

Mythologizing the story of a scientific invention: Constructing the legitimacy of research commercialization

Adi Sapir, Department of Leadership and Policy in Education, Faculty of Education, University of Haifa, Israel.

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This paper explores the processes through which an organizational story acquires mythological status within an organizational field. To this end, I analyze a story of a successful case of academic technology transfer that gained mythological status in the field of higher education in Israel: the commercialization of the innovative pharmaceutical drug Copaxone. I identify three processes of myth-making: organizational storytelling, media diffusion and reconstruction, and field-level counter-narratives. I argue that myth-making is a collective work, in which an organizational story is shaped not only through the strategic rhetorical work of managers but also through interpretations and modifications by the media and later by other actors in the field. The myth of Copaxone, as it is currently told in the field of higher education in Israel, is a complex assemblage of the organizational story and various counter-stories. I further suggest that this myth not only serves to naturalize and reinforce academic patenting, but also provides a discursive space for reflections about the ambiguities inherent in academic commercialization.

Introduction

This paper explores the work of mythologizing, the process through which an organizational story acquires mythological status within an organizational field. Myths are widely shared stories, often partial and distorted, that nevertheless convey an “illusion of reality” (Rawlins, 2014, p. 455). Extensive literature has shown that myths pervade organizational life (e.g. Bathurst & Monin, 2010; Durepos, Helms Mills, & Mills, 2008; Malsch & Gendron, 2009; Rawlins, 2014; Sewell, 2001; Yanow, 1992), yet these studies tend to engage with demystification and deciphering of myths rather than with the

process of myth construction. Accordingly, current organizational-level and field-level literature is limited in its capacity to provide insight into the process of myth-making. The claim made by Lawrence and Suddaby (2006, p. 244), that “we still lack a detailed understanding of precisely how mythologies communicate to actors and how skilled actors can appropriate and manipulate myths during processes of institutional stasis and change,” still holds true today. The guiding research question of this paper is: How does an organizational story become a field-level myth?

To address this question, I explore the story of the invention and commercialization of the molecule Copolymer-1 (Cop-1) at the Weizmann Institute of Science. This molecule served as the basis for the multiple sclerosis (MS) drug Copaxone, developed by Teva Pharmaceutical Industries, and ranks among the 15 best-selling prescription drugs in the world, with annual sales of \$4.8 billion in 2014. I argue that, through its multiple iterations, the story of Copaxone has gained mythological status in the Israeli field of higher education as a symbol of academic entrepreneurship and its contribution to the public good.

This study provides key insights regarding the mechanisms of organizational myth-making. Specifically, I identify three concurrent processes of mythologizing work: organizational storytelling; media diffusion and reconstruction; and field-level retelling and countering. While much research on organizational myths has focused on the role of organization management, and specifically on the manner in which managers create and leverage myths for specific purposes, I argue that myth-making is a collective work, in which an organizational story is shaped not only through the strategic rhetorical work of managers but also through interpretations and modifications by the media and later by other actors in the field. This paper also contributes to the “historic turn” in organization and management studies (Mills et al., 2016), and specifically to the research stream that examines organizations’ strategic usage of history as a symbolic resource (Foster, Coraiola, Suddaby, Kroezen and Chandler, 2016). Responding to Smith and Russell’s (2016) call for a polyphonic approach to perceptions of history, I explore how multiple and diverse voices take part in myth-making. Thus, the myth of Copaxone, as it is currently told in the field of higher education in Israel, is a complex assemblage of the

organizational story and various counter-stories. I further suggest that this myth not only serves to naturalize and reinforce the institution of research commercialization and academic patenting, but also provides a discursive space for reflections and deliberations about the ambiguities inherent in academic commercialization.

Myths and myth-making

Given the variety of intellectual traditions and disciplines engaged in the study of myth, the definition of myth constitutes a contested terrain among scholars. Indeed, Doty (2000) claims that “there are as many definitions of myth as there are students of myth” (p. 85). Some of the essential constitutive characteristics of myth are widely agreed on—including, for example, the idea that a myth is a narrative form, typically concerned with past events, and that mythical stories are frequently repeated. Other characteristics, however, are dependent on specific settings or contexts; these characteristics include centrality of imaginary events, a sacred nature, or a connection to ritual behavior.

One way of dealing with the problem of definition is to create a comprehensive definition that includes all possible elements, and when considering a specific case, to choose only the elements that apply (Doty, 2000). Another method is not to look at the essential components of myths but rather at their social function. For example, Csapo (2005: 9) defines myths as narratives that are considered socially important in a certain social and historical context and therefore are repeated or alluded to frequently in social discourse. An influential contribution in this perspective is Barthes’ (1972, 1982) concept of myth, which acknowledges the instrumental conditions of myth creation and the uses of myth as an instrument of power in reproducing social order. Myth, according to Barthes, is “a depoliticized speech” (Barthes, 1982, p. 130), whose essential function is a work of *naturalization*, that is, making dominant cultural and historical values, norms and beliefs seem taken-for-granted, “normal” and “natural”.

Barthes conceives of myth as a second-order semiological system that takes a constituted sign and turns it into a signifier in the second order. Barthes gives the famous example of a magazine cover portraying African youth in uniform saluting the French flag. The level of first-order language denotes the event of a young man saluting the flag.

In the second-order mythological level, the sign surpasses its referential denotation and becomes a signifier of French imperialism, which presents French colonialism in Africa as natural and acceptable. Thus, according to Barthes, “Myth is a type of speech defined by its intention... much more than by its literal sense” (Barthes, 1982, p. 110).

Barthes’ work has been highly influential on the scholarship that explores the ideological functioning of myths. In this paper, I draw from this literature stream and adopt Lincoln’s conceptualization of myth as “ideology in narrative form” (Lincoln, 1999, p. xi-xii). According to Lincoln (1989, 1999), myth is a form of discourse that serves as an effective instrument that constructs and legitimates established social forms through its ability to persuade and to evoke sentiments. Furthermore, a mythical story has a mobilization function: “myth is not just a coding device in which important information is conveyed, on the basis of which actors can then construct society. It is also a discursive act through which actors evoke the sentiments out of which society is actively constructed” (Lincoln, 1989, p. 25).

Bearing in mind the conceptualization of the myth as a social instrument, the relations between myths and the events they describe, and indeed the nature of the relationship between myths, past and history, warrant closer examination. This paper draws on a cultural theory approach that conceptualizes history as a narrative reconstruction of past events, constructed and reconstructed through processes of selection and interpretation (Durepos et al. 2008; Mills, Weatherbee and Durepos, 2014). Hence, I build my analysis on the idea that historical accounts are constructions of the past, undertaken in certain socio-political contexts, and that mythical stories are specific constructions of history, that make claims for truth, and are held to be credible by given audiences (Lincoln, 1989)

Mythical stories, while based on historical narratives, can employ them in complex and creative ways. Barthes (1982: 140-141) suggests that the myth “deprives the object of which it speaks of all History. In it history evaporates.” The myth reduces complex phenomena, eliminating context and causality, transforming history into nature. Thus the image of a black youth saluting the French flag is deprived of the historical context of French colonialism in Africa. Against this draining of history, myth-making

can also involve the “invention of tradition” (Hobsbawm and Ranger, 1983), a set of practices, with a ritualistic or symbolic nature, claiming to continuity with the past, but serving novel purposes. Traditions are “a form or a means to tell a story and spread a certain moral” (Kroeze & Keulen, 2013: 1272), which is always related to the present and the future. Sewell (2001), for example, explores the creation of the myth of teamwork, which portrays it as an essential characteristic of human nature, suggesting that the myth is based on an invented tradition of the nature of preindustrial work, celebrating the ideal of the autonomous familial craftwork.

