The Patent Genre

Between Stability and Change[1]

FIORELLA FOSCARINI

ABSTRACT This article examines patents as typified communicative practices enacted within the articulated and rigid boundaries of legal systems. By applying concepts from rhetorical genre studies, the article identifies the regularities of textual features and social intentions characterizing the patent genre and shows how patents are compulsorily constructed, evaluated, and contested within highly structured socio-cultural contexts. Despite their conservative nature, both patents and the rules surrounding them are the outcome of continuous negotiations of meanings and motives among those participating in them (e.g., inventors, patent examiners, and legislators) and depend on this participation. Through a genre analysis of the system of patents granted to the University of Toronto in the 1920s for its method for producing insulin and the medical substance itself, the article discusses the changes that Toronto's Insulin Committee was able to make to the patent genre and to a broader system of interrelated genres. This case study confirms that genre innovation and transformation are indeed possible, even in the most formal and stable environments. It also demonstrates that in order to appreciate the strategic goals and rhetorical actions performed by genres, we have to situate them within the specific socio-historical circumstances in which they were enacted.

1 This research was partly supported through funding from the Social Sciences and Humanities Research Council of Canada (SSHRC) partnership grant no. 895-2013-1004, Trust in Digital Records in an Increasingly Networked Society. I would like to acknowledge the contributions of two graduate research assistants, Laura Dymock, master's student at the University of Toronto Faculty of Information at the time of this study, and Weimei Pan, doctoral student at the University of British Columbia School of Library, Archival, and Information Studies. Both were instrumental in investigating early patent laws and tracing the history of insulin. Special thanks go to the University of Toronto Archives and Records Management Services' archivists for their assistance with the Insulin Committee Papers.

RÉSUMÉ Cet article étudie les brevets comme méthode de communication caractérisée ayant lieu à l'intérieur des limites structurées et rigides de systèmes juridiques. En appliquant les concepts issus de la théorie littéraire des genres, cet article identifie les constantes des caractéristiques textuelles et des intentions sociales qui caractérisent le genre du brevet et montre comment les brevets sont obligatoirement élaborés, évalués et contestés dans des contextes socio-culturels hautement structurés. Malgré leur nature conservatrice, tant les brevets que les règles qui les entourent sont le fruit de constantes négociations de signification et d'intentions entre ceux qui y participent (par ex. les inventeurs, les examinateurs de brevets et les législateurs) et dépendent de cette participation. Par l'analyse du genre du système de brevets émis à l'Université de Toronto dans les années 1920 pour sa méthode de production d'insuline et pour cette substance médicale elle-même, cet article aborde les changements que le Toronto's Insulin Committee a pu apporter aux brevets comme genre et à un système plus large de genres interreliés. Cette étude de cas confirme que l'innovation de genre et la transformation sont en effet possibles, même dans les environnements les plus stables et les plus formels. Elle démontre également que, afin d'apprécier les objectifs stratégiques et les actions rhétoriques posées par les genres, nous devons les replacer dans le contexte socio-historique spécifique au sein duquel ils ont pris forme.

Introduction

The records that we create in order to achieve our purposes in society, or that originate from the activities we carry out daily, may be more or less standardized and articulated in their form and substance depending on the domains of life in which we act. The legal domain and the regulatory network of formal institutions governing many aspects of our lives are highly structured social systems, which are sustained through and give rise to typified written texts, spoken utterances, and other recognizable symbolic actions – in a word, genres – that have specific requirements and well-defined consequences. Engaging with what we may call legal genres presupposes a certain degree of understanding of the rules that regulate their formation, reception, and use, as well as their function and compulsory effects within complex societal machines, where multiple communities with different interests and worldviews negotiate ways of reaching their goals through communication.

This article examines one particular genre of law-based interaction, the patent,[2] and uses rhetorical genre studies (RGS) ideas and diplomatic analysis methods in order to shed light on the patent's features and its place within structured human activities. As an interdisciplinary field of research and scholarship, RGS focuses on everyday, non-literary discursive practices and emphasizes the socio-historical nature of genres as "typified rhetorical actions based in recurrent situations."[3] Of great interest to RGS scholars are the ways that formal environments (e.g., workplaces, schools, and sites of citizen–state interaction) shape and are shaped by culturally constructed tools, or genres, that "extend and mediate" human activities and, by doing so, allow collaboration and knowledge creation.[4] The phenomenon of typification that underlies the notion of genre is indeed especially evident in relation to communicative practices that are regulated by law. Yet legal systems are "relatively stable, but

2 The Canadian Intellectual Property Office (CIPO) describes what patents are and what they do as follows: "Patents apply to newly developed technology as well as to improvements on products or processes. Patents provide a time-limited, legally protected, exclusive right to make, use and sell an invention. In this way, patents serve as a reward for ingenuity." Canadian Intellectual Property Office, "What Is a Patent?" Government of Canada, 1 December 2015, accessed 15 September 2018.

3 Carolyn R. Miller, "Genre as Social Action," *Quarterly Journal of Speech* 70, no. 2 (1984): 159.

4 David R. Russell, "Rethinking Genre in School and Society: An Activity Theory Analysis," *Written Communication* 14, no. 4 (1997): 509.

not ossified,"[5] and as this article will try to show, individual agency is to some extent possible even within rigidly constrained, institutionalized contexts.

In a study that is cited quite often in the RGS literature – principally because it introduced the concept of a genre system as "interrelated genres that interact with each other in specific settings"[6] – Charles Bazerman investigated the "patent system and the communicative forms (genres) by which it is enacted."[7] His analysis of the textual regularities of patents highlighted the conservative, extremely standardized nature of this and any other genres developed within the boundaries of legally defined situations. However, even in the most explicitly prescribed circumstances, each instantiation of a genre may reproduce the genre's patterns and strategic intentions in a slightly different manner. Such shifts in form and substance may in turn affect the broader regulatory framework that genres participate in, as "regulation is always itself constituted and sustained by communicative practices."[8] All this is to say that individual intentionality and instability are not only characteristic of informal situations and free-style genres (e.g., dialogues between friends); they are also detectable in highly structured contexts and legally bound genres – although permanence, rather than change, is more often the distinguishing trait of the latter.

This article expands on Bazerman's discussion of the patent genre system and applies his insights to a specific case: the system of patents that was initiated with the US patent granted in October 1923 to Toronto-based doctors Banting, Best, and Collip for their method of producing insulin and the medical substance itself. By first examining the typified textual features of patents by means of both diplomatics and genre theory, and then using the findings to analyze a set of the University of Toronto's Insulin Committee Papers, we were able to situate the controversial patenting of a medical product and process within the ethical concerns and strategic goals of those involved. The RGS approach turned out to be particularly useful for understanding how a group of scientists,

5 Charles Bazerman, "Systems of Genres and the Enactment of Social Intentions," in *Genre and the New Rhetoric*, ed. Aviva Freedman and Peter Medway (1994; republished as e-book, London: Taylor & Francis, 2005), 82. All citations from this edited volume are from the e-book edition.

6 Ibid. The notion of a genre system is explained in more detail later in this article.

7 Ibid., 70.

8 Mark Zachry, "Introduction: Regulation and Communicative Practices," in *Communicative Practices in Workplaces and the Professions: Cultural Perspectives on the Regulation of Discourse and Organizations*, ed. Mark Zachry and Charlotte Thralls (Amityville, NY: Baywood Publishing Company, 2007), vi.

who were new to the patent genre, successfully managed to transform both a highly conservative genre and the notion of intellectual property itself.[9]

One of the purposes of this article is to demonstrate the explanatory power of RGS as a conceptual framework and as a method of inquiry. The socio-cultural lens through which RGS examines communication practices reveals the rhetoric and ideology inherent in our discursive choices and augments traditional ways of looking at the form and function of records. In recent years, a number of archival and information scholars have engaged with genre theory to investigate archival objects, concepts, functions, and practices.[10] This case study builds on this growing body of literature and aims to support the argument that the archival discipline and RGS have similar concerns and can be used to enrich each other.[11]

9 The historical research and the diplomatic analysis supporting this study were conducted within a broader research project on patents, petitions, and trust, which I led between 2013 and 2017 in the context of the SSHRC-funded Trust in Digital Records in an Increasingly Networked Society project, also known as the InterPARES Trust Project.

10 The articles in the 2012 special issue of *Archival Science* dedicated to "Genre Studies in Archives," and the volume of essays edited by Jack Andersen, *Genre Theory in Information Studies* (London: Emerald Group Publishing, 2015) offer an interesting selection of genre-based studies conducted by archival and information scholars. RGS, for instance, has been used to investigate the meaning and evolution of finding aids. See Heather MacNeil, "What Finding Aids *Do*: Archival Description as Rhetorical Genre in Traditional and Web-Based Environments," *Archival Science* 12, no. 4 (2012): 485–500; Ciaran B. Trace and Andrew Dillon, "The Evolution of the Finding Aid in the United States: From Physical to Digital Document Genre," *Archival Science* 12, no. 4 (2012): 501–19; Heather MacNeil and Jennifer Douglas, "The Generic Evolution of Calendars and Guides at the Public Record Office of Great Britain, ca. 1838–1968," *Information & Culture: A Journal of History* 49, no. 3 (2014): 294–326; Jennifer Douglas and Heather MacNeil, "The Generic Evolution of Calendars and Inventories at the Public Archives of Canada, 1882–ca. 1975," *American Archivist* 77, no. 1 (2014): 151–74. It has also been used to analyze the characteristics of personal information management practices and to describe how collaboration takes place in organizations. See Pamela J. McKenzie, "Genre and Typified Activities in Informing and Personal Information Management," in Andersen, *Genre Theory in Information Studies*, 67–90; and Fiorella Foscarini, "A Genre-Based Investigation of Workplace Communities," *Archivaria* 78 (2014): 1–24.

