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The wisdom of the intermediary: the role, function, and ways-of-being of the intermediary in a strategic program for university-industry relations

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Abstract

This paper is an inquiry into the human factor in intermediation. We argue that we have not yet fully grasped the different roles, functions, and ways-of-being of the intermediary and that the concept of first- and second-order "wisdom" is helpful in understanding what it takes to succeed as an intermediary. Through a comprehensive inquiry into human intermediaries in a corporate strategic program for university-industry collaboration in a global company, we develop a typology based on three fundamental roles: the "Power Promoter," the Diplomat, and the Creative Integrator. On this basis, we argue that the wisdom of the intermediary involves mastering the different roles (first-order wisdom) and deciding between them in each individual situation of intermediation (second-order wisdom). As a result, we advance Hargadon and Sutton's initial insight into the human factor in intermediation, thereby further humanizing the research on intermediation.

Keywords: Intermediaries, Triple helix, Knowledge brokering, University-industry collaboration, Wisdom

Spanish: La providencia del Intermediario: El role, función, y carácter del intermediario en un program estratégico para la relación industria-universidad.

Resumen: El presente trabajo es una investigación sobre el factor humano en la intermediación. Argumentamos que no se entienden aún los diferentes roles, funciones y modos de ser del intermediario, y que el concepto de"sabiduría"—de primer y segundo orden—es útil para establecer lo que se necesita para tener éxito como intermediario. Observando intermediarios humanos en un programa de colaboración universidad-industria de una compañía global, desarrollamos una tipología basada en tres funciones fundamentales: el promotor, el diplomático, y el integrador creativo. Sobre esta base, argumentamos que la sabiduría del intermediario incluye el dominio de los diferentes roles (sabiduría de primer orden), y su respectivo uso en cada situación individual de intermediación (sabiduría de segundo orden). Como resultado, se avanza la lección de Hargadon y Sutton sobre el factor humano en la intermediación, humanizando aún más la investigación sobre intermediación.

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French

La sagesse de l'intermédiaire. Rôle, fonction et manière d'être de l'intermédiaire dans un programme stratégique de relations université-industrie
Cet article est une enquête sur le facteur humain dans l'intermédiation. Nous soutenons que les différents rôles, fonctions et manières d'être de l'intermédiaire ne sont pas encore pleinement compris et que le concept de "sagesse" de premier et de second ordre est utile pour comprendre comnent l'intermédiare peut réussir sa mission. A travers une enquête exhaustive sur les intermédiaires humains dans un programme stratégique de collaboration entre université et entreprise dans une grande société, nous développons une typologie fondée sur trois rôles fondamentaux: le «promoteur de puissance», le diplomate et l'integrateur créatif. Ainsi, nous soutenons que la sagesse de l'intermédiaire consiste à maîtriser les différents rôles (sagesse de premier ordre), et de les prioriser dans chaque situation individuelle d'intermédiation (sagesse de second ordre). Comme résultat, nous faisons évoluer les travaux de Hargadon et Sutton sur le facteur humain dans l'intermédiation, humanisant ainsi davantage la recherche sur l'intermédiation.

Chinese: 中介的智慧
在大学-产业关系战略项目中中介组织的作用、功能和存在方式

摘 要**:** 本文探究在中介中的人的因素。认为我们还没有充分抓住中介的不同作用、功能和存在方式。第一级和第二级"智慧"的概念会帮助我们理解什么是一个成功的中介。通过全面考查在一家全球性公司的大学-产业合作企业战略项目中的人力中介机构,我们归类了三个基本的主体:"权力发起人"、外交官和创意集成者。在此基础上,我们认为:中介的智慧涉及掌控不同主体(一级智慧),和根据每个中介个体状况在主体之间做决定(二级智慧)。我们的结果推进了Hargadon和Sutto对中介中人的因素的最初研究成果,进而人性化了在中介方面的研究。

Russian: Мастерство посредничества.
Роль, функция и действия посредника в реализации стратегической программы, сфокусированной на взаимоотношениях университета и бизнеса.

Аннотация: Настоящая статья раскрывает роль человеческого фактора в посредничестве. Мы считаем, что к настоящему времени нами полностью не изучены роли, функции и действия посредника, а также убеждены в том, что концепция мудрости первого и второго порядка важна для понимания основ успеха в сфере посредничества. В ходе всестороннего изучения деятельности посредников в рамках корпоративных стратегических программ, реализуемых глобальными компаниями в сфере сотрудничества университетов и бизнеса, мы разработали типологию, основанную на трех основополагающих ролях посредников: «силовой двигатель», дипломат, креативный интегратор. Далее мы предположили, что мастерство посредников включает способность исполнения различных ролей (мудрость первого уровня) и выбора оптимальной из них в зависимости от ситуации (мудрость второго уровня). По итогам нашей работы была расширена предложенная Харгадоном и Саттаном (Hargadon and Sutton) теория о роли человеческого фактора в посредничестве, тем самым открыв возможности для дальнейшей персонализации посредничества.

Portuguese: A sabedoria do intermediário.
O papel, a função e os modos de estar do intermediário em um programa estratégico para as relações universidade-empresa.

Resumo: Esse artigo é uma pesquisa sobre o fator humano na intermediação. Nós argumentamos que ainda não compreendemos plenamente os diferentes papéis, funções, e modos de estar do intermediário, e que o conceito de "sabedoria" de primeira e de segunda ordem é útil na compreensão do que é preciso para se ter sucesso como um intermediário. Através de uma investigação abrangente sobre intermediários humanos um programa corporativo estratégico de colaboração universidade-empresa em uma empresa global, nós desenvolvemos uma tipologia baseada em três papéis fundamentais: o "Promotor da Energia", o Diplomata, e o Integrador Criativo. Nesta base, nós argumentamos que a sabedoria do intermediário envolve o domínio de diferentes funções (sabedoria de primeira ordem), e decidir entre ambas em cada situação individual de intermediação (sabedoria de segundo ordem). Como resultado, nós avançamos na percepção inicial de Hargadon e Sutton do fator humano na intermediação, e desse modo humanizamos ainda mais a pesquisa sobre a intermediação.

