See David Weissbrodt, Joseph C. Hansen, & Nathaniel H. Nesbitt, *The Role of the Committee on the Rights of the Child in Interpreting and Developing International Humanitarian Law*, 24 HARV. HUM. RTS. J. 115, 126 (2011) (“The reporting process is intended to function in a dialogic manner that facilitates policy development and, eventually, the full realization of Convention rights.”).

⁶⁸ See *supra* notes 51-53 and accompanying text.

⁶⁹ The Simplified Reporting Process is an effort to spur states to “prepar[e] reports that are focused on key priority areas and are shorter to follow the new words limit imposed by the GA resolution to all State reports, independently from the type of reporting procedure (31,800 words for initial reports, 21,200 words for subsequent periodic reports).” CHILD RTS. CONNECT, THE UNCRC SIMPLIFIED REPORTING PROCEDURE (SRP): FREQUENTLY ASKED QUESTIONS (FAQ) 2 (2019), https://www.childrightsconnect.org/wp-content/uploads/2019/07/SRP_FAQ_FINAL_PUBLIC_2019.pdf [https://perma.cc/372R-FT42].

Concluding Observations.⁷⁰ Reducing the length of documents might put pressure on the CRC Committee and other treaty bodies to limit the number of issues they cover or the depth of analysis of issues covered in Concluding Observations.⁷¹

We also note that the demand of equality can work at cross-purposes with another demand: responsiveness. In other words, the Committee's evaluations should be tailored to the conditions at hand in the state party under review, rather than mechanically walking through a pre-set checklist without deviation. We return to this question further in the next section, where we consider consistency across subregions.

The analyses below use the headings and sub-headings in the Concluding Observations to identify the topics under discussion. We isolate the 430 Concluding Observations issued between January 2000 and July 2019, because the Committee used largely the same set of detailed headings and subheadings during those years.

During the 2000-2019 period, the Concluding Observations followed a roughly similar format, with around five consistent top-level headings, using slightly differing wording across Concluding Observations: Introduction; Positive Aspects or Follow-Up Measures and Progress Achieved; Factors and Difficulties; Concerns and Recommendations; and Follow-Up and Dissemination. The Concerns and Recommendations section represented the bulk of each of the Concluding Observations documents. Within those Concerns and Recommendations sections, beginning around the year 2000, the Committee began using a set of ten second-level headings, listed in Table 3 below. These second-level headings were further divided into seventy-four third-level subtopic headings listed in Appendix A. The remainder of this analysis exploits the section-subsection structure to derive insight from the Concluding Observations text.⁷²

⁷⁰ U.N. Secretariat, Concluding Observations, ¶ 33(b), U.N. Doc. HRI/MC/2014/2 (Apr. 14, 2014) (recommending that committees "Limit concluding observations on periodic reports to 3,300 words").

⁷¹ We note also that the computational tools used in this article could also be used in the future to measure the impact of the simplified reporting procedures and reduced length of Concluding Observations on breadth and depth of coverage of rights.

⁷² Prior to 2000, the Committee used only top-level headings without more granular designations of sections below. For example, a Concluding Observations document issued in 1993 covering Bolivia contains only the following headings: Introduction, Positive Aspects, Factors and Difficulties Impeding Implementation

i. Topic Appearance and Word Count

To measure the Committee's equality of treatment of rights, we first identified the appearance of all second- and third-level sections across Concluding Observations and counted the words used in each section. Here, we used a text analytics package in R called *quanteda*. The package defines a "word" as a number or character, or set of numbers or characters, flanked by spaces on either side. We dropped punctuation and symbols, which *quanteda* tallies as well, from the count. Table 3 below reports various measures of second-level topic appearance.

of the Convention, Principal Subjects of Concern, and Suggestions and Recommendations. *See* Comm. on the Rts. of the Child, Consideration of Reports Submitted by States Parties under Article 44 of the Convention: Concluding Observations: Bolivia, ¶¶ 1, 2, 4, 5, 7, 13, U.N. Doc CRC/C/15//Add.1 (Feb. 18, 1993). We experimented with a text analytics method called topic modeling to identify the subjects discussed within each section. Topic modeling identifies commonly co-occurring words within documents in order to produce "topics," or clusters of related words. A researcher then reviews the topic modeling output to judge whether the topics are coherent and useful. While our initial topic modeling experiments did not produce meaningful topics, this is a promising avenue for future research to continue to experiment with and refine a topic modeling approach. *See* Margaret E. Roberts, Brandon M. Stewart & Dustin Tingley, *stm: R Package for Structural Topic Models*, 91 J. STAT. SOFTWARE, Oct. 2019, at 1, <https://www.jstatsoft.org/index.php/jss/article/view/v091i02/1319> [<https://perma.cc/9D9L-C4HU>]; Brandon Stewart, R DOCUMENTATION, <https://www.rdocumentation.org/packages/stm/versions/1.3.6> [<https://perma.cc/AY8A-AMZC>].

Table 3: *Second-Level Topic Appearance and Word Counts, 2000-2019*

<i>Topic</i>	<i>Topic Appearance, % of All COs</i>	<i>Total Topic Word Count, All COs</i>	<i>% of All COs' Concerns and Recoms. Words⁽¹⁾</i>	<i>Average Word Count per CO⁽¹⁾</i>
Special protection measures	100%	571,238	22%	1,328
Implementation	100%	489,522	19%	1,138
Basic health and welfare	100%	437,606	17%	1,018
Civil and political rights and freedoms	100%	321,327	13%	747
General principles	100%	256,220	10%	596
Family environment and alternative care	96%	211,425	8%	492
Rest, leisure, recreation, and cultural and artistic activities (incl. education)	93%	140,622	6%	327
Follow up and dissemination	87%	79,949	3%	186
Optional protocols	31%	9,588	0.4%	22
Age and definition of the child	2%	1,444	0.1%	3

Notes: (1) Figures in column include Concluding Observations in which those topics both did and did not appear.

(2) The Concerns and Recommendations section sometimes also included generic introductory language not pertinent to a particular subject or topic. That language, omitted from Table 3, totaled approximately 31,000 words, or about one percent of Concerns and Recommendations words across all Concluding Observations in the years 2000-2019.

In terms of length of discussion, we find that the Committee has been consistent in prioritizing the special protection measures, implementation, and basic health and welfare sections in its Concluding Observations (see Table 3). In some cases, the differences between these and other children's rights topics are substantial. For example, the Committee on average allocates 1,328 words per Concluding Observations document to "special protection measures" while it spends 747 words on civil rights and freedoms and 327 words on "rest, leisure, recreation and cultural activities (incl. education)." While there have been variations year-to-year in the amount of discussion of each cluster of rights or subject area, generally speaking, the relative differences across topics have remained fairly consistent over time (see Figure 2 below).

Thus, while it is arguably unsurprising that the Committee has devoted significant portions of the Concluding Observations to special protection measures, implementation, and basic health and welfare (together, they constitute fifty-nine percent of the "Concerns and Recommendations" sections of the Concluding Observations), as these are significant issues, text mining does uncover some unexpected results. For example, the "rest, leisure" topic constitutes only six percent of Concluding Observations' Concerns and Recommendations words, even though that topic includes coverage of education. Education is widely recognized not only as a fundamental right in itself, but also as a "multiplier" in that it helps facilitate realizations of other rights.⁷³ If education does not receive adequate attention, other rights of the child as well as the child's development may be at risk.

We can probe the coverage of education issues further by digging down one level in the Concluding Observations, to the Committee's third-level sections that address specific subtopics. Within the "rest, leisure" topic, we see two subtopics: "Education including vocational training and guidance," present in ninety-two percent of Concluding Observations, and "Human rights and peace education," present in four percent (Appendix A). The frequent appearance of the specific "education" subtopic suggests consistent coverage of the issue, though the depth of coverage might merit further examination.

⁷³ Todres, *supra* note 34, at 129 ("Education has a multiplier effect, positioning children to realize a host of other rights during their youth and as adults."); KATARINA TOMASEVSKI, HUMAN RIGHTS OBLIGATIONS IN EDUCATION: THE 4-A SCHEME 7 (2006).

It is important to note that this initial analysis relies on the Committee's topic and subtopic headings. We use headings for two reasons: (1) they signal that the Committee viewed an issue as sufficiently important to merit its own, separately named section or subsection; and (2) they identify where in the text the discussion of a particular issue would likely be concentrated. We acknowledge that this approach misses issues that the Committee discusses *across* sections or subsections. For example, education may be mentioned in other Concluding Observations sections and subsections beyond the "Education including vocational training and guidance" subsection mentioned above.⁷⁴

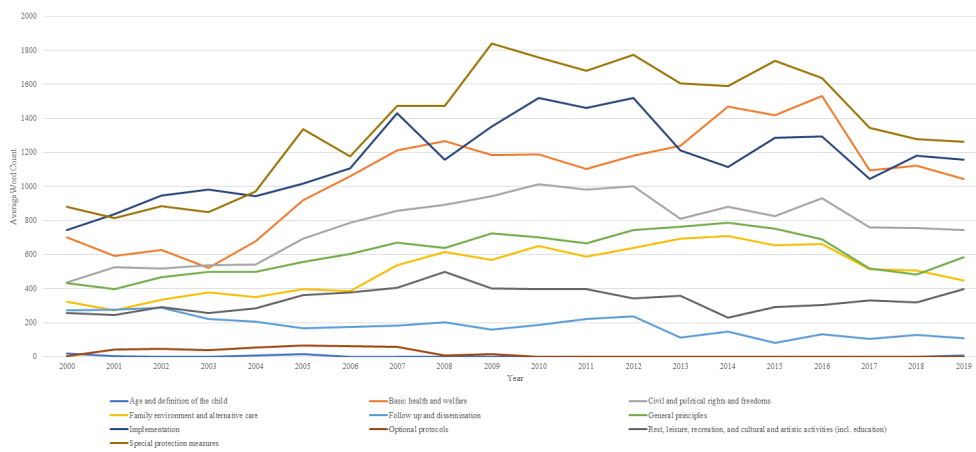
Beyond the education-specific subtopics, we note that other areas of the Concerns and Recommendations section merit further research at the most granular, subtopic level of the Committee's Concluding Observations. For example, within "Basic Health and Welfare," "Adolescent Health" and "Children with Disabilities" were the most common subtopics, each appearing as a distinct subsection in eighty-six percent of Concluding Observations (Appendix A). In contrast, "Mental Health" appeared as a distinct subsection in only twenty-two percent of Concluding Observations. Within "Special Protection Measures," "Juvenile Justice" and "Sale, Trafficking, Abduction, Sexual Exploitation and Abuse" were the most commonly included topics, appearing in ninety-seven percent and ninety percent of Concluding Observations, respectively. Meanwhile, "Street and Homeless Children" (forty-nine percent of Concluding Observations) and "Minority and Indigenous Children" (thirty-two percent of Concluding Observations) were afforded a separate subtopic far less frequently. By analyzing coverage of these third-level topics, we are able to see the extent to which the Committee addressed and gave priority to specific rights issues or populations of children. Appendix A provides a complete breakdown of subsections' presence across Concluding Observations.

By exploiting the Committee's section headings, we can also examine topic coverage over time to assess whether the distribution

⁷⁴ We conducted a preliminary analysis, identifying and counting "education" and all forms of the word "educate" across full Concluding Observations, and found that while education is most often referenced in the "rest, leisure" section, it is also mentioned frequently, for example, in "basic health and welfare." This search did not differentiate how "educate" is used, and so would pick up sentences that address education of both adults and children and other issues that might not be seen as central to education rights. Further work in this vein might also employ topic modeling, a technique discussed in *supra* note 72.

of coverage has grown or stayed consistent. In Figure 2 below, we provide a chronological view of the average number of words that the Committee has devoted to each of its ten more general topic areas within the Concerns and Recommendations sections of its Concluding Observations. Word counts provide a further rough measure of the level of importance that the Committee assigns to a particular topic, the assumption being that more words equal greater Committee attention.