11 I have developed this argument more extensively in Fiorella Foscarini, "Diplomatics and Genre Theory as Complementary Approaches," *Archival Science* 12, no. 4 (2012): 389–409; Fiorella Foscarini, "Record as Social Action: Understanding Organizational Records through the Lens of Genre Theory," *Information Research* 18, no. 3 (2013); and Fiorella Foscarini, "Organizational Records as Genres. An Analysis of the 'Documentary Reality' of Organizations from the Perspectives of Diplomatics, Records Management, and Rhetorical Genre Studies," in Andersen, *Genre Theory in Information Studies*, 115–132.

Understanding Genres – and Legal Genres in Particular

Russian philosopher and semiotician Mikhail Bakhtin, whose major works were produced in the first half of the 20th century but were only translated into English in the 1980s, believed that language could not be studied in the abstract but only in the "concrete utterances of individual speaking people,"[12] which is where language performs its communicative function. He also posited that everything we say or write is a response (in the broadest sense of the word) to others' preceding utterances and, at the same time, takes into account possible responsive reactions to our own utterance. All our speaking and writing is "filled with *dialogic overtones*;"[13] and, as "links in the communication chain," our communicative acts can never be totally free or creative.[14] In practice, before expressing anything, we first orient ourselves within the generic forms (i.e., the context of genres) available to us in any given sphere of communication (i.e., the social and cultural context in which we act).[15] By elaborating on Bakhtin's insight, contemporary genre scholar Amy Devitt described genre as a dynamic and reciprocal "nexus between an individual's actions and a socially defined context."[16]

Devitt belongs to a group of North American rhetoricians, linguists, and composition and communication scholars who, in the mid-1980s, discovered Bakhtin and incorporated his ideas about speech genres (i.e., typical forms of utterances) into a stream of genre research that became known as rhetorical genre studies (RGS) or new rhetoric.[17] Characterized by a strong sociological and ethnographic orientation, this new school was in fundamental disagreement with the formalism and classificatory aims of previous genre theories. According to Catherine Schryer, "Bakhtin's most important contribution . . . to [RGS's]

12 Mikhail M. Bakhtin, "The Problem of Speech Genres," in *Speech Genres and Other Late Essays*, ed. Caryl Emerson and Michael Holquist (Austin, TX: University of Texas Press, 1986), 71.

13 Ibid., 92 (emphasis in original).

14 To explain figuratively his idea of the interconnectedness of all utterances and their consequent lack of absolute novelty, Bakhtin writes, "A given speaker is not the first to speak about [a certain topic]. . . . The speaker is not the biblical Adam, dealing only with virgin and still unnamed objects, giving them names for the first time." Ibid., 93.

15 In Bakhtin's words, "We speak only in definite *speech genres*, that is, all our utterances have definite and relatively stable *typical forms of construction of the whole*." Ibid., 78 (emphasis in original).

16 Amy J. Devitt, *Writing Genres* (Carbondale, IL: Southern Illinois University Press, 2004), 31.

17 Natasha Artemeva and Aviva Freedman, eds., *Rhetorical Genre Studies and Beyond* (Winnipeg, MB: Inkshed Publications, 2006).

reconceptualization of genre is his paradoxical observation that genres are sites of both stability and instability."[18]

Every time we recognize a situation as recurrent (e.g., when participating in a business meeting, drafting a project report, or applying for a patent), we enact certain typified discursive forms that need to fit within that specific sociocultural situation in order for us to participate in it; for example, we raise a hand and wait to be called before speaking, identify a project's deliverables, or position ourselves as the inventor of the object to be patented. "The better our command of genres," writes Bakhtin, "the more freely we employ them, the more fully and clearly we reveal our own individuality in them (where this is possible and necessary)."[19] Despite the fact that our discursive choices are determined by the repertoire of genres available to us at any given moment (in Bakhtin's words, genres "are not created by [us] but are given to [us]")[20] and by our anticipation of possible responses to our utterances (a phenomenon that Bakhtin calls "addressivity"),[21] those who possess "specialized knowledge"[22] of the environment in which they act and are able to master its genres have some flexibility and may avail themselves of the opportunity to challenge existing genres. To explain how agency on the part of the writer or speaker manifests itself, RGS scholars resorted to a concept known as *kairos* (timeliness) in classical Greek rhetoric. As "socially perceived space-time,"[23] kairos may be interpreted both passively – as a realization that some new circumstances allow new, innovative uses of certain conventions that are perceived as fitting and timely (e.g., the availability of online technologies has triggered the move from paper-based to e-petitions) – and actively – as the construction of an opportunity by human agents who sense the right time and the right place to change a situation (e.g., a student submits a

18 Catherine F. Schryer, "The Lab vs. the Clinic: Sites of Competing Genres," in Freedman and Medway, *Genre and the New Rhetoric*, 89. Drawing on Bakhtin, Schryer develops her own characterization of a genre as a "stabilized-for-now or stabilized-enough site of social and ideological action." Ibid. See also Catherine F. Schryer, "Records as Genre," *Written Communication* 10, no. 2 (1993): 200.

19 Bakhtin, "The Problem of Speech Genres," 80.

20 Ibid.

21 Ibid., 95.

22 Graham Smart, *Writing the Economy: Activity, Genre and Technology in the World of Banking* (London and Oakville, CT: Equinox Publishing, 2006), 11.

23 Carolyn R. Miller and Dawn Shepherd, "Blogging as Social Action: A Genre Analysis of the Weblog," *Into the Blogosphere: Rhetoric, Community, and Culture of Weblogs* (blog), University of Minnesota Digital Conservancy, 2004, 2, http://hdl.handle.net/11299/172818.

proposal ahead of time because this will give them an advantage).[24]

As Miller, Devitt, and Gallagher recently observed, "genre holds in balance fundamental tensions along multiple dimensions: between innovation and conformity, [and between] stability and change, . . . among others."[25] Within highly articulated social systems and those spheres of communication where exchanges are regulated through national and local laws, international regulations, and administrative policies and procedures, the oscillation between these polar perspectives may be less evident – at least in the short term. In such controlled and ritualized contexts, "centripetal impulses," which tend to result in "formalization, normalization, regularity, convention, stability – and stasis," are usually stronger than any "centrifugal impulses," which are those generating "resistance, idiosyncrasy, ad hoc innovation – and chaos."[26] Yet the bureaucratic machine that dictates the form and substance of communicative practices and makes them meaningful and effective depends on the continuous enactment of those same practices that define and enable it. Or, as Bazerman put it, "the machine itself only stays working in-so-far as we participate in it and make our lives through its genres."[27]

It should also be mentioned that the alleged rationality of legally framed systems is always relative and is contingent on many factors, including the ambiguity inherent in legislative texts and the competing goals of those who are expected to act in accordance with those texts.[28] Nevertheless, by imposing some order, logic, and predictability on the fluid complexity of the social world,

24 This example is provided in Natasha Artemeva, "A Time to Speak, a Time to Act: A Rhetorical Genre Analysis of a Novice Engineer's Calculated Risk Taking," *Journal of Business and Technical Communication* 19, no. 4 (2005): 389–421.

25 Carolyn R. Miller, Amy J. Devitt, and Victoria J. Gallagher, "Genre: Permanence and Change," *Rhetoric Society Quarterly* 48, no. 3 (2018): 273.

26 Clay Spinuzzi, *Tracing Genres Through Organizations: A Sociocultural Approach to Information Design* (Cambridge, MA: MIT Press, 2003), 21–23. The expression "centripetal and centrifugal impulses" comes from Mikhail M. Bakhtin, *The Dialogic Imagination: Four Essays*, ed. Michael Holquist, trans. Caryl Emerson and Michael Holquist (Austin, TX: University of Texas Press, 1981), 270–73. I find this dualism quite emblematic of the difficult position in which records professionals often find themselves in organizations, caught between the "creative" information practices of their clients (centrifugal impulse) and the mandate to safeguard and promote existing policies and procedures (centripetal impulse). See Fiorella Foscarini, "Understanding the Context of Records Creation and Use: 'Hard' versus 'Soft' Approaches to Records Management," *Archival Science* 10, no. 4 (2010): 402.

27 Bazerman, "Systems of Genres," 67.

28 See Dorothy Winsor, "Using Texts to Manage Continuity and Change in Activity Systems," in Zachry and Thralls, *Communicative Practices in Workplaces and the Professions*, 3–19.

legal procedures are capable of providing "some murky real world event" with "technical legal status,"[29] so that, when acting by means of legal genres, we can rely on well-defined routines and mandatory consequences for other spheres of endeavour. Law and government contribute to the "repertoire of shared symbolic resources,"[30] or genres, with which we collectively construct our reality. Being endowed with technical symbolism, the legal domain involves special communicative and adjudicative rules to which we must subject ourselves if we want to be taken seriously and have some impact on the real world. Learning how to translate our intentions into the highly standardized generic forms dictated by a legal system is the first step to becoming sufficiently conversant with that specialized knowledge to eventually be able to challenge it.