Multilingual abstract

Please see Additional file 1 for translation of the abstract into Arabic.

Introduction

The knowledge economy has given birth to a new species of people situated at the crossroads of different domains of knowledge. We call them intermediaries, knowledge brokers, or boundary spanners. Like a modern Hermes, they act as a human instrument for the transmission of knowledge. In a world where collaboration between practices, organizations, disciplines, etc. is increasingly seen as the cure for our societal problems, this modern Hermes figure has become vital (Meyer 2010; Johri 2008).

This paper is centered on a classic scene of intermediation: that which occurs between the world of academia and that of the corporation when the two parties collaborate in the interest of innovation. Such instances of collaboration, also known as the modus 2 of the production of knowledge (Nowotny et al. 2003), have given rise to substantial research into how university-industry collaboration is supported by intermediary institutions, such as technology transfer offices (Graff et al. 2002), industry-university cooperative research centers (Boardman & Corley 2008), and industry liaison offices (Fisher & Atkinson-Grosjean 2002; Lee & Ohta 2010), as well as research into the governance structures that support this collaboration (Todeva 2013). This research has given us a good understanding of how different intermediary institutions may tackle the major challenges that present themselves when universities and corporations work together, such as the open nature of academic research as against industry's need to protect the technologies they use or the long-term perspective common to academic research as against the typically short-term perspective of industrial R&D (Perkmann & Salter 2012).

On the basis of an inquiry into the everyday work of human intermediaries in a strategic program for university-industry collaboration (UIC) in a large global company, it will nonetheless be argued in this paper that we have not yet fully grasped the different roles, functions, and ways-of-being peculiar to the human intermediary in a corporate

setting. Additionally, it will be argued that what is lacking is a sufficient concept of "wisdom" regarding the multitude of different roles, functions, and ways-of-being of the intermediary. Simply put, to understand the intermediary, we need to understand what might be called "the wisdom of the intermediary." This research on bilateral university-industry collaborations will also be relevant to triple helix collaborations since in both cases, the task of the intermediary is to mediate and unite different actors with different agendas.

The paper is organized as follows. First, we present existing research on intermediaries, with a focus on the emergence of the human factor in the research and the introduction of wisdom in relation to the intermediary (Hargadon & Sutton 1997). Secondly, we present our methodology and research setting. Thirdly, we present our empirical findings. Fourthly, we discuss our findings in relation to the concept of wisdom informed by the postmodern turn, exemplified by the position of John D. Caputo. And finally, we conclude and give recommendations for further research and practice.

Intermediation

What is intermediation about? According to an influential definition, it is about "bringing people together, helping to build links, identifying gaps and needs, and sharing ideas" (Bielak et al. 2008). In Schlierf and Meyer's words, "[k]nowledge inter-mediation can be described as that blurry field of activity where individuals or institutions are concerned with knowledge transfer or co-creation" (Schlierf & Meyer 2013). The task of the intermediary is then not only to bring people together but also actively to enable understanding across, and in spite of, their differences. Barnett writes: "The task is none other than that of constructing a language in which the parties can place themselves and engage with each other in mutual understanding" (Barnett 2003). In other words, at the core of intermediation is the task of fostering understanding between different domains of knowledge. The following introduction to the concept of intermediation in past and current research will present two major positions:

- The position informed by the information processing view, where the intermediary is seen as a "boundary spanner" (Aldrich & Herker 1977; Tushman & Scanlan 1981b; Tushman & Scanlan 1981a).
- The position informed by network theory and organizational memory, where the intermediary is seen as a "knowledge broker" (A. Hargadon & Sutton, 1997).

The intermediary as a "boundary spanner"

Aldrich and Herker's paper "Boundary Roles and Organization Structure" (Aldrich & Herker 1977) laid the foundation for research into how particular people in an organization, known as boundary spanners, are responsible for processing information between an organization and its environment, i.e., between what is inside and what is outside of the company:

> The process by which information filters through boundary positions into the organization must be examined. Boundary roles serve a dual function in information transmittal, acting as both filters and facilitators. Information overload would still be a problem if all relevant information had to be immediately communicated to

> internal members. Accordingly, boundary role personnel selectively act on relevant information, filtering information prior to communicating it. They act autonomously on some information, and consolidate, delay, or store other information, thus alleviating the problem of overloading communication channels (although perhaps incurring other costs to the organization in the process). Information is summarized and directed to the organizational units that need it (Aldrich & Herker 1977).

The role of the boundary spanner is to process information from the outside to the inside of an organization and vice versa, i.e., the boundary spanner has a "dual function in information transmittal." By looking closely at the quotation above, we also note that Aldrich and Herker use the verb "act" several times: the boundary spanners are "acting as both filters and facilitators," "selectively *act* on relevant information," and "they *act* autonomously on some information." It is these "actions" by the boundary spanner that drive the information processing. By acting, the boundary spanner "filters," "consolidates," "delays," "stores," and "communicates" information for the right people or unit at the right time. This is a controllable process of input-output without noise, where the boundary spanner has no personal interests that may contaminate the information to be processed from A to B—no subjectivity, no conflicting interest to mediate. Aldrich and Herker thus establish a neutral third-person view of information processing that consists of actions by the boundary spanner (a human being), that more or less leaves the human factor out of the equation. The result of this contradiction is an understanding of intermediation that, despite its focus on human actions, ends up describing intermediation as a dehumanized process in which the information travels through the intermediary from A to B without change: a perfect game of Chinese Whispers.