Figure 2: Average Word Count per all Concluding Observations per Topic per Year, 2000-2019



Note: Figure 2 includes Concluding Observations in which those topics both did and did not appear.

As Figure 2 shows, the Committee’s average word counts per topic have varied both across years and across topics. Recall from Table 3 above, for example, that both “Special Protection Measures” and “General Principles” appeared in 100 percent of Concluding Observations studied. However, Figure 2 reveals that the Committee consistently devoted more than double the number of words to “Special Protection Measures” than to “General Principles” over the entire study period. Moreover, the “Special protection measures” word count itself varied quite a bit, ranging from a low of about 900 words per Concluding Observation in the early years to a high of over 1,800 in the mid-2000s. By contrast, the lower word-count topics stayed fairly consistent over time.

Further analysis could leverage word counts at the more granular subtopic level as well. However, even at a higher level, it is evident that there are disparities in coverage of various clusters of rights. These differences merit further examination to determine whether they reflect appropriate coverage of, and responsiveness to, the most pressing children's rights issues, greater complexity of certain issues necessitating more detailed discussion, a lack of adequate coverage of selected issues, or other issues.

c. Consistency and Responsiveness Across Subregions and Topics

Using a similar set of computation tools, we are also able to assess how the Committee allocates its coverage of children's rights issues across various states parties, captured here by United Nations subregion.

Note that our analysis does not attempt to decide, as a normative matter, whether the Committee is devoting *enough* analysis to any given subregion or subregion-topic combination. Other scholars might, for example, call on the Committee to increase its focus on children's civil and political rights and freedoms in countries with regressive regimes or post-coup. Researchers might also be interested in a geographic analysis of the Committee's work as a way to explore possible political influence over the treaty body.⁷⁵

Here, we demonstrate a set of tools that would provide a grounding in the data for these types of projects by allowing us to measure and compare the Committee's coverage and tone across subregions and topics. Though this section presents our results by subregion and the ten level two topics, one could easily perform the same (though much more extensive) analysis by states party and/or more granular-level three subtopic listed in Appendix A.

⁷⁵ Comparing survey results from the Universal Periodic Review ("UPR") and Treaty Bodies clearly shows that Concluding Observations are perceived to be less politically motivated than the UPR recommendations. In the UPR, a wide majority of respondents believe that recommendations are often or always politically motivated. About a third of respondents are of the opinion that this seldom occurs, and remarkably, no respondent indicated that this never happens. This is very different than the Treaty Bodies, where a vast majority of respondents believe that Concluding Observations are seldom or never politically motivated, a minority of respondents believe that this is often the case, and no respondent believes that this always occurs. Valentina Carraro, *The United Nations Treaty Bodies and Universal Periodic Review: Advancing Human Rights by Preventing Politicization?*, 39 HUM. RTS. Q. 943, 951 (2017).

i. Word Counts by Subregion

We begin with a geographical view of word counts. Comparing Concluding Observations across United Nations subregions, we find notable geographical differences in the length of documents. For example, as Table 4 below shows, as compared against Northern, Southern, and Western Europe, the average Concerns and Recommendations section – the core of Concluding Observations – was twenty-two percent longer for Sub-Saharan Africa (6,276 words on average), thirty-two percent longer for South-eastern Asia (6,835 words), and thirty-five percent longer for Southern Asia (6,973 words).⁷⁶

⁷⁶ Recall that the Northern America subregion contains only Canada and is therefore not a comparable subregion to the others. *See supra* note 43.

Table 4: Concerns and Recommendations Word Counts by Subregion, 2000-2019

<i>Subregion</i>	<i>Total Subregion Word Count, All COs</i>	<i>% of All COs' Concerns and Recs. Words per Subregion</i>	<i>Average Concerns and Recs. Word Count per Subregion</i>
Southern Asia	160,377	6%	6,973
Northern America	13,797	1%	6,899
South-eastern Asia	150,377	6%	6,835
Eastern Asia	115,228	5%	6,778
Sub-Saharan Africa	602,490	24%	6,276
Northern Africa	61,915	2%	6,192
Eastern Europe	129,207	5%	6,153
Latin America and the Caribbean	430,084	17%	5,892
Western Asia	243,861	10%	5,671
Central Asia	77,642	3%	5,546
Oceania	121,197	5%	5,269
Northern, Southern, Western Europe	443,870	17%	5,161

Notes: The generic introductory Concerns and Recommendations language previously omitted from Table 3 above is included in the word count sums and percentages reported here in Table 4.

Overall, the Committee's Concluding Observations appear to be longer for Global South countries. This analysis does not explain the reasons for geographical disparities in length. Higher word counts might reflect a larger number of issues to address with selected countries, more in-depth coverage of issues in certain regions, or shortcomings in the analysis of Global North countries.

It is true that children in certain countries face more significant barriers to realization of their rights. For example, some countries might have more out-of-school children, less access to primary health care, or a larger population of youth in detention. Such disparities could result in longer Concluding Observations for some countries versus others. However, all countries have work to do to meet their obligations under the CRC, and the reporting process is not a comparative evaluation, but rather an opportunity to assess a

particular country at a particular point in time. Richer countries in the Global North, for example, should not get a figurative “pass” just because they have achieved more in some areas of children’s rights than selected Global South counterparts. Indeed, the Committee aims to use the reporting process to spur progress on children’s rights in all countries, across all areas of children’s rights. Therefore, one might expect Concluding Observations to have similar word counts across states parties and subregions, with assessments of countries that have a stronger record on children’s rights providing a more nuanced analysis of remaining priority issues.

In this vein, our data-centric approach allows us to isolate and compare the broader sections and more granular subsections on the level of particular states parties. Appendix B contains word count measures for each of the states parties for each of the ten broader, second-level topics. One could also perform these analyses on each of the third level subtopics listed in Appendix A.

As an example, during our study period, the Committee’s Concluding Observations for Ireland devoted the most words to Special Protection Measures (twenty-five percent of the Concerns and Recommendations section), Basic Health and Welfare (twenty-one percent), and Implementation (nineteen percent), and the fewest words to Civil and Political Rights and Freedoms (nine percent) (Appendix B). In contrast, the Committee’s Concluding Observations on Haiti contained the lengthiest discussions of Special Protection Measures (twenty-six percent), Civil and Political Rights and Freedoms (seventeen percent), and Basic Health and Welfare (seventeen percent), and the fewest words on General Principles (eight percent) (Appendix B). Depending on their particular research interests, scholars could identify interesting and substantive differences across other countries as well.

As noted elsewhere, this initial analysis cannot explain why these differences have occurred. A range of explanations is possible. As suggested in the discussion above, for instance, variations in the length of Concluding Observations’ sections and subsections may be responsive to the individual circumstances that each country faces. However, we believe identification of these differences suggests an agenda for further research, so that we can better understand these differences and the reporting process more broadly.

ii. Cosine Similarity by Subregion

Beyond the rough measure of word counts, we can generate a measure of text similarity to examine the extent to which the Committee has used different language across subregions. Here, we first dropped from the text any words that identified a person, entity, or place specific to a state party or subregion.⁷⁷ We then computed the cosine similarity of the text that remains. This involves first vectorizing the text, meaning transforming each document into a string, or vector, of numbers that capture the frequency with which each unique word appears in each of the Concluding Observations. Creating such vectors captures multiple dimensions of word usage: the number of unique words in each of the Concluding Observations, their frequency, and the overlap between documents' words.⁷⁸

With words stored in vector form, we then plotted each vector against each other and measured the cosine of the angles between them. Identical documents would produce identical vectors, which would sit directly atop one another when plotted, generating a cosine of one. The fewer shared words between Concluding Observations, the lower the cosine similarity measure. After computing cosine similarity, we grouped the Concluding Observations by U.N. subregion.

Here, we find very similar language across subregions: the most similar pair is Southern Asia and Sub-Saharan Africa (0.995), while the least similar pair is Eastern Asia and Northern America (0.944). This similarity is not surprising: the Committee is discussing a single set of common children's rights issues regardless of which states party is under review. However, application of text similarity measures could be used in other ways to yield more interesting findings. One might imagine, for example, comparing the language used in the Committee's Concluding Observations to the states parties' own reports, or to the Alternative Reports submitted by NGOs. This comparison would likely provide insights into how

⁷⁷ Specifically, we used the Named Entity Recognition tool from the spaCy large model, implemented in Python, to create a dictionary of words, which we then dropped from the Concluding Observation corpus. *Named Entity Recognition*, SPACY, <https://spacy.io/usage/linguistic-features#named-entities> [<https://perma.cc/4PHV-76VD>].

⁷⁸ This is called a "bag of words" approach in natural language processing and text analytics. See YOAV GOLDBERG, NEURAL NETWORK METHODS FOR NATURAL LANGUAGE PROCESSING (2017).

heavily the Committee relies on and benefits from NGO reports and other inputs into its monitoring and evaluation process. We could also compare the CRC Committee's Concluding Observations to the Concluding Observations published by other human rights treaty bodies to discern whether and to what extent there are commonalities in reporting across the treaty body system.

iii. Sentiment by Subregion and Topic

Finally, we used a method called sentiment analysis to probe not only what the Committee said with respect to each subregion, but how the committee delivered its message(s). In its simplest form, sentiment analysis is an automated method by which a researcher compares a passage of text to a set of predetermined positive and negative words. The algorithm counts the number of "hits" on the positive and negative dictionaries. Though there are a multitude of approaches to sentiment analysis in the fields of natural language processing and text analytics, this section uses a simple, dictionary-based approach—using the *quanteda* package's built-in *Lexicoder Sentiment Dictionary*—to explore the application of this tool to the Committee's work.

On the whole, the Concluding Observations as a set used mostly neutral words. This neutrality makes sense, given that much of the Committee's writing is descriptive narrative of the reporting process and the conditions for children in the states party. Focusing specifically on positive and negative words, we found that the Committee used more positive than negative words. This held true even though many of the words that the Committee uses to address substantive matters (e.g., discussing violence against children, or abuse) are themselves negative. Despite the negative subject matter, the Committee's language, overall, was generally positive in tone.

We observed roughly the same pattern across subregions, as Figure 3 below shows. In all subregions, Concluding Observations contained between two and three percentage points more positive words than negative words, as a percentage of the Concluding Observations' overall word count.

