Making a Scientist: Discursive "Doing" of Identity and Self-Presentation During Research Interviews

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Abstract: Participating in an interview is taking part in an activity system that is often very different from the daily lives of most individuals. Grounding ourselves in an activity theoretic perspective, we regard the interview event and who or what these agents become during that process as an outcome of the activity of "doing interviews." In contrast to the modern concept of identity, a stable and characteristic feature of an individual, we understand identity as arising from social interactions—identity and activity are said to be in a dialectical relationship. Interviews are thus occasions whereby identity and issues of self-presentation have to be managed by agents primarily through discourse processes. By further regarding interviews as "topic" in this article we make salient their co-constructive nature qua social interaction rather than as a neutral data gathering tool. Our case study of an interview with a renowned environmental scientist demonstrates how identity and issues of self-presentation were discursively played out using the concepts of "stake" and "footing." It was found that our participant came to be a full-fledged member of the scientific community with traits typically ascribed to scientists such as expertise, objectivity, passion and disinterestedness. This discursive "doing" of identity and self-presentation during research interviews is a pervasive effect and cautions practitioners against treating interviews as an unproblematic methodology.

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1. Introduction

> Interviewer: Well, you know, so, what does the research mean to you personally?
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> MacArthur: Satisfaction of achievements. That I want, satisfaction of contribution to the society? I think that's the, that's the major fulfillment, that I don't do science, just for the sake of science. I want to have my science make a difference, make an impact. If it doesn't, I'm not interested in doing that science; it has to have some impact on the society, on the economy, on health, you know, somewhere beyond my area of research. Yes, there is always a, a satisfaction of producing a top-notch paper in the world's top journal, that's a different kind of satisfaction, among my peers. But my greatest satisfaction is beyond my peers, to the society, to the general public actually, so that I can take my science to [the] general public, actually make them understand exactly what I do.
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> Interviewer: Wow that's great. If you could have one word to describe what drives you in your work, what word would that be?
>
> MacArthur: Fun?
>
> Interviewer: Fun?
>
> MacArthur: Yes. It's fun.

MacArthur (pseudonyms used throughout) is an internationally renowned environmental scientist who participated in our larger study on knowing, learning and identity in different communities. There is in fact, more to MacArthur than meets the eye, or more accurately the ear of the researcher. In that short time that he graciously granted us for the interview, he communicated more than just important details about his life and research. MacArthur emerged from the interview with the identity of an excellent scientist in the community. For example, we (are made to) realize that he is not just any scientist who publishes papers but one who desires to publish "top-notch papers in the world's top journal." He is a professional who does not just do any science—which those interested in the history of science might associate with "normal science" (KUHN 1970)—but in science that makes a difference in and to society, a science at the cutting edge that makes an impact, a KUHNIAN "revolutionary science." MacArthur, however, considers communicating his research to wider society an even more satisfying challenge. His is the identity of a communicator, someone who does not only talk to and write for his peers but also to the general public. In the interaction with the interviewer, he becomes a modern day Janus with one face speaking to his scientific peers and the other to the general public. These intimidating challenges that would deter many from engaging in science are, according to MacArthur, fun! [1]

In this article we demonstrate that during the rather distinctive activity that we call the research interview, both participants and researchers are active agents whose identities are constituted in that process. Our standpoint derived from cultural-historical activity theory is that who a person is cannot be divorced from taking into account the social contexts of the environment. Furthermore, the means by which these concerns are primarily negotiated and accomplished is through the medium of discourse during interviews. The activity theoretic

perspective that is adopted here stands in contrast to traditional psychology, which, similar to folk psychology, has tended to view identity as an innate construct deterministically controlled by other innate variables. By further treating interviews as "topic," we strengthen the view that they are not straightforward elicitations of information from participants to researchers but are sites whereby identity and issues of self-presentation are accomplished. Our study is significant in that (a) it contributes detailed empirical data to the small group of studies whereby identity and issues of self-presentation are shown to be discursively constructed in activity like interviews (see ABELL & STOKOE 2001), and (b) it cautions researchers against an unproblematic use of the interview which is a corollary from the previous point. [2]