Scholars have also explored how science, which Western thought has largely framed as a tool for displacing mythical beliefs, can be regarded as a myth-spawning institution. Feyerabend (1975) argues that science’s privileged position within Western societies is derived from the “myth of science”, as a value-free, fact-based, scientific method with proven successes, while “it is inherently superior only for those who have already decided in favour of a certain ideology, or who have accepted it without ever having examined its advantages and its limits” (p. 295). Allchin (2003) looks at historical narratives of scientific inventions, and identifies rhetorical features of myths in these narratives—such as monumentality, idealization, entertainment and persuasion. Allchin suggest that these features result in a certain type of misconception, or a so-called “myth-conception”, of science, which does not promote understanding of the nature of science. The current study examines a science-related myth from an organizational perspective, seeking to investigate how an organizational story of the development and commercialization of a scientific invention was able to attain broader mythological status. Accordingly, in what follows I delve into the literature on mechanisms and uses of storytelling and myth-making in organizational settings.

Organizational stories and uses of the past

In recent years, organizational scholars have devoted increasing attention to narratives and stories, a trend that is consistent with the “turn to language” taking place across the social sciences (Brown & Thompson, 2013). Organizations have been referred to as “storytelling” systems and “discursive spaces” shaped by multiple authors (Boje, 1995;

Brown & Humphreys, 2006). An emerging stream of literature explores the “uses of the past”, the use of historical narratives as a strategic resource by managers (Foster et al, 2016). Suddaby, Foster, and Trank (2010: 157) suggest the concept of rhetorical history, “the strategic use of the past as a persuasive strategy to manage key stakeholders”, to capture the notion that history can be an effective managerial tool within organizations and a source of competitive advantage.

Managers employ strategies of rhetorical history when they invent traditions, as in the case of the invention of Cadbury’s corporate culture, analyzed by Rowlinson and Hassard (1993). Examining the company’s corporate histories, the authors showed how through various rhetorical “inventions”, such as constructing continuity between past and present labor management policies or identification of the company’s roots with the Cadbury family’s Quaker religious beliefs, the organization was able to create an official history that reflected a stable and enduring corporate culture.

Organizational management can also appropriate elements of collective memory and convert them into “social memory assets” for the organization. Foster, Suddaby, Minkus, and Wiebe (2011) argue that this process involves the deliberate use of specific and schematic narratives—the retelling of past events from the firm’s history and connecting them with broader societal meanings and significance. They show how the Canadian fast food chain Tim Horton used history as a social memory asset, appropriating themes and images from Canada’s past to create the company’s image as a uniquely Canadian company. By skillfully employing a nostalgic image of hockey, the national winter sport, in its external communications, and creating an association with the Canadian military through Remembrance Day activities, the company managed to “borrow the legitimacy” (p. 102) from these Canadian national institutions.

Rhetorical histories are also about intentional forgetting. Anteby and Molnar (2012) show the significance of repeated forgetting in the historical construction of collective memory related to an organization’s identity. Exploring ongoing rhetorical history strategies in the official history of a French aeronautics firm, meant to sustain the national element of its identity, they show how the company’s internal bulletin systematically omitted contradictory elements in the firm’s past. Two key facets of

forgetting emerge from their analysis: structural or deliberate omission, and preemptive neutralization, in which contradictory elements of the past are neutralized with national identity cues.

Organizational myths

Some of the literature on organizational stories focuses on stories of a particularly resonant nature, with distinctive characteristics that qualify them to be categorized as myths (e.g., Bathurst & Monin, 2010; Durepos et al., 2008; Malsch & Gendron, 2009; Rawlins, 2014; Sewell, 2001; Yanow, 1992). Specifically, organizational myths tend to be embedded in specific historical and cultural contexts, oriented toward the past with implications for the present and future, often with a mobilizing function. Researchers emphasize the constructed nature of these stories, whose details are often manipulated, yet which nonetheless tend to be attributed the status of historical fact. These stories are often told and retold beyond organizational boundaries, with broad and enduring social appeal.

The literature on organizational myths combines two main streams, corresponding to two different perspectives on the nature of myth. One stream of literature considers myths as classical, inspiring stories, creating meaning in a confused world, based on timeless archetypes of virtues, vices, mores and values (e.g. Kostera, 2008). In this paper, drawing on Lincoln's conceptualization of myth as "ideology in narrative form", I follow the second stream of literature, which comprises studies that look critically at the political and ideological contexts in which myths are created and mobilized (e.g. Bathurst & Monin, 2010; Brown, 1991; Rawlins, 2014).

These works emphasize the constructed nature of mythical stories, which often involve manipulation of the past, and imbue narrative elements with the status of historical facts. For example, Durepos et al. (2008: 117) rely on Barthes in their efforts to decipher the myth of "German threat" that Pan American Airways (PAA) created during the pre-World War II era. The myth, which was reproduced in numerous corporate and popular writings, casts the company as playing a vital role in national defense, as a "savior and protector of the American Way of life", and served to sustain the airline's

monopoly position in South America. The “naturalization” function of myths is further explored by Malsch and Gendron (2009), who unravel the myth of financial practitioners’ (FPs) trust in financial auditors, despite FPs’ skepticism regarding the value of audited financial statements. They demonstrate the mythical nature of representations of trustworthiness that FPs manifest towards financial auditors, and they show that these representations are designed to maintain FPs’ own professional legitimacy and reproduce the status quo within the financial system.

Yanow (1992) suggests an alternative perspective on myths. Writing about policy and organizational myths, she argues that these stories, created and communicated tacitly, mask tensions between or among competing values, creating a semblance of temporary reconciliation or resolution. Myths are created at points of tension or uneasiness and, at least temporarily, “deflect attention away from that which is publicly undiscussable” (p. 420). Thus, myths are critical in maintaining public silences concerning contradictions and incommensurable values in social life. In a similar fashion, the concept of “mediatory myths” reflects the capacity of myths to mediate contradictions within an organization’s ideology or belief system (Abravanel, 1983) and among various belief systems in the organization’s external environment (Scheid-Cook, 1988). These myths, or shared beliefs held by organizational members, enable organizations to work despite such contradictions, and thus protect the legitimacy of organizational values and activities.

To summarize, prior research has identified organizational, professional and policy myths, and explored their diverse uses and functions, which include validation, authorization, interpretation, naturalization, legitimization, deflection of attention, and masking. However, these studies mostly engage with demystification of myths—deciphering or unraveling them—and with analyzing their functions, rather than with examining the process of their creation. Few studies have addressed the process of myth-making or mythologizing: the creation of myths, their development, and their appropriation (Lawrence & Suddaby, 2006, p. 244). Studies on the development and strategic use of organizational stories, discussed in the previous section, can shed some light on this process. Yet these stories attend to the rhetorical history strategies of managers, while largely ignoring the voices and agency of other groups of actors (Smith

and Russell, 2016) and their contribution to mythologizing processes via retelling, modification and re-construction of the official narrative. This study aims to fill these gaps, and to elucidate the process through which an organizational story acquires mythological status within an organizational field.

Methods

Empirical context: Academic patenting and the commercialization of Copaxone

The licensing of intellectual property (IP) rights has become the prominent mechanism of research commercialization, referred to professionally as technology transfer (TT; the terms will be used interchangeably). Over recent decades, research commercialization has become integral to the functioning and survival of higher education institutions, and researchers have widely adopted and internalized the norms and practices associated with IP licensing. Consequently, academic scientists currently conceptualize the patenting and licensing of results of academic research as a social institution, delineated by a set of legitimate and taken-for-granted rules that afford it the status of “part of what universities do, and through which organizational, legal, and normative structures were built that allowed activity to persist without undue effort or attention” (Berman, 2008, p. 836). However, throughout much of the 20th century, most universities and academic scientists were reluctant to be involved in patenting and licensing. Although certain universities and scientists did own patents in the early 20th century, they were “anomalous” (Etzkowitz & Webster, 1994); involvement in patenting and commercial activities was not considered a legitimate academic activity at least until the 1980s (Sampat, 2002). And although patenting has since been institutionalized, misgivings about its potential adverse effects on academic culture and research persist, providing fodder for lively debate (e.g. Evans, 2010; Powers & Campbell, 2011).

Against this background of gradual institutionalization, ambiguous normative climate and uncertain reputational implications, I aim to explore the story of a successful case of IP-based TT, the commercialization of the innovative pharmaceutical drug Copaxone, developed at the Weizmann Institute of Science.