Figure 3: Percent of all Positive and Negative Words by Subregion

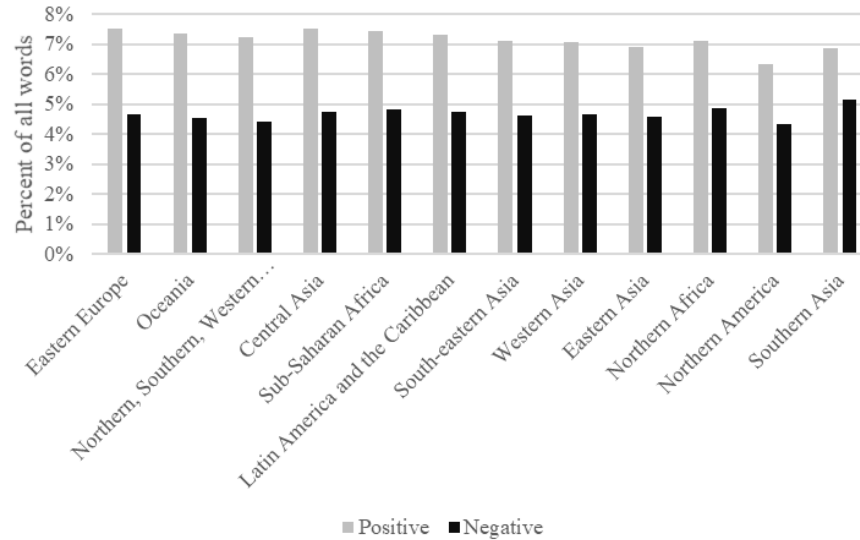
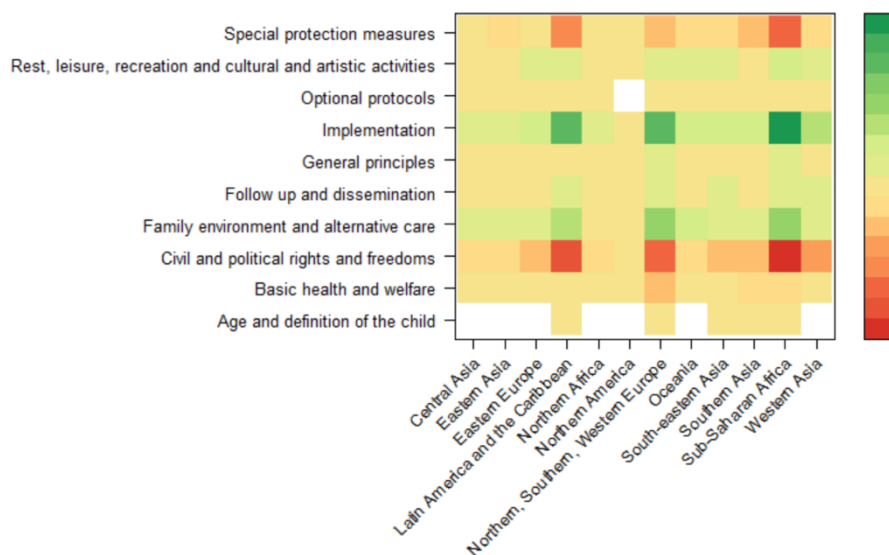


Figure 4, in turn, contains a heatmap showing scaled sentiment by subregion and the ten second-level topics. The darkest red squares indicate the most negative sentiment, whereas the darkest green squares indicate the most positive. White squares mean that there was no sentiment score calculated for that subregion-topic pair because the Committee did not address that topic in that subregion's Concluding Observations. The sentiment measures are scaled to account for varying underlying numbers of words in topic-subregion pairs.

This illustration does reveal some differences in the Committee's tone: special protection measures and civil and political rights and freedoms were both more negative than other topics, whereas implementation was generally positive. The Concluding Observations pertinent to Sub-Saharan Africa and civil and political rights contained the most negative language.

Figure 4: *Sentiment by Subregion and Topic*

Note: Normalized sentiment to account for different underlying numbers of words; white means no sentiment score calculated.

This analysis seems to reinforce several key aspects of the reporting process. First, as noted above, the process is intended to be collaborative, whereby through a constructive dialogue with the government of the state party, the Committee develops a set of recommendations to guide the state in addressing obstacles/barriers and improving outcomes for children. The fact that Concluding Observations are typically positive or neutral supports the notion that the Committee is committed to ensuring a constructive dialogue. It also undercuts critiques of the reporting process that assert that U.N. committees are overstepping their bounds, encroaching on state sovereignty, and simply criticizing governments on domestic issues.⁷⁹ Overall, this positive practice is

⁷⁹ See Carole J. Petersen, *Bridging the Gap?: The Role of Regional and National Human Rights Institutions in the Asia Pacific*, 13 *ASIAN-PACIFIC L. & POL'Y J.* 174, 180 (2011):

The expanding role of international law is sometimes portrayed in a negative light, as an encroachment on sovereignty and democracy. A more nuanced view is that sovereignty has simply evolved into a new concept, one that places less emphasis on the ability of a ruler to "exclude" the world and more emphasis on international legal recognition and participation.

consistent with the goal of having the reporting process serve as a “constructive dialogue” between states and the Committee.⁸⁰

One note of caution is in order. There is no custom set of sentiment analysis dictionaries available for use in a human rights or diplomatic context. Creating such word lists would be a labor-intensive undertaking that would require deep subject matter knowledge about the various and specific way(s) that states parties, NGOs, and U.N. treaty bodies use language in their particular contexts. For example, the words “regret” and “concern” are both categorized as mildly negative in off-the-shelf sentiment dictionaries such as the one used in this study. A close read of the Committee’s Concluding Observations, however, reveals that the Committee’s usage of these words at times can signal something closer to deep alarm on the Committee’s part. We return to the subject of the Committee’s clarity in communicating its message(s) in Part IV.F below. Thus, while a standard sentiment analysis approach such as the one used here can be effective in broad strokes, a set of custom sentiment dictionaries would likely generate much more interesting findings. This suggests a rich set of possibilities for future data-centric human rights research.

d. Attention to the General Principles

As noted above, the General Principles are four umbrella provisions that apply across the entire Convention on the Rights of the Child. The Committee has prioritized the General Principles – Articles 2 (non-discrimination), 3 (best interests), 6 (life, survival, and development), and 12 (voice of the child)⁸¹ – since the early days of its existence.⁸² Although the reasons for the Committee’s selection of these particular provisions as the General Principles are not clearly documented,⁸³ after more than thirty years since the CRC’s adoption, Articles 2, 3, 6 and 12 are now firmly entrenched as the General Principles and afforded priority in various discussions of the CRC.⁸⁴ Our expectation, therefore, would be that the

⁸⁰ See sources cited *supra* note 8.

⁸¹ See General Comment No. 5, *supra* note 55, at ¶ 12.

⁸² See Lundy & Byrne, *supra* note 55; General Comment No. 5, *supra* note 55, at ¶ 12.

⁸³ Lundy & Byrne, *supra* note 55.

⁸⁴ See Lundy & Byrne, *supra* note 55; Hanson & Lundy, *supra* note 55.

Committee would also prioritize the four General Principles in its evaluation of the states parties' progress in implementing the CRC.

By analyzing the Committee's discussion of the General Principles in its Concluding Observations, we can test two overlapping concepts. First, we can examine whether and to what extent the Concluding Observations reflect the notion that the General Principles are of heightened importance. Second, we can go beyond the prior section's discussion of topics and subtopics to focus specifically on the Committee's discussion of particular articles of the Convention.⁸⁵ Similar to other sections, this section offers an initial examination that demonstrates the types of questions that can be probed using our suite of text and data analytics tools.

In the analyses reported below, we examine the Committee's treatment of the four General Principles subtopics in contrast with a set of comparator subtopics: children with disabilities, children's rights and the business sector, and budget and resources. We selected these comparators because they are illustrative of different types of rights issues: the children with disabilities subtopic is an example of a focus on a special population; the children's rights and the business sector subtopic offers a look at a key stakeholder and institutional actor; and the budget and resources subtopic is a cross-cutting theme relevant to all children's rights issues. Adding these three subtopics enables us to examine the Committee's treatment of the General Principles versus other types of rights issues.

i. Subtopic Appearance by Percent of Concluding Observations

To begin, we find that the Committee has allocated unequal coverage to the four General Principles. As shown in Table 5, non-discrimination and participation/views of the child are included as subtopics in almost all Concluding Observations (ninety-seven and ninety-three percent of Concluding Observations, respectively).

⁸⁵ Within the structure of the Concluding Observations, the General Principles and comparator subtopics are identified by third-level headings within the Concerns and Recommendations section. Appendix A lists all third-level headings and their appearance by percent of Concluding Observations.

Table 5: Subtopic Appearance by Percent of Concluding Observations, 2000-2019

<i>Subtopic</i>	<i>Appearance in % of Concluding Observations</i>
General Principles	
Non-discrimination	97%
Participation and views of the child	93%
Best interests of the child	76%
Right to life, survival, development	43%
Comparator Topics	
Budget and resources	92%
Children with disabilities	86%
Children's rights and the business sector	23%

However, in almost one-quarter of reports, there is no subsection assessing implementation of Article 3 and the best interests of the child (seventy-six percent of Concluding Observations include a subsection on best interests). And in more than half of Concluding Observations, there is no section on the right to life, survival, and development (only forty-three percent of Concluding Observations have a subsection on Article 6). Further, as Table 5 shows, of our comparator topics, budget and resources and children with disabilities both eclipsed best interests and right to life, survival, and development in terms of appearance across Concluding Observations.

As noted above, the absence of a subsection on any particular subject does not necessarily mean that the Committee never mentioned these rights. For example, the Committee could have mentioned or even urged application of the best interests standard in other sections and subsections of the Concluding Observations in the context of other specific issues. However, the absence of a specifically-labeled and named subsection does mean that these rights were not given a certain level of recognition—that is, their own subsection—in those Concluding Observations. Given the emphasis that the Committee has put on the General Principles as foundational to the CRC, we believe it is potentially significant that Articles 3 and 6 did not receive specific focus in such a large proportion of Concluding Observations.

Indeed, this lesser focus on Articles 3 and 6 (best interests and life, survival, and development) in numerous Concluding Observations conflicts with the stated importance of the General Principles. In General Comment No. 5—“General Measures of Implementation of the Convention on the Rights of the Child”—the Committee emphasizes that “Every legislative, administrative and judicial body or institution is required to apply the best interests principle by systematically considering how children’s rights and interests are or will be affected by their decisions and actions.”⁸⁶ The Committee stated further,

[e]nsuring that the best interests of the child are a primary consideration in all actions concerning children . . . demands a continuous process of child impact assessment (predicting the impact of any proposed law, policy or budgetary allocation which affects children and the enjoyment of their rights) and child impact evaluation (evaluating the actual impact of implementation).⁸⁷

Similarly, with respect to Article 6, the Committee stated in General Comment No. 5 that it “expects States to interpret ‘development’ in its broadest sense as a holistic concept, embracing the child’s physical, mental, spiritual, moral, psychological and social development. Implementation measures should be aimed at achieving the optimal development for all children.”⁸⁸

The absence of express focus on Article 3 in approximately one-quarter of Concluding Observations and Article 6 in more than half of Concluding Observations raises questions about whether these core articles of the CRC are receiving adequate coverage and assessment in the reporting process. We separately examined the Committee’s coverage patterns over time and note that coverage of best interests increased in the later years of our study period, thus potentially resolving this gap.⁸⁹ However, coverage of the right to life, survival, and development has consistently lagged behind the other three General Principles. This preliminary analysis does not provide a definitive answer as to whether Committee evaluation of

⁸⁶ General Comment No. 5, *supra* note 55, ¶ 12.

⁸⁷ *Id.* ¶ 45.

⁸⁸ *Id.* ¶ 12.

⁸⁹ We also analyzed Committee coverage of the four General Principles and three comparator topics across subregions and found functionally equal coverage.

these issues is sufficient, but it suggests that these questions merit further research.⁹⁰

ii. *Subtopic Word Count*

One further path for analysis is an examination of word counts per subtopic. Though word counts, like topic appearance, do not assess the adequacy of the Committee's discussion on any given subject, they do offer a more nuanced view of the level of attention that the Committee pays across topics and subtopics. For example, although Table 5 above reports a negligible difference in topic appearance between nondiscrimination and participation (ninety-seven percent versus ninety-three percent of Concluding Observations), word count tells a different story: the Committee used nearly thirty percent more words discussing non-discrimination as compared to participation and views of the child (Table 6). In addition, even though budget and resources appeared more consistently as a separate section than children with disabilities, children with disabilities received more in-depth coverage in most years, as measured by word count (Figure 6). In fact, children with disabilities received the most coverage of all seven issues, by total number of words, General Principles and comparator topics included (Table 6). In addition, as Figures 5 and 6 below show, the average budget and resources word count across Concluding Observations was higher than all General Principles word counts in some years.