Regularities in the Form, Function, and Action of Patents

The patents discussed in the following pages are dispositive documents[31] used by public authorities to grant exclusive rights to inventors, or assignees, for limited periods of time[32] in exchange for the public disclosure of the inventions. Patents may therefore be seen as cultural tools capable of balancing temporary monopoly privileges with the enrichment of society, which derives from the full disclosure and dissemination of state-of-the-art knowledge. Despite this apparently benevolent purpose, much of the literature on patents describes them as being geared toward commercial interests and the economic health of a nation.[33] From the perspective of the inventor, the patent is "a means by which you 'turn your ideas into money' as the ads for patent brokers say."[34] Before examining the patent's

29 Bazerman, "Systems of Genres," 80.

30 Smart, *Writing the Economy*, 9.

31 Diplomatics defines a dispositive document as a juridical act that must be manifested in writing in order for the act to exist and have consequences. That is, "the written form [is] the essence and substance of the act." Luciana Duranti, "Diplomatics: New Uses for an Old Science (Part II)," *Archivaria* 29 (Winter 1989–90): 7.

32 Today, the term of a patent is usually 20 years, either from the filing date of the patent application or from the date the patent was granted. In earlier times, it could be 5, 10, or 15 years, depending on how large a fee had been paid. In the period when insulin was patented, the standard term in North America was 17 years. See Margaret Coleman, "The Canadian Patent Office from Its Beginnings to 1900," *Bulletin of the Association for Preservation Technology* 8, no. 3 (1976): 56–63.

33 Vic Duy, *A Brief History of the Canadian Patent System* (Ottawa: Canadian Biotechnology Advisory Committee, Project Steering Committee on Intellectual Property and the Patenting of Higher Life Forms, 2001), 10.

34 Bazerman, "Systems of Genres," 69.

textual features and social intentions, this article briefly reviews the history of the legal system defining the patent genre's characteristics. As it reflects on the findings of a project focusing on the patenting of insulin, the first attempt at which resulted in an application filed with the US Patent Office in May 1922, this historical overview primarily considers the legislation and practices that influenced North American patent systems between the end of the 19th century and the first quarter of the 20th century.

The patent's direct ancestral genre, the letters patent (in Latin, *litterae patentes*, "open letters"), was a published written order issued by a king or other sovereign authority for the purpose of granting an office, a right, a monopoly, a title, or a status to a person or a corporation. As designations of monopolies granted by the Crown, patents started to be issued in England in the early modern period. It soon became apparent that the system of Crown privileges was open to abuse. Therefore, in the middle of the 17th century, Parliament forbade all forms of state-granted monopoly except for single, temporary monopolies awarded to the inventors of new goods, under the assumption that the country's economy would benefit from the inventions. Subsequently, a mechanism for evaluating patent claims and related registration and litigation procedures were established and then exported to the colonies overseas. In the United States, the first patent bill dates back to 1790, but it was only in 1836 that a new patent law introduced an evaluation procedure, which was assigned to a patent office.[35] Canada's first federal patent act was issued in 1869, shortly after confederation and was modelled on the American act of 1836. (Prior to 1867, most provinces had their own patenting arrangements.) Canada's 1869 Act was amended several times during its life, though mostly through minimal revisions, and it regulated patent practices in Canada until it was replaced by the Patent Act that came into force on 1 September 1923.[36]

As a textual form, patents can be easily recognized; and as we have learned, genres rely on our ability to recognize and position them within the socio-cultural systems of which each is a part.[37] Patent laws define the specific formal elements to be included in a patent application, prescribe their organization in the text,

35 Ibid., 70–71.

36 Margaret Coleman, "The Canadian Patent Office from Its Beginnings to 1900," *Bulletin of the Association for Preservation Technology* 8, no. 3 (1976): 56–63.

37 "A genre exists only in the recognitions and attributions of the users. . . . A textual form which is not recognized as being of a type, having a particular force, would have no status nor social value as a genre." Bazerman, "Systems of Genres," 69.

suggest specific formulas, and list any additional documents to be enclosed with the application.[38] They also provide patent examiners with criteria for patent adjudication and describe how judges have to deal with litigation cases.[39] The following examination of the textual features of patents is conducted along the lines suggested by genre scholars Anthony Paré and Graham Smart, who noted that "repeated patterns in the structure, rhetorical moves and style of texts are the most readily observable aspects of genres."[40]

Structure

We relied on diplomatics for the identification of the elements of documentary form that make up a patent's structure. A patent typically starts with a *protocol*[41] including the date when the patent was granted (*chronological date*); the patent number (*title*); an official designation of the patent granting body (*entitling*), e.g., United States Patent Office; and the name of the invention (*subject*). The name(s) of the inventor(s) and, where applicable, those of the assignee(s)[42] (*nominal inscriptions*)[43] may or may not be part of the protocol. The formula "to all whom it may concern" (*general inscription*), which typically ends the protocol of older patents (we found it until approximately the late 1920s),

38 In the early Canadian patent system (until 1900), a complete file would include "the original petition, the original oath signed by the applicant and the justice of the peace before whom it was sworn, the original specifications and drawings, and any correspondence about the case if it were not routine." Coleman, "The Canadian Patent Office from Its Beginnings to 1900," 59.

39 As the patent acts examined for this study all have the same origin and have remained almost unchanged over time, this analysis will not make reference to the specific genre instances and legal provisions supporting the findings, unless necessary for contextualization purposes.

40 Anthony Paré and Graham Smart, "Observing Genres in Action: Towards a Research Methodology," in Freedman and Medway, *Genre and the New Rhetoric*, 123.

41 In diplomatics, protocol refers to the first part of a document, and usually "contains the administrative context of the action (i.e., indication of the persons involved, time and place, and subject) and initial formulae." Luciana Duranti, "Diplomatics: New Uses for an Old Science (Part V)," *Archivaria* 32 (Summer 1991): 11. The terms italicized in the text are defined comprehensively within diplomatics as "intrinsic elements of documentary form" and are explained in the above-mentioned article by Duranti (11–16). Most of the elements of form discussed in this section can be seen in the patent reproduced in the appendix.

42 "Assignee . . . A patent may be granted to any person to whom an inventor, entitled under this Act to obtain a patent, has assigned in writing or bequeathed by his last will his right to obtain it." Government of Canada, *Patent Act*, R.S.C., 1985, c. P-4, Section 49.1.

43 Inscription refers to "the addressee of the document and/or the action. . . . It may be a *nominal* inscription or a *general* one." Duranti, "Diplomatics: New Uses for an Old Science (Part V)," 12 (emphasis in original). The inventor/assignee is the addressee of the act of being awarded a patent.

reminds us of the open nature of patents: they are ideally addressed to everyone. The specification of the invention may be attached as a separate document or directly linked to the protocol. In the latter case, the *text*[44] usually starts with a formula, such as "Be it known that I/we" (*notification*), and is followed by the name(s) of the inventor(s) (*superscription*)[45] and their solemn declaration that they are the inventor(s) of the object (product, process, or both) in question. Before describing what the invention is about, applicants are required by patent laws to provide an overview of existing knowledge in the relevant area (*exposition*). This section should emphasize the limitations of prior art (or state-of-the-art knowledge), so as to show clearly that the proposed novelty is indeed an improvement. A brief summary of the invention and, where applicable, one or more technical drawings, are then followed by its detailed description, which is often introduced by the formula "To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it."[46] The patent text ends with a list of claims, sometimes bulleted, which tends to be clearly marked by language aiming to stress the novelty of the patented object, such as, "Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is: . . . " (*disposition*). The final section of a patent, diplomatically known as the *eschatocol*,[47] starts (in earlier patents only) with a ritual closing – e.g., "In witness whereof, I have hereunto set my hand" – known as the *close of corroboration*. This is followed by the place and time of the application (*topical and chronological dates*) and the *subscriptions* (names and signatures) of the inventor(s) and two witnesses (*attestation*).[48]

44 The text "contains the action, including the considerations and circumstances which gave origin to it, and the conditions related to its accomplishment." Ibid., 11.

45 Superscription is defined as "the mention of the name of the author of the document and/or the action." Ibid., 12. In more recent patents, the specification is written in the third person.

46 Bazerman, "Systems of Genres," 68.

47 The eschatocol "contains the documentation context of the action (i.e., enunciation of the means of validation, indication of the responsibilities for documentation of the act), and the final formulae." Duranti, "Diplomatics: New Uses for an Old Science (Part V)," 11.

48 More recent patents do not have any attestations at the end of the text (i.e., the eschatocol is empty). In his study of 333 US patents from 1999 to 2009, aiming to explain how the phraseology suggested by the legislation works rhetorically, Ismael Arinas Pellón provides an overview of the structure of patents, which shows that the genre has not changed much over time. Based on his sample's headings, we may for instance see that the specification typically displays the following structure: background of the invention; brief summary of the invention; brief description of several views of the drawing; detailed description of the invention; claim(s); and abstract of the disclosure.

