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Temporality in Academic Evaluation: 'Trajectoral Thinking' in the Assessment of Biomedical Researchers

Björn Hammarfelt, Alexander D. Rushforth and Sarah de Rijcke

Abstract
This paper builds on emerging concerns with how temporality and spatiality unfold in, and order, academic evaluation practices. We unpack how the notion of 'trajectory' – a simultaneously prospective and retrospective narrative device permeating contemporary academic evaluation discourses – is mobilized within a particular evaluation site. Materials for our study are drawn from reports commissioned by Swedish universities when hiring for new professors. These texts are authored by external referees who rank and compare candidates, in this case for associate and full professorship positions in biomedicine. By using the theoretical perspective of 'narrative infrastructures' we explore how the referee reports mobilize 'trajectories' to weave together disparate bits of evidence extracted from the bylines of biomedical researchers' CVs: publication numbers, impact factors, authorship positions and 'earning power'. Our analysis finds certain resemblances across reports of what constitutes an ideal candidate's career trajectory, but none of these are completely identical. We consider how 'the trajectory' is evoked as a singularity within this genre of writing, thereby bestowing retrospectively a sense of coherence and purpose on the past performance and prospective development of careers. We discuss the implications of our findings in terms of how 'trajectorism' shapes evaluation in academic biomedicine and possibly beyond, and propose suggestions for how this dominant narrative might be challenged.

Keywords: biomedicine; peer review; temporality; spatiality; trajectorism; valuation

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Introduction

Central to the lively emerging interdisciplinary field of valuation studies is *time*. Clearly, many instances of a 'moment of valuation' (Antal et al. 2015) involve anticipating what kind of future could and should be brought into being. When we make judgements on what products to buy, which educational degree to pursue, or where to invest our money, we are betting on how various decisions might affect our – or someone else's – future. Hence, imagined futures often form the background for valuation, and projections of future value or performance are one of the main outcomes. Estimates and predictions are thus central to the 'systematic organised guess work' of evaluation (Mennicken and Sjögren 2015: 4). This future-orientation is very present in contemporary academia and its ever-expanding audit cultures (Strathern 2000). Similar, future oriented evaluation is visible in many other evaluative contexts; the stock-brokers prediction of the market, the football scouts work in picking talents, and the art curator trying to buy big names early.

Despite this, how temporality and academic evaluation practices relate to one another has only just recently started receiving attention from scholars in STS and related fields (Vostal 2016; Ylijoki 2016; Felt 2017). This paper builds on one of the themes within this broader discussion, namely how temporal and spatial dimensions become intertwined with specific infrastructures for evaluating academics. Focusing on extensive analysis of the external referee reports used to form and legitimatize hiring decisions in Swedish academia, we unpack how 'career trajectories' are constructed in order to evaluate candidates for academic positions based on their CVs.

According to Appadurai (2013: 223f), a key characteristic of western civilization is to understand the world – and our own lives as individuals within it – as a trajectory. Trajectorism postulates that we are – or should be – on a journey from here to there, from the past to the future. We want to be able to describe the world as a cumulative journey into the future, a journey that we can analyse, calculate and explain. It also means that we, and nobody else, should be in control of this journey into the future. In applying the concept of 'trajectorism', Felt (2017) suggests that the measures and indicators of papers, funds and other outputs is constitutive of trajectoral thinking in academia: '…by lining up indicators over time, stability, improvement or decline might be rendered visible'. (Felt 2017: 59).

A trajectory, in physical terms, is defined by velocity and position. Thus, 'trajectorism' encompasses more than temporal processes, as it includes "a problematic ideology of spatial expansion" (Appaduari 2013: 225). Although the kind of expansion – in terms of European imperialism – which Appadurai discusses, takes us far from the topic of our study, we still find it valuable to consider this additional aspect of 'trajectorism'. In the study of evaluation reports of biomedical CVs

such features might be expressed in terms of where a researcher has been, with whom they have worked; where they went intellectually, and whether or not they were mainly in the clinic or in the lab. In analysing the trajectories of researchers we therefore emphasize how the temporal and the spatial interact. For example, where someone has moved in his or her career by a certain point in time can be indicative of a particular career trajectory.

An important function of the trajectory as a narrative device is to reduce complexity and ambivalence. In a finite time period external reviewers must re-order dozens of CVs packed full with lines of information into expert accounts which sort 'the best from the rest'. In our materials, various bits of information are extracted from the bylines of candidate CVs and rearranged as 'evidence' of particular trajectories candidates' academic careers have taken (which in turn represent a proxy for likely future performance).

Our approach here is not so much to study how candidates for professorships in biomedicine are valued, or what kind of judgement, indicators or metrics are used for assessing value. Rather, we study how time becomes folded into narrative practices of valuing a career in biomedicine. We ask how valuation is performed and enacted in these documents, how valuation is narrated, and the role trajectoral thinking plays in these documents. In short we focus on the work that these documents do: "the production—in practice—of what comes to count as valuable, desirable, or otherwise worth caring for" (Dussauge et al. 2015: 10).

Our focus on academic biomedicine is motivated by it being a large and resourceful field in which debates about evaluation, specifically (mis)uses of metrics, have been prevalent in recent years (Alberts et al. 2014; Benedictus et al. 2016). The increasing influence that performance measures and indicators have on research has been documented in a range of studies (Weingart 2005; Burrows 2012; de Rijcke et al. 2016), and more specifically the epistemic consequences of indicator uses in the field of biomedicine has been highlighted (Rushforth and de Rijcke 2015; Müller and de Rijcke 2017; Rushforth et al. 2019). As might be expected, much of the information extracted from these biomedical CVs took the form of relatively crude indicators, such as the h-index and the journal impact factor, as well as even more simple outputs in the form of publications and funding.

Before we delve further into how trajectorism is an important narrative feature in these evaluation documents, a description of the role of 'external referee reports' and an overview of the structure of these documents is needed. Hence, we first provide a short introduction to the genre of the referee report and how it relates to other types of academic evaluation. In the background section we also briefly describe the process of recruitment in Swedish academia.

'Narrative infrastructures' and their role in crafting trajectories is introduced in subsequent parts of the article, alongside the materials and methods used. Thereafter the findings of the study are outlined in four sub-sections focusing on different ingredients in the narrative infrastructure, while simultaneously trying to capture the predominant 'master stories' which emerge in these documents. Finally, the discussion expands on how temporal notions of efficiency and expectations of ever increasing production can be understood through the concept of 'trajectorism'.

Academic valuation and the genre of the referee report

Researchers act as evaluators in many roles, and a considerable degree of their work time is devoted to this task. Langfeldt and Kyvik (2011) identify several evaluative tasks that are regularly performed by researchers, from journal peer review to institutional evaluation. And these are only the formal roles. If we consider valuation more generally this list can be extended almost infinitely, with supervision and seminar discussions as typical activities in which valuation plays a central part. Moreover, we might view these activities as folded into each other, where for example peer review of journal articles is a pre-requisite for later evaluation of the research quality of an institution and so forth (Helgesson 2016). Hence, researchers are used to being assessed, and to evaluate others. How judgements are made and justified is dependent on several factors: the evaluative task at hand, discipline specific norms, gender and seniority of the evaluator, and different epistemological styles (Lamont 2009).