⁹⁰ While we are encouraged by the consistent presence of non-discrimination and participation/views of the child in the vast majority of Concluding Observations, we observed aberrations in selected years. For example, the Committee included a subsection on child participation in only seventy percent of Concluding Observations issued in 2001 and only seventy-one percent of Concluding Observations issued in 2014. As this is one of the foundational principles of the CRC, and arguably the most transformative right enshrined in the treaty, it arguably merits a subsection of focused discussion in every Concluding Observations issued. See GERISON LANSDOWN, UNICEF, *EVERY CHILD'S RIGHT TO BE HEARD: A RESOURCE GUIDE ON THE UN COMMITTEE ON THE RIGHTS OF THE CHILD GENERAL COMMENT No. 12, at 5* (2011), https://www.oikoumene.org/sites/default/files/Document/Every_Childs_Right_to_be_Heard.pdf [<https://perma.cc/K4BD-3VDY>] (discussing the concept of child 'participation' and identifying it as one of the main principles of Article 12 of the U.N. Convention on the Rights of the Child).

Table 6: Total Subtopic Word Count, 2000-2019

<i>Subtopic</i>	<i>Word Count</i>
General Principles	
Non-discrimination	101,078
Participation and views of the child	78,714
Best interests of the child	51,946
Right to life, survival, development	32,385
Comparator Topics	
Budget and resources	80,914
Children with disabilities	102,218
Children’s rights and the business sector	27,746

Figure 5: Average Subtopic Word Count per CO per Year, 2000-2019: General Principles

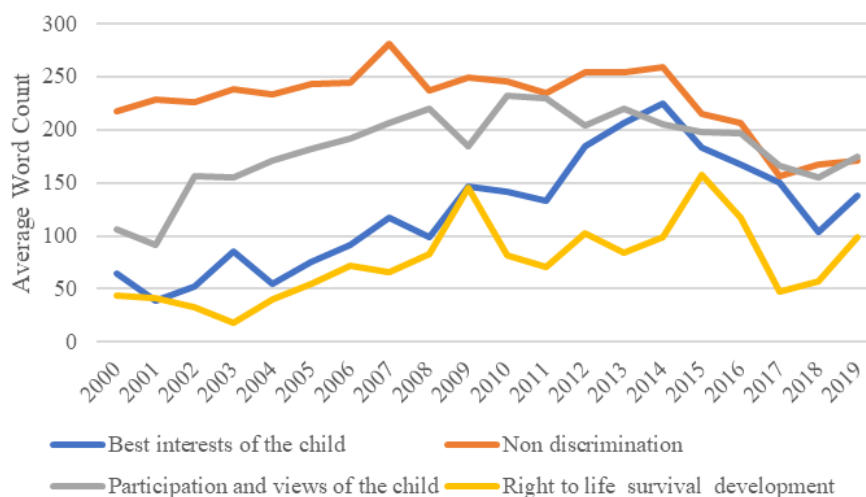
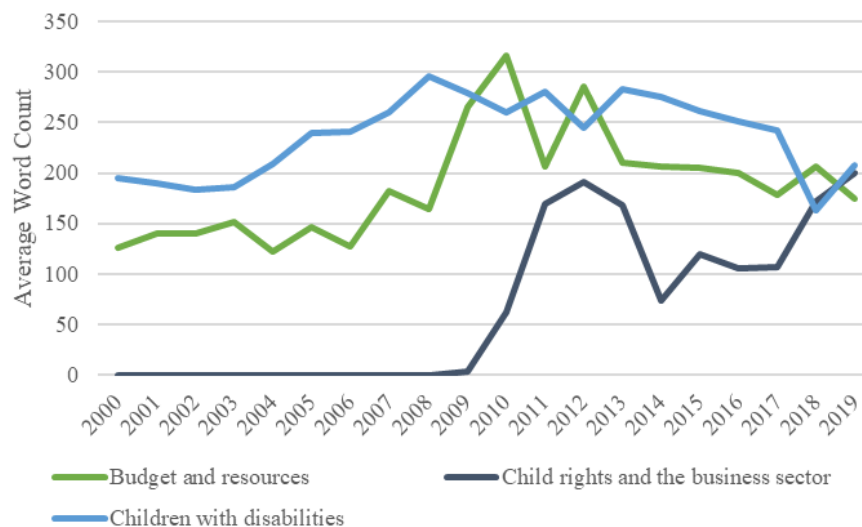


Figure 6: Average Subtopic Word Count per CO per Year, 2000-2019: Comparator Subtopics



Note: Figures 5 and 6 include in the calculation of averages Concluding Observations that both do and do not contain the particular subtopics at issue.

More study is needed, but what these analyses can reveal is how the Committee divides its coverage among provisions of the CRC and, more generally, among children's rights issues. Such an assessment can help identify whether certain issues are receiving adequate coverage or are being overlooked. Moreover, these tools can be particularly powerful when paired with a qualitative assessment of the Committee's work. As noted above, counts of headings and words have limitations, and cannot provide an expert, subjective assessment of the quality of Committee's review and analysis of particular issues. However, our quantitative review of the Committee's coverage of General Principles and comparator topics raises questions that are central to the functioning of the reporting process and suggest a rich set of questions for further analysis.

e. Responsiveness to the General Comments

As noted in the Introduction, the Committee—like all human rights treaty bodies—performs multiple core functions. The Committee not only evaluates states’ practices via the reporting process,⁹¹ but also interprets and develops the jurisprudence of the CRC. Central to that role is the Committee’s issuance of General Comments, which serve as authoritative interpretations of particular provisions of the CRC. In this way, the Committee functions much like a regulatory body expounding on the content of the law within its mandate. Given the General Comments’ articulation of definitive interpretations of covered rights, one might expect the Committee to emphasize newly adopted General Comments in the reporting process. Thus, we might expect to see an increase in coverage of these issues following the adoption of a General Comment, or perhaps starting before the official adoption of a General Comment when the drafting of it was already on the Committee’s radar.⁹²

Our preliminary analysis of selected General Comments uncovered a different pattern. Here, we discuss two examples. First, the General Comment on children with disabilities was adopted in 2006. In the years immediately following, there was a modest increase in the percentage of Concluding Observations that included a subsection on children with disabilities. (We note that the topic had already been consistently included in the vast majority of Concluding Observations, so there may not have been as much

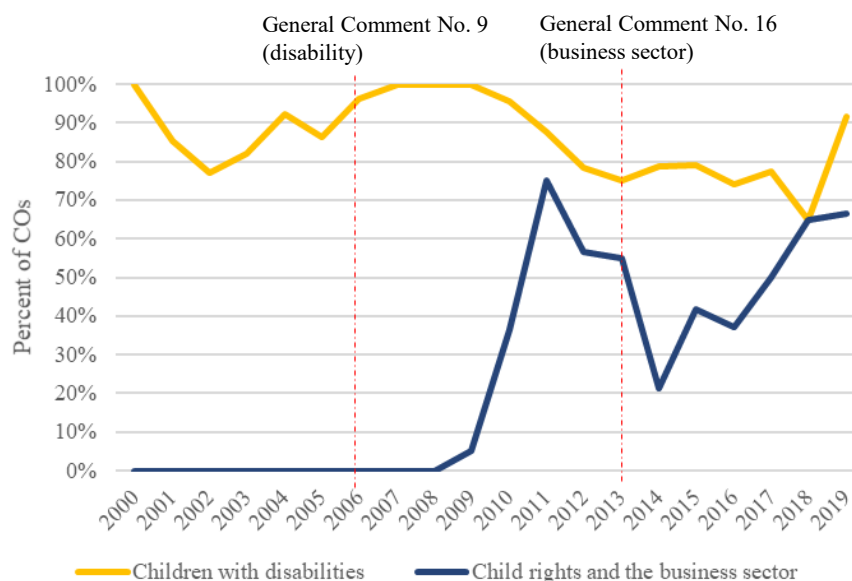
⁹¹ To a lesser extent, human rights treaty bodies also evaluate states through the complaint mechanisms established. Like other human rights treaty bodies, the Committee on the Rights of the Child can also hear complaints from individuals and issue decisions as a quasi-judicial body. See Optional Protocol to the Convention on the Rights of the Child on a Communications Procedure, art. 5, G.A. Res. 66/138 (Dec. 19, 2011) (only states that have ratified this third optional protocol to the CRC have granted the Committee the authority to hear cases against them).

⁹² States’ practices also inform the development of the CRC meaning. Cynthia Price Cohen, *The Developing Jurisprudence of the Rights of the Child*, 6 ST. THOMAS L. REV. 1, 6 (1993):

The evolving interpretation of the Convention’s language takes place in two stages. First, the standards of the Convention must be interpreted by each State Party. This interpretation is then subsequently evaluated by the Committee on the Rights of the Child. As this process is repeated over time, the Convention’s true meaning will ultimately be determined by the Committee’s application of the Convention’s text to the acts of States Parties.

room for an increase in coverage as compared to other topics.) However, from 2012 through 2018, the percentage of Concluding Observations that include a subsection on “children with disabilities” was consistently below that of 2005, the year before the General Comment was adopted. Figure 7 below illustrates these trends.

Figure 7: Subtopic Appearance by Percent of Concluding Observations per Year: Comparator Subtopics



Second, General Comment No. 16—“State Obligations Regarding the Impact of the Business Sector on Children’s Rights” — was adopted in 2013.⁹³ In the reporting process, a section on “children’s rights and the business sector” actually first appeared in 2008 and 2009 in Bolivia’s and Mozambique’s Concluding Observations, comprising fewer than 100 words. As Figure 7 above shows, the frequency of this subtopic’s appearance increased substantially in 2011 and 2012, up to eleven and thirteen Concluding Observations, respectively, averaging 296 words for each Concluding Observations—all before the relevant General

⁹³ Comm. on the Rts. of the Child, General Comment No. 16: State Obligations Regarding the Business Sector on Children’s Rights, U.N. Doc. CRC/C/GC/16 (April 17, 2013).

Comment was issued. In 2014, the year after the General Comment's adoption, the "children's rights and the business sector" subsection appeared in only three Concluding Observations, or twenty-one percent of the Concluding Observations issued that year, but averaged 345 words each time. Since 2014, coverage has increased fairly steadily. However, "children's rights and the business sector" has never appeared as a stand-alone section in more than sixty-seven percent of Concluding Observations issued in any given year since the adoption of General Comment No. 16, and the peak year remains 2011, which was prior to the General Comment's adoption.

This preliminary analysis is based primarily on whether the Committee included separate sections on these topics in Concluding Observations. As above, it is possible that these topics were mentioned in other sections focused on other issues. For example, children with disabilities could have been mentioned in the context of realizing education rights or participation in cultural life. The business sector might have been mentioned under special protection measures when discussing trafficking of children.⁹⁴ However, it is still notable whether the Committee decided to dedicate a specific section to address a rights issue, as opposed to making passing reference to the topic within other sections. Further, in our view, it is somewhat surprising that newly adopted General Comments do not appear to have had a more significant impact on the Committee's assessment of a state party in its Concluding Observations.