The Weizmann Institute of Science, Israel, is one of the world's leading multidisciplinary research institutions devoted to basic research and graduate study and is also a pioneer and a world leader in the field of research commercialization. The Institute was established in 1934 as the Daniel Sieff Research Institute, and was inaugurated as the Weizmann Institute of Science in 1949. In 1959 the Institute established *Yeda Research and Development*, a subsidiary company for the commercialization of research results.

Yeda has impressive success stories with commercialized patents and boasts three “blockbuster” drugs to its credit. The company has an (estimated) turnover of between 50 and 100 million dollars a year from royalties, constituting 10%-20% of its budget (Weinreb, 2013), and in 2006 was ranked first in the world in revenues from TT (Messer-Yaron, 2008, pp. 82-83). A significant part of Yeda's success is attributed to the drug Copaxone for multiple sclerosis (MS). The drug is based on the molecule Copolymer-1, an invention developed by Institute scientists Michael Sela, Ruth Arnon and Dvora Teitelbaum. In 1987, Yeda signed a licensing agreement for Copolymer-1 with the Israeli company Teva Pharmaceuticals Ltd. Ten years later, in 1997, Teva began to market the drug worldwide. The drug's commercial success was impressive, and it is considered to be the market-leading therapy for relapsing-remitting forms of MS (Comer & Looney, 2014).

Data

In analyzing the mythologization of the story of Copaxone, I rely on three types of sources, combining corporate communications, newspaper articles, and semi-structured interviews. Most of the data were collected from the Weizmann Institute's public relations archive. The archive is located at the Institute's Department of Media Relations and contains a historical collection of press releases and other publicity publications, as well as news items published about the Institute, in local and international press.

The first set of data includes Copaxone-related organizational communications released by the Weizmann Institute between the years 1987 (when the invention was licensed to Teva) and 2015. These publications include press releases and news items in the Institute's magazines and brochures. I retrieved most of these materials from the

Institute's public relations archive, and collected others from the web. The second set of data includes Israeli media coverage of Copaxone, over the same period. This data set was collected from the Weizmann Institute's public relations archive and from online media archives. In the period under study, hundreds of news items were published about the sales of the drug, the commercial success of Teva Pharmaceuticals, and fluctuations in Teva's share prices in response to Copaxone's sales and changes in the status of its patents in the face of generic competition. In this study, I analyze media items that focus on the Weizmann Institute's connection to the drug, while acknowledging the importance of the extensive coverage of Teva's commercial success.

The third set of data comprises 29 interviews with Israeli academic managers, scientists, and TT professionals. These interviews are part of a larger sample of 68 interviews that were conducted between the years 2009 and 2011 for a study about the institutionalization of research commercialization in Israel. The interviews were semi-structured, and interviewees were asked to talk about their experiences and insights regarding TT. Out of 68 interviewees, 29 referred to Copaxone, although they were not explicitly asked about the drug. These interviewees included scientists ($n = 15$); TT professionals ($n = 9$); and academic managers (university presidents and VPs; $n = 5$). Although this data set does not necessarily provide a comprehensive representation of the views of actors in the field—given the small number of interviews, coupled with the fact that Copaxone was not their focus—the fact that the interviewees brought up Copaxone of their own initiative, and in relation to different issues discussed in the interview, is a testament to the status of the story in the field: its publicity, reputation, and indeed myth-like status.

Data analysis

My approach to analyzing the data combined historical methodology and narrative analysis. The first phase of the analysis consisted of the methodological principles suggested by Kipping, Wadhvani, and Bucheli (2014), which draw on historiographical tradition coupled with qualitative methods. This method combines source criticism, triangulation, and hermeneutic interpretation, and it is well suited for the incomplete and fragmented nature of historical sources, and the necessity of

acknowledging the contextualization of each source in time and place. I read each of the corporate communications and media texts to establish its validity as a source. Van Riel and Fombrun (2007) summarized the characteristics and aims of corporate communications, defining such communications as “the set of activities involved in managing and orchestrating all internal and external communication aimed at creating favorable starting points with stakeholders on which the company depends” (p. 25). I kept these characteristics and aims in mind when analyzing the contents of the Institute’s corporate communications, seeking to observe the rhetorical strategies that Weizmann’s management employed from the 1970s until the 2010s, under changing social and political conditions.

The popular press reflects the prevailing values in the social settings in which it is embedded, and as such it is considered as important “legitimizing arena” for organizations (Vaara, Tienari & Laurila, 2006: 789). Most of the popular media texts I analyzed for this paper were published as business journalism—a domain in which neoliberal discourse is dominant, and the perspectives represented by management are often accepted uncritically (Hellgren et al. 2002). On the other hand, journalists, including business journalists, can also play a critical role in shaping the public perspective, problematizing certain issues, and framing business issues as political issues (Kjær and Lange, 2005). When reading the news items against the organizational communications, I looked for reproductions, translations and contradictions of issues and messages. Reading these texts in comparison with one another and in relationship to their contexts, I also looked for distinct uses of recurrent words and phrases, and for similarities and differences across the different versions of the story. This method of work enabled me to discern recurrent themes and identify illustrative quotes. As elaborated in what follows, through this process, I identified three key themes in the corporate communications that also appeared in the news items: “basic science”, “national ethos” and “tradition”. I identified two additional themes in the news items, which were not discussed in the corporate communications: “economic success” and “income and royalties”.

The second stage of analysis concerned extracts taken from the semi-structured interviews. Since the case of Copaxone was not the specific focus of these interviews, I analyzed only the parts of the interviews in which the interviewees discussed the case. I consider these unsolicited short discussions as counter-narratives, “the stories which people tell and live which offer resistance, either implicitly or explicitly, to dominant cultural narratives.” (Andrews, 2002: 1). In this context, I consider the story of Copaxone, told by the Weizmann Institute and reproduced and reconstructed in the media, as a dominant or “master narrative” of what constitutes a TT success story. I used narrative analysis to examine how these counter-narratives emerge in the context of the interview, as talk-in-interaction, and “what it is that is actually ‘countered’” (Bamberg, 2004: 359), which parts of the dominant or master narrative are disputed and which parts are left intact. As Bamberg notes, “speakers never totally step outside the dominating framework of the master narrative (...) counter-narratives always operate on the edge of disputability and require a good amount of interactional subtlety and rhetorical finessing on the part of the speaker” (p. 363). Thus, the key themes that emerged from the analysis of the corporate communication and news items were also apparent in the counter-narratives. Yet, new themes emerged from the interviews: “uncertainty and luck” and “moral concerns”.

Finally, I conducted a final round of triangulation of the three sets of sources, tracking the different versions of the story, the recurrent themes, the transformations and contradictions. Throughout the analysis process, I went back and forth between the data, relevant literature and the emerging categories and themes, and made several refinements along the way.

Findings

In presenting the findings, I start with a prevailing version of the myth of Copaxone, currently told in the Israeli field of higher education, and then discuss the three concurrent processes of mythologizing that created it. This version of the mythical story is a synthesis of the stories that appear in the press, based on the Institute’s corporate communications, and recurring themes in the stories told by interviewees. In

other words, it is a brief summary of the master narrative coupled with its more dominant counter-narratives.

The myth of Copaxone

The myth of Copaxone tells the story of an innovative drug, which is the result of a project of basic research that began in the 1970s at the Weizmann Institute of Science. The scientists did not aim to develop treatment for MS. They were interested in understanding how the immune system works, and arrived at the findings unexpectedly, as often happens in basic research. Luckily, the Institute patented the invention; otherwise, no company would have been prepared to develop the drug. The drug was developed by Teva Pharmaceuticals, which was then a medium-sized generic drug company, and was approved by the FDA almost 30 years after the initial research. Copaxone became the leading MS therapy in the US and globally, and its sales are highest among all drugs produced by Israeli pharmaceutical companies. Teva pays the Weizmann Institute exceptionally high royalties on sales of the drug, and the Institute is the leading higher education institution with regard to TT in Israel, and one of the most successful worldwide. However, the Institute's impressive success is driven by a small number of patents, owes a great deal to luck, and it is not certain that it will be able to recapture such success. The scientists themselves have become billionaires, which serves as a strong motivating factor for other academic scientists, though it might also raise moral questions concerning the distribution of royalties from publicly funded research. Overall, the story of Copaxone is an inspiring story of academic research commercialization, but it is atypical: many TT projects fail, income from royalties is relatively modest, and the industry is risk-averse when it comes to developing drugs from early-stage university-based inventions.