2. The Interview as Resource and Topic

We begin by considering the interview as a general tool from a methodological standpoint. As a preferred data collection strategy it is unrivalled within the social sciences—about 90% of all research conducted here had used it in one form or another (BRIGGS 1986). This is perhaps not surprising for we live in an *interview society* (ATKINSON & SILVERMAN 1997) whereby interviews are a central part of meaning making in social life. Since interviews are utilized so regularly and oftentimes uncritically, it is therefore vitally important for its epistemological foundations to be appreciated by all researchers. There are four general ways in which interviews are used, namely as (a) "a source of witness accounts of the social world," (b) "a source of self-analysis," (c) "an indirect source of evidence about informants' attitudes or perspectives," and (d) "a source of evidence about the constructional work on the part of the informant (and perhaps also the interviewer) by means of which interview data are produced" (HAMMERSLEY 2003, p.120). [3]

In this taxonomy of interview functions, the first two points pertain to interviews as *resources* while the latter two pertain to interviews as *topics*. Beginning with the studies by CICOUREL (1964; 1974) and GARFINKEL (1967), advocates of the latter two points have questioned the role of interviews as a neutral data-gathering instrument that affords an in-depth window into the mind no matter how rigorously conducted. These positions which depart from the traditional and commonsensical views in (a) and (b) have instead understood the interview as a joint or co-construction process that concerns itself with issues of accounting, self-presentation and identity management by participants in a socially situated context (GOFFMAN 1959). In other words, the researcher now analyzes how people present themselves in the process of talking, make sense of each other, and the rhetorical devices that they use to accomplish these tasks. Focus is now on examining "doing" the interview as a social encounter between researchers and participants and this takes significance over disclosure of content matter that arises. Understood this way, interviews are active interactions between people acting in particular social contexts rather than merely an exchange of information or an authentic reflection of an "out-there-ness" that has to be excavated by the researcher. [4]

Which position is to be preferred? Practitioners adopting interviews as a resource understand and utilize interviews as data that help them discover something about the world and social reality. However, researchers using interviews as a topic despair in extreme cases of even obtaining any useful information from participants themselves because whatever is said can never be something solely attributable to the participant (BREUER & ROTH 2003). What is perhaps more meaningful and interesting to these practitioners of interviewing is the manner in which both research participants and researcher *managed* the interview as a social process (SUCHMAN & JORDAN 1990). The "radical critique of interviewing should not be adopted uncritically. At the same time, to ignore it would amount to complacency, since it points to some serious dangers in using interviews and especially in relying exclusively on data from that source" (HAMMERSLEY 2003, p.124). We thus advocate treating the interview as both resource and topic in a stance that can be described being faithful to and yet critical of research data and the circumstances in which it was collected (BAKER & JOHNSON 1998; BRIGGS 1986; GILBERT & MULKAY 1984; HOLSTEIN & GUBRIUM 1995; 1997; SILVER-MAN 2001). In doing so, we realize that as much as there is no reason to doubt the veracity of our participants' accounts normally, we are constantly mindful that interviewing is a social interaction that takes rhetorical effort to accomplish successfully. Thus, both researchers and participants take on their normative roles, which usually means that the former initiate the interview, ask questions, and steer the conversations while the latter are the actual subjects of interest and respond to requests of researchers. Issues of identity and self-presentation are at stake and have to be managed actively but are usually ignored or glossed over when taking interviews solely as a resource. [5]