The genre of referee reports for academic positions has much in common with other types of 'remote peer review' (Bozemann 1993), such as the peer reviewing of projects and journal articles. In both these cases external and independent experts are brought in to make impartial statements on the quality of study, or the innovativeness and feasibility of a project. A main difference in the assessments procedure studied here is that the valuation of candidates for academic positions operates within a longer temporal dimension, as it stretches to include both past achievements and imagined future performances (Nilsson 2009; Hammarfelt 2017). It is indeed true that judgements made on grant proposals usually include the 'track record' of the applicant and estimates on how fruitful a particular research idea might be, but these are additional concerns: the main focus usually is on the project, the ideas behind it and its design. Moreover, the valuation of candidates by necessity also involves biographical elements (age, family and gender), which usually are of less concern, or at least less openly so, when journal articles or grant proposals are evaluated. The broad temporal scope, as well as the focus on the individual, thus distinguishes the evaluation of candidates from other types of peer review. In fact, in

several aspects, these texts resemble other genres, like the scientific bibliography (Söderqvist 2011) or academic obituaries (Hamann 2016), in which careers are summarized.

Obituaries are a particularly interesting comparison as these documents feature distinct evaluative features. Hamann (2016) shows how two main strategies for positioning are used in these texts. First, academics are situated based on their position in the landscape of academic knowledge; the community and discipline they belong to, and their standing in this field. 'Symbolic ties' to other prominent members of this community serve as important markers in this regard. The second strategy of positioning involves connections to institutions, and may involve positions at universities, visiting fellowships and editorships, to mention just a few. While the narrative structure of obituaries shares features with referee reports, it is the overall purpose of ordering "the distinct, sometimes, accidental and incoherent, stations and achievement of an academic life course into a linear trajectory" that marks the affinity between these two genres (Hamann 2016:1). But whilst the obituary is largely backward-looking and celebratory, evaluating candidates is a practice with a firm eye on the future. For example, a candidate might be described as having a positive trend (in terms of publications) which signals that a bright future is ahead, while diminishing output is interpreted as signs of deceleration and disorientation.

A similar reading of academic CVs is made by Latour and Woolgar (1986), when they describe scientists' movements between positions as 'trajectories'. The building of a positive career trajectory is in their analysis dependent on the accumulation and investment of 'credit', which allows researchers to move into new positions. Notably, 'position' here suggests academic rank, as well as 'situatedness' in the field of research, and geographical location. The complexity of studying position is, according to Latour and Woolgar (1986: 211), due to their constant (re)negotiations at the intersection of 'individual strategy' and 'field configuration'. This complexity is also evident in our study where a researcher's location in a broader landscape is an important dimension when evaluating their individual performance. 'Trajectory', which for Latour and Woolgar (1986: 214) is mainly is used to analyse the accumulation of credit, is in our approach a broader notion, which relates to the overarching ideology of 'trajectorism'. Here, trajectoral thinking is viewed as a way of making sense of the world which is manifested in many contexts, including that of academic evaluation. Our approach broadens out to include spatial, institutional, epistemic and interpretative dimensions (Kaltenbrunner and de Rijcke, in press).

Recruitment procedures in Swedish academia

The use of external referees has a long tradition in Sweden, where it originated in the late nineteenth century. Originally the system was introduced to ensure the independence of universities and professors by safeguarding the impartial judgement of merits when recruiting academic staff. The importance of referee reports has lessened somewhat and yet the system plays an important role, both in practice and as a symbol for academic autonomy (Nilsson 2009).

The procedure for recruitment differs considerably between national academic systems (Musselin 2009), and the Swedish system has two distinctive features which makes it particularly apt for studies of this kind. First, the recruitment procedures are largely similar across institutions. Second, government institutions in Sweden should, according to the 'principle of openness' (´offentlighetsprincipen´) make all documentation of recruitment decisions available to the public. Yet, while our material originates from a Swedish context we expect that the judgements made also reflect a broader, cross-national and disciplinary dependent culture of evaluating academic candidates. This assumption is further strengthened by the fact that many of the appointed referees are based outside of Sweden.

The customary routine for recruiting professors at Swedish universities can be outlined in a few steps: first a decision to begin a recruitment process is made and a description of the position and the qualifications needed are advertised. Then applications from candidates, containing a CV, a selection of publications in full text (usually 5–10 papers or books) as well as a description of pedagogical merits, are welcomed. In the next step referees are selected among colleagues at other universities in Sweden or abroad (to avoid bias). The referees should be experts, usually professors, in the research field. The referees are then assigned the task of writing assessments – which we hereafter refer to as *referee reports* – in which the qualifications of each candidate are evaluated. These referee reports are written independently and remotely, based on materials provided by the applicants. The referee reports, together with possible trial lectures and interviews with top candidates, are the basis on which a definite ranking of candidates is made. Finally, the department head, or the dean, takes the formal decision to employ specific candidate(s). This process is to a considerable degree formalized, and candidates can appeal a decision in cases where rules have not been followed. The degree of openness in this process – all formal documentation is publicly available – is quite unique to Sweden.

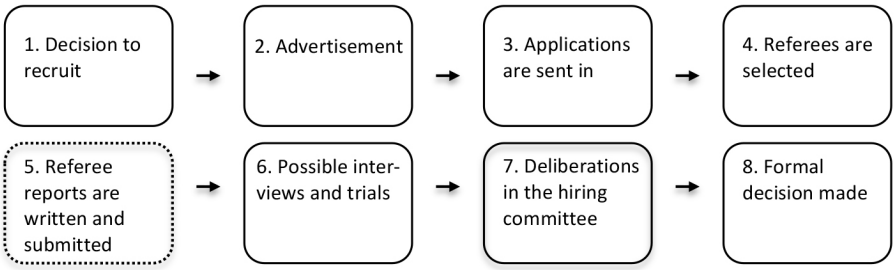

Figure 1 Schematic overview of the hiring process
Source: Authors' compilation.

While the recruitment process as a whole is highly interesting and worthy of study, our analysis is limited to the referee report, and how valuation and ranking is performed in these documents. Thus, we limit ourselves to stage five (see Figure 1); deliberations made before and after this step in the recruitment procedure are not part of the analysis.

Narrative infrastructures and the reduction of uncertainty

Given the importance and stability of the stories told in the referee reports we might view these as 'narrative infrastructures' (Deuten and Rip 2000). Deuten and Rip analyse how stories around a specific innovation form a 'narrative infrastructure' which directs and explains actions within an organization. The infrastructure emerges in the form of narrative 'building blocks', with specific 'ingredients' that become widely acknowledged and established. Eventually a 'master story' evolves out of these accounts where typifications emerge such as *heroes*, as well as *allies* and *users*. Analytically a narrative infrastructure allows actors to guide both future possibilities and relations in a certain setting, while also constraining the stories and interactions that are possible (Deuten and Rip 2000: 74). Moreover, it should be noted that the master story is constantly rewritten by several actors ('authors') and this separates it from a single authored text. The narrative infrastructure reduces '...possibilities (and thus complexity and uncertainty) which enables the various actors to be productive, while at the same time constraining them in certain directions' (Deuten and Rip 2000: 85). While these characteristics are typical of narratives more generally, we find it likely that the specific narrative infrastructure of career trajectories produces its own typification. The reduction of complexity and uncertainty is a key factor to consider, and the journey in the documents studied here is one from ambiguity

(how can research quality be valuated, and who is the best candidate?) to one of relative clarity and order.