"Particularly if the genre is responsive to formal regulation," writes Bazerman, "a defect in any of the subactions may be reason for the failure of the work of the genre."[49] A patent application that fails to apply the exact formulas in use at the time of the submission, that does not provide a specification of claims, or that lists the claims before offering a detailed description of the invention will not achieve its purpose, which is to be recognized as a valid application. Going back to Bakhtin's dialogic understanding of genre, we may say that every patent is "a link in a communication chain" governed by "rules of proper utterance,"[50] and that such rules are in turn the result of the stabilization – for now – of certain elements of form through their continuous enactment. Thus, a patent responds to previous patents by reusing the same, or similar, successful formulas and reproducing the same prescribed structure; and concurrently, it keeps an eye on its audience's expectations – that is, it tries to anticipate the possible reactions of its examiners. The internal dialogue of the patent with "others' words" engenders what Bakhtin calls "assimilation,"[51] which is a form of reproduction that always involves some transformation. Contemporary genre scholars refer to this phenomenon as "intertextuality."[52]

Rhetorical Moves

To understand what patents try to accomplish in the real world, it is appropriate to leave diplomatics aside and turn to RGS and a constellation of related theories. Borrowing from speech act theory, Bazerman suggests that, in their treatment

Ismael Arinas Pellón, "How Does a Patent Move? Genre Analysis Has Something to Say about It," in *Legal Discourse across Languages and Cultures*, ed. Maurizio Gotti and Christopher John Williams (Bern and New York: Peter Lang, 2010), 313–34.

49 Bazerman, "Systems of Genres," 75.

50 Bakhtin, "The Problem of Speech Genres," 93.

51 Ibid., 89.

52 In her study of the genre set characterizing the tax accountant profession, Devitt labels this kind of intertextuality "generic." She explains:

> Each text draws on previous texts written in response to similar situations. Through such interaction of texts, genres evolve as recurring forms in recurring rhetorical situations. Whenever an accountant writes a text within a genre, he or she is making a connection to previous texts within the community.

Amy J. Devitt, "Intertextuality in Tax Accounting: Generic, Referential, and Functional," in *Textual Dynamic of the Professions: Historical and Contemporary Studies of Writing in Professional Communities*, ed. Charles Bazerman and James Paradis (Madison, WI: University of Wisconsin Press, 1991), 338–339.

as requests or applications, patents can be considered "directive" speech acts: they attempt to direct someone else's behaviour. They are also "declarative": the act of declaring, "I have invented . . ." makes it so. These two characteristics give patents "stable illocutionary force," which means that the speaker or writer's intention to accomplish something in the real world is evident to the hearer or reader.[53] This power "to do things with words,"[54] or performativity, is based on more than the formalization of textual appearance and procedural steps dictated by the rules surrounding the "composing processes involved in creating . . . texts, and the reading practices used to interpret them."[55] Such rules are in fact part of the multiple "felicity conditions"[56] that all performative utterances must meet in order to be effective. These contextual conditions comprise, inter alia, the timing of the utterance, the authority of the utterer, and the adherence to specific conventions of language, including standards for the completeness of form.[57] However, they also involve less factual circumstances, such as "social intentions [and the] psychological state of speaker and hearer toward the act, the utterance, and each other."[58] This attention to sociological and dramaturgical elements – which would normally be of no interest to diplomatics, being outside a bureaucratic purview – is an important hallmark of the RGS approach.

From the speaker's (inventor's) point of view, the patent applicant must, first, assert that their idea meets the patent criteria – i.e., it is useful and new

53 Bazerman, "Systems of Genres," 71–76. Various archival scholars have drawn on speech act theory to investigate the nature of records. See Geoffrey Yeo, "Representing the Act: Records and Speech Act Theory," *Journal of the Society of Archivists* 31, no. 2 (2010): 95–117; Geoffrey Yeo, *Records, Information and Data* (London: Facet Publishing, 2018); and Pekka Henttonen, "Looking at Archival Concepts and Practice in the Light of Speech Act Theory," in *Research in the Archival Multiverse*, ed. Anne Gilliland, Sue McKemmish, and Andrew J. Lau (Clayton, VIC: Monash University Publishing, 2017), 537–57.

54 One of the best-known works by John L. Austin, the British philosopher who developed the theory of the speech act, is entitled *How to Do Things with Words* (Oxford: Oxford University Press, 1962).

55 Paré and Smart, "Observing Genres in Action," 122. In this chapter, Paré and Smart propose to analyze genre regularities across four dimensions: texts, composing processes, reading practices, and social roles of writers and readers. For the purposes of this study, given our inability to investigate patent creators and receivers in action, we examined composing processes and reading practices in relation to the rhetorical intentions they respectively imply.

56 Bazerman, "Systems of Genres," 72. Austin's "felicity conditions," elaborated in the context of speech act theory, is one of the concepts that have been appropriated by RGS scholars.

57 These are all elements that bureaucracy typically uses to assess a record's reliability. See Duranti, "Diplomatics: New Uses for an Old Science (Part II)," 11–13.

58 Bazerman, "Systems of Genres," 72.

– and, second, give a positive, honest impression of themself. "The applicant may always be in bad faith concerning any of these representations [i.e., that this is their idea, that the idea is workable, and that it is a novel improvement], but in forwarding the application the inventor must present himself or herself as sincere in these representations."[59] As mentioned earlier, the applicant's goal is to create a text that the receiver (patent examiner) will recognize as a properly formed application and will feel compelled to process as such. Because of the constraints imposed on the patent genre by the legal system in which it is enacted, "a request can become not only recognizable, but compulsorily must be taken as such by certain people structurally employed to receive requests."[60]

We have now moved into the realm of what Paré and Smart call "reading practices,"[61] a realm that, in the case of legal genres, is characterized by highly reduced interpretive flexibility. But how does the "desired perlocutionary effect (of actual issuance of the patent)"[62] happen? How is the application receiver persuaded (persuasion being one of the goals of rhetoric since antiquity) that the product or process presented as a useful innovation in the application is indeed patentable and that the inventor is reliable? Procedures for evaluating a patent are quite specific and attend only to certain aspects of the representation. Overall, what stands out is that the assessment is exclusively intertextual. "The patent descriptions and claims are compared to the file of existing patents and to other representations of the current state of the art, such as textbooks and encyclopedias."[63] This text-based cross-examination will be sufficient for the examiner to verify the novelty of the claim. The identity of the inventor will also be checked, so as to establish a minimum basis of trust. However, the examiner will have no way of knowing whether the invention does indeed work or is of any use in the real world. If it does not work or does not bring any improvements to

59 Ibid., 78–79. Bazerman points out that "in the earliest extant applications, the rhetorical emphasis was on the deserving character of the petitioner and the great economic value to befall the United States; the specific technical improvement [was] purely secondary and unargued." Ibid., 70–71.

60 Ibid., 77.

61 Paré and Smart, "Observing Genres in Action," 122.

62 Bazerman, "Systems of Genres," 79. The illocutionary force of a patent (the speaker's intention to obtain it) is transformed into the listener's perlocutionary act of issuing it when the latter is convinced that the text is receivable as a patent application.

63 Ibid. Devitt refers to the kind of intertextuality that relies on other texts as authority as referential intertextuality. See Devitt, "Intertextuality in Tax Accounting," 342–46.

society, the patent will be of no financial value and will simply be abandoned. The patent genre system appears therefore to be eminently rhetorical. It can only be successfully performed when the parties involved have a sound knowledge of the genres involved in terms of their textual features and intertextual connections.

Style

The third and last typified textual aspect, style, is traditionally associated with both genre classification and diplomatic analysis. The style of legal genres is pretty much codified by legislation, and the latter does not give individual writers much latitude in deciding how to express themselves. Bakhtin acknowledged that "all genres possess 'individual style'." However, he added, "the least favorable conditions for reflecting individuality in language obtain in speech genres that require a standard form."[64] As mentioned earlier, genres that have legal consequences cannot allow much interpretation on the part of the addressees. In order to enable proper evaluation of the patent's claims, to facilitate the testing of the invention by area experts, as well as to assist judges in case of contestation, patents adopt a specialized way of describing things, which tends to privilege conciseness, clarity, and technical precision.[65]

Whether using first- or third-person narration, active or passive voice (e.g., "I/we claim as new," "The invention is claimed as follows"), the body of the patent's text resembles that of a "legal petitionary letter"[66] (i.e., an official request to an authority), where the inventor positions themself as a sincere petitioner who claims to have invented something new and useful. Interestingly, the elements of form included in the initial section of a patent (the protocol) present the patent as already granted. In the protocol, the actor is the granting patent office, and

64 Bakhtin, "The Problem of Speech Genres," 63.

65 Bazerman cites Title LX, Section 4888 of the 1874 US patent law, which specifies,

> Before any inventor or discoverer shall receive a patent for his *(sic)* invention or discovery, he shall make application therefor, in writing, to the Commissioner of Patents, and shall file in the Patent Office a written description of the same, and the manner and process of making, constructing, compounding, and using it, in such *full*, *clear*, *concise*, and *exact* terms as to [enable] any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, or use the same.

Bazerman, "Systems of Genres," 68 (emphasis added).