3. Activity Theory and Identity

What we have articulated so far about how identity and issues of self-presentation develop in social situations like interviews has been similarly arrived at from a very different perspective—activity theory. Activity theory normally describes the trajectory of ever-changing participation in collective activity while interviewing as topic speaks about the hidden complexities of the co-constructional work that arises from social interactions. Some moment's reflection would reveal that there are indeed similarities in both of these positions that inform how we should treat research interviewing as social activity/interaction. Western psychology has traditionally perceived identity as an innate construct in a person who needs to expend effort to locate and cultivate it for proper psychosocial functioning (CÔTÉ & LEVINE 2002). Activity theorists in contrast understand identity as being both process and product of human activity (ENGESTRÖM 1987). Depending on the nature of the social activity, different identities arise in persons that are deemed appropriate or necessary for the occasion. By engaging in praxis, people constitute and (re-) produce the very structures that gave rise to the practices themselves. We also understand that identity and action are mutually constitutive in a dialectical relationship. Exhibiting certain behaviors, norms and values that characterize one's participation and affiliation in a specific community is common knowledge (LAVE & WENGER 1991). An interesting question now arises when we ask whether possession of

identity in the first place motivated the expression of these activities or did praxis generate identity? Though the answers to this question have not been fully developed, we nonetheless believe that identity and activity develop in a dialectical manner similar to the mutually evolving concepts of understanding/explaining (RICŒUR 1991). However, these abstract problems should not detract from realizing that who one is cannot be determined independently of the social and material situation that agents are embedded in. For example, "being a teacher in firm control of a class" or "being an A student" are not aspects of a stable identity, although our research participants may treat them as such. Rather, identity is continuously produced and reproduced in activity, which inherently allows people to be different across situations (ROTH et al. in press). Rather than being astonished that someone is a good teacher in one class and a poor teacher in another, and rather than describing them as having a good day or a bad (hair) day, we simply accept that identity is the *outcome* of activity instead of its precondition. All identities are constantly evolving over historic time in the constantly changing social interactions or communities that one participates in (LAVE 1993; WENGER 1998). Yet framed in the contexts of an urban, inner-city school, both structural and cultural inequalities can severely constrain agency in students (ROTH et al. in press). Without drastic changes in broader society, the identities of most of such "youth-at-risk" would be unable to transcend that of a school dropout or failure in life. More precisely, we find that identity does not develop in solo contexts but requires the mediation of other people (and division of labor, tools, rules) in the salient activity system. In a study of expert fish culturists it was found that their identities as experts could not have developed without the assistance of support biologists who helped deepen their practical understanding of fish culture (LEE, ROTH & BOYER 2003). When these forms of mediation were lacking, there was not only a withdrawal by these fish culturists from the activity system of the hatchery but also numerous instances of dis-identification with the organization. [6]

It follows that the identities of both researcher and participant are thus enacted during research interviewing *qua* interactional event. To exemplify our case, we draw on data collected as part of a larger project on the interaction of local (aboriginal, i.e., Traditional Ecological Knowledge [TEK]) and everyday knowledge about the environment. In particular, we selected one interview with a scientist working in a North American university. Rather than thinking about him or the researcher independently of their context, we view the interview, what is being said, and who the participants are becoming (MacArthur the scientist and researcher as earnest inquirer) as an outcome of the activity "doing interviews" (see ROTH, LEE & PEEBLES 2003). Both MacArthur and the researcher therefore partook during the interview session in a common activity system with a shared motive of producing a fairly complete and mutually satisfactory recorded interview that subsequently was to be transcribed. In the progression towards achieving the objective of the activity system, the subject (individual or groups of individuals) is changed; identities are reinforced, modified or discarded. The division of labor in activity theory required certain behavioral norms expected of such encounters as mentioned earlier while being governed by rules of courtesy and respect in the company of a distinguished scientist. By all these

aforementioned criteria, the interview became not just a straightforward and unproblematic elicitation of information—in the way most qualitative researchers would assume this process to occur—but an interactional process by active agents whose identities and issues of self-presentation had to be managed. Research interviewing is not part of quotidian life for most individuals, which means that participating in this activity system demands a specific re-orientation and concomitant management of identity. Activity theory therefore provides an alternative and robust epistemology into why interview data have to be considered as topic as much as a resource. [7]