The tendency of 'peer review' to take similar form regardless of specific instructions is a further argument to why trajectorism may be described as a 'narrative infrastructure' within these academic evaluation reports, and can help to explain 'how coherence can emerge in multi-actor, multi-level processes, without any actor specifically being responsible for it' (Deuten and Rip 2000: 71). Moreover, a focus on the commonalities of the narratives makes it evident how these documents together form 'master stories' that possibly have an influence far beyond the individuals that are affected by a particular evaluation process. Yet, it is important to emphasize how the 'stories' analysed here, compared to Deuten and Rip's material, to a considerable degree point forwards. This means parts of the trajectorism narrative remains untold, as one goal of the evaluation is the projection of who will perform best in the future. Indeed, we would argue it is the predictive and forward-oriented focus of these assessments which generates the inclination to describe candidates and their careers in the form of trajectories.

Reading and analysing referee reports

Referee reports from a ten-year period starting in 2005 and ending in 2014 were collected from four major universities in Sweden (Table 1). We focused on referee reports with two or more applicants; cases with only one applicant were excluded, as we were particularly interested in how comparisons and rankings are made between candidates/careers. Making candidates and their merits commensurable, and thus enabling direct comparison and ranking is a key element in these reports, and this procedure, we argue, triggers particular 'trajectoral' narrative repertoires as referees are invited to calibrate, and highlight certain features of the CV over others. In cases where two or three referees wrote joint reports these were treated as one document. In total the material consists of 132 reports from four universities (Table 1).

Table 1 Referee reports from four Swedish universities

	Lunds University	Umeå University	University of Gothenburg	Uppsala University	Total
Reports	46	3	22	61	132

Source: Authors' compilation.

Referee reports for professorships at state financed universities in Sweden are publicly available without obtaining permission from either referees or candidates. Still, we decided to not reveal the identity of referees and candidates. Therefore, all reports were coded based on year and university (Lund University: LU, University of Gothenburg: GU, Uppsala University: UU, Umeå University: UMU).

Given our theoretical framing of narratives and trajectories, it made sense to first analyse the dominant logic and structure of these documents. Hence, our first readings focused on analysing the main story told in these documents, and through this 'structural reading' we were able to identify the main features of the dominant narrative. Attention was given to genre specific elements concerning style and argumentation. In the next step, we focused on specific ingredients found in the referee reports, such as how the actors in the document are presented, which values are at stake, how these are measured and ranked. Specific attention was given to the tools and devices used to accrue value, as well as stylistic features. While a more formalized coding might be advantageous when looking for distinct topics and concepts, we found that such an approach tended to put focus on specific themes (authorship, metrics, mobility) rather than on the overall narrative. Consequently, we found that a more holistic reading was better suited for unveiling the broader logics and narratives found in these reports.

In the next step we brought these readings together to tease out the functions of specific features in this narrative. For example, presenting a metric (e.g. h-index) may have certain connotations when introducing applicants at the beginning of a report, and another when used in the final ranking of candidates towards the end of the document. Practically, our method consisted of readings and re-readings of these documents where we looked for distinctive formulations, while also focusing on the more general structure. Framed by the theoretical lens of 'narrative infrastructures' as well as the concept of 'trajectories', these documents were first analysed independently by each author (except for some documents that were only available in Swedish, and thus had first to be translated by BH), and thereafter we brought our findings together.

Framing evaluation: coherence, independence and rigour

The structure of these documents follows a particular order, which is visible in nearly all reports. First, the task at hand is introduced, and the referee might comment on specificities regarding the particular position that is advertised – if it is a position that is mostly geared towards research, if teaching is the main task or if administrative

duties are an important part of the job description. While pedagogic and administrative merits are considered, and sometimes these have a decisive influence on the ranking, the major part of these documents focus on research merits. What happens here is that the 'character' of referees is introduced into the narrative as independent agents that rely on specific knowledge and resources. While the referees are given a great deal of freedom in performing the valuation, they are still, as actors within the narrative, bound to play a specific role, and only small deviations from the expectations are allowed (Deuten and Rip 2000: 87).

One of the referees describes the process in six steps, and while not all assessments follow the same structure this quote reflects quite well how the reports are structured:

> I have undertaken my assessment in the following way:
>
> - Detail [sic] scrutiny of each application with notes of major achievements, particularly in relation to research, publications, PhD supervision and range of teaching experience;
> - Preliminary assessment according to *checklist*;
> - Initial identification of candidates unlikely to meet criteria for the post as specified;
> - Detailed assessment of likely candidates and review of checklist;
> - Calculation of citation rate and h-index from Web of Science;
> - Ranking, excluding those that I did not consider fulfilling the requirements, mostly because of insufficient experience, but also where important information was lacking.
>
> (Bio UU 2012:11, emphasis added)

The checklist referred to above is used by Uppsala University, as an aid for reviewers. In short it details a range of requirements, from rather concrete ones, such as 'The applicant can present a minimum of 15 scholarly publications' and 'The applicant has been a supervisor or co-supervisor for doctoral students', to more abstract ones, such as 'The applicant's publications are of good quality' or 'the applicant demonstrates independence'. The list in itself is quite extensive, and except for requirements in 'research expertise' it lists 'educational expertise', administrative and leadership expertise', 'collaborative expertise' and 'clinical expertise'. While the list is extensive it does however seem to play a lesser role in forming the narrative in the referee reports, and this parallels earlier findings suggesting that formal requirements and instructions have little influence on how evaluation is performed in practice (Langfeldt 2001: 837). One obvious reason is the rather abstract requirements such as 'quality' or 'independence',

which leaves much room for external referees to manoeuver (see also Lamont 2009). Hence, some of the universities have more detailed instructions for how to write referee reports but when comparing the reports from different institutions there is little difference between them.

After the introductory preamble, the referees usually present each candidate separately; this can be done in alphabetical order or, in the case of many applicants, the referee might choose to separate candidates into groups depending on an overall ranking. Usually the top candidates are discussed last, and at greater length than those with lower rank. In cases where there are many applicants – some reports concern more than 40 candidates – it is common to make a first selection where five to ten applicants are singled out as a top group, which are then scrutinized further. Generally the evaluation of individual candidates begins with a short biographical introduction where information on age, gender, former positions, and supervisors are given. In some cases indicators, such as total citations or h-index, are provided as a background fact or to offer 'unbiased' data on the performance of applicants (Hammarfelt and Rushforth 2017). Thereafter referees usually discuss research, teaching and administrative merits where the former almost always take up considerably more space than the latter two (Brommesson et al. 2016). While teaching and administrative merits are usually discussed more generally, research achievements are scrutinized in greater detail, often with a focus on specific publications: this is why in this study we primarily chose to centre on research merits. A reason why referees mostly concentrate on research is that they generally feel more comfortable when judging on research merits. Moreover, in assessing skills in teaching referees must rely on the information supplied by the applicants themselves, which may, as expressed by this referee, make it difficult to make comparisons: 'Generally it can be said that the information regarding pedagogical merits is harder to compare between applicants as the material is presented in different forms and scope' (Bio LU 2005: 8).