I identified three concurrent processes of mythologizing work with regard to the story of Copaxone, summarized in Table 1. Each process takes place in a different social arena: the organization (the Weizmann Institute of Science), society at large (Israeli popular media), and the organizational field (higher education in Israel). For each

process, I analyzed the themes and the rhetorical strategies of storytelling and the emerging story that was constructed.

--Insert table 1 here--

1. Mythologizing through organizational storytelling: "A product of a program of basic research"

As noted above, corporate communications are a key mechanism in organizations' efforts to inform groups inside and outside them about organizational activities, events and crises, and to influence their own reputations and legitimacy (Vaara & Tienari, 2002; Van Riel & Fombrun, 2007). The Weizmann Institute's public relations department produced various press releases, newsletters and other publications addressing developments related to Copaxone. The press releases were focused on key events, such as the success of the clinical trials, Teva's decision to file for FDA approval, and the reception of that approval. The other publications consisted of newsletters and brochures, such as *Enigma – A Journal of Science and Discovery*, published by the Weizmann Institute Foundation UK, and magazine-like articles, such as those published in *Interface*, the Institute's science magazine geared toward the public.

The most prominent theme running through all these communications is that of the benefits of basic research that can lead to applied research and innovative products. Drawing on the ideology, or institutional logic, of science, of what constitutes "good science" (Calvert, 2006), the publications stress the ideal of "pure" scientific enquiry, guided purely by the curiosity of the researcher; such research is of a long-term nature, and is initially unconcerned with practical applications. Accordingly, the drug is presented as a "product of a program of basic research at the Weizmann Institute" (Weizmann Institute of Science, 1994b), and the publications emphasize the scientists' original "pure" scientific intentions, and the surprising, unpredictable nature of basic research:

"Paradoxically, the long journey of scientific exploration that resulted in the development of copolymer-1 began with a major disappointment. In trying to produce an MS-like disease in laboratory animals, the scientists synthesized several protein-

like molecules called copolymers that mimicked a natural substance believed to trigger MS. But despite repeated efforts, the new molecules failed to produce the disease. The scientists persisted, and in studying the properties of their copolymers stumbled upon an amazing discovery. Rather than triggering MS-like symptoms, the molecules actually blocked them. (Weizmann Institute of Science, 1996).

The publications consistently celebrate the scientists' original failed hypothesis and scientific experiments, the unpredictable results, and the researchers' persistence and determination:

“Despite the initial failure, the scientists persist in their study of the molecules’ properties and stumble on a surprising finding: rather than causing MS symptoms, the copolymers actually block an MS-like disease.” (“COP 1”, 1997, p. 16).

An additional issue that the communications repeatedly emphasize is the long period of time required to make the journey from initial curiosity-driven research in the laboratory to the production lines:

“Copolymer-1, a synthetic protein, is the result of 25 years of research by Professors Michael Sela and Ruth Arnon, with Dr. Dvora Teitelbaum.” (“Weizmann drug”, 1995).

The press release that announced Teva’s decision to submit the drug for FDA evaluation was subtitled “Cop-1 in development for 25 years”, and announced that “this later report by Teva summarizes a quarter of a century of research at the Institute into Copaxone (copolymer 1)” (Weizmann Institute of Science, 1994a).

The story that the Institute tells, of Copaxone as a product of basic research, in an Institute of basic research, is encapsulated in the following lines:

“The goal of the Institute, as clearly evidenced from the above, is twofold: to strongly support basic research in the exciting field of immunology, and, employing the tools that such basic research provides, to improve the health of mankind” (*Immunological research*, 1990).

As an institute of basic research, the Weizmann Institute has been under political pressure since its early days to demonstrate its contribution to national economy. The institute has to balance between its scientific reputation, based on excellence in basic scientific research, and its legitimacy in the national arena, based on the state's expectations for contribution to the local industry and to economic development (Sapir, 2017). This tension is clearly manifested in the Institute's communications about the commercialization of Copaxone; these communications try to convey the significance of basic research per se, and, simultaneously, the contribution of academic research—and especially basic research—to the national economy.

Alongside the story of Copaxone as a product of basic research, the Institute's publications took care to emphasize the drug's status as a source of national pride: Originating in an Israeli research institute and developed by an Israeli pharmaceutical company, it was “the first original Israeli drug to be approved by the U.S. FDA” (Weizmann Institute of Science, 2007). In a press release describing Prof. Arnon and Dr. Teitelbaum's reception of Women of Distinction awards from Hadassah, the Women's Zionist Organization of America, Arnon is quoted as saying: “as an Israeli, I am really proud that Copaxone, which will bring relief to MS sufferers all over the world, is a true 'Sabra'¹, a born-in-Israel product” (Weizmann Institute of Science, 1996). Likewise, the drug was a source of tangible national benefit, making a “...significant contribution to the Israeli economy” (Weizmann Institute of Science, 2007).

Thus, the communications tell the story of Copaxone with two dominant themes: basic research and national ethos. Basic research is presented as long-term, curiosity-driven research, albeit leading to applicable results. The national ethos is the combination of contribution to national pride and to the local economy. The two themes are interwoven throughout the various communications: “The drug was one of the most important discoveries to have emerged from basic scientific research because it translated into one of the biggest pharmaceutical success stories in Israeli history” (“Ruth and Uriel

¹ Sabra is an informal term that refers to Israeli-born Jews.

Arnon”, 2015: 18-19). When addressing each theme, the communications draw on existing meta-ideologies, or cultural assumptions, of science and the state, to support and legitimize the Institute’s commercialization activities, and also to shape its identity and public image.

This rhetorical strategy of creating resonance with wider belief systems is accompanied by other discursive practices designed to confer legitimacy, reduce complexities and suppress potential conflicts. For example, the communications consistently work to neutralize the potential connotations of IP-based commercialization, referring to activities that are value-laden as if they were value-free (Deetz, 1992). The patenting of research results and the commercialization process are presented succinctly, as matter-of-fact. The initial initiative of patenting the molecule in the early 1970s, uncommon among scientists at the time, is hardly ever discussed. While in interviews to the press, the scientists sometimes discussed the decision to seek out a patent, offering justifications for their actions ("without the patent we would never have found a company to produce and market it"; BIOTECH International, 2000), in the Institute’s publications, the matter is mentioned briefly, in passing. For example, a story about Arnon in the Institute’s magazine *Interface* states the following:

“They discovered that one polymer could prevent the symptoms of an experimental disease, the animal model for multiple sclerosis, and went on to patent it” (“Drug pioneers”, 2009, p. 38).

Press releases systematically refer to the licensing agreement with Teva in a similarly perfunctory manner:

“Copolymer-1 is licensed to Teva for the treatment of MS through the Yeda Research and Development Company, which handles the commercial development of inventions from the Weizmann Institute” (Weizmann Institute of Science, 1994b).

This strategy of deploying “statement of fact” without explanation (Barthes, 1982) simplifies the process of research commercialization, naturalizes the concept of patenting and exclusively licensing research results, and performs what Deetz (1992) has called “discursive closure”, eliminating alternative interpretations or hints of other routes of action, thus creating the appearance of only one possible path of TT.

Another rhetorical strategy is structural omission (Anteby and Molnar, 2012), or topical avoidance (Deetz, 1992), that is, avoiding certain issues that may create conflict. It is perhaps not surprising that the Institute’s official public relations communications do not elaborate on the various difficulties and conflicts that were part of the process of the commercialization of Copaxone. Yet, a second topic is notable in its complete absence from the Institute’s publications—information about the vast royalty stream that resulted from the sales of Copaxone. The communications repeatedly mention “active sales in the U.S. and 40 countries around the world” but do not mention the royalties that result from these sales. The avoidance of the issue of royalties is in line with the general policy of universities—in Israel and elsewhere—to withhold information about their revenues from research commercialization, as such information may conflict with the narratives of science for its own sake and the role of basic research institutions in contributing to the public good (Mirowski, 2008).