4. Method: A Framework for Analyses

Data analysis in activity theory based research has generally relied on long term, fine-grained ethnographies of individuals or groups of individuals in collective activity. For our current study we have chosen to concentrate instead on the chief meaning making process in the interview that enabled it to be accomplished successfully as joint social activity—discourse. In taking interviews as topic, we further find support for considering our interview data as a means for achieving intersubjectivity, a co-construction of social worlds during talk. We have thus relied on a large and heterogeneous group of analytic procedures used for spoken and written texts known as discourse analysis. Discourse Analysis (DA) is concerned with how talk is used to perform social actions; how certain phenomena are created, reified and taken for granted. If DA foregrounds everyday discourse as being adequate and useful in its actional aspects rather than judged valid or correct in content (EDWARDS & POTTER 1992), then DA is ideal for demonstrating how identity and self-presentation are played out in interviews. DA takes into consideration how people produce their versions of the world and how these are legitimized by various means. Practitioners of DA understand that action does not follow from words because words themselves perform actions (as in J. L. AUSTIN's sense) during social interaction. It is believed that ultimately the construction of reality during discourse such as interviews is as much *how* (form) it is said as *what* (content) is said (HOLSTEIN & GUBRIUM 1995; 1997). [8]

Early research in talk among scientists (GILBERT & MULKAY 1984) highlighted a discursive device called "interpretive repertoires" which are "systematically related sets of terms that are often used with stylistic and grammatical coherence and often organized around one or more central metaphors" (POTTER 1996a, p.131). As described by SILVERMAN (2001), it was found that scientists engaged in an empiricist repertoire when they described matters regarding science as truth, which gives the impression that there is a reality "out there" in "nature." These types of devices were used when scientists spoke at conferences, during writing of scientific papers and other formal occasions. However, when they wanted to ascribe doubt or error to the productions of others (rival laboratories or scientists), they used a "contingent repertoire." Use of this contingent repertoire was confined to speaking among friends or colleagues in informal settings. Interpretive repertoires highlight the situated nature in which something that is normally presented as monolithic like science can take on different meanings in

different situations. Though useful in showing how scientists manage their identities through talk, the interpretive repertoire has recently been criticized for being rather difficult to implement as a discursive tool (SILVERMAN 2001). [9]

Here we wish to focus on using the more limited concepts of stake and footing (described below) to demonstrate how identity and self-presentation are specifically managed in interviews *qua* activity system and social interaction. During discourse, accounts or reports are constructed as (come to be) factual and therefore rhetorical effort has to be made to prevent these from being construed as false. It is this active management of how people attribute blame or responsibility that is called "stake." "Footing" is another rhetorical device embedded in these accounts that plays a major role in constructing believability and undermining possible alternatives. Taken together stake and footing allowed language to perform identity and self-presentation functions while MacArthur spoke about his life and work during our research interview. What MacArthur said and his deployment of stake/interest and footing, however, should not be understood independent of the interview context, the particular questions asked, and the history of the interview event that evolved unforeseeably from the transactions between its participants. [10]

4.1 Stake/interest

The management of interest or stake is a fundamental concern of the two offshoots of ethnomethodology—discourse analysis and conversation analysis. Here, we are concerned with how people manage blame and responsibility in the process of accountability (being considered justifiable, rational, acceptable or believable): "People *treat each other*, and often treat *groups*, as entities with desires, motivations, institutional allegiances and biases, and they display these concerns in their reports and attributional inferences." (EDWARDS & POTTER 1992, p.158) [11]