When assessing research, referees quite frequently demonstrate that they have read parts of or whole paper(s) and base their judgement on their reading; but more often their account could most likely have been arrived at by scanning the abstract and judging quality based on publication channel or measured 'impact' in the form of citations or other indicators. This external and numerical information then plays an important role when candidates are compared and ranked.

The final section of the reports contains summative judgements of candidates' quality, and applicants are compared and ranked. In some cases referees initially rank all candidates into two or three categories (research, teaching and administrative merits), and these then provide

the basis for a final ranking. How conclusive the final ranking is varies considerably and often referees deliberately formulate their assessment in a way that gives the hiring institution room to manoeuver. For example, a top group can be distinguished (rather than in a ranked list), or the referee might state that a particular candidate is suitable if one kind of profile is looked for but another might be better if slightly different competencies are required. The report might also end with a recommendation that interviews, and even trial lectures, should be conducted to distinguish between top candidates. So, in its most generic form we find that most reports comprise an introduction (including comments on method), a descriptive and evaluative part, and a summative and comparative conclusion (often, but not always, resulting in a ranking). The general narrative then follows a quite well established structure, with many reports following the logic of the scientific article. The 'scientificness' of many reports is further emphasized through the inclusion of various numbers and tables. In a similar manner to the scientific article, these reports are directed at a specific community, and the way they are written, read and analysed is shaped by interactions within the discipline. Hence, the structure and language, as well as judgements and rationales, in these documents are field dependent (Hammarfelt and Rushforth 2017). Analysing these documents may then, as expressed by Bazerman (1988: 47), '…reveal something about its discipline, not so much in the specific writing choices as in the context in which each of those moves makes sense; not in the moves, but in the hints about the gameboard revealed by the moves'.

'Brilliant start': getting on board and keeping the course

Where you have been, and who you have been with, will give some indication of where you are going, and in introducing applicants the referees often provide some background on the current context in which they work: where is the applicant situated, with whom, are they part of a group, and which role does she or he play in this group? Working in a large and established group may be advantageous for making 'groundbreaking results' that can be published in leading, and prestigious, journals; however the ability to lead a group of one's own is a prerequisite for being recognized as a mature and independent researcher for senior positions such as these.

Undergraduate studies by the candidates are often mentioned but the educational role usually plays a lesser role compared to graduate and postgraduate positions. However, being a medical doctor, and thus being able to work as a physician in a hospital, may for some positions be an advantage. These candidates are also seen as having a greater ability to take the leap from 'bench to bed' (LU 2008–1: 5). The main spatial aspect expressed in these documents is the possibility to move

geographically between (similar) institutions, yet here another quality is evoked: the ability to move between the context of 'discovery' and the context of 'application'.

Supervisors, during both PhD and postdoc are usually mentioned and by attaching the candidate to more famous names the referee positions the candidate in a broader landscape of research. Similarly to the 'symbolic ties' used in obituaries (Hamann 2016), the naming serves the purpose of placing the candidate both in an institutional and intellectual landscape (Latour and Woolgar 1986). Moreover, it is not uncommon that evaluative statements of these places and persons accompany the descriptions:

> After receiving his doctorate xxx held a position as a postdoctoral researcher at Research center A, which is an internationally leading laboratory in cancer research. His postdoctoral studies were supervised by yyy, who is a pioneer in computational biology. (GU 2013–8: 1)[i]

Such an introduction sets the background for describing the continuation of the career, and the 'dropping of names' also situates the candidate in a hierarchal space of institutions and renowned researchers. Naming people and places provides a starting point both academically (gaining the PhD) and geographically, from which the trajectory can take off.

Being associated with famous researchers and prestigious institutions is generally perceived as advantageous. Yet, the future performance of high performing candidates having such connections is sometimes questioned as there might be a suspicion that they are too dependent on former supervisors or lab leaders:

> [the applicant] got off to a brilliant start in his career and has received much appreciation and recognition. He is now on to a new phase in his career, but it is not yet clear that he is able, as an independent scientist, to achieve the same success as he did with mentorship. (Bio LU 2014–2: 5)

Therefore, movement between contexts and the ability to collaborate with different researchers is an important quality of a successful candidate in biomedical research. The geographical movements between labs reflects a norm where postdoctoral studies, ideally abroad, represent a transient phase leading either to a permanent position, relatively often in the home country, or it might result in the researcher leaving academia. Yet, as pointed out by Garforth and

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[i] From Swedish: "Efter sin doktorsexamen fungerade xxx som post-doktoral forskare vid forskningsscentrum A i New York, som är ett internationellt ledande laboratorium inom cancerforskningen. Han utförde sina post-doktorala studier under ledning av yyy, som är en pionjär inom beräkningsbiologin."

Červinková (2009), the 'transnational' tends to become more of a permanent state as prolonged periods in different labs as postdoctoral researchers becomes more common. Ideally however the postdoc period remains a key ingredient in becoming an independent researcher, and in many ways it tells the story of the apprentice being sent out into the world and then returning as a master. A rivalling narrative then is that of the wandering postdoc who fails to become a master and find a home.

If mobility is a key for embarking on a career in biomedicine then a steady stream of financial support is central to upholding it. In our documents we see how funding received is seen as a necessity for financing oneself and possibly a whole research group. Not to bring in money, or to be dependent on others to do it for you is not an available option. In order to be considered for a senior position a candidate must show a record of receiving external funding. To bring in a few major grants during a career is not enough, as a steady stream of funding is needed. This is why it is common in these documents to refer to amounts per year rather than to discuss individual grants. Resources, in the form of contacts and finances, are thus necessary in order to move both geographically and intellectually. As formulated by Gregg (2016: 114): 'Valuable lives attract investment to move with agility, comfort and ease while others are left to lag, accumulate weight, and ossify.' Overall, what is valued first and foremost here is independence and portability.

Besides being a necessity for pursuing a career, grants serve as recognition that a particular line of research is deemed fruitful by society, and by fellow researchers as funds are often granted based on decisions made through peer review. Not all grants are equally prestigious, however, and larger funders, which often are more oriented towards basic research, and where proposals are judged by other researchers through peer review, are often given more value compared to smaller and application-oriented funders as the quote from this referee illustrates:

> ... for the grants I gave +++ to applicants who have current grants from at least 2 sources, including VR, EU Vinnova and Cancer Fonden. The ++ means good grants mostly from local organizations; the + limited grants. For my evaluation I mostly considered ongoing grants. (Bio GU 2013: 11)

Receiving resources from commercial entities, for example pharmaceutical companies, is seen as advantageous, yet too much reliance on this kind of resource might cast doubts regarding the applicant's devotion to 'pure research'. Hence, all money does not have the same value when careers are assessed.