Finally, the communications engage in strategies of rhetorical history (Suddaby et al. 2010) as a means of legitimating commercialization activities. Invoking the long-term nature of basic research, and the Institute’s primacy in establishing its own TT Company in the 1950s, the communications depict a story of a long-standing organizational tradition in which basic research and commercialization activities are intertwined. The rhetorical history strategy operates at two levels. First, it anchors the invention of Copaxone in the work of Ephraim Katzir, a scientist at the Institute and the fourth president of the state of Israel, in the 1950s.

“Copaxone - interface between past and present. In the 1950s, Ephraim Katzir of the Weizmann Institute of Science, later fourth president of the State of Israel, commenced research on the properties of proteins—the building blocks of all

biological systems. This research led to the design of simple synthetic models of proteins, called ‘polyamino acids’. His research student at the time, Prof. Michael Sela.... decided to test the influence of these synthetic molecules on the immune system. (...). These experiments eventually led to the development of Copaxone.” (Weizmann Institute of Science, 2007)

Second, the communications “invent a tradition” (Hobsbawm & Ranger, 1983) of TT at the Weizmann Institute, dating back to the Institute’s founder and Israel’s first president, Dr. Chaim Weizmann. Copaxone is presented as part of the “Weizmann Institute tradition” of TT, a continuum of commercial and industrial initiatives that began with Chaim Weizmann, and reached its peak with Copaxone:

“Although the focus of the Weizmann Institute is on basic research, it is no mistake that the first technology transfer company in the country was founded at the Weizmann Institute, nor that one of the first industrial science parks in the country was established on its borders. (...)

[Excerpt from a timeline of events]

1941 First pharmaceutical company in Israel: Palestine Pharmaceutical Products, Ltd. was founded by Dr. Chaim Weizmann;

1954 First computer in Israel (WEIZAC), would provide the basis for Israel’s high-tech industry;

1997 Israel’s first ethical drug, Copaxone, received FDA approval.” (*About the Weizmann Institute of Science*, n.d.)

However, while organizational mechanisms for TT, such as the Yeda Research and Development Company, were indeed created at an early stage, the publications gloss over the fact that for many years—at least until the 1990s—Institute scientists were reluctant to collaborate with Yeda, register patents for their inventions or engage in applied research projects. Scientists also refrained from providing consulting work to companies in the nearby science park (Sapir, 2017). The communications connect the past to the

present, presenting TT as a long-standing historical “fact”, thus conferring legitimacy to practices that were not necessarily “common”, acceptable or consensual.

In sum, the story of Copaxone that emerges from the Weizmann Institute’s organizational storytelling is a story about the significance of basic research, and about the contribution of TT to the public good, national economy and national pride; it is a story that presents TT between academia and industry as a harmonious and linear process, and the IP channel as an inevitable, taken-for-granted procedure.

2. Mythologizing through diffusion and reconstruction: “The people’s share”

The popularization of an organizational story is a necessary step for the story to become a myth in the organizational field. The media provide an important mechanism for receiving significant public attention.

Similarly to the story of Pan American Airways (Durepos et al., 2008), elaborated above, the story of Copaxone was widely disseminated and popularized through the popular press. However, in the case of Copaxone, the media did not simply reproduce the story constructed by the Weizmann Institute. Rather, relying not only on the Institute’s communications but also on other sources of information, such as corporate communications of Teva Pharmaceuticals, the media narrated and recounted a different story. Although this story reinforced the dominant themes emphasized by the Institute’s communications, these themes were overshadowed by a focus on the drug’s commercial success, which involved an emphasis on issues that the Institute had deliberately avoided: the financial success of the drug and the large stream of royalties that the Institute received from Copaxone sales.

Some of the Institute’s press releases, especially those celebrating important milestones such as the success of clinical trials, or FDA approval, were published almost word-for-word as short news items. In other cases, the scientists were interviewed and generally repeated the same messages presented in the Institute’s communications. For example, in an interview, Prof Arnon reiterated the Institute’s focus on the fact that the invention had originated from “pure” research:

“We did not intend to develop a medication, but rather to try and understand how a simple protein can stimulate the body to attack itself. We thought that it must stem from its characteristics so we tried to create a synthetic molecule that will resemble it so we can study its mechanisms” (Ron, 2008).

The media thus reproduced and disseminated the organizational story of long-term, curiosity-driven basic research leading to applicable results. Similarly, in accordance with the Institute’s publications, and with broader value-systems prevalent in Israeli society, the patenting of research results was portrayed in the press as self-evident and inevitable, a commercialization strategy that merits no discussion beyond the statement of facts.

However, the popular media’s coverage of Copaxone unequivocally focused on Teva Pharmaceuticals, “the biggest and most successful company to have come out of Israel,” (Habib-Valdhorn, 2013), and the drug’s substantial sales and profits—and this aspect of the narrative was effectively framed as the story of “the people's share” (as large numbers of Israelis are invested in Teva). In the stories about the drug’s commercial success, the recurring topics were sales, commercial competition, market leadership, innovation, entrepreneurship, revenues, and also financial reports, share value and patent litigation. News items discussing these aspects usually briefly mentioned that the drug was “developed on the basis of a discovery at the Weizmann Institute”, but the focus was on the “Israeli pharmaceutical giant”, Teva Pharmaceuticals, its revenues and share price.

A derivative, secondary aspect of this story concerned the Institute’s royalties, and the inventors’ share in the profits, shining a spotlight on what the Institute was trying to conceal. Some media reports pointed out the relatively high percentage of royalties that Teva had agreed to pay the Institute because it had purchased the license after the successful completion of phase II trials (e.g. Levy, 2006; Weinreb, 2013b). Other reports were blunter. In 2004 a headline in the newspaper *Haaretz* talked about “The billionaire professors of the Weizmann Institute”:

“The Weizmann Institute is today the most prominent academic institution in Israel, which successfully combines scientific research and commercialization. The Institute's income from royalties is based on six products developed by the

Institute's researchers. In 2003, revenues amounted to \$93 million, and in the last three years amounted to about NIS 1 billion. The Weizmann Institute of Science does not specify the distribution of revenue from patents and refuses to give details about the income of the institute's researchers from the royalties, on the grounds of privacy. Scientists are also not interested in revealing the numbers. However, Yeda's reports and revenue figures show that a significant portion of the Weizmann Institute's revenues from royalties came from three patents developed by the institute's researchers: Rebif, Copaxone and the NDS encryption system. About 40 percent of these royalties, about NIS 400 million, came to the hands of about 10 researchers at the institute. In recent years, these researchers have become millionaires and their average income from commercializing their patents ranges from \$5 million to \$7 million per researcher.” (Hermoni, 2004)

In a 2013 interview, Sela and Arnon were confronted with the claim that “Teva pays the Weizmann Institute exorbitant royalties”, to which Arnon replied, "Teva got an advanced product. They've profited handsomely from it.” The reporter added that on the basis of these royalties, Sela and Arnon “have presumably earned tens of millions of dollars, possibly even hundreds of millions” (Weinreb, 2013a).

The divergence between the Institute’s story and the story told in the popular press is evidence of how the media work to “(re)construct meanings” (Hellgren et al., 2002), promoting specific stories and marginalizing others. The story of Copaxone is reproduced in the media as a story of economic and financial success, with a strong nationalistic aroma. Previous research has shown how the popular media serve as an arena for the production of legitimacy, for management theories and ideas (Mazza & Alvarez, 2000), and for mergers and acquisitions (Vaara & Tienari, 2002; Vaara et al., 2006). Indeed, in the current study, the media, and especially the business press, reinforced the organizational story rather than challenging it, and in doing so added another source of legitimation to academic research commercialization. The role of the media in the current context resonates with the findings of earlier literature on the dominance of economic and financial rationality discourse alongside nationalistic

discourse in media texts on business issues (Hellgren et al, 2002; Vaara and Tienari, 2002). While the Institute's communications referred to the ideology of science and national ethos, the press framed the story of Copaxone as a story of innovation and commercial success. Invoking the broad meaning systems prevalent in Israeli society in the 1990s and onward—neo-liberal discourse and a nationalistic ethos—the press primarily told the story of the success of the “flagship of Israel's advanced industry”.