As noted in other sections, our analysis does not explain the variations across years or why the Committee included or omitted a section in particular Concluding Observations. However, the results related to the General Comment on the business sector are illustrative of what text mining can discover and how data analytics can be helpful in identifying issues that merit further analysis. For example, it may be worth probing why "the business sector" subsection first appeared a few years *before* the General Comment. Did the drafting of the General Comment raise awareness and attract attention to the business sector during the reporting process? Was the focus prompted by a particular country under review? Moreover, if, as we presume, the Committee expects states parties to take seriously the guidance it provides in General Comments,

⁹⁴ The General Comment on children's rights and the business sector was likely mentioned in connection with other subtopics (e.g., trafficking) even if it was not always called out as its own separate topic in the period 2009-2019.

why do we not see more consistent use of subsections on “the business sector” following the adoption of General Comment No. 16? We believe it is critical to understand how the reporting process and the General Comments interact and engage with one another, and thus we believe this is an area that merits further research.

f. Accessibility and Clarity

As noted in Part III.B, the Committee’s Concluding Observations are relevant to, and potentially read by, a wide range of different stakeholders. The U.N. Manual on Human Rights Reporting states that Concluding Observations should “ensure that the underlying message is conveyed properly . . . to the readers.”⁹⁵ These readers include foremost government officials of the states parties under review. But they also include NGO advocates who work on children’s rights and communities that are affected by children’s rights violations. Finally, although the language of the Concluding Observations is clearly not targeted at children, young people—who are the subjects of the treaty—should also be considered a key audience.⁹⁶

In this section, we probe the effectiveness of the Committee’s communication through the Concluding Observations by analyzing two variables: readability (how accessible is the Committee’s language) and clarity (how clearly does the Committee communicate the relative urgency of its various messages to its readers).

i. Accessibility as Measured by Readability

We first use readability measures to assess the level of accessibility of the Committee’s language. There are many different readability measures available to the researcher. We chose one for purposes of demonstration, the widely used Flesch-Kincaid grade level assessment, which produces a grade level score that corresponds with the sophistication and difficulty of the language. A Flesch-Kincaid grade level score of twelve equals the twelfth

⁹⁵ See MANUAL ON HUMAN RIGHTS MONITORING, *supra* note 9, at 5.

⁹⁶ See *supra* note 59 and accompanying text.

grade; higher scores indicate college- or graduate-school level speech. However, Flesch-Kincaid scores have no upper bound, as they derive their readability calculations from the number of syllables per word in a sentence, and one can easily imagine quite lengthy, mult clause, linguistically convoluted sentences with multiple multisyllabic words, generating high Flesch-Kincaid performance measures. The immediately preceding sentence, for example, scores a post-Ph.D.-level 26 on the Flesch-Kincaid scale. As a further point of comparison, a 2017 study found that articles published in the *New York Times* were written, on average, on an eleventh grade reading level, as measured by Flesch-Kincaid.⁹⁷

As a general matter, the Concluding Observations are written at a high level of sophistication (see Table 7 below). The minimum reading level of the Concluding Observations was twelfth grade, while the average was a score of 19.59—graduate level—on the Flesch-Kincaid scale.

Table 7: Concluding Observations' Flesch-Kincaid Readability Scores, by Grade Level

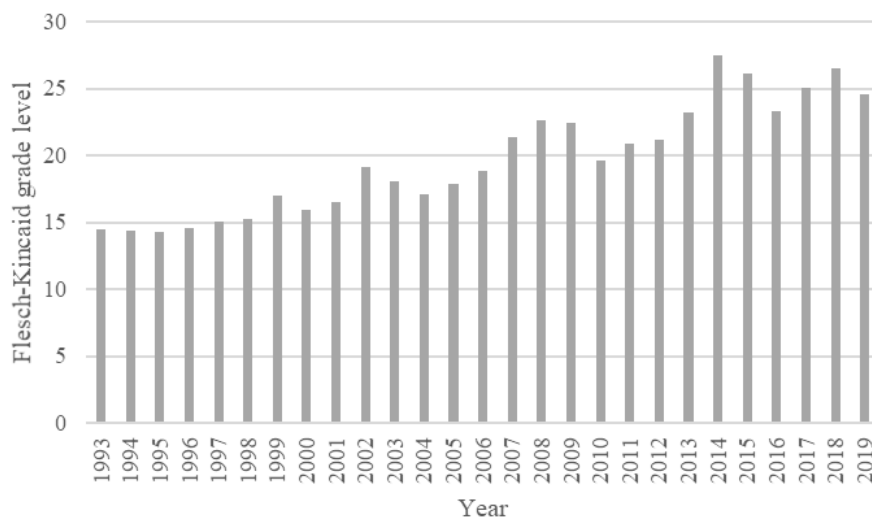
<i>Measure</i>	<i>Grade Level Score</i>
Minimum	12.04
Maximum	36.54
Median	18.38
Mean	19.59

We also tested the readability of Concluding Observations over time. As Figure 8 below shows, although readability scores have always been high, they have actually worsened over time.⁹⁸

⁹⁷ Yuni Susanti, Takenobu Tokunaga, Hitoshi Nishikawa & Hiroyuki Obrai, *Controlling Item Difficulty for Automatic Vocabulary Question Generation*, 12 RSCH. & PRAC. TECH. ENHANCED LEARNING, no. 25, at 6 (2017), <https://link.springer.com/article/10.1186/s41039-017-0065-5> [<https://perma.cc/HZM4-U3A6>].

⁹⁸ Data on file with authors.

Figure 8: Average Flesch-Kincaid Readability of Concluding Observations, 1993-2019



This high level of sophistication of the language in the Concluding Observations potentially creates a barrier to communicating with key stakeholders, such as communities at risk of or subject to rights violations. For example, if a significant percentage of a particular country or region of a country did not complete secondary school, then the language of the Concluding Observations—including Committee recommendations on education—might be ineffective in reaching the public. Our findings may add further support to the call for the Committee to produce child-friendly versions of each of the Concluding Observations issued.⁹⁹ Moreover, in all or nearly all Concluding Observations, the Committee urges states parties to distribute or

⁹⁹ For examples of child friendly supplements or addendums to children's rights law documents, see Hon. Peter Jackson's Re A: Letter to a Young Person [2017] EWFC 48, <https://www.bailii.org/ew/cases/EWFC/H CJ/2017/48.html> [<https://perma.cc/NLG4-SXWK>]; Between Lancashire County Council and Mr. A, Mr. B, The Children, [2016] EWFC 9, <https://www.bailii.org/ew/cases/EWFC/H CJ/2016/9.html> [<https://perma.cc/3HTZ-XVGN>]; see also Ton Liefwaard, *Child-friendly Judgments*, LEIDEN L. BLOG (July 18, 2017), <https://leidenlawblog.nl/articles/child-friendly-judgments> [<https://perma.cc/Z5HG-FFS6>]; Helen Stalford & Kathryn Hollingsworth, "This Case Is About You and Your Future": Towards Judgments for Children, 83 MOD. L. REV. 1030, 1030-32 (2020).

make the Concluding Observations widely available within the country.¹⁰⁰ While this dissemination is important, unless the language is more accessible, the impact of any distribution of the Concluding Observations will likely be limited.¹⁰¹

ii. *Clarity as Measured by Use of Directives and Intensifiers*

The second vital feature of effective Committee communication via Concluding Observations is clarity—that is, the intended audience(s) should be able to understand the meaning and intent of the Committee’s observations and recommendations. In our conceptualization, clarity, which concerns the conveyance of meaning, is separate from readability, which concerns the complexity of the language. A Concluding Observation might be written in very low grade-level, highly readable language, but might nevertheless lack clarity because the Committee’s words do not fit the message it is attempting to deliver. Here, we find that the Committee, like other human rights treaty bodies, often relies on diplomatic language to convey its evaluation and recommendations. In other words, the Committee delivers its messages in a sort of code, which may not be fully understood by the wide range of audiences it intends to reach, who may be unfamiliar with the peculiarities of the Committee’s language.

To probe the clarity of the Committee’s Concluding Observations, we constructed our own dictionaries of directive words and intensifiers, available in Appendix C, and applied them to the Concluding Observation text using the same methods as in sentiment analysis, above. We define “directives” as words used by

¹⁰⁰ See, e.g., Comm. on the Rts. of the Child, Concluding Observations on the Combined Fifth and Sixth Periodic Reports of Argentina, ¶ 48, U.N. Doc CRC/C/ARG/CO/5-6 (Oct. 1, 2018) (“The Committee also recommends that the combined fifth and sixth periodic reports, the written replies to the list of issues and the present concluding observations be made widely available in the languages of the country.”). The Committee also typically urges states to translate the Concluding Observations into multiple languages. *Id.*

¹⁰¹ Although states bear a responsibility to make reporting process documents available to its population, the Committee can aid in that process by making its Concluding Observations more accessible. By doing so, the Committee would facilitate direct communication between the Committee and both adults and children within a state party, rather than having to rely on the state to translate the Committee’s evaluation of the state’s human rights practices—an approach which is fraught with potential issues, particularly in countries that are resistant to human rights law.

the Committee to instruct a state to take or stop taking some action; we define “intensifiers” as adjectives and adverbs that amplify the Committee’s message.

In all, about thirty percent of the Concluding Observations’ Concerns and Recommendations sentences contain a directive, whereas just less than that (about twenty-seven percent) contain an intensifier. This finding suggests that the Committee is spending a significant portion of the Concluding Observations providing directions and action steps to states parties. On both measures, the Committee is roughly consistent across all subregions—this suggests impartiality and a commitment to provide guidance to all states’ parties.

However, even at its most directive and intense, the Committee’s language is still relatively restrained, risking undercutting the serious nature of the challenges to children’s rights around the world. For example, in a set of Concluding Observations directed to Turkey, the Committee first expressed its “extreme[] concern[]” about the torture of children in the juvenile justice system.¹⁰² Yet the Committee later merely “invited” Turkey “to take all appropriate measures to ensure the physical and psychological recovery and social reintegration of child victims of torture and/or ill-treatment.”¹⁰³ Though an experienced reader of Concluding Observations would recognize this wording as indicative of the Committee’s alarm about the circumstances, outsiders to the reporting process may fail to grasp the Committee’s urgency. Indeed, although diplomatic criticisms that express “concern” or “deep concern” might resonate with government officials from the relevant states parties, they may fall short of conveying, with sufficient clarity, the level of urgency that NGOs and local communities rely on when seeking to “mobilize shame” and press governments to improve their human rights practices.¹⁰⁴ We

¹⁰² Comm. on the Rts. of the Child, Consideration of Reports Submitted by States Parties Under Article 44 of the Convention: Concluding Observations of the CRC Committee: Turkey, ¶ 39, U.N. Doc. CRC/C/15/Add.152 (July 9, 2001).

¹⁰³ *Id.* ¶ 40.

¹⁰⁴ See Gopalan, *supra* note 24, at 795:

States are not isolated entities—they are members of international institutions, clubs, and other organizations. Interdependence and networking are indeed the very currency of state action on the international level. It is this enmeshment in groups that presents conditions ripe for the deployment of shame sanctions. Group membership invites scrutiny and makes reputation matter. At a

recognize the inherent challenge that the Committee on the Rights of the Child and other human rights treaty bodies face in trying to convey their message effectively to diverse audiences. However, we believe these findings and additional research on clarity can help inform the Committee and other stakeholders, so that the Committee's messages can be understood by, and communicated effectively to, all parties.

g. Effectiveness

The previous sections have sought to assess the Committee's Concluding Observations against a set of features that are characteristics, in our judgment and the judgment of other human rights scholars, of an effective human rights monitoring and evaluation system. This final section takes on the question of effectiveness more directly, asking whether computational tools can measure the degree to which children's rights law, and human rights law more generally, actually work.

As a starting point, we analyzed two aspects of the text: (1) word count and lexical diversity, which measure the extent to which the Committee has used repeated or unique words over time; and (2) "reiterates" language, which reflects how often the Committee restates its evaluations and recommendations across Concluding Observations. Low lexical diversity and high counts of "reiterates" language may suggest that the states parties are not making progress toward their children's rights goals and obligations, prompting the Committee to repeat itself across reports.

We emphasize that this is just a starting point, examining only the Committee's output, rather than any direct measure of change in conditions for children on the ground in any country. Through these examples, however, we aim to show how these computational tools can contribute to an overall evaluation of the reporting process and its effectiveness.