In summary, by positioning and attaching candidates to famous persons and institutions the referees fix in place a landscape from which a journey and a trajectory can take off. The leading narrative

told here is that excellent researchers will be associated with, and appreciated by other excellent researchers, and organizations financing them will also be of the highest standard. Yet, we observed a rivalling story, which questions the ability of some high performing candidates to continue an independent career when leaving a prestigious lab or a successful supervisor or lab leader. Despite rivalling stories this part of the narrative is rather uniform. For example almost always a list of past and present institutions with which the candidate is associated is provided. The complexity in evaluating 'research quality' makes the latter parts, in which candidates merits are more directly compared and evaluated, less uniform, and as will be evident there are many ways through which the 'quality' of research is assessed and made comparable in these documents (cf. Lamont 2009).

Scoring high: the measurements of a career trajectory

The research record of a candidate is evaluated in a range of forms, and while a shallower appraisal of submitted publications is the more general route, there are many examples of referees making quite detailed comments regarding specific publications or findings. A key issue for being deemed of high quality is that the research is viewed as 'groundbreaking' while competent but more descriptive work has less value. However, as expressed by the reviewer below, making the distinction between innovative work and more mundane contributions is a hard task, especially when evaluating a long list of candidates from different disciplines.

> I have avoided making qualitative statements on specific research projects since my own competence is obviously variable in the wide array of research fields represented among the 36 applicants. However, I have still tried to identify specific breakthroughs in the research and to give less credit for 'bread and butter' type of research. (LU 2005–5: 1)

Typically what is valued highly by referees is 'groundbreaking research' and research that has the potential to become clinically useful. In many cases the judgement of whether the assessed research qualifies as being regarded as groundbreaking and useful is made based on reading of papers. Still, as indicated in the quote above, many referees – and especially in cases with numerous candidates – feel that their own ability to make judgements on the quality of research is too limited. In these cases additional information, such as number of citations received, is used in order to judge quality, and in the case of more applied areas of clinical or commercial relevance, indicators like patents, or clinical or industry relations become clues that help form judgements on the quality of research. In short these indicators are

used as forms of 'judgement devices' that are employed to assign value to rather disparate and not easily compared candidates (Karpik 2010). Judgement devices serve as shorthand for assessing quality, as well as for legitimizing claims and decisions. For example, a particular paper might be assigned a 'value' by using the status of the journal where it is published, or citations received might be seen as an indication of its value for other researchers (Rushforth and de Rijcke 2015).

Two main judgement devices employed for assessing quality in biomedicine are the 'journal impact factor' scores for journals, as well as citations to papers (Hammarfelt and Rushforth 2017). The impact factor is assigned to journals and not to individual articles or researchers and might therefore seem less applicable when a career is evaluated. Yet, by aggregating impact factor scores for several articles referees can use the 'average' impact factor as a proxy for the quality of the journals in which a given candidate publishes, and eventually use this information to form a judgement on the candidates' career as a whole. This sometimes involves a rather complex manoeuver where the average impact factor scores of journals in which a specific candidate has published is calculated and used as an indicator of 'quality': '[the candidate] has published 55 original papers in international journals with a moderate to high impact factor. The mean impact of the ten selected papers is 4.5' (Bio LU 2005–6: 4). At other times, the inferred link between impact factor and quality is more impressionistic – with statements to the effect that a candidate has a track record of publishing in 'high impact' journals.

One particularly prominent indicator in our material is the h-index. This indicator takes into account both the number of papers and citations. In short the h-index of an individual is the number of papers (x) that have received (x) citations. Hence, an h-index of 10 suggests that the author in question has ten papers which have been cited ten times each (Hirsch 2005). As it takes time for an individual's h-index score to climb it is often considered more relevant for measuring individuals with a longer career in academia. Despite its many limitations, the h-index is a popular indicator, which referees use when performing their analysis. In some cases the h-index becomes a key indicator for illustrating the position that candidates have on the idealized career trajectory, and it is not unusual to find that the h-index score aligns with the final ranking of candidates. In some cases the recommendation of candidates almost completely follows their h-index, and thus forms distinct benchmarks for qualifications for a professorship: a candidate with h-index 15 is deemed as borderline qualified and one with 26 as fully qualified (UU 2014–1).

Citations, both when used independently and when integrated in composite measures such as the h-index, have the advantage of being easily aggregated and compared over time. Thus, it is not unusual to

compare the total citations that candidates' papers have attracted, and referees may also reflect upon the citation trend – is it increasing or decreasing over time?

> His total amount of citations according to http://isiknowledge.com are 3,491 and h-index 29, while where I am searching (Web of Science) I find 2,905 citations and an h-index 28. In any case activity with both publications and citations has shown an increasing trend. (Bio UU 2012–9: 7)[ii]

The applicant ranked in the last position by this referee has their performance compared across different indicators, with the following extract comparing their h-index score with the citation scores of publications that they managed to acquire in a given year: 'She has a surprisingly low citation rate, albeit with a high h–index (max citation <60 in 2010, h-index = 17, Web of Science).' (Bio UU 2012–11: 8). Hence, while the applicant in this case has been able to produce a quantity of papers, which have been cited with some level of consistency, they have not yet managed to reach a level where they visibly impact on the research of their field (measured in terms of citations). Given that the candidates are applying for a professor position, such a high level of influential contributions would appear to be expected by this stage of a career. While they perform less impressively in terms of recognition and fame (measured in papers with citations above a certain number), they are partly redeemed in terms of the consistency with which they produce papers, indicated by a steady stream of papers above a minimum limit of citations (the h-index). The fact an individual has a relatively high h-index score (at least in comparison to their own citation impact score) is given as evidence of a trajectory of 'performance' which has at least remained consistent, although clearly not impressive enough to be ranked more highly. This comparison is illustrative of how different temporal orders emerge around bibliometric evaluation indicators. Notably in this case the evocation of performance over time provides a slightly more flattering image of this particular candidate's publication trajectory than the citation score. The 'generous' reading of a candidate's past performance appears to be a form of procedural politeness that accompanies a lower ranking. It is probably a means of conveying that the candidate is not 'bad' per se, just not impressive compared to the others.

Overall, different bibliometric indicators infer distinctive temporal orderings when evaluating research. Impact factors can be used to

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ii From Swedish: "Hans totala citeringar enligt http://isiknowledge.com anges vara 3491 och H-index är 29, medan där jag söker (Web of Science) finner jag 2905 citeringar och H-index 28. I vilket fall en god aktivitet där både publikationer och citeringar visat en stigande trend.

assess research early, before it has managed to gather citations, and even sometimes before it has been published (e.g. when a paper is referred to being under review for a particular journal). Citations, on the other hand, can only be used retrospectively as it takes at least a couple of years for them to accrue, but on the other hand they are easily aggregated and transformed into more elaborate indicators. Such an indicator is the h-index, which captures both productivity and 'impact', and it does so over a whole career. Still, the role of metrics in these narratives is not to actually form the trajectory, but rather metrics in the form of for example publications; authorship positions and citations are instruments which can be used to estimate where candidates are positioned compared to an idealized trajectory, which then facilitates a comparison with other candidates. Together, these examples illustrate how different temporalities associated with particular indicators can be combined to complement one another, or to undermine the other, in statements which justify rankings.