Though the story told in the media coverage was sympathetic to the Institute, and generally resonated with its main messages, a few news reports did diverge from the Institute's “talking points”—specifically, they discussed the royalties obtained from the sales of the drug, a topic the Institute insistently avoided. These reports were relatively low-key in the general public arena, and did not draw public attention or incite public debate. In the field of higher education, however, as described in the next section, these reports had a very different impact.

3. Mythologizing through retelling and countering: “Most cases of technology transfer are nothing like Copaxone”

Interviews conducted with academic scientists, managers, and TT professionals clearly illustrate that the myth of Copaxone is more than the outcome of strategic storytelling and its uptake by the media. The third process of mythologizing takes place in the Israeli field of higher education, where the story of Copaxone is told and retold, and various counter-narratives (Bamberg, 2004) are constructed in response to the stories told by the Institute and the media. Because Copaxone is the most successful scientific invention to have been commercialized in Israel, the story has drawn much attention in the field of higher education, and has become a “master narrative” of commercialization success. Thus, academic scientists, managers, and TT professionals who were interviewed as part of a larger study on TT in Israel—despite not being asked specific questions about Copaxone—referred to the story when discussing various aspects of TT. It was clear that their knowledge of the story was based on media accounts as well as on other sources of information, mainly stories and conversations with other actors in the field. In addition, interviewees referred to their own experience and expertise in research commercialization.

Like the popular press, the interviewed individuals repeated and reinforced some of the elements of the story constructed by the Weizmann Institute's communications: the significance of curiosity-driven research, the benefits of TT, and the necessity of the patenting mechanism. Yet they openly contested other elements. In particular, whereas the Institute sought to portray the process of TT and the relations between academy and industry as being smooth and harmonious, actors in the field of higher education stressed the difficulties and uncertainties involved:

“Drug development is a very complicated process. For example, the FDA approval for Copaxone was a borderline case. They were successful then, but I'm not sure they would have been able to do it today. It is not easy.” (Scientist).

“Teva buys percentages in many biotech firms in Israel, and has a de-facto monopoly on biotech and pharma industries in Israel. This is a very powerful company, and it has a lot of power over the Weizmann Institute, because the Institute receives the Copaxone royalties from Teva, so it will not stand up to them.” (Scientist)

“There are four or five big success stories in Israel and everyone keep talking about them. But most cases are not like that. The typical success story is approximately \$100,000. Most patents are like that. Blockbusters are like a Nobel prize. Most cases of technology transfer are nothing like Copaxone.” (TT professional)

Whereas Weizmann's communications praised the Institute's long-standing tradition of TT, and the professionalism of the Institute's TT arm, the interviewees repeatedly raised the claim that the drug was a one-time success story driven by a large element of luck, and pointed to the relatively small number of commercial success stories or royalty-bearing licenses originating from the Institute.

“You also need luck: Copaxone, or NDS, or the cherry tomatoes. You have to be in the right place at the right time and do the right thing.” (Academic manager)

“The success of one hundred million dollars is a huge spotlight that illuminates the entire world, but perhaps there are a lot of hidden diamonds there that they do not know how to handle.” (TT professional)

“At the Weizmann Institute they claim that they are the best in the world in technology transfer. That is an outright lie. They make a lot of money from Copaxone to be sure, but normalize the number of scientists they have per number of successful entrepreneurs – nothing to write home about.” (TT professional)

And while the Institute’s publications omit data about its own revenues, and the press has mainly written about Teva’s profits, actors in the field of higher education raise moral concerns about the distribution of royalties inside the Institute, and point to a potential threat of government regulation concerned with the inventor’s share of royalties.

“These three scientists are getting \$20 million each year. Of course they are paying income tax and that’s fine, but I think there is something wrong here. Three people inside an institute with hundreds of researchers. And they are employees, not entrepreneurs, not owners. They are employees. Something is not right here (...) They did not take any risk. They did what they were hired to do. Which is research.” (Scientist)

“The calls for regulation or for an ‘Israeli Bayh-Dole’ (...) I think that certain people were frustrated with the enormous, unprecedented flows of money, like in the case of Teva and Copaxone, to academic institutions and to the private pockets of researchers. We are all public institutions. For example, there was a suggestion to restrict the scientists’ share to 20%, and give the rest to the Institute, easing the burden on the taxpayer. I don’t agree with these calls.” (Academic manager)

The fame and reputation of the story of Copaxone make it a mythological story of TT, and provide an outlet for discussing personal experiences and general reflections

towards patenting and commercialization. When the actors interviewed herein discussed controversial issues—for example, when they referred to criticism regarding the business performance of TT companies or scientists’ personal gains from publicly-funded research—the name of Copaxone came up. In particular, these actors in the field told “counter-narratives” about Copaxone; that is, they questioned aspects that were at the core of the Weizmann Institute’s official story, such as its claims for expertise and an organizational tradition of research commercialization.

By telling these counter-narratives, scientists, academic managers and TT professionals effectively sought to confront the reality of the small number of huge commercial successes (“luck”) and to address some of the ambiguities raised by the conflicting values of science and the market (referring to royalties, or to relations with industry). They expressed doubts, frustrations and reservations. At the same time, they left other issues—the necessity of patenting, basic research as a source of innovation—unquestioned. As Bamberg (2004: 363) notes, when telling counter-narratives, “speakers never totally step outside the dominating narrative, but always remain somewhat complicit and work with components and parts of the existent frame ‘from within’”.

Thus, the mythological story of Copaxone that is told by actors in the field is based on the story that the Weizmann Institute created: The merits of TT; the applicable potential of basic research; the inevitability of the patenting mechanism. Yet this story eliminates certain aspects of the Institute’s official narrative—the storyline of the Institute’s tradition of TT or the harmonious portrayal of university-industry relations—and incorporates new elements. In particular, the story that circulates in the field refers to issues reported by the press, mainly the commercial success and the high stream of royalties. Moreover, many of the various counter-narratives—of luck, of ethical concerns, of the complexity and uncertainty of the TT process—have become part of the myth itself, such that the story of Copaxone is also a story of the difficulties and moral ambiguities in the process of TT. It should be noted that there are other, marginal, counter-narratives that are not included in the mythical story that is told by scientists, academic managers and TT professionals. One such counter-narrative is that of open science, once the dominant narrative in the scientific field, which necessitated the

legitimation rhetoric in the Institute's communications in the early years. Today, this counter-narrative exists at the margins of the current higher education field and is widely dismissed as being naïve, outdated and irrelevant.

Discussion

Mythical stories are prevalent in modern society, conveying meanings, beliefs and assumptions that are embedded in broader ideologies and yet assume the appearance of naturalness (Barthes, 1972; Yanow, 1992). Myths are essential for socially accepted understandings of what seems “natural” and “taken for granted”, and thus “it is important to understand how they form, where we find them, how we interpret them, and how they might influence our values and behaviors” (Bathurst & Monin, 2010, p. 271).

Accordingly, researchers have uncovered the different functions of myths in contemporary organizational life in creating shared meanings, reinforcing ideals and legitimating actions. One issue that has received little attention in literature is the gradual process of myth-making: the “nuts and bolts” of the formulation and diffusion of organizational-level and field-level myths.

In this paper, I explored the creation of the myth of Copaxone, the process in which an organizational story of the successful commercialization of a scientific innovation became a field-level myth of TT and academic entrepreneurship. My analysis portrays myth-making as an ongoing, recursive process that combines three concurrent sub-processes. In the first process, an organizational story is created, through official mechanisms of organizational communication. The Weizmann Institute's official story of Copaxone depicts a linear model of TT that led from curiosity-based research in academic laboratories to technological innovation in industry. In this story, the boundaries between academia and industry are clearly marked, and the Institute has a clear contribution to the local economy and the public good. The mechanism of patenting the results of academic research is succinctly mentioned, and there is no reference to the ensuing royalties.

In the second process of myth-making, the story is disseminated—and reconstructed—by local media. Some of the storylines of the original story remain, others disappear, and new issues emerge. In light of the impressive commercial success of Copaxone, the Israeli press focuses on the sales of the drug, its commercial success and the status of the shares of the industry partner (Teva). As a result, the subject of royalties received by the Institute and by the scientists draws some attention. In parallel, other news stories reproduce the story told by the Institute, highlighting the applicable potential of basic research and the contribution of academic research to the national economy. The mechanism of patenting and licensing the results of publicly-funded research remain a non-issue.