66 Ibid., 68.

the inventor, or assignee, appears as the addressee of the act (the inscription, in diplomatics). The latter will gain an active role in the patent's text, where the inventor's claims are asserted in their own voice (i.e., the inscription becomes a superscription). We may therefore conclude that the patent as a whole is a multivocal genre: the language of the grant (detectable in the protocol and, where present, in the eschatocol) and the language of the application (manifesting itself primarily in the specification included in the text) merge in one entity, the patent. Even when the specification is part of a separate document, the patent's discursive practice is that of "wholesale transport of the language of the application into the language of the grant."[67] Bazerman also noted that the inventor and the patent examiner may be seen as collaborators in the creation of the patent, although each brings different social intentions to the genre's "ceremonial language game."[68] The inventor's intention to obtain a patent monopoly through representing their idea according to the genre rules of the patent application meets the examiner's intention to fulfil their duty by applying appropriate examination procedures to determine whether the representation is patentable. Bakhtin would call this juxtaposition of worldviews "social heteroglossia,"[69] a notion that of course has a linguistic basis and that is related to the intertextual dialogism discussed earlier in this article.

The highly regularized and regulated style in which patents are written, together with the precise rules of composition, adjudication, and contestation surrounding the whole genre system, contribute to the stabilization of this extremely specialized discourse domain. We should, however, always be mindful of the fact that "the participations that constitute legal practice continue to evolve."[70] The symbolic acts involved in the making, using, and keeping of patents are recreated every time they are re-enacted by lawyers, inventors, civil servants, and other individuals engaged with the genre-in-use. Each participant must learn the current "rules of the game" in order to play it meaningfully and effectively. However, anyone can potentially challenge those rules, and only through

67 Ibid. Bazerman further explains this "curious multivocality" as follows: "the patent consists of a text written by the applicant before the grant as though the patent were already granted and the text by the patent office validating this before-the-fact text as an after-the-fact accomplishment." Ibid., 80.

68 Anne Freadman, "Anyone for Tennis?" in Freedman and Medway, *Genre and the New Rhetoric*, 37–56.

69 Bakhtin, *The Dialogic Imagination*, 278.

70 Bazerman, "Systems of Genres," 82.

an examination of actual instantiations of a genre may we be in a position to identify the strategic intentions and rhetorical actions of those staging the genre within specific socio-historical circumstances.

In the next few pages, the insights discussed above are applied to a specific case study, with the hope that a tangible and replicable example will make the value of RGS for the archival profession and scholarship more apparent. The case study is introduced with an explanation of yet another concept encountered in this article: the genre system.

The Insulin Patent as a Genre System

Genres never come alone; they always exist in "a complex web of interrelated genres." To account for the intertextual relationships emanating from the "full set of genres that instantiate the participation of all the parties – that is, the full file . . . , the full interaction, the full event," Bazerman conceived the idea of a genre system. According to his definition, "only a limited range of genres may appropriately follow upon another in particular settings, because the success conditions of the actions of each require various states of affairs to exist."[71] A patent, for instance, will only be issued following the filing of a valid application, and a licence to operate on the basis of a patent (e.g., a licence for manufacturing insulin) will require certain certifications and tests prior to its execution. In very structured domains, such as the legal domain, the sequencing of generic actions tends to be quite fixed and predetermined, and the actions themselves are performed mostly in writing. Yet, because of the tension between stability and change highlighted throughout this article, deviations and workarounds are always possible. In any event – and here is where RGS augments the traditional view of the "documentary context" one may find in archival studies[72] – a genre

71 Bazerman defines a genre system as "interrelated genres that interact with each other in specific settings." Ibid., 82–83. Along the same lines, Amy Devitt has coined the expression *functional intertextuality*, which describes the linkages existing within the "macrotext" of a complete tax accountant's client file. See Devitt, "Intertextuality in Tax Accounting," 350–53.

72 The InterPARES 1 project glossary defines *documentary context* as "the archival fonds to which a record belongs, and its internal structure." Luciana Duranti, ed., *The InterPARES Project: The Long-Term Preservation of Authentic Electronic Records – Findings of the InterPARES Project* (San Miniato, Italy: Archilab, 2005), 359. For a discussion of the relationship between the notions of context and intertextuality in RGS and the traditional understanding of these concepts in archival studies, see Fiorella Foscarini and Juan Ilerbaig, "Intertextuality in the Archives,"

system is not simply a structured sequence of texts. Rather, it "reflects a complete interaction including all social relations and the history of the interaction."[73]

Our examination of the complete interaction constituting the insulin patent genre system starts with a brief historical overview of the discovery of insulin and of the contrasting opinions that eventually coalesced into the "desire to secure [it] by Letters Patent."[74] The overview is based on existing literature on the subject as well as an examination of the University of Toronto's Insulin Committee Papers, housed at the University of Toronto Archives and Records Management Services.[75] While the limitations of a historical study rule out the possibility to observe directly or interview the participants in the situation under investigation, we may look at these records as "embod[ying] the full history of speech events as intertextual occurrences."[76] Analysis of the records as a genre system will allow the social relations, and the rhetorical innovations devised by the actors to achieve their goals, to emerge.

Brief History of the Discovery of Insulin

Diabetes mellitus has been known since ancient times; however, it was not until the 19th century that anything resembling an appropriate treatment for the disease appeared. Once there was an understanding of the main cause of diabetes – i.e., that an affected person was incapable of processing sugar from the bloodstream – physicians began treating patients by means of diet and exercise. As these were nearly starvation diets that contained the bare minimum of calories to survive, patients became emaciated, though they did live longer than before. The road to the breakthrough by Banting and colleagues began in

in *Archives in Liquid Times*, ed. Frans Smit, Arnoud Gaudemans, and Rienk Jonker (Gravenhage, Netherlands: Stichting Archiefpublicaties, 2017), 177–94.

73 Natasha Artemeva, "Approaches to Learning Genres: A Bibliographical Essay," in Artemeva and Freedman, *Rhetorical Genre Studies and Beyond*, 27.

74 This is a typical formula used in early petitions to introduce the specification of the claim(s). See Bazerman, "Systems of Genres," 78.

75 The University of Toronto's Insulin Committee Papers are part of University of Toronto's Board of Governors Fonds (reference code: UTA 0007), and are arranged into 8 accessions, comprising a total of 94 boxes (equivalent to 13.16 linear metres of textual records). This study focused on the materials included in the largest accession (62 boxes, 8.0 linear metres), identified with reference code UTA 0007-A1982-0001, titled "University of Toronto. Board of Governors. Insulin Committee," and covering the time period 1922–1973. In 2013, the University of Toronto's Insulin Committee Papers were added to the UNESCO Memory of the World Register, in recognition of the fact that the event enshrined in these records was one of the most significant medical discoveries of the 20th century.

76 Bazerman, "Systems of Genres," 83.

1869, when German pathologist Paul Langerhans discovered distinct groups of cells in the pancreas (later called islets of Langerhans) that appeared to have a role in glucose regulation. In 1889, through experimentation on dogs, Josef von Mering and Oskar Minkowski found out that diabetes could be induced if the pancreas was removed, thus indicating that this organ was somehow at the root of the disease. Between 1901 and 1920, a series of cases recorded in the medical literature confirmed that the islets had a specific regulating function; however, all attempts to remove them from the pancreas and extract their hormone secretion were unsuccessful. During this time, the name *insuline* was also coined for the secretion, despite its status as a hypothetical hormone that could not yet be isolated.[77]

Learning about these cases and experiments, Frederick Grant Banting, a young physician in the University of Toronto Physiology Department headed by Professor John James Rickard Macleod, devised a new way of removing the islets from the bodies of various mammals, extracting the hormone, and transforming it into an injectable substance. With the assistance of medical student Charles Herbert Best and biochemist James Bertram Collip, Banting managed to perfect the method for the extraction and purification of this unknown substance, which was called first isletin and then insulin.[78]

> On 23 January 1922 at the Toronto General Hospital, Leonard Thompson, a young diabetic close to death, received an injection of a bovine pancreas extract. He consequently recovered his strength and a satisfying life, provided he received daily injections and observed a strict lifestyle.[79]

The production of insulin was initially entrusted to the University of Toronto's Connaught Antitoxin Laboratories, a semi-public organization established in 1914 by Dr. John G. FitzGerald and with a mission not to make financial profit but to promote research and health policies through the production of low-cost

77 Michael Bliss, *The Discovery of Insulin* (Chicago, IL: University of Chicago Press, 1982).

78 The name insulin was adopted by the Toronto research team in April 1922, and apparently, they were not aware of the earlier term insuline. The manufacturer's trade name may also appear as *Iletin*; American company Eli Lilly and Company still owns the trademark Iletin for its insulin product. See Louis Rosenfeld, "Insulin: Discovery and Controversy," *Clinical Chemistry* 48, no. 12 (2002): 2270–88.

79 Maurice Cassier and Christiane Sinding, "'Patenting in the Public Interest': Administration of Insulin Patents by the University of Toronto," *History and Technology* 24, no. 2 (2008): 153.

vaccines. Given the complexity of the operation, however, it soon became clear that Connaught Laboratories did not have the capacity to produce large batches of insulin of consistently high quality. In May 1922, the University of Toronto arranged a one-year exclusive licence with the American firm Eli Lilly and Company of Indianapolis, which had developed a method of isoelectric precipitation that appeared to be much more stable and potent than previous methods. This licence was later replaced by non-exclusive licences with several pharmaceutical firms.