The intermediary as a "knowledge broker"

Hargadon and Sutton's influential paper "Technology Brokering and Innovation in a Product Development Firm" (Hargadon & Sutton 1997) is based on an ethnographic analysis of the design company IDEO and informed by the theory of organizational memory (Walsh & Ungson 1991) and social network theory (Burt 1992). The result is a new understanding of the intermediary, because these scholars regard the "knowledge broker" as a person who does not process information in a noiseless way from A to B but actively creates new technologies by transforming existing and disparate knowledge: "Technology brokering at IDEO entails more than just transporting ideas […] it also means transforming, sometimes radically, those ideas to fit new environments and new combinations" (Hargadon & Sutton 1997). The ability behind this creative performance is identified by Hargadon and Sutton as "wisdom," whose central characteristic is that it enables the knowledge broker to facilitate the sharing of knowledge between the IDEO employees, thereby driving the three-step brokering process of Acquisition, Storage, and Retrieval which Hargadon and Sutton borrow from Walsh and Ungson's theory of organizational memory (Walsh & Ungson 1991):

> Much of this benefit, however, depends on IDEO's strong norms for designers to share their disparate knowledge and help one another. We have proposed that these norms (and the associated values) can be summarized as an 'attitude of wisdom' (Sutton and Hargadon, 1996). Building on Meacham's (1990) writing, people who

> have an attitude of wisdom are cooperative because they are neither too arrogant nor too insecure to ask others for help and because they treat what they know with humility and what others know with respect. Furthermore, wise people realize that they know things that others do not, so they constantly tell others what they know and offer others help and advice. (Hargadon & Sutton 1997)

From our point of view, the originality of Hargadon and Sutton's influential paper lies not so much in their efforts to make a generalizable process model for technology brokering (Acquisition, Storage, and Retrieval), but rather in their efforts to refocus the research on intermediation from a neutral and dehumanized information processing view to a view of brokering as driven by wisdom—by wise intermediaries. We will call it a humanized understanding of brokering, since it emphasizes that brokering proceeds and succeeds due to a certain way in which (some) humans are able to be in the world, namely as wise people. In addition, we agree with them that the essence of intermediation (brokering) has to be found on the basis of an inquiry into how humans are in the world (of intermediation), that is to say, their ways-of-being. But we do not fully agree with them when it comes to their description of what kind of being in the world makes intermediation succeed, since their understanding of what kind of being in the world makes intermediation succeed seems to us excessively narrow. Hargadon and Sutton explain their understanding of "wisdom" in an earlier paper on brainstorming in IDEO:

> [Wisdom] means acting with knowledge while simultaneously doubting what one knows. Wise people do not suffer from excessive caution or confidence that dampens the curiosity they need to be adaptive in the face of uncertainty […] Attributes that best distinguish wisdom from intelligence and creativity include considering advice, feeling that one can always learn from others, being a good listener, listening to all sides of an issue […] (Sutton & Hargadon 1996)

In other words, the certain way-of-being which Hargadon and Sutton identify as "wisdom" is a *particular* way-of-being characterized by openness towards the ideas of others and by a willingness to listen. These are the attributes of wisdom. Since Aristotle's *Nicomachean Ethics*, wisdom has typically been approached as the socialized and skilled person's capacity to shift appropriately between the common rules and the singular situation: a socialized person knows what is the right thing to do in a social situation; while the skilled person, for instance a carpenter, knows how to repair a particular old door, for instance. So when Hargadon and Sutton introduce "wisdom" and characterize it by the attributes of openness and listening, they seem to mean that openness and listening are the decisive cognitive operations needed to enable the most perfect match between the common and the singular in the process of intermediation. We agree that openness and listening are central aspects of acting wisely, and we agree that the essence of intermediation has to be worked out from the specific ways humans are in the world. But we do not believe that *everything has been said* about what it takes to act wisely as an intermediary once openness and listening have been highlighted. In the following, we will therefore conduct what we see as a more comprehensive inquiry into how humans (intermediaries) *are* when they intermediate, and, on that basis, discuss what it is to intermediate wisely.

As far as we are aware, such a comprehensive inquiry into how humans (intermediaries) *are* when they intermediate, and a correspondingly comprehensive discussion of what it is to intermediate wisely, has not previously been attempted in the research on the intermediary. Hargadon's later paper on knowledge brokering and learning (A.B. Hargadon, 2002) does not further investigate the notion of wisdom, and recent research on "boundary spanning" does not investigate the ways-of-being that undergird boundary spanning (Fox & Cooper 2013; Levina & Vaast 2005).

On this background, the aims of the paper are to:

- Conduct an inquiry into how intermediaries are, their ways-of-being, roles, and functions; and
- Develop a notion of "wisdom" that is able to grasp these ways-of-being, roles, and functions, i.e., what it is to be a wise intermediary.

This paper's ambition is therefore to deepen Hargadon and Sutton's initial insight into the human factor in intermediation, thereby further humanizing the research on intermediation. The scene for our inquiry is a classic one: corporate intermediaries in a strategic program for university-industry collaboration.

Methods

Research setting

Since 2013, we have been conducting an inquiry into the university relations office (URO) of a global technology company (GTC). The URO is a part of the R&D division. In 2001, the GTC established a global program for strategic collaboration with currently seven selected universities situated in the USA, Germany, China, and Denmark. The program is governed by (1) a local university relations manager (CKI Manager) situated at the university and responsible for sustaining and developing new projects (i.e., "collaborations"); (2) a key account manager in the URO (UR Manager) with responsibility for a specific university in the program; and (3) a local steering committee consisting of high-level managers from the GTC and the university in question. In addition, a global steering committee oversees the entire program. The global steering committee consists of the chief technology officer of the GTC (a member of the GTC's board of directors), divisional chief technology officers, and the managing director of the URO. The URO is responsible for the daily running and development of the global program. The main task of the URO is to ensure alignment between the global innovation strategy of the GTC and local R&D projects with the selected universities.