In the third process, actors in the field discuss and reflect on the story. In the interviews I conducted, actors in the Israeli field of higher education—scientists, academic managers and TT professionals—brought up the story of Copaxone as an example of and a reference point for the benefits and pitfalls of TT. Their versions of the events relied on media coverage as well as on local knowledge and personal experience. Through their counter-narratives they discussed the complexities of commercialization, the difficulties and uncertainties entangled in the process, and the moral ambiguities that arise from academia-industry relations. These actors challenged some of the elements of the organizational story, such as the harmonious depiction of research commercialization, and affirmed others, such as the contribution of basic research to technological innovation and the public good. Nevertheless, through collective storytelling and retelling, they continue to reinforce the myth.

Scholars have pointed to the importance of re-contextualizing myths, exposing the historical conditions that are “neutralized” by myths and unveiling the ideological messages embedded in these stories (Barthes, 1972; Lincoln, 1999). As discussed above, the myth of Copaxone was created in the context of profound transformations of the academic landscape, an ongoing shift that has entailed increasing engagement in IP-based commercialization, amid broader trends of commodification and assessment of academic activities on the basis of economic criteria. These changes have been accompanied by tensions and contradictions, risks and uncertainties. The unresolved tension between

traditional academic norms and market rationality is the context for the rise of the myth of Copaxone. The myth addresses the ambivalence and discomfort created in the presence of incommensurable values (Yanow, 1992) or conflicting institutional logics (Vallas & Kleinmann, 2008). This complexity is skillfully concealed in the story told by the Institute, but some of it is exposed in the press and, more broadly, in the field.

The myth provides an ideological story of the value of basic research and its contribution—through the mechanism of TT—to the state and to the public good. Furthermore, it addresses some of the tensions in the field, for example, explaining through a story of large-scale commercial success why there are few successes: The Institute's communications stress the long period of time and persistence required, while the counter-narratives make the myth a story of luck, of a one-in-a-million success story. Because the myth incorporates the counter-narratives, it is not a simplified narrative of successful academic entrepreneurship, but a more complex and nuanced story.

This study contributes to the literature on myth-making in several ways. The first concerns the limits and the scope of agency. Myth-making emerges as a distributed and polyphonic process rather than the heroic action of corporate managers who skillfully employ strategies of storytelling and rhetorical history to legitimate organizational practices. Actors beyond the managerial ranks, who rely on various sources of information, are involved in telling, retelling, interpreting and countering the official story. This implies that myths themselves, based on the official organizational story and on the various counter-narratives, are not simply authoritative interpretations of the past, serving the interests of those in powerful positions.

The latter assertion invites a broader look at the functions of myths. Prior research has established the legitimating and naturalization functions of myths. Indeed, the myth of Copaxone serves to enhance the reputation of the Weizmann Institute, to motivate scientists to engage in research commercialization, and to legitimize universities' growing engagement with IP-based TT. However, the work of legitimation is not complete, and the tensions between scientific and neo-liberal values are only partially masked. While the act of patenting and licensing research results is effectively naturalized as an

inevitable mechanism of TT, other aspects and implications of academic research commercialization, remain open to debate.

In this sense, the myth, as a common story told and retold in an organizational field, also functions as a discursive space (Fletcher, Bailyn, & Blake-Beard, 2009), a channel for sense making, interpretations and deliberations of alternatives and different possibilities. Scientists, academic managers and TT professionals tell different versions of the story of Copaxone, confronting the selective and seamless story of the Weizmann Institute. In the context of the normative ambiguity of TT and the uncertainties of commercializing scientific innovations, myth-making is an ongoing process of telling and retelling. The assemblage of different stories, of a master narrative and various counter-narratives, is a space of negotiations. Each counter-narrative defies the Institute's narrative and reveals an alternative route of action or an alternative perspective on academic involvement in the market. Through their discussion of the myth of an exceptional success story, actors in the field articulate different visions of what TT is, and indeed, different visions of the role of the research university, and what it should be, in times of profound transformation.

References

- About the Weizmann Institute of Science. Impact: Industry.* (n.d.). Retrieved from <https://wis-wander.weizmann.ac.il/about/facts-figures?page=10>
- Abravanel, H. (1983). Mediatory myths in the service of organizational ideology. In L. Pondy, P. J. Frost, G. Morgan, & T. Dandridge (Eds.), *Organizational symbolism*
- Allchin, D. (2003). Scientific myth-conceptions. *Science education*, 87(3), 329-351.
- Andrews, M. (2002). Introduction: Counter-narratives and the power to oppose. *Narrative Inquiry*, 12, 1-6.
- Anteby, M., & Molnar, V. (2012). Collective memory meets organizational identity: Remembering to forget in a firm's rhetorical history. *Academy of Management Journal*, 55(3), 515-540.
- Bamberg, M. G. W. (2004). Considering counter narratives. In M. G. W. Bamberg, & M. Andrews (Eds.), *Considering counter narratives : narrating, resisting, making sense*: 351-371. Amsterdam: J. Benjamins.
- Barthes, R. (1972). *Mythologies*. London: Jonathan Cape.
- Barthes, R. (1982) Myth Today. In S. Sontag (Ed.), *A Barthes reader* (pp. 93-149). New York: Hill and Wang.

- Bathurst, R. J., & Monin, N. (2010). Finding myth and motive in language: A narrative of organizational change. *Journal of Management Inquiry*, 19(3), 262.
- Berman, E. P. (2008). Why did universities start patenting? Institution-building and the road to the Bayh-Dole Act. *Social Studies of Science*, 38(6), 835–871.
- BIOTECH International (2000) Commercial potential and the Weizmann Institute of Science. *BIOTECH International: The European Magazine for the Life Sciences Industry*, 12(6), 14–15.
- Boje, D. M. (1995). Stories of the storytelling organization: A postmodern analysis of Disney as “Tamara-Land”. *Academy of Management Journal*, 38(4), 997-1035.
- Brown, A. D., & Humphreys, M. (2006). Organizational identity and place: a discursive exploration of hegemony and resistance. *Journal of Management Studies*, 43(2), 231-257.
- Brown, A. D., & Thompson, E. R. (2013). A narrative approach to strategy-as-practice. *Business History*, 55(7), 1143-1167.
- Calvert, J. (2006). What’s special about basic research?. *Science, Technology, & Human Values*, 31(2), 199-220.
- Comer, B., & Looney, W. (2014). Brand of the Year, PharmaExec.com. Available at: <http://www.pharmexec.com/node/247060?rel=canonical> (accessed 20 July 2015).
- COP 1 (Copaxone): The story of a drug. (1997). *Interface (Weizmann Institute Magazine)*, (Spring-Summer), 16–17.
- Csapo, E. (2005). *Theories of mythology*. Hoboken: Wiley-Blackwell.
- Deetz, S. (1992). *Democracy in an age of corporate colonization: Developments in communication and the politics of everyday life*. Albany: SUNY Press.
- Doty, W. G. (2000). *Mythography: The study of myths and rituals*. Tuscaloosa: University of Alabama Press.
- Drug pioneers. (2009). *Interface*, Spring-Summer: 38.
- Durepos, G., Helms Mills, J., & Mills, A. J. (2008). Flights of fancy: Myth, monopoly and the making of Pan American Airways. *Journal of Management History*, 14(2), 116-127.
- Etzkowitz, H., & Webster, A. (1994). Science as intellectual property. In S. Jasanoff, G. E. Markle, J. C. Petersen, & T. Pinch (Eds.), *Science and technology studies handbook* (pp. 480-505). London: Sage Publications.
- Evans, J. (2010). Industry collaboration, scientific sharing, and the dissemination of knowledge. *Social Studies of Science*, 40, 757.
- Fletcher, J. K., Bailyn, L., & Blake-Beard, S. (2009). Practical pushing: Creating discursive space in organizational narratives. In J. W. Cox, T. G. LeTrent-Jones, M. Voronov, & D. Weir (Eds.), *Critical management studies at work: Multidisciplinary approaches to negotiating tensions between theory and practice* (pp. 82–93). Cheltenham, UK: Edward Elgar.
- Foster, W. M., Coraiola, D. M., Suddaby, R., Kroezen, J., & Chandler, D. (2017). The strategic use of historical narratives: a theoretical framework. *Business History*, 59(8), 1176-1200.
- Foster, W. M., Suddaby, R., Minkus, A., & Wiebe, E. (2011). History as social memory assets: The example of Tim Hortons. *Management & Organizational History*, 6(1), 101-120.