In the meantime, other scientists, particularly in the United States, had begun to attempt their own processing of insulin, and competition for the monopoly on a medical substance that was in high demand was growing within the pharmaceutical industry. Worried that "unscrupulous drug manufacturers" could make or patent "an impotent or weakened version of this potentially dangerous drug and call it insulin,"[80] the Toronto-based team started to discuss the opportunity to take out patents to protect their invention.[81] However, the notion of a patent and the profiteering system behind it were perceived as absolutely incompatible with the medical profession. As Michael Bliss writes,

> Medical men such as Macleod and Banting were bound by their professional code to make all advances in health care freely available to humanity. If nothing else, it would violate a physician's Hippocratic Oath to engage in the profiting from a discovery that patenting normally implied. During preliminary discussions of this problem,

80 Rosenfeld, "Insulin: Discovery and Controversy," 2280.

81 In a letter dated 12 April 1922, FitzGerald, Banting, Best, Collip, and Macleod wrote to the Vice-Chancellor of the University of Toronto, Sir Robert Falconer:

> We have been advised . . . that it is unsafe for us not to hold a patent for the method of preparation of such extracts. . . . We have recognized a high commercial value is attached to the method . . . and we have decided to keep this as secret as possible until we can publish in detail in scientific journals and thus throw this method to the profession. After such publication, patenting would become impossible by anyone, but in the meantime a real danger exists that a method approximating ours might secure a patent.

University of Toronto Library, University of Toronto. Board of Governors. Insulin Committee, UTA 0007-A1982-0001/009(03).

> Banting was apparently particularly reluctant to be in any way associated with patenting.[82]

Banting's concern was such that his name does not appear among the signatories of the first patent application, which Collip and Best filed with the US Patent Office on 22 May 1922. The relationships among the scientists working under Macleod's direction had started deteriorating a few months earlier, when Collip had apparently threatened to leave the team. The insulin patent was one of the sources of discord.[83]

If we were to translate this crisis situation into the language of RGS, we could say that it exemplifies a genre entering a community to which it does not belong; in this case, a great deal of thinking and negotiation of meanings must be carried out by the participants, so as to learn the genre and avoid as much as possible its disruptive (centrifugal) effects. The social and ideological action of any new genre, which embeds certain worldviews, opens some pathways and closes others, comes with a specific history of uses, and must be reconciled with the ethics, epistemology, and conventions of the adopting community. In order to support the scientists at this difficult time, Sir Robert Falconer, Vice-Chancellor of the University of Toronto, set up a committee that became known as the Insulin Committee, whose purposes were to provide a sounding board for discussions of the delicate matter of patenting a medical discovery and to manage the relationship with the industry that possessed the technical know-how.[84] By studying precedents (i.e., thyroxin, which had been patented a few

82 Bliss, *The Discovery of Insulin*, 132–33.

83 Rosenfeld reports that, as a consequence of a personal conflict with Banting, Collip, who had moved back to Edmonton, expressed the intention to take out a patent in his own name and to start producing insulin on his own. Once word got out, Banting, Best, Collip, Macleod, and FitzGerald signed a memorandum, dated 25 January 1922 (when the Connaught Laboratory was still in charge of the production), in which each agreed "not to take any steps which would result in the process of obtaining an extract or extracts of pancreas, being patented, prepared by any commercial firm with the aid of any of the above or otherwise exploited during the period of cooperation with the Connaught Antitoxin Laboratory." UTA 0007-A1982-0001/009(03). See also Rosenfeld, "Insulin: Discovery and Controversy," 2278.

84 The Insulin Committee initially consisted of three members of the board of governors of the university, including Falconer, and sat with an advisory committee composed of Banting, Best, Collip, Macleod, and FitzGerald. The committee soon grew to include, in addition to academics and researchers, members from industry and Charles Riches, an attorney who specialized in patent law. See Cassier and Sinding, "'Patenting in the Public Interest'," 167–68.

years earlier, and adrenaline, patented in 1900 – both in the United States),[85] corresponding with colleagues around the world, and most importantly, getting familiar with the specialized knowledge encapsulated in the patent genre, the committee eventually devised an innovative strategy for the administration of a complex system of patents, licences, certifications, laboratory tests, advertisements, and royalty contracts, among other genres. According to socio-economists Maurice Cassier and Christiane Sinding, through its innovative resolution of the dilemma between medical ethics and the university's humanitarian goals, on the one hand, and the commercial orientation of both the legal instrument adopted and the industry involved, on the other, "the University of Toronto managed to impose a policy of democratization of intellectual property rights."[86] We will now see how all this was accomplished.

Patenting for the Public Good

The first important step the Insulin Committee took was to establish that the board of governors of the University of Toronto would be the assignee of all patents applied for in the names of Banting, Best, and Collip. This rhetorical move eliminated any ambiguities connected to one of the typical expectations around patents – that is, profit sharing for inventors. The three scientists agreed to assign their rights to the university for one dollar each.[87] They were also persuaded by the Director of Research at Eli Lilly and Company, Doctor G.H.A. Clowes, to seek protection not only for the method of producing insulin but also for the substance itself.[88] This double protection – a novelty in the

85 Ibid., 154.

86 Ibid., 166.

87 In a statement read by Macleod at an Insulin Committee meeting on 28 April 1924, the scientists' ethical dilemma and the stratagem that resolved it are explained in these terms:

> Since however, it is contrary to the traditional principles of the medical profession to restrict the production or supply of any substance that may be used for the alleviation of human suffering and is contrary to its ethical code for any physician to derive financial benefit from the sale of such substance, it was decided that the patents should be assigned to the Board of Governors of the University of Toronto to be held by them for the sole purpose of preventing any other person from taking out a similar patent which might restrict the preparation of Insulin.

UTA 0007-A1982-0001/006(01).

88 A letter from Clowes to Macleod, dated 11 May 1922, reads, "It is extremely important to take out a product patent for if you do not take this precaution someone else will undoubtedly devise a process differing sufficiently from yours to enable them to manufacture the same product without restriction." UTA 0007-A1982-0001/012(12).

field of intellectual property rights for products of a scientific rather than an industrial nature – raised several objections within the scientific community. The patentability of a natural substance and the consideration of insulin itself as an invention rather than a discovery were not the only contested aspects. The University of Toronto's medical research council "criticized the scope and lack of precision of the Toronto's patent claims . . . [which] were too broad and ill-defined, and were easy to by-pass."[89] As noted earlier in this article, clarity and precision are among the stylistic qualities that are essential for a patent application to be successful. Nevertheless, the legal community appeared not to share such concerns. Indeed, "the legitimacy of Toronto's patent claims was never questioned, neither by the patent offices nor by the judges,"[90] and on 9 October 1923, Banting, Best, and Collip were awarded a US patent for both the insulin and their method of producing it.[91]

From a genre perspective, it is interesting to observe that, although personality clashes and disagreements among the three scientists would never completely cease,[92] Banting allowed his name to be included in the patent application in question (which was filed on 12 January 1923) when it was pointed out that an application without the name of one of the main inventors would likely be denied because it would be seen as "false and perjured."[93] Such a realization presupposes an anticipation on the part of the petitioners of the patent examiners' response to their move. This is exactly what Bakhtin meant by addressivity: the tendency of any utterance to be shaped by what the utterer expects as possible reactions to it. Thus, this application-in-the-making was in a dialogic, intertextual relation-

Collip and Best's first application (the one without Banting) was for a patent on the process only. This was aligned with Canadian patent law of the early 20th century, which did not contemplate the possibility of patenting a drug; only the process by which the drug was made could be patented. Duy, *A Brief History of the Canadian Patent System*, 14.

89 Cassier and Sinding, "'Patenting in the Public Interest'," 157.

90 Ibid., 158.

91 See appendix for a scanned copy of US patent no. 1,469,994, entitled "Extract obtainable from the mammalian pancreas or from the related glands in fishes, useful in the treatment of diabetes mellitus, and a method of preparing it." The scan has been provided by the University of Toronto Archives and Records Management Services from the original patent (UTA 0007-A1982-0001/006(08).

92 Even in relation to the Nobel Prize for Medicine, which was awarded to Banting and Macleod in 1923, the scientists were not on the same page. Banting, in particular, felt resentment at Macleod's nomination, arguing that the latter's role in the discovery would not have been that crucial. Banting gave half of his prize money to Best, while Macleod gave half of his to Collip. As research has shown, Macleod's contribution to the whole enterprise was actually fairly significant. See Rosenfeld, "Insulin: Discovery and Controversy," 2284.

93 Bliss, *The Discovery of Insulin*, 181.

ship not just with existing patents and applicable patent laws (or rules of proper utterance) but also with its imagined audience.

As a rhetorical innovation, the move of assigning all insulin patents to the university's board of governors defeated the very purpose of a patent and prevented anyone else from establishing a commercial monopoly. It also "gave the university the authority to set the standards of the new drug, control the quality of its industrial production, and regulate the conditions of its marketing."[94] All this was achieved thanks to a system of controls, known as patent pooling, that the Insulin Committee managed to impose on its partners and licensees and that lasted until the 1950s. The system was based on a sharing principle, according to which each and every patent on insulin that would be filed in the future all over the world had to have the University of Toronto as its assignee. The university would also be the only entity entitled to authorize suitable pharmaceutical firms to use the methods patented for manufacturing the product. The patent pooling system supported the university's "policy of guaranteeing accessibility of the invention to multiple firms which could then compete to minimize the cost of the drug."[95] Substantial negotiating ability and creativity had to be put in place by the Insulin Committee to convince a very competitive industry that all insulin patent licenses had to be non-exclusive, that the licensees' manufacturing practices had to be certified by the university, and that the quality of the produced batches had to undergo testing at a special laboratory established for that purpose by the committee on the premises of Connaught Laboratories. The control of the university extended even over drug advertising. All these activities were financed through the 5 percent royalties that the university collected from the sale of insulin.[96]

94 Cassier and Sinding, "'Patenting in the Public Interest'," 156.

95 Ibid., 160. The first experimental use of the patent pooling system was during World War I, when the US government used it in the aeronautics field for national defence purposes.