In our inquiry, we focus on the people in this global UR organization who work as corporate intermediaries between the GTC and the universities in order to create instances of innovation that fit the overall strategy of the GTC and the interests of the university. These are the key intermediaries of our inquiry, the people who facilitate the formal and informal cross-boundary flow of knowledge between the different hierarchical levels in the global program and between the different university collaborations. These people, although they formally belong to the GTC, thus play an important bilateral role in ensuring alignment between both the innovation strategy of the GTC and the research interests and goals of the university. From a unique in-the-middle (or in-

between) position in the GTC, they negotiate suitable collaboration topics and their scope, support the selection of partners, and find ways of dealing with intrinsic challenges in UR collaborations regarding, e.g., IP rights, governance structures, or the mismatch of expectations. As such, these intermediaries in a corporate setting play an important role with regard to the GTC's ability to reach out for external knowledge and thus continuously innovate, and through the CKI Manager (situated at the university), the university is provided with a person to bridge research interests and the GTC's R&D needs.

Participant observation

The study of the people in the global UR organization began in January 2013 and has primarily taken place at the URO office in the corporate R&D headquarters and at the universities, where we participated in their daily work during our visits. Building rapport is not an easy and instantaneous process. However, we were able to cultivate good relationships with several key people, and by the end of 2013, we no longer felt like an outsider. This position of an intimate insider was important because we wanted to inquire into their way-of-being as an intermediary. A distinct sign of this status was that we became a "person of trust" that they could go to for advice on UR matters. In this respect, our prior experience in university relations was helpful. By the summer of 2014, we were (1) "cc" on many emails (without asking for it), (2) invited to co-develop and moderate a yearly global UR conference, (3) invited to participate in matchmaking workshops at the local universities in the program, (4) developing a book proposal together with the URO, and (5) allowed to interview the divisional CTOs. As always, the sign of a good rapport is the fact that a person will risk his/her own rapport with someone higher up in the organization.

Interviewing

In addition to numerous informal conversations during lunch when we visited the URO, or longer conversations when we participated in dinners with members of local and global university steering committees, we conducted 23 semi-structured interviews with the people working in the GTC's global program for university relations. The duration of each interview was from 1 to 1½ h, and all the interviews were recorded and transcribed. Most people do not have an explicit understanding of their everyday lives. They do (of course) understand what they are doing, but it is difficult to make this understanding explicit since our practices are so embedded in our everyday lives (Brinkmann 2012). It is therefore necessary to help such everyday experts to make their implicit understanding explicit. To do this, we used a questioning method during the semi-structured interviews in which the interviewee was asked systematically to reflect on his or her life, as seen from the perspective of another person. When the different ways-of-being an intermediary became clear to them and to us, we did follow-up interviews to deepen our understanding of this way-of-being. The interviews were essential in the later conceptualization of the different ways-of-being of the intermediary.

Analysis

The analysis is inspired by the philosophical hermeneutics of Hans Georg Gadamer (Gadamer 2013). Gadamer claims that our understanding does not represent the world

"as it is." Instead, understanding is taken to be an action, as something done by somebody. An analysis of a field constituted and structured by human actions, such as the daily life of the people in the UR organization, is therefore an activity in which the researcher tries to understand the life of other people. Since this life already involves understanding, the analysis is a process in which the researcher creates an understanding of what and how other people understand themselves on the basis of the researcher's own pre-understandings. The purpose (and hope) of such an endeavor is a breakdown in understanding, i.e., a misfit between our pre-understandings of a research field and the empirical material (Alvesson & Karreman 2007). In the case of the intermediary, our pre-understandings primarily involved the assumption that the human factor is important in intermediation and that intermediation also therefore includes (among other things) issues of power, creativity, and self-interest. Through our interviews and observations, it became clear that power, creativity, and self-interest may be (and often were) elements of our interlocutors' work and self-image but that other factors were involved as well. Against this background, an iterative process of comparing and seeking inspiration in the existing research literature and theory on the subject matter began.

The Power Promoter, the Diplomat, and the Creative Integrator

The main task of the people in the global corporate UR program is to make sure that different UR collaborations in the global portfolio are prioritized in accordance with the GTC's strategy and the university's interests:

> (…) the most important level is everything in between. It's where you find what I like to call strategic alignment (…) where you can make priorities about the kind of efforts you want to make in future, and where you aren't driven by random interests or tasks arising on an ad hoc basis. And the whole rationale on which this is based is of course that you can make some kind of alignment, like a coordination of what kind of portfolio of projects you want to carry out (Interview 2014).

They position themselves in an in-between role, where they are able to span the different interests and perspectives of the GTC and the university. The goal is to facilitate "strategic alignment," described as "coordination of what kind of portfolio of projects you want to carry out." In this way, the people in the global UR program act as intermediaries who negotiate the different goals and perspectives of the GTC and the university. When looking through our empirical material, three roles of the intermediary and corresponding functions and ways-of-being became apparent.

The Power Promoter

We met Peter (a pseudonym) quite early in our inquiry. We had been trying to approach him for a while because we knew that he as the first managing director of the URO had played an important role in setting up the strategic UR program and was part of the negotiations with the first universities to join the program. He could therefore give us important insights about the history of the program, and more importantly, his understanding of how he worked to mediate interests in the negotiations that took place with some of the first universities. We met Peter at a time when he was no longer working for the GTC, and our hope was that he would abandon any possible strategic

or tactical thinking during our interview. He welcomed us in the reception, saying that he had been looking forward to this meeting for days. "Collaboration with universities is one of my favorite themes," was his opening line. Our interview began by retracing the beginning of the program and then turned toward understanding how the different interests between the GTC and the universities were bridged. An interview soon developed into a conversation on the role of power:

> Peter:
> "I can make it very simple and black and white. If you are in a role like me (…) in such a role you need a budget at least, but it's better to have a budget and power. But not taking your power to persuade people instead of convincing them taking advice, but using your power and your budget to drive ideas, to drive innovations (…) to bring an idea from [the] outside into your internal organization. And you need at least this power and that budget to do this, otherwise it will fail."
>
> Interviewer:
> "So if you imagine that you were to hire a person to have a similar function within the GTC, what would be your best advice to that person?"
>
> Peter:
> "To have a budget and power."