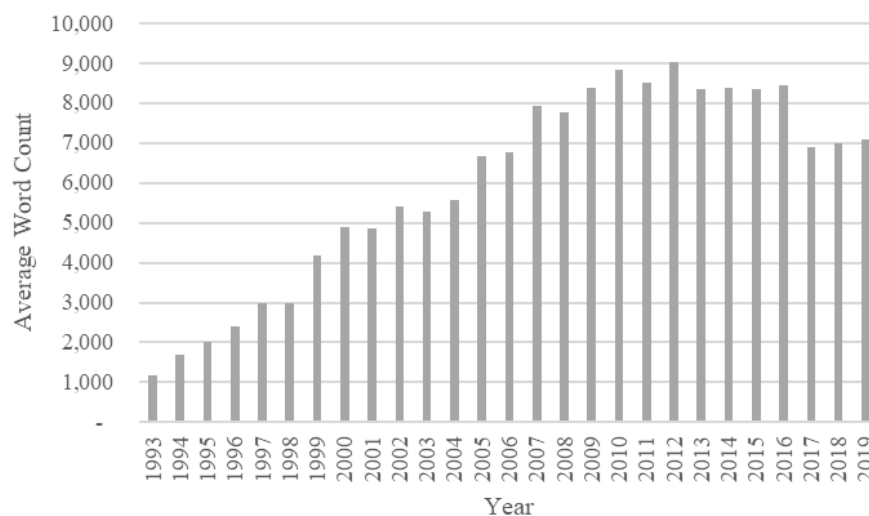
minimum, bad behavior invites questions and subjects the state to embarrassment. . . . Thus, as long as reputation is not completely irrelevant, shame matters.

See also Henkin, *supra* note 24, at 44 ("States can be shamed, and the system resorts increasingly to mobilizing shame."); Saunders, *supra* note 23, at 100 ("While enforcement via reporting and monitoring has often been criticized, such critiques fail to consider the ways in which reporting may work in tandem with other types of enforcement.").

i. Word Count and Lexical Diversity Over Time

At a macro level, Concluding Observations have increased substantially in length since the early days of the Committee on the Rights of the Child. As Figure 9 below shows, in the first five years of reporting (1993-1997), Concluding Observations averaged 2,056 words. They reached a peak in length in 2012, averaging 9,015 words per each of the Concluding Observations. And more recently, responding to calls to reduce the length of reporting process documents,¹⁰⁵ in the 2015-2019 period, they averaged 7,557 words.¹⁰⁶

Figure 9: Average Word Count per Concluding Observation, per Year



¹⁰⁵ See U.N. Secretariat, *supra* note 70, ¶ 33(b) (recommending that committees “[l]imit concluding observations on periodic reports to 3,300 words”).

¹⁰⁶ We note that an April 2014 U.N. report observed that CRC Concluding Observations “currently average from 9,000 to 10,000 words.” *Id.* ¶ 21. It is unknown how the U.N. defined a “word” for purposes of this statement, but using the *quanteda* package in R and counting all “tokens” within the text, including all numbers, punctuation, and symbols that may read as words, the per-Concluding Observations count in 2012 was 10,404 and 9,532 in 2013, the year before the U.N.’s report. Our analyses in this Article drop numbers, punctuation, and symbols from counts of “words,” and therefore are slightly lower than the U.N.’s circa-2014 word count totals.

As Concluding Observations grew over time, the added discussion should have provided the Committee an opportunity to cover more issues, include more in-depth analysis, or both. We can test this hypothesis, in part, by measuring lexical diversity over time, or the number of unique words the Committee uses, as a proportion of the total number of words used. Again using the R package *quanteda*, we found that, as the Committee's per-Concluding Observations word count grew over time, lexical diversity stayed about the same. In other words, the larger denominators (total number of words) were accompanied by larger numerators (number of unique words). This result suggests that the Committee was covering more topics in its expanded Concluding Observations or greater detail in the discussion of particular issues. Further research is needed, but we view these results as an encouraging indication of effectiveness—that the Committee has used its expanded word counts to expand the scope of its review as well.¹⁰⁷

ii. *"Reiterates" Language*

As a final measure of effectiveness, we investigated the extent to which the Committee devoted words in its Concluding Observations to reiterating evaluations and recommendations that it had previously made in earlier iterations of the reporting process. As an illustrative, but not comprehensive, measure, we counted the Committee's use of the word "reiterate" and all its varieties (e.g., "reiterated" and "reiterating"). We then investigated the context in which the Committee used the "reiterates" language. We acknowledge that the Committee also used synonyms for "reiterate," such as "repeat," to call continued attention to its previous recommendations. A more comprehensive approach would scour the Concluding Observations for all such synonyms and construct a custom "reiterates" dictionary, as in other methods described above. Here, we confine our analysis just to "reiterates" for purpose of illustration, but we note that our findings are likely an undercount of the true extent to which the Committee has issued repeated recommendations across Concluding Observations.

¹⁰⁷ We recognize that the U.N. has called for reducing the length of Concluding Observations, which might hinder the Committee's ability to cover all relevant issues and engage in in-depth analysis of states parties.

Committee most often reiterates its recommendations. In short, this inquiry could help identify where and on which issues there is inadequate progress. In turn, those findings might suggest that the Committee needs to take a different approach or that governments and civil society need to develop more effective and innovative approaches to certain issues.

V. IMPLICATIONS AND DIRECTIONS FOR FUTURE RESEARCH

As the preceding discussion reveals, we believe that text and data analytics can play an important role in advancing understanding of both the human rights treaty reporting process and, more broadly, the implementation of human rights law. We see data analytics research as complementing qualitative and other research.

Our discussion in Part IV aims to demonstrate the types of questions that can be probed using data analytics. Much more research is needed. For example, continuing to focus on the Concluding Observations, there is much more we can examine at a topic level and/or country level to better understand how the Committee evaluates particular issues and states parties. For example, we might be able to identify issues in which the Committee's evaluation is particularly strong and others that have received insufficient attention. We can also study these issues over time to assess whether the Committee's approach has evolved. Additionally, further research is needed on the interaction between the Committee's Concluding Observations and its General Comments.

As Concluding Observations are only one component of the review process, we can also expand the scope of our research to examine states parties' reports. We can subject states parties' reports to similar textual analyses as in our examination of Concluding Observations, and we can start to analyze how the states parties' reports and Concluding Observations interact with one another.¹⁰⁹

¹⁰⁹ We might also investigate how much the reporting guidelines shape states parties' reports and whether they foster greater coverage and disclosure in states parties' reports or whether they might constrain reporting. *See generally* Comm. on the Rts. of the Child, Treaty-Specific Guidelines Regarding the Form and Content of Periodic Reports to be Submitted by States Parties Under Article 44, Paragraph 1 (b), of the Convention on the Rights of the Child, U.N. Doc. CRC/C/58/Rev.3 (March 3, 2015) (describing the reporting guidelines).

How responsive are the Concluding Observations to the states parties' reporting? Do subsequent states parties' reports respond adequately to the recommendations issued by the Committee in its previous Concluding Observations?¹¹⁰

Further, we can bring in NGO alternative reports as another key component of the reporting process. We might investigate the extent to which the Committee relies on NGO reports, in addition to or instead of states parties' reports, in its Concluding Observations, by measuring the textual similarities among the three document types. Does the extent of the Committee's reliance differ based on which states parties are being reviewed or which NGOs (international versus local, for example) submit reports? Does the Committee's interaction with NGO alternative reports cluster around particular rights issues? These are illustrative questions.

Finally, we can also bring in data and research on the conditions children face in various countries to assess how responsive the reporting process documents—i.e., Concluding Observations, states parties' reports, NGO alternative reports—are to the lived experience of children. For example, we could examine not only whether Committee recommendations lead to legislative and policy changes in a state party, but also whether they correlate with subsequent improvements in health or education outcomes for children or progress on other issues affecting children.

In addition to introducing additional texts, we might also introduce other computational methods. As natural language processing continues to advance, researchers have a panoply of ever-more sophisticated tools and techniques to extract meaning from text. Measures of document similarity using word embeddings; clustering, topic modeling, and other unsupervised learning techniques; and dashboards and visualizations that help make insights accessible and understandable to wide audiences are all options for further research.

In short, by adding states parties' reports, NGO alternative reports, and data and research on children, and by continuing to expand our methodological toolbox, we can develop a much more nuanced understanding of the complexities of the reporting process. Finally, while we have focused on the Committee on the Rights of the Child in the present work, we hope others will take up this task in examining other human rights treaty bodies, so that we can also

¹¹⁰ We have begun to analyze states parties' reports with a larger team of researchers. This work is ongoing.

draw lessons from across the human rights system and identify whether certain committees are more or less successful at advancing implementation through the reporting process. Ultimately, we hope that developing a more nuanced understanding of the reporting process will enable the human rights system to build on the strengths of the human rights treaty bodies and develop responses to any shortcomings, so that this built-in evaluation of states' human rights practices operates as effectively as possible.

VI. CONCLUSION

Text and data analytics research has provided vital insights in other fields, ranging from predictions of U.S. Supreme Court decisions to identification of radicalizing and hate speech online.¹¹¹ To date, however, it has been under-utilized in human rights law. This may be due in part to some concern about reducing complex human rights issues to a set of data points. However, as we aim to show in this article, computational methods can complement deep human expertise and—we believe—help to advance research on human rights law and its implementation.

We focused on the reporting process in this work both because it is a common feature among the major human rights treaties, and thus has broad applicability, and because the reporting process is the only legally mandated evaluation of countries' implementation of human rights law. The computational tools used in this article and others like them can offer insights into how the Committee on the Rights of the Child or another treaty body approaches its mandate, where it focuses its attention, what, if any, issues are overlooked, and how effective that treaty body is in spurring progress on human or children's rights. Ultimately, we see text and data analytics as offering an important set of tools that, when combined with subject matter insight and expertise, can drive efforts to improve the reporting process and, ultimately, secure and protect human rights.

¹¹¹ See, e.g., Daniel Martin Katz, Michael J. Bommarito II & Josh Blackman, *A General Approach for Predicting the Behavior of the Supreme Court of the United States*, 12 PLoS ONE, Apr. 2017, <https://doi.org/10.1371/journal.pone.0174698> [<https://perma.cc/3URA-CLG8>]; Oscar Araque & Carlos A. Iglesias, *An Ensemble Method for Radicalization and Hate Speech Detection Online Empowered by Sentic Computing*, COGNITIVE COMPUTATION (2021), <https://doi.org/10.1007/s12559-021-09845-6> [<https://perma.cc/9P7J-3PXU>].