Stake can be used as a rhetorical device to discount the significance of an action or to rework its nature (e.g., a player claiming disinterestedness in sports after loosing a game or buying a present for the boss is currying favor rather than a friendly gesture). In other words, stake attempts to present a version of the world that things are just the way things are or should be in the world according to the speaker. However, in the "dilemma of stake or interest" (EDWARDS & POTTER 1992, p.158) there exists a real tension between participants to produce accounts that maintain and preserve interests without being seen as doing so. The use of an "I dunno" was used to minimize Princess Diana's stake in her account of her involvement in the publication of a book that portrayed the royal family in a bad light as described by POTTER (1997). Rather than an uncertainty token from a linguistic or cognitive psychological perspective, the "I dunno" functioned to camouflage or rework one's stake in the discourse as in the other examples of a jealous husband and a psychiatrist's justification. This prevention of the potential undermining of one's accounts has been termed "stake inoculation" which functions in a similar fashion as in the medical sense—to prevent something threatening from occurring in the future (POTTER 1997). Scientists also have

been found to use one interpretive repertoire to justify facts in their own formal writing while using another to undermine the claims of competing scientists (GILBERT & MULKAY 1984). In sum, these attributions of blame and responsibility in stake provide legitimation for courses of action for people (POTTER 1996b). [12]

4.2 Footing

> "What the speaker is engaged in doing, then, moment by moment through the course of the discourse in which he finds himself, is to meet whatever occurs by sustaining or changing footing. And by and large, it seems he selects that footing which provides him the least self-threatening position in the circumstances, or, differently phrased, the most defensible alignment he can muster." (GOFFMAN 1981, p.325)

In the study of narrative, footing is described as the situation whereby a speaker adopts multiple and different roles or presentations of the Self during speech or story telling which is itself often multi-layered. This can happen for example when narrators switch subject positions between that of conversationalist and storyteller or from "stating something ourselves to reporting what someone else said" (GOFFMAN 1981, p.151). Other instances of changes of footing occur when one adopts an accent in order to mock it, embeds a proverb or adage during speech to gain credibility, or when members of the British royal family tell family stories or personal experiences on television to project an aura of commonality. Ultimately, these negotiations and changes in footing determine who and what speakers and listeners are at that moment of interaction. Footing thus refers to the "metapragmatic processes through which speakers/hearers position themselves relative to one another and to their utterances in the framing of experience; a shift in footing transforms our interpretive frame for the embedded action" (MATOESIAN 1999, p.493). [13]

More critically, such shifting should not just be taken as accounting of truth, half remembered fragments, verbatim or "gist" versions (EDWARDS & POTTER 1992) but instead can be fruitfully seen as rhetorical devices for managing participants' interests or stake in the process of accounting. These threats to participants' identities, motivations, biases, institutional loyalties have to be defended in order to protect one's stake through the medium of discourse: "[T]he attribution of views to others does not offer a transparent window into what an individual 'believes', nor does it reveal the sources of their information: rather, footing is a conversational resource used by participants for managing interactional difficulties." (WILKINSON 2000, p.450) [14]

In a study of women experiencing breast cancer, it was discovered that footing for speakers had served certain functions, namely to avoid, challenge, or ridicule potential arguments or occasions that might be problematic to self-identity (WILKINSON 2000). Attributing a statement to somebody else makes it another person's opinion and removes accountability that minimizes stake and interest from the speaker. These issues of negotiation and protection of identity similarly occurred during an interview with Princess Diana in the famed Panorama

documentary series whereby many particularly challenging and probing questions were posed to her. After analyzing the program transcripts, it was seen that Diana had changed footing repeatedly thereby shifting the need to be embarrassed, a move that actively protected and maintained her identification as a legitimate member of the British royal family (ABELL & STOKOE 2001). Footing is an important analytic category for understanding the way discourse is oriented to action for "people can emphasize their distance from a particular attitude or evaluation by sharply making the animator/origin[1] distinction or they can align themselves with it by blurring or ignoring the distinction" (EDWARDS & POTTER 1992, p.38). [15]