We left the interview with the understanding and hypothesis that the bridging of interests depends on the use (directly or indirectly) of power. This view on power in relation to the intermediary was later repeated by John (a pseudonym), who was for several years a CKI Manager at a specific university in the strategic UR program. In the interview, John focused on the role of the intermediary in relation to R&D projects and quickly began to talk about "organizational uncertainty" and how the intermediary was able to dissolve this uncertainty:

> John:
> "[In] another project which is actually similar but which didn't grind to a halt because there was this mediator, there was this power sponsor or power promoter.
> (…)
> People really liked each other, but there was huge uncertainty at the GTC about what on earth the division was supposed to be doing (…), a great deal of organizational uncertainty about how much they could commit to, and that kind of thing – know what I mean? And in that situation Boundary Spanner X was fantastic at cutting to the chase every now and then and saying what we're going to do is this because I'm the man with the money, in other words he removed some of the organizational uncertainty […]."
>
> Interviewer:
> "So how would you describe his function or role in that situation?"
>
> John:
> "What I think is that what I call it is a power promoter or something like that, and I think he was just the kind of glue in-between who's able to say that this is a strategic

> prioritization of relationship building. And after all he can back his view up with funding – I mean to say it might be, it doesn't just have to be about money, it can be about organizational pressure if you like, this is what you've got to do, or power in other words."

The intermediary is named the "Power Promoter." The Power Promoter dissolves organizational uncertainty ("cutting to the chase") through the use of dominance (money and power) and is therefore able to achieve some of the many possibilities in the field of collaboration between the GTC and a university. We concluded that this was a distinctive role of the intermediary that we would name the Power Promoter. The way-of-being of the Power Promoter is dominance, and the function of the Power Promoter is to enable the transition from what is possible to its realization.

The Diplomat

At the beginning of 2014, the second role of the intermediary in the strategic UR program became explicit when we observed and interviewed people during the yearly ideation workshop held at one of the universities in the strategic UR program. The ideation workshops are an important part of the strategic UR program since they set the agenda for the coming year in terms of what research topics to prioritize for each of the collaborations between the GTC and the universities. As often, prioritization works like a catalyst for making different interests explicit. The workshops in the program were therefore a focal point for our inquiry—the scene, so to speak, of implicit interests becoming explicit between the people from the GTC and the researchers from the universities. This year's workshop between the GTC and University X would not be like last year's workshop, we were told. There had for some time been a concern that several ideas from last year's ideation workshop did not develop into concrete projects. We heard people from both sides saying things like "we really need more ideas that turn into concrete projects". On the agenda were therefore not only next year's ideas and priorities but also (present but never said out loud) the value of the collaboration itself between the GTC and University X. In addition, for this year's workshop, high-level managers from the GTC were invited to give a presentation on future technology and business areas. This added anxiety to an already tremulous atmosphere, since the high-level managers were the executive sponsors of new collaboration projects.

We were divided into three groups. Each group consisted of researchers from University X, researchers from the GTC, a UR Manager, and one of the high-level corporate managers, who led the discussion. Each group consisted of approximately 8–12 people. The high-level corporate manager started the discussion by repeating his view on the development of a specific technology and its relation to various business development areas. He stressed that the project should be of interest to both the university researchers and the business needs of the GTC, without being specific about what that meant. This set the scene for the following discussion on future collaborative projects. We focused our attention on one of the UR Managers, Steven [Pseudonym], from a group in which we had heard statements like "you need to tell me what we get out of this" and "we need to be more business oriented if we want to get this idea funded." What would the UR Manager do in these situations? In this group, Steven intervened by saying things like "What do you think, Martin? [Pseudonym, part of the GTC] Would what William [Pseudonym, university researcher] said fit into what you

want to do?" In this way, Steven acted not as a Power Promoter (although he could have done this) but more like a neutral bridge-builder between the different interests.

We were curious to know more. In our follow-up interview with Steven, he reflected on his way of intermediating as follows:

> Steven:
> "I'd say that I chose or assumed the role of bridge-builder between these different sides, and tried to sort of translate our criteria for success at a given moment and made sure I remembered that there were arguments on both sides of the fence (…) It's all about creating shared needs or understandings of the respective needs and joint criteria for success. This doesn't mean that it's never been necessary to say that one person should give way in order to meet someone else halfway."

The position of the intermediary in this example is not that of the Power Promoter who uses dominance but one that involves facilitating alignment between the "…different sides," remembering that "there were arguments on both sides of the fence." In this role, the intermediary's goal is to seek compromise and consensus, and thus avoid dominance as a vehicle in facilitating a possible collaboration between the GTC and the university. In a later interview in 2014 with David [Pseudonym], another UR Manager, he told the story about how he enabled a compromise by way of a sort of cross-organizational diplomacy between a person outside of the GTC and persons from the GTC:

> David:
> "Yes, to be very clear, it's not just [that] I transport something from A to B, it is always; I have to double-check, is it true, is it worthwhile for the other side, has he understood it? And my first point of proof is very simple: if I have not understood this message, I will never transport it (…)".
>
> Interviewer:
> "Yes"
>
> David:
> "And in this case it was: what is the motivation of Person X [person outside of the GTC]? The motivation is a political motivation; he's not interested (…) in values of fifteen or eighteen or twenty. It is simply: is it politically achievable in my environment? This is a world completely different to the world of the engineer, so I asked the R&D guy [GTC employee] what he thought was technically [and] physically [achievable]. And the R&D guy, in simple figures, says, "well, we can achieve five". And the sales guy [GTC employee] says "ah, twenty". So what should I say now to Person X [person outside of the GTC]?"
>
> Interviewer:
> "What did you say? Can you remember that?"
>
> David:
> "Eh, it was, I think it was then after of course a lot of consultation, I think in this case we agreed to fifteen, in terms of figures (…)".