- Habib-Valdhorn, S. (2013). Check-up on Teva. *Globes [online]*, *Israel Business News*. April 17.
- Hegele, C., & Kieser, A. (2001). Control the construction of your legend or someone else will: An analysis of texts on Jack Welch. *Journal of Management Inquiry*, *10*(4), 298–309.
- Hellgren, B., Löwstedt, J., Puttonen, L., Tienari, J., Vaara, E., & Werr, A. (2002). How issues become (re)constructed in the media: Discursive practices in the AstraZeneca merger. *British Journal of Management*, *13*, 123–140.
- Hermoni, O. (2004). The millionaire professors of the Weizmann institute. *Haaretz*, July 4 [Hebrew].
- Hobsbawm, E., & Ranger, T. (1983). *The invention of tradition*. Cambridge, UK: Cambridge University Press.
- Humphreys, M., & Brown, A. D. (2002). Narratives of organizational identity and identification: A case study of hegemony and resistance. *Organization Studies*, *23*(3), 421-447.
- Immunological research at the Weizmann Institute spearheads the fight against disease* [Brochure]. (1990). Rehovoth: Weizmann Institute of Science.
- Kipping, M., Wadhvani, R. D., & Bucheli, M. (2014). Analyzing and interpreting historical sources: A basic methodology. In M. Bucheli & R. D. Wadhvani (Eds.), *Organizations in time: History, theory, methods* (pp. 305-329). Oxford: Oxford University Press.
- Kjaer, P., & Langer, R. (2005). Infused with news value: Management, managerial knowledge and the institutionalization of business news. *Scandinavian Journal of Management*, *21*(2), 209-233
- Kostera, M. (2008). Introduction to the trilogy: Mythologies of organizational everyday life. In *Organizational Olympians* (pp. 1-8). London: Palgrave Macmillan UK.
- Kroeze, R., & Keulen, S. (2013). Leading a multinational is history in practice: The use of invented traditions and narratives at AkzoNobel, Shell, Philips and ABN AMRO. *Business History*, *55*(8), 1265-1287.
- Lawrence, T. B., & Suddaby, R. (2006). Institutions and institutional work. In R. Clegg, C. Hardy, T. B. Lawrence, & W. R. Nord (Eds.), *Handbook of organization studies*, 2nd Edition (pp. 215-254). London: Sage.
- Lawrence, T. B., Suddaby, R., & Leca, B. (2011). Institutional work: Refocusing institutional studies of organization. *Journal of Management Inquiry*, *20*(1), 52–58.
- Levy, O. (2006) Ten years to Teva's Copaxone – sales reach 5 Billion Dollars, *Maariv*, March 8 [Hebrew].
- Lincoln, B. (1989). *Discourse and the Construction of Society: Comparative Studies of Myth, Ritual, and Classification*. New York: Oxford University Press.
- Lincoln, B. (1999). *Theorizing myth: Narrative, ideology, and scholarship*. Chicago: University of Chicago Press.
- Malsch, B., & Gendron, Y. (2009). Mythical representation of trust in auditors and the preservation of social order in the financial community. *Critical Perspectives on Accounting*, *20*, 735-750.

- Mazza, C., & Alvarez, J. L. (2000). Haute couture and prêt-à-porter: the popular press and the diffusion of management practices. *Organization Studies*, 21(3), 567-588.
- Messer-Yaron, H. (2008) *The capitalism of knowledge*. Tel Aviv: Israel Ministry of Defense Press. [Hebrew]
- Mills, A. J., Suddaby, R., Foster, W. M., & Durepos, G. (2016). Re-visiting the historic turn 10 years later: current debates in management and organizational history—an introduction. *Management & Organizational History*, 11(2), 67-76.
- Mills, A. J., Weatherbee, T. G., & Durepos, G. (2014). Reassembling Weber to reveal the-past-as-history in management and organization studies. *Organization*, 21(2), 225-243.
- Mirowski, P. (2008). Livin' with the MTA. *Minerva*, 46(3), 317-342.
- Mumby, D. K. (1987). The political function of narrative in organizations. *Communications Monographs*, 54(2), 113-127.
- Mumby, D. K. (2004). Discourse, power and ideology: Unpacking the critical approach. *The Sage Handbook of Organizational Discourse*, 2, 37-258.
- Powers, J. B., & Campbell, E. G. (2011). Technology commercialization effects on the conduct of research in higher education. *Research in Higher Education*, 52(3), 245-260.
- Rawlins, J. D. (2014). Mythologizing change: Examining rhetorical myth as a strategic change management discourse. *Business and Professional Communication Quarterly*, 77(4), 453–72.
- Rhodes, C., & Brown, A. D. (2005). Narrative, organizations and research. *International Journal of Management Reviews*, 7(3), 167–188.
- Ron, L. (2008). Ruth Arnon Portfolio. *Globes*, July 17.
- Ruth and Uriel Arnon, A legacy of scientific discovery. (2015). *The Weizmann International Magazine of Science and People*, 7, 16-19.
- Sampat, B. (2002). Private parts: patents and academic research in the twentieth century. Paper prepared for Research Symposium of the “Next Generation” of Leaders in Science and Technology Policy, AAAS and CSPO.
- Sapir, A. (2017). Protecting the purity of pure research: Organizational boundary-work at an institute of basic research. *Minerva*, 55(1), 65-91.
- Scheid-Cook, T. L. (1988). Mitigating organizational contradictions: The role of mediatory myths. *The Journal of Applied Behavioral Science*, 24(2), 161-171.
- Smith, A., & Russell, J. (2016). Toward polyphonic constitutive historicism: A new research agenda for management historians. *Management & Organizational History*, 11(2), 236-251.
- Sewell, G. (2001). What goes around, comes around: Inventing a mythology of teamwork and empowerment. *The Journal of Applied Behavioral Science*, 37(1), 70-89.
- Suddaby, R., Foster, W. M., & Trank, C. Q. (2010). Rhetorical history as a source of competitive advantage. *Strategic Management*, 27, 147-173.
- Vaara, E., & Tienari, J. (2002). Justification, legitimization and naturalization of mergers and acquisitions: A critical discourse analysis of media texts. *Organization*, 9(2), 275-304.

- Vaara, E., Tienari, J., & Laurila, J. (2006). Pulp and paper fiction: On the discursive legitimation of global industrial restructuring. *Organization Studies*, 27(6), 789-813.
- Vallas, S. P., & Kleinman, D. L. (2008). Contradiction, convergence and the knowledge economy: The confluence of academic and industrial biotechnology. *Socio-Economic Review*, 6(2), 283-311.
- Van Riel, C. B., & Fombrun, C. J. (2007). *Essentials of corporate communication: Implementing practices for effective reputation management*. London: Routledge.
- Weinreb, G. (2013a) Yeda earns \$50-100m annually. *Globes*, July 28.
- Weinreb, G. (2013b). Copaxone's inventors hope for improved treatment. *Globes*, March 28.
- Weizmann drug nears full scale use. (1995). *ENIGMA, a Journal of Science and Discovery*, 1, 3.
- Weizmann Institute of Science (1994a, July 25). *Teva to submit Weizmann Institute drug for MS to US FDA for evaluation* [Press release].
- Weizmann Institute of Science (1994b, October 28). *Weizmann Institute MS drug to be submitted for approval* [Press release].
- Weizmann Institute of Science (1996, January 28). 'Women of Distinction' award to two Weizmann Institute scientists [Press release].
- Weizmann Institute of Science (2007, October 10). Israeli scientists identify: Genes that affect responses of multiple sclerosis patients to Copaxone [Press release].
- Yanow, D. (1992). Silences in public policy discourse: Organizational and policy myths. *Journal of Public Administration Research and Theory*, 2(4), 399-423.