If number of papers is a means of evaluating the productivity of an author, and the journal impact factor and other bibliometric indicators are used to access 'impact' or even quality, then authorship (position) is the means through which 'independence' is assessed. Generally, the ideal trajectory is from first author – a position generally associated with the PhD and postdoc phase – to the last position, often known as 'senior author' position. As will be shown in the next section, the ratio of authorships positions over time becomes an important measure when candidates are compared and ranked.

The ideal career trajectory and the masculine norm of linearity

The candidates in first position in referees' ranking reports tend to score very high or highest across a number of measures, denoting a very 'progressive' course through their academic careers: 'He has an outstanding research record; 172 published papers, first author on 17 and senior author on 68. There were >200 citations in 1999 and >700 in 2010 and 2011, and an h-index value of 50 (Web of Science)' (UU 2012–11).

While scoring well on a range of indicators supports a first placed ranking, a tactic for legitimating the ranking of a candidate below first place is to juxtapose two or more measures, thereby demonstrating a 'mixed record' of performance. Thus those falling short of the top positions do well on some indicators but tend to be undone by how they score on others. For instance, in the same referee's evaluation report as above, the candidate in fifth position scores well on productivity and citation impact, but is commented upon for the lower prestige of journals in which they have published:

> She has a very impressive publication record (96 papers, 21 as first author, 9 as senior author) although not perhaps in the most prestigious journals but with significant citations (consistently above 250pa [*sic*] since 2004, max 459 in 2007, h-index 29, Web of Science). (UU 2012–11)

Clearly the productivity and impact of the candidate's publication trajectory has been strong, yet she loses credit on the basis of the journals targeted, with 'prestige' of journals often being premised on difficulty associated with peer review processes. This is used as a proxy to measure both the intellectual credentials and 'ambition' of the candidate. Although the candidate does well on some of the major temporal virtues (productivity and celebrity), taking 'shortcuts' in the publication process by avoiding the tough peer review processes and high rejection rates of prestigious journals appear to undermine the candidate's credentials for the position.

This type of trajectory, perhaps best described as 'mixed records', shows how candidates are matched against an ideal trajectory. Here we have a candidate who is preforming very well in terms of number of publications, but lacks top journal publications. However, the candidate has attracted quite a lot of citations. Hence, this is a researcher that almost, but only almost, matches the highflying trajectory, and while a high citation rate partly compensates for 'top journal' papers this divergence might still be at her disadvantage. (In this particular case she ended up in the top group of highly qualified candidates, but was ranked rather low, five, within this group). Most candidates have somewhat of a 'mixed record' especially if other criteria as teaching and administrative skills are taken into account. However, it appears that some 'flaws' (not being involved or interested in teaching or leadership) are more easily overlooked, whereas not having a stellar publication record is more damaging. One explanation might be that referees judge that great researchers can become good leaders and teachers, but the opposite does not apply.

What we call 'mixed records' have been described by Garforth and Červinková (2009: 179) as a 'patchwork or horizontal career'. These are careers that do not match with the 'linear bioscience trajectory'. Having such a career does not necessarily mean that a career in science must be abandoned, although it might eventually come to this point, but it will be more precarious and marginalized compared to the high flying model.

Still, disrupted careers may be repaired by the use of 'compensatory devices' as in the cases below where the h-index (which is highly dependent on the age of the researcher) is adjusted not only for different lengths of career but also for parental leave.

> Their academic careers are of different lengths which makes it interesting to study h-index divided in years after PhD-defence (minus parental leave): yyyy 0.68; zzzz 1.56 and xxxx 0.9.
>
> During recent years she has had two children, which must have slowed down her science a bit (GU 2014–1: 2).

Yet, it remains that the 'masculine norm of linearity remains invisibly connected to excellence' (Garforth and Červinková 2009: 185). In fact, attempts at fixing the problems associated with this masculine norm appear to reinforce the norm, and rather than questioning the linear trajectory it repairs and strengthens the narrative.

While the linear trajectory is an ideal, we also find that there is recognition that eventually careers reach a peak and plateau, and especially for more senior candidates, referees relatively often discuss their ability to keep pace, rather than accelerating. Thus, rather than projecting future accomplishments it might be said that a candidate is 'still going strong'. There are also examples where the innovativeness of more senior researchers is questioned explicitly: 'He has done well recognized work within lipoproteins, but his production has declined and lost focus during the last 5–10 years' (Bio LU 2011–2: 3). Thus, a decrease in research intensity, a deceleration of the academic career, is here accompanied with a sense of disorientation. Thus, an ideal 'trajectory' combines velocity with a distinct sense of direction and purpose; and this quote clearly illustrates how the temporal and spatial are dependent on each other. While the main question for more experienced researchers is to keep up the pace and the sense of direction, more junior candidates still have to prove their capability of establishing an independent research line: 'He has contributed to an internationally well recognized scientific production, also with papers published in high impact journals […], but has yet to show whether he will be able to continue a high profile production' (Bio LU 2013–1: 8).

Making comparisons: the role of lists and tables

When making comparisons, and presenting a ranking, referees highlight certain qualities that can be readily compared. One relatively common strategy for achieving and justifying a final ranking is to gather key metrics on candidates' performance in a table. These tables can include a range of data – from birth year to number of citations and supervised PhDs (Figure 2).

Table 1. Merits of applicants

Name	Years from PhD	Year of Docentur	Original papers			Review articles/book			Total # citations	Current Grants	Supervision of				
											PhD students				Post-docs
											Completed		Ongoing		
			T	F	L	T	F	L			Main	Co-sup	Main	Co-sup	
Candidate A	17	2004	52	8	8	13	7	4	1732	++	2	3	1	2	2
Candidate B	15	2007	24	11	3	4	2	2	573	+	2	--	1	1	4
Candidate C	12	2009	25	5	13	17	8	3	514	+++	2	2	1	--	6
Candidate D	9	2011	30	6	3	3	--	2	837	+	1	1	1	--	2
Candidate E	13	2011	23	6	6	--	--	--	708	--	--	2	--	2	1
Candidate F	17	2001	42	8	21	3	1	1	1715	+++	5	1	2	1	2
Candidate G	11	2009	38	8	6	--	--	--	643	+++	4	3	2	2	5
Candidate H	20	2000	40	11	14	12	8	1	1030	++	3	--	4	1	2
Candidate I	12	2009	22	8	4	5	3	--	975	+++	2	1	1		3
Candidate J	11	2009	29	10	5	7	5	2	810	+++	--	2	2	1	2

Figure 2 Picture of table titled 'merits of applicants' (anonymized)
Source: Bio GU 2013: 13.