Interviewer:
"But it says something about [your] role and the function…"

David:
"Yes, yes, the whole check, what is achievable (…) what is the good compromise between the worlds".

As the UR Manager says, his job is not to transport something from A to B but to understand the different worlds of on the one hand Person X from a different organization, and on the other hand, the R&D person and sales person in the GTC and then from this understanding, to define a common ground that all parties will agree to. In this case, "15" is the compromise and the consensus: more than "4" and less than "20." It is difficult not to identify this cross-boundary practice with that of the *diplomatic virtue of* finding a compromise (Sennett 2012). From a unique in-the-middle position, the intermediary can act as a diplomat trying to find compromise.

But what is a compromise? We often hear praise for a person's ability to seek compromise. But we must also understand that compromise may span the boundaries of different interests between the GTC and a university and yet still remain *within* the boundaries of the *existing* opposing interests. Nothing new is created or set in motion. As an intermediary says: "Compromise is something like where you add 1 plus 1 is 1.5" (Interview). The result of the compromise is thus preservation and continuity in the collaboration, which was also the case during the ideation workshop, where Steven made sure that the participants listened to each other and in this way prevented discussions from turning into open disputes. Metaphorically speaking, the intermediary as The Diplomat is the lightning conductor used to appease opposing interests.

The Diplomat is the second role of the intermediary. The way-of-being is compromise. The function is to enable the continuity or preservation of an existing or possible reality, in this case, the preservation of the collaboration between the GTC and the university.

The Creative Integrator

In our interviews and through our observations, our curiosity focused on Simon [a pseudonym]. Simon had worked with UR for more than a decade and was often described as a great "UR person" by people in the global UR program. We observed him during ideation workshops and dinners and noticed that unlike most of the other intermediaries, he was strikingly candid, almost rude we sometimes thought, with remarks to tenured professors like: "I don't think this solution will work – you haven't really understood the problem." He did not seem to seek compromise, nor did he act with obvious domination (money and power) in the situations we observed. His primary intention (so it seemed) was to put new ideas on the table and then see if the others acknowledged them. At one point, we took a chance and interrupted an ongoing discussion at a workshop, asking him: "How would others describe what you are doing right now?" After some hesitation, he answered that he was not sure about what he did. With no time for a follow-up question, we decided to schedule an interview with him to talk about his way-of-being as an intermediary. During the interview, he

offered us this self-reflection regarding the question about how he worked as an intermediary:

> Simon:
> "To bring two people together in looking at the position of A, understanding the A position, [then] understanding the B position, and then derive perhaps with A, with the A people, understanding or looking through the eyes of the B people, a C vision."

When reading the transcription, this statement puzzled us, since what Simon here calls the production of a "C vision" did not really seem to match the function of either the Power Promoter or the Diplomat. It is not the result of dominance—because if it were, the result would be either "A" or "B," i.e., that Simon by using power would have cut the Gordian Knot by selecting either A or B. But what about compromise? If the "C vision" is a compromise, it must stay within the boundaries of A and B, and more importantly, it must result in the preservation or continuity of an existing reality. But according to Simon, "C" is a vision which entails something more than what already exists in A and B taken together. Therefore, the "C vision" is not a result of compromise. And at the same time, the "C vision" integrates "A" and "B," which is indicated metaphorically by the word "derive" and the notion that "A" and "B" have been looking through the eyes of each other. So it is possible to say that the "C vision" opens up something new based on things that already exist (A and B). We will name this role of the intermediary the "Creative Integrator," with reference to Mary P. Follett's concept of integration from her lecture with the title "The Problem of Organization and Co-ordination in Business":

> There is a [third] way beginning now to be recognized at least and sometimes followed, the way of integration (…) Integration means finding a third way which will include both what A wishes and what B wishes, a way in which neither side has had to sacrifice anything. (…) and the extraordinarily interesting thing about this is that the third way means progress. (…) By integrating something new has emerged, the third way, something beyond the either-or (Follett 2013).

On this background, it is possible to understand Simon's explanation of the "C vision" as an example of integration (of A and B), designating a third way of intermediation (Dominance and Compromise being the first and second) beyond the either-or. The way-of-being of the Creative Integrator is thus *integration.* The function is to enable the creation of something new, of something possible, from what already is.

Let us draw up a short balance sheet before we begin the discussion. Aldrich and Herker's information processing view of intermediation leads to a dehumanized intermediation process. Hargadon and Sutton humanize intermediation by introducing wisdom as a prerequisite for the intermediary. The movement in the research is therefore from a dehumanized approach to a humanized approach that in an

emphatic way acknowledges the human factor in intermediation. Against this background, and based upon our empirical material of a strategic program for university-industry collaborations, we have now identified a plurality of roles and ways-of-being of the intermediary: The Power Promoter (Dominance), the Diplomat (Compromise), and the Creative Integrator (Integration). In addition, we have identified a plurality of functions: The Power Promoter enables the transition from what-is-possible to its realization (from potentiality to actuality); the Diplomat enables the continuity or preservation of an existing or possible reality (from actuality to actuality or from potentiality to potentiality); and finally, the Creative Integrator enables the creation of something new, of something possible, from what already is (from actuality to potentiality). Thereby, one might consider whether it is possible to identify each role as being connected to a certain phase of the collaboration process—for example in the sense that the Power Promoter is first and foremost connected to the beginning of a collaboration. In our view, this would be a too strong conclusion. In the interview with "John" (see above), for example, he refers to the Power Promoter's ability to dissolve "organizational uncertainty" at a stage in the collaboration where it has been going on for some time. Instead, we consider the three different roles as available throughout the collaboration process. As we shall see in the following, it is therefore important that the intermediaries are wise in the sense of being able to shift between the different roles in the specific collaborative situation. Our findings are summarized in the following Table 1.

Discussion

In the following discussion, we will connect these findings to the concept of wisdom in order to develop a notion of "wisdom" that is able to grasp these ways-of-being, roles, and functions of the intermediary. This is the second aim of the paper.