96 On several occasions, Macleod argued for the reduction or even elimination of the royalties paid to the university. In his view, 5 percent was still a considerable burden for consumers. In his speech at the Insulin Committee meeting of 28 April 1924, cited earlier, Macleod expressed his concerns as follows:

> The collection of royalties has always seemed to me to be the only part of the work of the Insulin Committee that might be open to unfavourable criticism; but I feel confident that this could not be serious so long as the sums thereby collected did not exceed the expenses incurred in safeguarding Insulin.

UTA 0007-A1982-0001/006(01).

Cassier and Sinding suggest that "the policy of 'administering medical patents for the public good,' developed and applied by the University of Toronto in the early 1920s, was an impressive novelty at a time when the manufacturing and sale of drugs were subject to little control."[97] The world of drug production and commercialization would no longer be the same after the democratic principle of patent pooling devised by the University of Toronto started to spread to other remedies. This revolution affected the notion of intellectual property as well. By freeing the latter from "commercial goals, monopolies on production and sale, profit-sharing for inventors, and perhaps the collection of royalties,"[98] the insulin case showed how the power of patents could be used in the public interest. At a 1939 conference of the American Medical Association, the main question the delegates debated was "Patents for profit or patents for quality control?"[99] Apparently, by this time, the medical community did not see patents as a taboo, and the use of patents for the standardization and improvement of health products was fully recognized and encouraged.

Conclusion

"Only by uncovering the pathways that guide our lives in certain directions can we begin to identify the possibilities for new turns and the consequences of taking those turns."[100] Bazerman's words illustrate the transformative action each of us can potentially exercise on genres – even those belonging to very stable and structured contexts – assuming that we engage with them and are able to locate ourselves within the rhetorical possibilities they offer at any moment. This metaphor may help us understand how a team of scientists dealing with one of the most significant medical discoveries of the 20th century was able to come up with such an innovative discursive solution to a problem they had been facing. The problem was that someone else could replicate their invention and claim a monopoly on it. Rather than refusing to adopt a monopolistic approach altogether, these scientists challenged the system from inside: they decided to

97 Cassier and Sinding, "'Patenting in the Public Interest'," 165.

98 Ibid., 166.

99 Ibid., 167.

100 Bazerman, "Systems of Genres," 83.

take out patents exactly for the purpose of preventing any inclination to create a monopoly. This intuition (which sounds like a paradox) was their kairos – that is, an opportunity, which they created themselves, to change a situation and open up new pathways. Banting and colleagues would not have been able to trigger such a generic turn if they had not first acquired sufficient genre knowledge to understand how patents work; what kinds of social intentions they embed; how, when, and by whom they are to be written; what expectations their readers have; and how the relationship between writer and reader should be shaped in order to obtain the best possible outcome. In brief, they had to become familiar with the patent's felicity conditions so as to be able to influence them.

It is now time to return to Paré and Smart's categorization of textual feature regularities in order to review the main innovations the pioneers of the medical patent managed to bring to this highly conservative genre system.

Change in Structure

As the legislation does not give much leeway in choosing what elements of form to include in a patent or how to organize these in the text,[101] one has to turn to the whole genre system established by the Insulin Committee to identify important structural changes. The patent pooling system that all future insulin inventors (or improvers) and licensees had to subscribe to imposed an open, distributed notion of intellectual property, which was an absolute novelty in the pharmaceutical field. As a tool for "preserving the openness of the drug market, . . . an incentive for price control, . . . a way of facilitating the rapid circulation of inventions, . . . [and] a means to standardize medical products,"[102] the patent pooling innovation generated, and was sustained through, a complex system of genres including patents, licences, certifications, tests, and rules governing the advertising and sale of the product and the collection of royalties.

Change in Rhetorical Move

By assigning the patent rights to the board of governors of the University of Toronto for a symbolic price, the Insulin Committee managed to decouple the

101 If we look at the guide to preparing an application by the World Intellectual Property Organization (WIPO) in the context of today's international patent system, we may realize that the form and structure of patents have not changed dramatically. See "Patents," WIPO, accessed 15 September 2018, http://www.wipo.int/patents/en/.

102 Cassier and Sinding, "'Patenting in the Public Interest'," 166–67.

idea of intellectual property from that of personal gain for the inventors. This move mitigated the scientists' uneasiness about engaging with a commercial, profit-oriented mechanism. It also appealed to the patent examiners, who were apparently persuaded by the moral authority of the university and its researchers in addition to the sound legal arguments used within the patent. They did not object to any of the deviations that others (including the university's medical research council) had pointed out. Claiming protection for both a process and a product was not normal practice in the field of medicine, and the nature of the patent's object itself was perceived as ambiguous by some (was insulin a discovery or an invention?). Nevertheless, the rhetorical force of the application was such that no questions were raised about the patentability of the University of Toronto's results by those who carried out the intertextual examination of the first patent application.

Change in Style

The patent filed in January 1923 was broad in its scope and not very precise in its language. Members of the Insulin Committee took a conscious risk in elaborating on the stylistic rules prescribed by patent law and observable in precedents rather than applying them passively. They did so because they had a strategy. In order to be able to set up the envisaged patent pooling system, they needed to design their basic patent in such a way that it could "cover a multitude of preparations and put all other inventors in a position of dependence."[103] Again, we may infer that the university's reputation and also those of the laboratories involved in the testing and production of insulin (particularly Connaught Laboratories) were instrumental in guaranteeing the success of the application. From a genre perspective, we cannot help thinking that the Toronto team constructed the kairos that made its genre innovation timely and acceptable in spite of the series of violations of form and function identified in this study.

This article has tried to demonstrate how rhetorical genre studies, with its set of concepts derived from disciplinary traditions including linguistics, rhetoric, composition, and communications, may be used to investigate the fluid, "stabilized-for-now"[104] nature of genres, particularly those participating in highly structured and conservative domains. The area of archival studies, where legal and

103 Ibid., 167.

104 Schryer, "Records as Genre," 200.

formal systems play a key role, can certainly benefit from a genre perspective. Through its situated, sociological, and text-based approach, RGS helps reveal that records, systems, and organizations are all cultural constructs based on typified discursive practices. Realizing that such practices are continuously produced, reproduced, challenged, transformed, and eventually institutionalized through the enactment of social intentions may provide archivists with a more nuanced appreciation of the symbolic worlds of law, order, and bureaucracy.

BIOGRAPHY Fiorella Foscarini is an associate professor in the Faculty of Information at the University of Toronto. She holds a PhD in archival studies from the School of Library, Archival and Information Studies at the University of British Columbia. Before joining academia in 2010, she worked for a decade as Senior Archivist for the European Central Bank in Frankfurt am Main, Germany; prior to that, she was Head of the Records Office and Intermediate Archives at the Province of Bologna, Italy. In 2014–16, she taught in the Department of Media Studies at the University of Amsterdam, the Netherlands. In her teaching and research, Fiorella uses diplomatics, rhetorical genre studies, and information culture concepts to explore issues related to the creation, management, and use of records in organizational contexts. She currently serves as Co-Editor-in-Chief for the *Records Management Journal* and as Senior Associate Editor for *Archivaria*.

Appendix: United States Patent No. 1,469,994

Reproduction courtesy of University of Toronto Archives and Records Management Services.

Patented Oct. 9, 1923. **1,469,994**

UNITED STATES PATENT OFFICE.

FREDERICK G. BANTING AND CHARLES HERBERT BEST, OF TORONTO, ONTARIO, AND JAMES BERTRAM COLLIP, OF EDMONTON, ALBERTA, CANADA, ASSIGNORS TO THE GOVERNORS OF THE UNIVERSITY OF TORONTO, OF TORONTO, ONTARIO, CANADA.

EXTRACT OBTAINABLE FROM THE MAMMALIAN PANCREAS OR FROM THE RELATED GLANDS IN FISHES, USEFUL IN THE TREATMENT OF DIABETES MELLITUS, AND A METHOD OF PREPARING IT.

No Drawing. Application filed January 12, 1923. Serial No. 612,158.

To all whom it may concern:

Be it known that we, FREDERICK G. BANTING and CHARLES HERBERT BEST, of the city of Toronto, in the county of York and Province of Ontario, Dominion of Canada, and JAMES BERTRAM COLLIP, formerly of the said city of Toronto, and now of the University of Alberta, in the city of Edmonton, in the Province of Alberta, Dominion of Canada, British subjects, have invented an extract obtainable from the mammalian pancreas or from the related glands of fishes, useful in the treatment of diabetes mellitus, and a method of preparing it; and we hereby declare that the following is a full, clear, and exact description of the same, this application being a substitution in part of the application filed by the said JAMES BERTRAM COLLIP and CHARLES HERBERT BEST on the 22d day of May, 1922, Serial No. 562,835.