This table provides a range of numbers that for an experienced reader can easily be translated into a career trajectory. For example: the relation between first authored papers (col. F) and last author papers (col. L) will help to distinguish between candidates that have their own research group, and those that are still dependent on others. Reviews which you are invited to write, as well as citations, show your recognition in the wider community. Current grants are an interesting feature in this table as the system of assigning candidates' scores (one, two or three) is based on a previously introduced rating of grants. In relation to the practice of coming up with a ranking system for grants one would ask why other possible merits, for example connections to industry, or clinical practice are not ranked. Moreover, years from PhD and years of *docentur* (equivalent of the German *habilitation and in English roughly corresponding to associate professor*) are considered important, but not for example parental leave, clinical work or teaching.

By outlining achievements such as receiving PhD and publishing first paper on a timeline, the temporal dimension becomes even more pronounced. A particularly illuminating example is this handcrafted illustration (Figure 3).

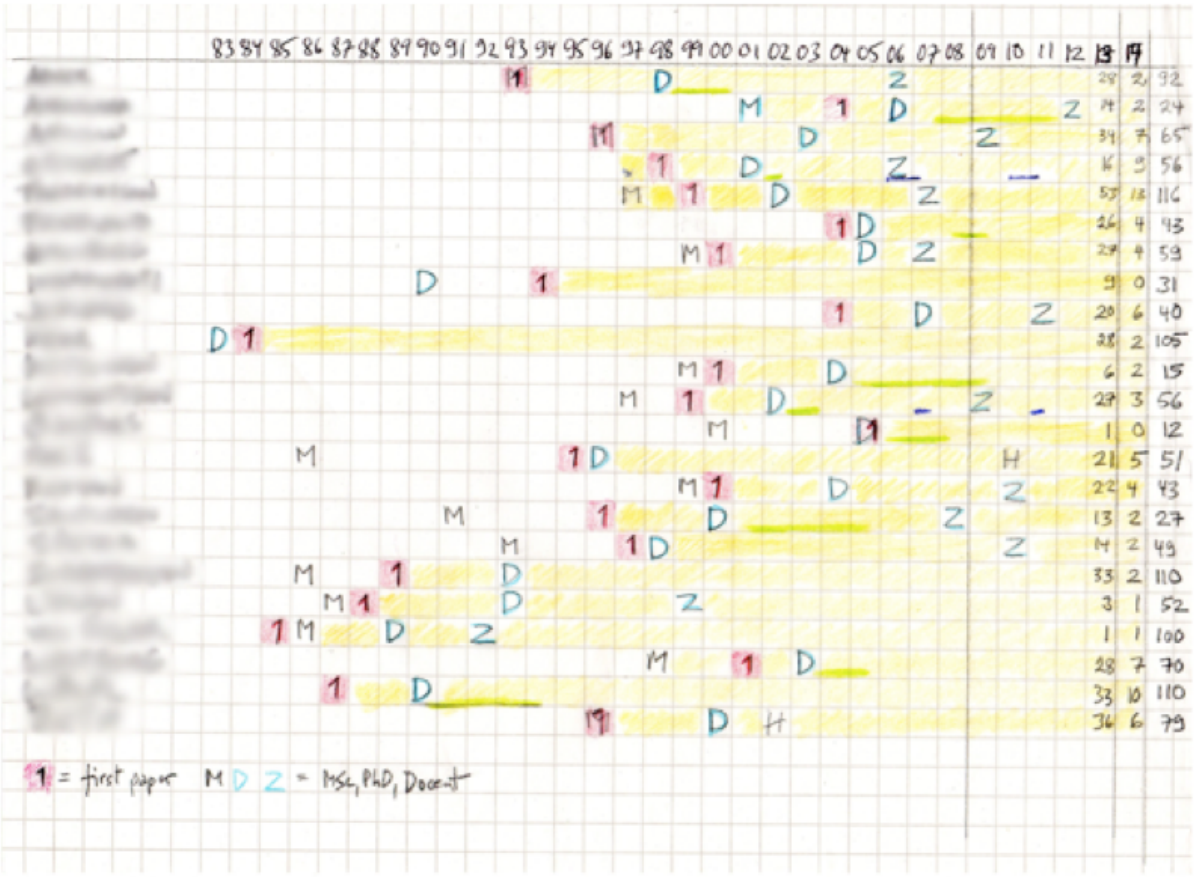

Figure 3 Picture of illustration titled 'A schematic view of applicants' careers in science' (anonymized)
Source: Bio UU 2014–1: 33.

Here a whole career is effectively summarized using key data such as first paper (1), degree in medicine (M), PhD degree (D) and Docent (Z). Yellow colour appears to be used to highlight the number of years that applicants have been an active researcher. The last three columns comprise the number of papers between 2009 and 2013, number of papers in 2014, and total number of papers. The importance of the last five years is further stressed by it being marked as separate from the rest of the table. Positioning publications over the last years (2009–13) as distinctive criteria will place doubt on candidates having many published papers in total, but showing a less impressive (declining) output over the last years. The table, which is introduced with the title: 'A schematic view of applicants' careers in science', is given as an

appendix following the actual report. Its placement and the rather informal note-taking design suggest that this illustration was not primarily meant to be part of the report. Rather it appears to have been used as an aid for the referee in turning disparate sets of data into distinct trajectories that can easily be visualized and compared.

Thus, tables, lists and rankings serve as an important ingredient in the narrative infrastructure. Their function is to summarize key information on the merits of applicants, and at the same time make merits directly comparable by commensuration. Moreover, by structuring and making information uniform the table appears to render a sense of impartiality, as the table only conveys information that is already given and established earlier in the report. Indeed, both the table and the list effectively assign every item, in our case candidates, to a specific and stable position. This operation reduces the complexity of information, yet it may also result in a loss of 'real understanding' of the phenomenon at hand (Goody 1977: 73): for example the particular epistemic orientation of a candidate.

Discussion

In this paper we have described how practices of making a summative judgement of the career trajectory of individuals in report writing is made possible by extracting key pieces of information from the candidates' CVs and comparing this with the equivalent information on others. We have argued that the trajectory is a means that reviewers have of handling the material form of the CV and its masses of dry information, which somehow need bringing to life in the written reports: it is an economical and interesting way of persuading their audience about the merits of one candidate over another. While not the only or necessarily best way of narrating differences between candidates based on the information at their disposal, it is, we suspect, probably one of the most common ad hoc solutions reviewers draw on to accomplish this task. We note that within the reports, providing the same information for the different applicants is a tactic used to legitimate the position of a candidate within a final ranking. It serves as a rhetorical strategy which demonstrates that the ranking is based on a considered, systematic, evidence base. Although most referees do not state that their final rankings were made mechanically on the basis of these scores, the rank ordering of candidates is often consistent with the citation scores (citation numbers, h-index, etc.). Listing this same information for each candidate clearly provides an implicit justification/support for the ranking. The comments accompanying such figures provide interesting moments in revealing how temporal orderings attached to different indicators are made to relate when explaining a ranking.