Sutton and Hargadon explain what they understand by "wisdom" as follows:

> [Wisdom] means acting with knowledge while simultaneously doubting what one knows. Wise people do not suffer from excessive caution or confidence that dampens the curiosity they need to be adaptive in the face of uncertainty (Weick, 1993). […] Attributes that best distinguish wisdom from intelligence and creativity include considering advice, feeling that one can always learn from others, being a good listener, listening to all sides of an issue and not being afraid to admit making mistakes (Sutton & Hargadon 1996).

Table 1 Typology of the human intermediary in a corporate setting

Role	Power Promoter	Diplomat	Creative Integrator
Way-of-being	Dominance	Compromise	Creative integration
Function	To enable the transition from what-is-possible to its realization (from potentiality to actuality).	To enable the continuity or preservation of an existing or possible reality (from actuality to actuality or from potentiality to potentiality).	To enable the creation of something new, of something possible, from what already is (from actuality to potentiality).

What Sutton and Hargadon understand by wisdom is the exercise of two different but integrated activities: Firstly, wisdom is about not being convinced that one is always right, but rather approaching one's own beliefs reflectively and with an awareness that one has not necessarily already found the ultimate answer to the matter in question. In that sense, the first step to acting wisely in the process of intermediation is almost identical to what Richard Rorty explains as "irony," since "[the] ironist spends her time worrying about the possibility that she has been initiated into the wrong tribe, taught to play the wrong language games" (Rorty 1989). Secondly, wisdom is also about listening to and being touched by the words of the others ("considering advice" or "always learn from others" as Hargadon and Sutton write) before deciding where one stands. Consequently, wisdom is the integrated activity of irony (in the Rortyan sense) and listening.

In our view, we need to supplement this notion of wisdom since it does not grasp the different roles, functions, and ways-of-being of the intermediary in our analysis. Dominance, for example, enables the transition from what-is-possible to its realization (from potentiality to actuality) by the use of power and money and not by irony and listening. Hargadon and Sutton's concept of wisdom is therefore only adequate as long as the understanding of the intermediary is mono-functional, namely as the ironic facilitator listening to the words of the other. But as we will argue, intermediation is a poly-functional enterprise that includes the use of, e.g., power and/or money, just as it requires the ability to both find compromises and create new ways of understanding. One might argue that our analysis of the empirical material has only identified the different mono-functional roles, functions, and ways-of-being. But in our interviews, the poly-functional enterprise of shifting role in different situations was also an important theme. One interviewee put it in this way:

> There are several arenas here, and it's also important to understand this when we talk about it [intermediation]. There are many arenas to play in, and you can play a role in more than one of them at the same time.
> […]
> And one can change the role underway, right? […], So, in this [project] Urban Mobility (…) where I have taken the role as power promoter. Here it is my conscious strategy to take the role as the integrator, which is properly my comfort zone.
> (Interview, 2015)

As one can see, the interviewee does not identify intermediation with one role, but with the capacity to navigate or to decide which role, function, and way-of-being would be most helpful in the concrete situation ("arena"). We will term this capacity to navigate or to do what is best in the concrete situation "wisdom," drawing partly on the Aristotelian understanding of wisdom (Greek: phronesis) as the capacity to do what is right to do in constantly changing situations. What links the different roles, functions, and ways-of-being together is therefore not only that they have the same goal, to sustain intermediation, but also that the skilled intermediator has an awareness of the different roles, functions, and ways-of-being and the ability to judge when what is required.

In continuation of this point, we suggest that it would be beneficial to differentiate between two levels of wisdom within intermediation:

- "second-order wisdom," the ability to reflect on the different roles, functions, and ways-of-being that are available in a situation, and from this multitude decide on which role, function, and way-of-being will be most helpful; and
- "first-order wisdom," the ability to act most helpfully according to the specific role, function, and way-of-being that the intermediary has chosen (e.g., as a Power Promoter).

This enables us to have a two-level concept of wisdom that acknowledges that the intermediary has to master different roles wisely (first-order wisdom) and to decide wisely between them in each individual situation of intermediation (second-order wisdom).

Our differentiation between first- and second-order wisdom does more than merely supplement Hargadon and Sutton's notion of wisdom. It also supplements the classical tradition of wisdom starting with Aristotle and his concept of *phronesis* (Aristotle 2000). Aristotle took phronesis to be the capacity to know what is the right thing to do in situations of change by merging the singular and the common, i.e., the general rule guiding single action. Using the terms of this paper, we can describe the understanding of wisdom within the Aristotelian tradition as "first-order wisdom," since wisdom is taken to mean the capacity to merge the common and the singular in the situation. Hargadon and Sutton also belong to this tradition, since they describe wisdom as the exercise of both irony and listening (two common ways of being in the world) in specific situations (of intermediation), e.g., the brainstorming sessions at IDEO that they investigate.

In postmodernity, we find a critical supplement to the tradition of first-order wisdom. This tradition includes thinkers such as Michel Serres, Jean-François Lyotard, Jacques Derrida, and John D. Caputo. Caputo explains what he sees as insufficient in the tradition of wisdom as follows:

> The hermeneutic conception of phronesis presupposes an existing schema, a world already in place. It is the virtue of applying or appropriating a preexisting paradigm. But what happens at that point where the schema is in crisis, where the worlds founder, where the epochal fluctuations of which Heidegger speaks come about? Then phronesis itself is put in crisis. For then it is not a question of having the skill to apply but of knowing what to apply. Then we find ourselves brought up short. The whole 'founders' (Constantin), is 'solicited' (Derrida). Now it is just at that point we need to describe what it would be like to be 'rational', for it is just at that point that we no longer have phronesis to fall back upon and that we need a notion of rationality beyond phronesis (Caputo 1988).