APPENDIX A

*Third-Level Subtopic Appearance by Percent of Concluding
Observations, 2000-2019*

<i>Subtopic</i>	<i>Appearance in % of COs</i>
Age and Definition of the Child	
Child marriage	2%
Basic Health and Welfare	
Adolescent health	86%
Children with disabilities	86%
Health and health services	80%
Standard of living	67%
HIV AIDS	41%
Harmful practices	40%
Substance use and abuse	26%
Mental health	22%
Breastfeeding	16%
Climate change and environmental health	15%
Nutrition	5%
Social security and welfare	1%
Suicide	0.5%
Reproductive health	0.2%
Civil and Political Rights and Freedoms	
Abuse, neglect, violence	97%
Birth registration, name, nationality identity	78%
Corporal punishment	67%
Torture and other practices	35%
Freedom of assembly, association, expression, thought, conscience, religion	26%
Access to appropriate information	22%
Right to privacy	10%
Gangs	1%
Bullfighting	1%
Bullying	1%
Camel racing	0.5%

Family rights	0.5%
Family Environment and Alternative Care	
Adoption, custody, alternative care	87%
Children deprived of family environment	60%
Family environment	10%
Parental responsibilities	10%
Children of incarcerated or detained parents	9%
Early childhood development, education, childcare	7%
Recovery of maintenance or assistance	6%
Family unity	3%
Follow-Up and Dissemination	
Dissemination, awareness raising, and training	87%
General Principles	
Non-discrimination	97%
Participation and views of the child	93%
Best interests of the child	76%
Right to life, survival, development	43%
General observations	0.2%
Implementation	
National plan, coordination, comprehensive policy and strategy	98%
Legislation	93%
Budget and resources	92%
Data collection	92%
Monitoring and evaluation	91%
Cooperation with civil society	58%
Previous recommendations	31%
Declarations and reservations	27%
Children's rights and the business sector	23%
Regional and international cooperation	14%
Corruption	2%
General observations	0.2%
Optional Protocols	
Juvenile justice	22%
Minority and indigenous children	8%

Asylum seeking, refugee, and migrant children	0.5%
Camel racing	0.2%
Child victims and witnesses	0.2%
Abuse, neglect, violence	0.2%
Substance use and abuse	0.2%
<hr/>	
Rest, Leisure, Recreation, and Cultural and Artistic Activities (Including Education)	
<hr/>	
Education including vocational training and guidance	92%
Human rights and peace education	4%
<hr/>	
Special Protection Measures	
<hr/>	
Juvenile justice	97%
Sale, trafficking, abduction, sexual exploitation and abuse	90%
Economic exploitation including child labour	79%
Asylum seeking, refugee, and migrant children	73%
Street and homeless children	49%
Minority and indigenous children	32%
Child victims and witnesses	24%
Children in armed conflict	24%
Helplines	17%
Other categories of vulnerability	2%
Death penalty and imprisonment	1%
Reconciliation and peace process	0.5%
<hr/>	

APPENDIX B

Second-Level Topic Average Word Counts and Percentages by State Party, 2000-2019

Notes: (1) Average word count per Concluding Observation
 (2) Percent of all Concluding Observations' Concerns and Recommendations section words

<i>Country</i>	<i>Basic Health and Welfare</i>		<i>Civil and Political Rights and Freedoms</i>		<i>Family Environment and Alternative care</i>		<i>General Principles</i>		<i>Implementation</i>		<i>Special Protection Measures</i>	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Afghanistan	1299	16%	1159	14%	604	7%	738	9%	1260	16%	2335	29%
Albania	1310	17%	1052	14%	818	11%	848	11%	1081	14%	1782	23%
Algeria	745	14%	809	15%	302	5%	610	11%	855	16%	1533	28%
Andorra	229	7%	480	16%	141	5%	389	13%	911	29%	663	21%
Angola	1301	21%	774	13%	344	6%	428	7%	1394	23%	1279	21%
Antigua and Barbuda	1012	21%	518	10%	342	7%	525	11%	937	19%	1093	22%
Argentina	858	19%	807	17%	307	7%	405	9%	1012	22%	874	19%
Armenia	1018	21%	298	6%	575	12%	501	10%	813	17%	1077	22%
Australia	1018	21%	811	17%	536	11%	479	10%	982	20%	767	16%
Austria	430	15%	390	14%	107	4%	386	14%	586	21%	616	22%
Azerbaijan	611	15%	576	14%	450	11%	310	7%	874	21%	952	23%
Bahamas	463	14%	358	11%	203	6%	285	9%	955	30%	615	19%
Bahrain	359	7%	853	17%	239	5%	609	12%	1165	24%	895	18%
Bangladesh	836	16%	729	14%	252	5%	563	10%	1148	21%	1261	23%
Barbados	252	10%	369	15%	244	10%	305	13%	431	18%	684	28%
Belarus	562	19%	400	13%	283	9%	261	9%	735	24%	405	13%
Belgium	687	18%	358	9%	158	4%	395	10%	1054	27%	789	20%
Belize	607	18%	476	14%	198	6%	251	8%	545	16%	647	19%
Benin	1027	21%	630	13%	250	5%	471	10%	816	17%	1056	22%
Bhutan	726	16%	671	15%	291	6%	368	8%	843	18%	1030	23%
Bolivia (Plurinational State of)	457	15%	332	11%	289	9%	271	9%	689	22%	690	23%

<i>Country</i>	<i>Topic:</i>											
	Basic Health and Welfare		Civil and Political Rights and Freedoms		Family Environment and Alternative care		General Principles		Implement-ation		Special Protection Measures	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Bosnia and Herzegovina	1190	16%	757	10%	728	10%	819	11%	1387	19%	1728	23%
Botswana	796	16%	453	9%	369	7%	660	13%	977	20%	1041	21%
Brazil	1684	23%	824	11%	465	6%	665	9%	1158	16%	1937	26%
Brunei Darussalam	678	16%	620	15%	201	5%	535	13%	1047	25%	667	16%
Bulgaria	952	19%	489	10%	581	11%	516	10%	970	19%	1093	21%
Burkina Faso	787	17%	692	15%	348	8%	360	8%	930	20%	1032	23%
Burundi	981	16%	728	12%	479	8%	633	11%	1153	19%	1509	25%
Cabo Verde	948	19%	711	14%	419	8%	322	6%	1006	20%	1152	23%
Cambodia	1087	18%	768	13%	464	8%	561	9%	1109	18%	1316	21%
Cameroon	1365	19%	929	13%	579	8%	508	7%	1183	17%	1815	25%
Canada	607	13%	427	9%	437	10%	492	11%	996	22%	1235	27%
Central African Republic	876	17%	724	14%	436	9%	411	8%	893	18%	1226	24%
Chad	644	18%	535	15%	230	6%	367	10%	667	18%	918	25%
Chile	733	16%	630	14%	285	6%	385	8%	1080	24%	1089	24%
China	862	15%	658	12%	501	9%	605	11%	1043	18%	1416	25%
Hong Kong	1293	15%	987	12%	752	9%	907	11%	1564	18%	2125	25%
China (Macau)	1293	15%	987	12%	752	9%	907	11%	1564	18%	2125	25%
Colombia	668	16%	446	11%	309	7%	415	10%	816	19%	1259	30%
Comoros	692	21%	313	10%	87	3%	214	7%	543	17%	755	23%
Congo	1146	14%	1271	16%	702	9%	813	10%	1457	18%	1922	24%
Cook Islands	835	16%	581	11%	676	13%	639	12%	1125	21%	737	14%
Costa Rica	578	14%	711	18%	231	6%	417	10%	686	17%	949	24%
Cote d'Ivoire	812	17%	748	15%	391	8%	381	8%	849	17%	1127	23%
Croatia	580	16%	528	14%	532	14%	482	13%	699	19%	694	19%
Cuba	351	14%	359	15%	151	6%	223	9%	726	30%	514	21%
Cyprus	214	7%	416	13%	334	10%	394	12%	772	24%	748	23%

<i>Country</i>	<i>Topic:</i>											
	Basic Health and Welfare		Civil and Political Rights and Freedoms		Family Environment and Alternative care		General Principles		Implement-ation		Special Protection Measures	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Czech Republic	491	11%	482	11%	608	13%	565	12%	981	22%	999	22%
Democratic People's Republic of Korea	674	16%	547	13%	468	11%	355	8%	725	17%	960	22%
Democratic Republic of the Congo	1147	17%	649	10%	657	10%	585	9%	1258	18%	1830	27%
Denmark	599	17%	280	8%	263	8%	329	9%	833	24%	879	25%
Djibouti	1288	24%	468	9%	471	9%	506	9%	1079	20%	1083	20%
Dominica	459	17%	412	15%	136	5%	215	8%	707	25%	264	10%
Dominican Republic	950	16%	895	15%	556	9%	579	10%	965	16%	1469	24%
Ecuador	597	12%	606	13%	317	7%	455	9%	1292	27%	1044	22%
Egypt	774	16%	640	13%	253	5%	617	12%	973	20%	1163	24%
El Salvador	804	16%	827	16%	480	9%	424	8%	1073	21%	1089	21%
Equatorial Guinea	605	13%	770	16%	513	11%	450	10%	1028	22%	679	14%
Eritrea	1074	18%	970	17%	498	9%	568	10%	1108	19%	1063	18%
Estonia	674	14%	528	11%	653	14%	433	9%	1188	25%	690	15%
Eswatini	1069	22%	761	16%	433	9%	549	11%	969	20%	591	12%
Ethiopia	774	17%	543	12%	364	8%	485	10%	843	18%	1212	26%
Fiji	1008	31%	331	10%	178	6%	134	4%	341	11%	900	28%
Finland	396	14%	239	8%	312	11%	380	13%	682	24%	519	18%
France	930	17%	1062	19%	450	8%	661	12%	891	16%	1131	20%
Gabon	960	16%	637	11%	667	11%	386	6%	1010	17%	1609	27%
Gambia	1314	20%	731	11%	663	10%	562	8%	1222	18%	1576	24%
Georgia	1153	20%	875	15%	509	9%	425	7%	847	15%	1598	27%
Germany	631	19%	380	11%	287	9%	281	8%	842	25%	581	17%
Ghana	909	22%	597	14%	340	8%	336	8%	711	17%	1003	24%
Greece	1045	16%	1026	16%	559	8%	600	9%	1013	15%	1516	23%
Grenada	1007	21%	701	15%	463	10%	396	8%	794	16%	840	17%
Guatemala	714	15%	654	14%	343	7%	439	9%	1110	24%	1010	22%

<i>Country</i>	<i>Topic:</i>											
	Basic Health and Welfare		Civil and Political Rights and Freedoms		Family Environment and Alternative care		General Principles		Implement-ation		Special Protection Measures	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Guinea	742	16%	591	13%	307	7%	404	9%	986	22%	1031	22%
Guinea-Bissau	1447	26%	515	9%	328	6%	581	10%	898	16%	1148	20%
Guyana	704	15%	424	9%	649	14%	519	11%	1171	25%	934	20%
Haiti	1157	17%	1182	17%	548	8%	525	8%	986	14%	1805	26%
Holy See	192	6%	695	22%	374	12%	470	15%	368	12%	888	28%
Honduras	370	13%	362	13%	238	9%	320	12%	533	19%	720	26%
Hungary	572	18%	430	14%	429	14%	460	15%	494	16%	470	15%
Iceland	311	15%	57	3%	183	9%	272	13%	555	26%	452	21%
India	1182	17%	785	11%	463	7%	804	12%	1179	17%	1750	25%
Indonesia	648	19%	272	8%	275	8%	308	9%	324	10%	1039	31%
Iran (Islamic Republic of)	682	12%	1042	18%	287	5%	993	17%	1023	17%	1240	21%
Iraq	773	18%	550	13%	349	8%	721	17%	248	6%	1288	31%
Ireland	867	21%	355	9%	444	11%	359	9%	771	19%	1031	25%
Israel	1025	16%	1040	16%	366	6%	9	17%	768	12%	1189	18%
Italy	577	12%	569	12%	406	9%	556	12%	959	20%	1216	26%
Jamaica	797	20%	348	9%	516	13%	397	10%	656	16%	932	23%
Japan	641	16%	406	10%	459	12%	471	12%	940	24%	568	14%
Jordan	949	19%	610	12%	253	5%	891	18%	690	14%	1121	22%
Kazakhstan	1002	18%	683	12%	619	11%	490	9%	1236	22%	1212	21%
Kenya	1524	22%	862	12%	665	10%	567	8%	1121	16%	1724	25%
Kiribati	962	22%	615	14%	225	5%	391	9%	866	20%	838	19%
Kuwait	424	12%	635	18%	391	11%	359	10%	784	23%	641	18%
Kyrgyzstan	1054	20%	704	13%	461	9%	535	10%	803	15%	1232	23%
Lao People's Democratic Republic	729	17%	559	13%	475	11%	472	11%	854	20%	652	16%
Latvia	997	20%	593	12%	419	8%	513	10%	1090	22%	1004	20%
Lebanon	717	15%	603	13%	381	8%	498	10%	704	15%	1269	27%
Lesotho	1032	18%	996	17%	581	10%	428	7%	881	15%	1016	18%
Liberia	1264	18%	625	9%	711	10%	745	10%	1309	18%	1613	23%