Previous investigators suggested that the ductless portion of such glands as the mammalian pancreas and the pancreas of cartilaginous fishes, known as the isles of Langerhans, and related glands (principal islets) of bony fishes contains an internal secretion or hormone capable of alleviating diabetic symptoms in patients and in laboratory animals; and other conducted experiments in which diabetic patients and diabetic laboratory animals were given extracts containing this secretion or hormone.

The results of these experiments were not considered sufficiently satisfactory to justify the continued use of the extracts in the treatment of diabetes in man because of the presence in the extracts of toxic substances, and apparently no definite progress was made towards the preparation of an extract sufficiently pure to be safely administered to human patients until these experiments were continued by us. From our knowledge of the results in the early experiments we concluded that the presence of toxic substances in the extract caused local irritation followed by general reactions unrelated to the physiological and therapeutic effects of the hormone, and these conclusions were confirmed by our early clinical observations. We, therefore, deemed it advisable before further clinical trials were undertaken to prepare the extract containing the secretion or hormone in practically pure form and to devise suitable means for obtaining the maximum yield of it.

This was done by extracting the internal secretion or hormone from the fresh pancreas of mammalia, or, from the fresh pancreas of cartilaginous fishes, or, from fresh related glands, (principal islets), of bony fishes, with a solvent capable of preserving the activity of the internal secretion or hormone and then separating it practically free from injurious substances including inert associated gland tissue, proteins, proteolytic enzymes, salts and lipoids.

The following are steps we employed in several methods for obtaining a practically pure extract from the fresh pancreas of mammalia:

(1) Separation of the internal secretion or hormone from the fresh pancreas by extraction with solvents such as ethyl alcohol, methyl alcohol, methylated spirits, and acetone, or any mixture of these, which are capable of preserving the activity of this internal secretion or hormone by not destroying it and by largely preventing or inhibiting the deleterious action on it of such proteolytic enzymes as trypsin, erepsin, and the proteases, and of other catalysts present, followed by filtration for the removal of the inert associated gland tissue.

(2) Removal of the major part of the proteins by some suitable method of precipitation. For this purpose alcohol, colloidal iron, precipitation at isolectric point by the use of dilute acid or alkali, or heating to a suitable temperature, may be used.

(3) Concentration of the extracted filtered solution, either before or after the removal of the proteins, as by distillation in vacuo, or evaporation in a dry air current.

(4) Removal of the lipoids after concentration either by mechanical separation or by chemical extraction with solvents such as ether, or toluol.

(5) Removal of the salts and a large part of the remaining impurities by precipitation with alcohol.

(6) Precipitation of the internal secretion or hormone with adherent substances

by a higher percentage of alcohol and collection of the precipitate on a filter.

(7) Dissolving the precipitate in freshly distilled water, removing the admixed alcohol from this solution, and concentrating it, as by vacuum distillation, followed by sterilization of the resulting aqueous solution.

A potent preparation of the extractive of the internal secretion or hormone of the pancreas of mammalia was prepared as follows:

The fresh pancreas of the ox was minced and then mixed with an equal volume of alcohol. The mixture was strained and filtered to separate the inert associated gland tissue from the substances which had gone into solution in the alcohol. The filtrate was treated with two volumes of the same solvent and allowed to stand several hours with occasional agitation. The greater bulk of the protein was precipitated by this treatment and the resulting precipitate was removed by filtration and this filtrate subjected to vacuum distillation to obtain a concentrated aqueous solution. A buffer solution of $\frac{1}{4}$ c. c. of 4% $NaHCO_3$ solution was added for every 5 litres of filtrate before distillation was commenced, to keep the hydrogen ion concentration within the *p*H range 4 to 7. The concentrated aqueous solution was twice extracted with ether. The lipoid substances were removed by this treatment. The ether was separated mechanically and the aqueous solution was returned to the vacuum still and concentrated further. Alcohol was then added to make this concentrated solution 80% alcohol and the mixture was thoroughly agitated. The greater bulk of the saline substances were "salted out" by this treatment and there was also precipitation of more protein. It was then centrifuged. After centrifuging four distinct layers were manifested in the tube. The uppermost layer was perfectly clear and consisted of alcohol holding all the internal secretion or hormone in solution. Below this in order were a flocculent layer of protein, a second clear or watery layer saturated with salt, and a lowermost layer consisting of crystals of salt. The upper most layer was next siphoned off and treated with several volumes of 95% ethyl alcohol. The foregoing treatments with alcohol caused fractional precipitation in which the earlier fractions were composed of precipitated proteins and salts and the last fraction was the internal secretion or hormone. The mixture was allowed to stand some hours. The precipitate was caught on a Buchner funnel washed with 95% alcohol and finally dissolved in distilled water. The resulting aqueous solution of the precipitate was then concentrated to the desired degree by vacuum distillation at low temperature and filtered through a Berkfeld filter to sterilize it. A preservative such as tri-cresol was added, the concentration of the same not exceeding 0.7 per cent.

A potent preparation of the extractive of the internal secretion or hormone of the pancreas of cartilaginous fishes and of related glands, principal islets, of bony fishes was obtained as follows:

The fresh gland was removed, cut in small pieces and placed in an equal volume of commercial alcohol. The mixture was allowed to stand at low temperature for several hours, after which the fluid was decanted and the gland tissue or solid residue ground to a fine pulp. The decanted fluid was then added gradually to the pulp with which it was thoroughly mixed by trituration to extract the internal secretion or hormone. The mixture was then strained to separate the pulpified gland tissue from the substance which had gone into solution in the alcohol, and the strained fluid filtered. The residue from this treatment was again extracted as above with fifty per cent alcohol and strained and filtered and the filtrate added to the first one. The alcohol was removed from the combined filtrates by distillation. The resulting aqueous solution was extracted by the use of ether for the removal of lipoids. The clear lipoid-free aqueous solution was then run off from under the ether and transferred to a wide beaker placed on a boiling bath so as to rapidly raise the temperature of the aqueous solution to between 70° and 75° C. at which it was maintained for 3 minutes with constant agitation of the beaker. By this treatment a flocculent precipitate of protein was thrown down and that portion of the ether which went into solution in the water was got rid of. The heated aqueous solution was then cooled, and filtered first through paper and then through a Berkfeld filter to sterilize it.

From each of the above mentioned glands we obtained by the foregoing methods, a potent pancreatic product or extract in sufficiently pure concentrated form for repeated administration to human patients and which had the physiological and therapeutic characteristics of removing the cardinal objective symptoms of diabetes mellitus in patients and reducing the percentage of blood sugar in laboratory animals, and which has a distinct value in the treatment of diabetes mellitus, and lowering blood sugar, decreasing the urinary sugar, checking acidosis and raising the carbohydrate tolerance of a diabetic individual to whom they are suitably administered.

Having thus fully described our invention what we claim as new and desire to secure by Letters Patent is

1. A substance prepared from fresh pancreatic or related glands containing in concentrated form the extractive from the duct-

less portion of the glands sufficiently free from injurious substances for repeated administration and having the physiological characteristics of causing a reduction of blood sugar useful for the treatment of diabetes mellitus.

2. A substance prepared from fresh pancreatic or related glands containing in concentrated form the extractive from the ductless portion of the gland practically free from injurious substances and having the physiological characteristics of causing a reduction of blood sugar useful for the treatment of diabetes mellitus.

3. A substance prepared from fresh pancreatic or related glands containing in concentrated form the extractive from the ductless portion of the gland practically free from inert associated gland tissue and injurious substances and having the physiological characteristics of causing a reduction of blood sugar useful for the treatment of diabetes mellitus.

4. A substance preperad fron fresh pancreatic or related glands containing in concentrated form the extractive from the ductless portion of the gland practically free from proteins and other injurious substances and having the physiological characteristics of causing a reduction of blood sugar useful for the treatment of diabetes mellitus.

5. A method for obtaining a potent substance from the ductless portion of pancreatic or related glands in concentrated form and practically free from impurities having the hereindescribed physiological characteristics, which consists of extracting said substance from a fresh gland with a solvent capable of preserving the activity of the substance, precipitating said substance from the solution practically free from injurious substances, and making a sterile aqueous solution of said substance.

6. A method for obtaining a potent substance from the ductless portion of pancreatic or related glands in concentrated form and practically free from impurities having the hereindescribed physiological characteristics, which consists of extracting said substance from a fresh gland with a solvent capable of preserving the activity of the substance, precipitating said substance from the solution practically free from injurious substances, and making a concentrated sterile aqueous solution of said substance.

7. A method for obtaining a potent substance from the ductless portion of pancreatic or related glands in concentrated form and practically free from impurities having the hereindescribed physiological characteristics, which consists of extracting said substance from a fresh gland with a solvent capable of preserving the activity of the substance, precipitating said substance from the solution practically free from proteins and other injurious substances and making a sterile aqueous solution of said substance.

8. A method for obtaining a potent substance from the ductless portion of pancreatic or related glands in concentrated form and practically free from impurities having the hereindescribed physiological characteristics, which consists of extracting said substance from a fresh gland with a solvent capable of preserving the activity of the substance, fractionally precipitating said substance from the solution practically free from injurious adherent substances, and making a sterile aqueous solution of said substances.

Dated at the said city of Toronto, this 19th day of December, A. D. 1922.

FREDERICK G. BANTING.
CHARLES HERBERT BEST.
JAMES BERTRAM COLLIP.

Witnesses:
CHAS. H. RICHES,
ROBERT MCCLINTOCK.