In other words: According to Caputo, the interpretation of wisdom as phronesis is in crisis, since the measures (norms/rules) for proper understanding and action in late modern society are relativized. The result is that it has become an insecure enterprise to merge the common and the singular. Wisdom therefore, in Caputo's view, has to be something other than the Aristotelian version of phronesis. But what has changed according to Caputo? It is not that there are no norms, but rather that there is a plurality of norms available in almost every situation—just as in the case of the intermediary who has to decide between different roles and ways-of-being. For the very same reason,

wisdom is not only a question of applying the rule of listening and being ironic in individual situations (e.g., the brainstorming sessions at IDEO), as suggested by Hargadon and Sutton. Instead, the wisdom of the intermediary in its totality must also include the second-order wisdom that takes into account the plurality of norms available in every situation.

We therefore argue that intermediation requires the exercise of the exact same kind of second-order wisdom that we find in the writings of Caputo. This is because our analysis showed that intermediation involves different modal movements, so the intermediary needs to have the capacity to enter into the different roles supporting the different forms of modality in intermediation (i.e., the Power Promoter moves the process from possibility to reality, the Diplomat preserves the process, while the Creative Integrator moves the process from reality to possibility). As such, "wisdom" is undoubtedly a question of irony and listening, just as Sutton and Hargadon claim. But when the intermediary listens to the situation, she might also hear that it is wise to stop listening and just act (as the Power Promoter does), to keep the process steady by compromise (as the Diplomat does), or to propose a third way (as the Creative Integrator does). However, and this is the crucial issue, the point at which intermediation needs a certain kind of modality is not written in the stars, just as no textbook or organizational culture for that matter can dictate when this point should be. So like Caputo's late modern humans, the intermediary has to be aware that many different and conflicting reasons are available in the same situation—so the situation could be approached very differently depending on whether the intermediary *decides* to act as a Power Promoter, as a Diplomat, or as a Creative Integrator. But as there is no pre-existing norm telling the intermediary what is the most appropriate solution in the concrete situation, the situation requires a decision that will privilege one of the intermediary roles based on the intermediary's prior experience, knowledge, preferences, and so forth—although this does not suspend the constant need for a decision in each subsequent situation. As such, and like Caputo's late modern humans, the wise intermediary is aware that many different and conflicting reasons are available in the same situation. Confronted with these options, she does not follow a pre-existing paradigm but chooses (based at least partly on her experience) how to be most helpful as a Power Promoter, Diplomat, or Creative Integrator.

We therefore agree that wisdom is the essence of intermediation, just as irony and listening are central aspects of wisdom. But we can only fully grasp what it takes to be a wise intermediary in the world when we acknowledge that the intermediary has to master different roles (first-order wisdom) and to decide between them in each individual situation of intermediation (second-order wisdom). The wise intermediary is therefore somebody who has given up the comforting belief that to be a wise and successful intermediary is a matter of (just) listening and being ironic. Instead, the wise intermediary knows that she will again and again have to decide what role, function, and way-of-being is the most helpful in the concrete situation. This concept of the wisdom of the intermediary enables us to acknowledge that being a wise intermediary can be many things. The intermediaries we have studied here (Peter, Steven, Michael, and of course many others) do not obey a pre-existing paradigm (wherever that might come from) of how an intermediary must be. When they are wise, they are able to choose the most helpful role, function, and way-of-being—as when Steven chose to be the Diplomat to preserve the continuation of the strategic

collaboration with a university or when Peter chose to be the Power Promoter to dissolve any organizational uncertainty.

Conclusion and recommendations for further research and practice

This paper advances Hargadon and Sutton's initial insight into the human factor in intermediation, thereby further humanizing the research on intermediation. Through a comprehensive inquiry into human intermediaries in a corporate strategic program for university-industry collaboration, we develop a typology of the intermediary: The Power Promoter enables the transition from what-is-possible to its realization (from potentiality to actuality); the Diplomat enables the continuity or preservation of an existing reality (from actuality to actuality or from potentiality to potentiality); and finally the Creative Integrator enables the creation of something new, of something possible, from what already is (from actuality to potentiality). On this basis, we argue that the wisdom of the intermediary involves mastering different roles, functions, and ways-of-being (first-order wisdom), and deciding between them in each individual situation of intermediation (second-order wisdom).

Recommendations for further research and practice

We recommend that future research should continue the inquiry into the relation between wisdom and the successful human intermediary in bilateral university-industry collaborations, including by extending the inquiry into genuine tripe helix collaborations. We believe that this research should focus on the institutional level, asking how "wisdom" can be anchored at the institutional level. This raises the difficult question whether wisdom is learnable, since we in this paper argue that wisdom is not about scholastic mastery (a competence) but a way-of-being. We therefore also recommend that future research should work out a language capable of describing this kind of coming-into-being which is a characteristic of the wise intermediary. We suggest that theoretical inspiration for this kind of language may come from the philosophy of, e.g., Søren Kierkegaard and Martin Heidegger since they both focus on our ways-of-being and not on competencies. Finally, we see it relevant to inquire how bilateral and trilateral collaborations may not only foster recourse to wisdom in their complex organizations but also sustain and promote further reflection on its substance and content.

In terms of recommendations for the existing practice, we recommend that intermediary institutions in both bilateral and trilateral collaborations integrate the typology and thus "translates" it from the individual level to the institutional level. *In concreto*, this would mean that the management of such intermediary institutions would use the typology to consider whether it is possible for their human intermediaries to act wisely in the processes of the collaborations, i.e., to shift between the different roles (Power Promoter, Diplomat, and Creative Integrator). It is our gut feeling that many intermediary institutions, due to their in-between position, are only assigned with the non-power to act as Diplomats. The result is often too many compromises that in the end make the collaboration work but without being able to realize the full and creative potential of the collaboration which is first realized when the human intermediary is both free and wise to play all the three roles. Accordingly, it is our recommendation that the management use the typology to evaluate their intermediary institutions to find out if they have the best conditions to create innovative collaborations.

Additional file

Additional file 1: Translation of the abstract into Arabic. (PDF 162 kb)

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