In a sense, this means condensing the entirety of research activities with which an individual has been associated into a few marks on an electronic document, rendering the candidates' career achievements commensurable. A common feature of the report writing in this respect is to provide information on various quantitative indicators of authorship. Drawing on Deuten and Rip's (2000) notion of narrative infrastructure, we see trajectories as a master narrative which figures prominently in this institutionalized academic evaluation setting. A master story which is repeatedly articulated in our material is the one from 'dependence to autonomy' and from 'apprenticeship to mastery'. It describes the journey from student to lab leader and professor, and one of the central ways in which this transition is manifested is through authorship: position in the author list of published outputs reveals one's progress along an implicit or explicit trajectory. Generally, this means following a pattern of going from first (primary investigator) to last authorship (research leader). Researchers being caught in the middle for too long, it is assumed will have to abandon the 'high flying trajectory' and instead embark on a more horizontal career – thus making them unsuited to the posts of associate and full professor (Fochler et al. 2016). In many ways this master story mirrors Appadurai's (2012: 26) description of 'trajectorism' as a progressive 'cumulative journey from here to there' which he views as deeply ingrained in western thinking, and in modern (social) science.

In many ways our analysis mirrors Latour and Woolgar's (1986) description of career trajectories and cycles of credit in the biomedical sciences, and it relates to accounts of academic capital more generally (Fochler 2016; Munesia et al. 2017). Importantly, trajectorism goes a step beyond conventional sociological accounts of commensuration (saying how A is made comparable to B), because it effectively combines the dimension of time and space. In bringing in time, one thing the trajectory device seems to evoke as a central value is efficiency. According to the *Heritage Dictionary* efficiency is 'the ratio of the useful work performed by a machine or in a process to the total energy expended or heat taken in'. Metaphorically the individual's career is imagined in the referee reports as a machine/process which has had various resources poured in – one thing the reviewers are effectively inferring from CV information is whether the individual is likely to give a good, efficient 'return on investment'. This resonates with arguments made elsewhere about the Taylorization of academic work, where rankings and ratings amplify valuation in terms of productivity e.g. quantifying how much valuable output an individual and institution produces within a given time window (Nedeva et al. 2012; Mingers and Willmott 2013). Thus, the trajectory brings efficiency and consistency of individual performance over the career as a whole to the fore, by re-presenting a candidate's career (based on

their CV) as measurable–accountable against an ideal career path characterized by linear and proportional progress.

Consequently, we suggest that the logic of 'trajectoral thinking' limits the ability of 'heterarchical' valuation (Stark 2009) as it assigns worth based on a fixed and ideal conception of how a successful career is structured. 'Trajectoral thinking' could thus become a mechanism that risks locking individuals into particular evaluative practices. The persuasiveness of 'trajectorism' entails that such consequences may also be visible outside the academic context. In fact, many contexts in which a narrow register of performance is employed can be said to suffer from similar preoccupation with ideal career paths that take the form of trajectories. Contexts, especially those in which 'progress' is easily measured – for example in sports – will trigger thinking in these terms, while other contexts, such as art and literature, with equally demanding activities, may be less prone to fixate on an 'ideal career trajectory'.

The 'narratives' both assess past achievements and predict future performances. In order to achieve these two goals the referees not only have to judge past achievements but they also have to make projections for the future. The trajectory helps referees to construct an independent, expert account of the 'track record' of candidates upon which decision makers will be 'placing their bet'. 'Track record', if we look at the etymology of the term, comes from records of how well a racehorse has performed on a particular track over previous races. Thus, in following the logic of the bookmaker it is not always evident that the candidate having gathered most 'merits' over a whole career should be ranked first. The logic of the gambler is not necessarily compatible with scholarly peer review which usually, for example when assessing a manuscript for publication, is supposed to focus on existing qualities of the work, and not on its projected future value. Hence, different temporalities of evaluation result in a situation where different evaluative logics might come into conflict with each other, and one obvious tension is when the age of candidates is brought into discussion: how should a younger and promising candidate be valued compared to an older and more experienced researcher?

By analysing referee reports as 'narrative infrastructures' we also bring to the fore how referees come to act both as 'narrators' and 'characters' in the reports. In recognizing their role as characters – often in the role of the impartial, unattached judge who proceeds systematically and rigorously – we open up for new possible venues of reflexivity when understanding how valuation takes place in these documents. Furthermore, such a reading displays two kinds of heroes: the referee that through his or her own knowledge and experience brings order and clarity, and the highest ranked candidate who emerges as a 'winner' in a highly competitive context. Furthermore, the

concept of 'narrative infrastructure' accentuates how these documents come to sustain the trustworthiness and independence of the academic system at the same time as they strengthen disciplinary formations and identities. Consequently, the performative function of these documents should not be underestimated as they come to define what is needed to become a professor, and what is needed in order to be recognized as 'one of us'. The semi-openness of these documents – the evaluation reports of candidates are shared with all applicants, and they are available to anyone upon request – positions them as exemplars of how research is evaluated. The evaluations thus provide concrete guidance to what is valued in a particular field at a specific moment in time.

As with any approach, an emphasis on 'narrative' aspects has certain drawbacks. Our study deliberately focused on a very limited part of the recruitment process and the evaluative process associated with it. For example, the actual outcomes and decisions made based upon these documents was not part of our analysis. Neither did we explicitly discuss the fairness of the assessments made or its consequences for gender equality. Nonetheless, there are clearly potential tensions between the ideal career trajectory found in these documents and how real lives are lived by women and men in academic biomedicine, and the 'masculine' norm is very much present in many accounts. Especially, discussions concerning 'independence' appears as a particularly interesting perspective to analyse further in relation to gender, as it seems that women were more often judged as dependent on lab leaders and former supervisors (see also Thornton 2014). More generally, we might ask how the rather narrow definitions of being a 'good' or rather 'hire-able' researcher expressed here might influence the lives of those being evaluated. What does it take to perform a career that fits with the ideal trajectory in these documents; how is the life of biomedical researchers shaped by the pressure to perform according to this script; and does it dissuade biomedical researchers from pursuing work which is possibly more clinically relevant but less likely to lead to career advancement and stability (Rushforth et al. 2019)?

The narrative infrastructures found in these referee reports are not easily challenged, and our tendency to think in terms of trajectories is, as Appadurai (2012, 2013) points out, deeply ingrained in western thought. Yet, other narratives are feasible and one way in which the linear trajectory outlined here can be challenged would be to evoke a set of more heterogeneous temporalities when evaluating careers. These temporalities could highlight qualities such as temporal autonomy, care, sustainability and inclusion (Vostal 2016; Gill 2018), which would stand in contrast to 'trajectorism' with its notions of (global) competition, conquering, speed and movability. In relation to assessing academic performances manifestations of merit in terms of

teaching, caring for joint work and leadership would be important building blocks in such a narrative. Generally these are qualities that are highly valued within organizations yet in academic evaluation they tend to play a minor role. We suggest that one reason for these merits being devalued compared to research is the failure to formulate competing narratives of performance, which challenges the prevailing, and rather one-dimensional, 'trajectoral' mode of thinking.

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