<i>Country</i>	<i>Topic:</i>											
	Basic Health and Welfare		Civil and Political Rights and Freedoms		Family Environment and Alternative care		General Principles		Implement-ation		Special Protection Measures	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Libya	162	10%	162	10%	0	0%	256	15%	586	35%	238	14%
Liechtenstein	179	11%	228	14%	38	2%	194	12%	574	35%	336	20%
Lithuania	772	17%	660	15%	413	9%	407	9%	790	18%	814	18%
Luxembourg	241	10%	434	17%	232	9%	343	14%	507	20%	543	21%
Madagascar	650	16%	601	15%	277	7%	417	10%	869	21%	932	23%
Malawi	1260	21%	665	11%	476	8%	487	8%	968	16%	1577	26%
Malaysia	1760	17%	1016	10%	688	7%	2	12%	1477	14%	2983	29%
Maldives	1058	19%	784	14%	287	5%	712	13%	1271	22%	929	16%
Mali	564	18%	385	13%	234	8%	144	5%	798	26%	627	21%
Malta	608	13%	566	12%	436	9%	498	10%	986	20%	1295	27%
Marshall Islands	1194	23%	757	14%	507	10%	371	7%	1199	23%	721	14%
Mauritania	1001	18%	502	9%	311	6%	412	7%	1021	18%	1606	29%
Mauritius	777	21%	396	10%	408	11%	349	9%	855	23%	702	19%
Mexico	724	19%	396	10%	296	8%	413	11%	811	21%	956	25%
Monaco	436	17%	256	10%	73	3%	373	15%	725	29%	471	19%
Mongolia	1013	22%	488	10%	379	8%	427	9%	836	18%	1024	22%
Montenegro	1115	17%	858	13%	534	8%	685	11%	1518	24%	1159	18%
Morocco	369	15%	275	11%	147	6%	229	9%	529	21%	690	27%
Mozambique	1799	22%	1093	13%	732	9%	745	9%	1068	13%	1881	23%
Myanmar	718	13%	786	15%	386	7%	339	6%	1057	20%	1614	30%
Namibia	1241	30%	365	9%	310	8%	315	8%	797	19%	925	22%
Nauru	938	16%	959	16%	672	11%	776	13%	1076	18%	1074	18%
Nepal	1237	21%	784	13%	382	6%	330	6%	809	14%	1657	28%
Netherlands	490	13%	354	9%	230	6%	556	15%	956	25%	801	21%
Netherlands (Antilles)	807	17%	481	10%	549	12%	646	14%	749	16%	774	17%
Netherlands (Aruba)	506	11%	446	10%	342	8%	750	17%	977	22%	934	21%
New Zealand	503	15%	413	12%	422	13%	266	8%	724	22%	567	17%

<i>Country</i>	<i>Topic:</i>											
	Basic Health and Welfare		Civil and Political Rights and Freedoms		Family Environment and Alternative care		General Principles		Implement-ation		Special Protection Measures	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Nicaragua	505	15%	424	13%	236	7%	252	8%	805	25%	704	22%
Niger	1086	17%	678	11%	566	9%	544	8%	1389	22%	1522	24%
Nigeria	1148	18%	714	11%	400	6%	509	8%	1122	18%	1766	28%
Niue	625	12%	801	15%	748	14%	561	11%	823	16%	1081	21%
North Macedonia	839	16%	737	14%	426	8%	471	9%	919	18%	1121	21%
Norway	477	15%	287	9%	417	13%	356	11%	535	16%	888	27%
Oman	1046	18%	847	14%	453	8%	745	13%	1292	22%	925	16%
Pakistan	1222	19%	715	11%	310	5%	624	10%	954	15%	1833	29%
Palau	941	19%	573	11%	576	12%	417	8%	958	19%	821	16%
Panama	572	13%	554	13%	366	8%	430	10%	1054	24%	1049	24%
Papua New Guinea	589	17%	415	12%	243	7%	412	12%	906	26%	541	15%
Paraguay	613	16%	491	13%	233	6%	286	8%	832	22%	916	24%
Peru	790	21%	459	12%	243	6%	373	10%	890	23%	776	20%
Philippines	1177	18%	881	13%	492	7%	688	10%	934	14%	1784	27%
Poland	645	21%	329	10%	294	9%	199	6%	510	16%	984	31%
Portugal	633	18%	359	10%	498	14%	516	15%	618	17%	491	14%
Qatar	439	11%	705	17%	236	6%	574	14%	892	22%	857	21%
Republic of Korea	344	8%	537	13%	539	13%	357	8%	1069	25%	956	23%
Republic of Moldova	1129	19%	649	11%	666	11%	612	10%	828	14%	1450	24%
Romania	939	18%	633	12%	569	11%	472	9%	933	18%	1170	23%
Russian Federation	746	21%	399	11%	453	12%	322	9%	710	20%	877	24%
Rwanda	906	20%	460	10%	499	11%	334	8%	633	14%	1301	29%
Saint Lucia	1169	20%	620	10%	791	13%	375	6%	1230	21%	1274	21%
Saint Vincent and the Grenadines	671	13%	627	12%	627	12%	691	13%	785	15%	1278	25%
Samoa	1265	24%	853	16%	344	7%	374	7%	1016	19%	789	15%
San Marino	0	0%	197	15%	145	11%	316	24%	380	29%	0	0%

<i>Country</i>	<i>Topic:</i>											
	Basic Health and Welfare		Civil and Political Rights and Freedoms		Family Environment and Alternative care		General Principles		Implement-ation		Special Protection Measures	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Sao Tome and Principe	1164	23%	566	11%	415	8%	440	9%	1048	21%	907	18%
Saudi Arabia	420	8%	818	16%	243	5%	833	17%	1000	20%	1163	23%
Senegal	905	20%	521	11%	275	6%	426	9%	856	18%	1267	27%
Serbia	1520	19%	1020	13%	694	9%	799	10%	1468	19%	1503	19%
Seychelles	790	16%	467	9%	401	8%	376	7%	1399	28%	1233	24%
Sierra Leone	1198	21%	510	9%	520	9%	504	9%	820	14%	1471	26%
Singapore	370	7%	591	12%	480	10%	621	13%	1291	26%	1076	22%
Slovakia	1285	23%	738	13%	613	11%	668	12%	1018	18%	767	14%
Slovenia	554	13%	557	13%	366	9%	643	15%	780	19%	847	20%
Solomon Islands	878	18%	692	14%	492	10%	339	7%	714	15%	1001	21%
South Africa	1613	23%	855	12%	847	12%	504	7%	1203	17%	1397	20%
Spain	494	13%	363	10%	400	11%	325	9%	779	21%	907	24%
Sri Lanka	715	16%	592	13%	352	8%	292	6%	1020	22%	1168	25%
Sudan	387	13%	258	8%	283	9%	230	8%	504	17%	932	31%
Suriname	1478	25%	619	10%	491	8%	464	8%	1054	18%	1195	20%
Sweden	610	21%	336	11%	192	7%	342	12%	577	20%	638	22%
Switzerland	1095	21%	611	12%	687	13%	585	11%	1153	22%	708	14%
Syrian Arab Republic	635	14%	816	18%	181	4%	537	12%	878	19%	1075	23%
Tajikistan	1183	22%	737	14%	443	8%	438	8%	872	16%	1195	22%
Thailand	844	16%	784	14%	356	7%	452	8%	1006	18%	1318	24%
Timor-Leste	1366	20%	825	12%	663	10%	662	10%	1171	18%	1188	18%
Togo	822	18%	510	11%	190	4%	507	11%	918	20%	1049	23%
Tonga	1465	25%	765	13%	509	9%	569	10%	757	13%	1102	19%
Trinidad and Tobago	569	20%	372	13%	280	10%	255	9%	555	19%	547	19%
Tunisia	355	11%	684	21%	144	4%	512	15%	590	18%	650	20%
Turkey	704	11%	1065	17%	243	4%	724	12%	1191	19%	1474	24%
Turkmenistan	1019	20%	826	16%	428	8%	657	13%	1053	20%	678	13%
Tuvalu	1453	27%	798	15%	314	6%	529	10%	806	15%	1005	18%

<i>Country</i>	<i>Topic:</i>											
	Basic Health and Welfare		Civil and Political Rights and Freedoms		Family Environment and Alternative care		General Principles		Implement-ation		Special Protection Measures	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Uganda	632	23%	229	8%	88	3%	206	7%	588	21%	760	27%
Ukraine	899	17%	647	12%	550	10%	432	8%	984	18%	1440	26%
United Arab Emirates	421	10%	658	15%	303	7%	685	16%	967	22%	964	22%
United Kingdom of Great Britain and Northern Ireland	934	16%	841	15%	296	5%	647	11%	1265	22%	1134	20%
United Kingdom of Great Britain and Northern Ireland (Crown Dependencies)	807	18%	416	9%	274	6%	279	6%	968	21%	834	18%
United Kingdom of Great Britain and Northern Ireland (Overseas Territory)	896	17%	452	9%	548	10%	415	8%	1022	19%	1039	20%
United Republic of Tanzania	1350	23%	639	11%	375	6%	581	10%	1025	17%	1476	25%
Uruguay	583	15%	380	10%	420	11%	410	11%	860	22%	875	23%
Uzbekistan	879	15%	1090	18%	546	9%	650	11%	1013	17%	1209	20%
Vanuatu	801	32%	352	14%	211	8%	93	4%	392	16%	349	14%
Venezuela (Bolivarian Republic of)	740	17%	444	10%	242	6%	502	12%	947	22%	958	22%
Viet Nam	698	16%	556	13%	399	9%	593	14%	994	23%	533	12%
Yemen	660	20%	343	10%	142	4%	423	13%	671	20%	727	22%

<i>Topic:</i>												
<i>Country</i>	Basic Health and Welfare		Civil and Political Rights and Freedoms		Family Environment and Alternative care		General Principles		Implement-ation		Special Protection Measures	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Zambia	1240	20%	582	9%	501	8%	533	8%	1241	20%	1452	23%
Zimbabwe	906	23%	407	10%	373	9%	408	10%	566	14%	921	23%

APPENDIX C

Directive and Intensifier Dictionaries

Directives	Intensifiers
call	deep
called	deeper
calling	deepest
calls	deeply
encourage	especially
encouraged	firm
encouragement	firmer
encouragements	firmest
encourages	firmly
encouraging	full
expect	fuller
expectation	fullest
expectations	fully
expected	grave
expecting	gravely
expects	graver
hope	gravest
hoped	great
hopes	greater
hoping	greatest
invitation	greatly
invitations	high
invite	higher
invited	highest
invites	highly
inviting	much
recommend	particular
recommendation	particularly
recommendations	profound
recommended	profoundly
recommending	seriously
recommends	specifically
request	strong
requested	stronger
requesting	strongest
requests	strongly
require	urgently

Directives	Intensifiers
required	utmost
requirement	very
requirements	emphasis
requires	emphasize
requiring	emphasized
stress	emphasizes
stressed	emphasizing
stresses	extremely
stressing	highlight
suggest	highlighted
suggested	highlighting
suggesting	highlights
suggestion	underline
suggestions	underlined
suggests	underlines
urge	underlining
urged	underscore
urges	underscored
urging	underscores
	underscoring