As a concept, footing is still in the process of theoretical development, for it appears to be difficult to operationalize (KOVEN 2002; LEVINSON 1988). One has to caution against the uncritical use of the animator/origin distinction that might lead to a reification of these devices commonly present in everyday talk (EDWARDS & POTTER 1992). Specifically, the aforementioned authors oppose it on three grounds: (a) much talk is used rhetorically to accomplish certain interests, (b) texts are often heteroglossic, and (c) intention and creativity are problematic from a post-structuralist viewpoint. [16]

We have however, through this concept gained much insight in the subtle and composite roles that one can take during speech for "our social identities are not static or structurally determined, but [are] contextually situated and interactionally emergent" (MATOESIAN 1999, p.494). As such, the analytical tools of stake and footing will be used to examine how identity and self-presentation in a scientist were constructed and managed during an interview. [17]

5. Sample and Data Collection

As part of a larger study on knowing, learning, and identity with respect to environmental issues in a variety of communities, we interviewed more than 50 individuals in different activity systems, including scientific research, environmental activism, organizations, and lay people. In this study, we exemplify our argument with data from one interview with a scientist (MacArthur). The interview schedule adopted a semi-structured format where the questions ranged from eliciting past personal experiences and information about water conservation to learning issues and knowledge flow. The session lasted for nearly an hour and was subsequently transcribed. [18]

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1   Animator is the person doing the talking while origin is source of the words (e.g. press secretary and speech writer respectively).

6. On Being a World-Class Scientist: Identity and Self-Presentation in an Interview Setting

At a superficial level, the interview with MacArthur proceeded rather typically with general discussions about his life, research and work experiences. Many details were presented that would be of broad interest to historians, educators, social scientists, environmentalists and even journalists, for MacArthur's life was indeed eventful and showed his dynamism and commitment to his work. It is however, at this level of analysis that taking interviews as a resource terminates—unable to break its theoretical straightjacket to see that more was occurring than mere conveyance of information. In the following sections we present data to show how MacArthur came to be effectively and unassailably constructed as an expert scientist who was able to see what others similarly trained in science could not see. Passion for science drove him onwards and excellence was both the goal and by-product of his endeavors. Indeed, the statements he made implied that his research program was the most unique in the world. Science seems complex to most lay people but MacArthur besides being the professional scientist was also going to be a fearless communicator and interpreter of science. (It should be kept in mind that it is always the audience that makes such implications [DERRIDA 1988], always the ear of the other that hears statements in particular ways [DERRIDA 1985].) To summarize, our participant came out of the interview as a full-fledged member of the scientific community with traits typically ascribed to scientists such as expertise, objectivity, passion and disinterestedness. Through the concepts of stake and footing, these often hidden but pervasive dimensions of identity formation and self-presentation are shown to be present in research interviewing such as in our study here. MacArthur was not just telling a story about his life that someone else asked him for; he was *making* himself for the researchers (both his audience and fellow-actors). But he was making himself in the context of *this* interview and in response of *these* questions. [19]

As a result of the transactions between the interviewer and MacArthur, the latter came out to be a scientist with a particular identity. The particular aspects of his identity included here make MacArthur a scientist (a) with a trained eye, (b) who runs an excellent program, (c) who has a life-long passion for science, (d) who proclaims objective truth, and (e) who is able to communicate scientific matters despite its complexity. In contrast to other research that would ascribe these aspects of identity to MacArthur independent of the situation, we suggest that the particular form of identity produced here is an outcome of the interactions and therefore highly specific to this setting. We assume that any claims to more enduring features of his identity that exist across situation would have to be empirical matters rather than presupposed. [20]

6.1 Doing science needs a trained eye ...

In the following three excerpts from the interview transcript, we see how MacArthur's stake as a visionary and knowledgeable scientist came to be co-constructed. By means of footing, we become aware that MacArthur alone saw what even scientifically competent people were unable to see. His was the trained

eye, the persistent evangelist who dared to voice his opinions to disbelieving higher authorities that eventually (had to) come around to the truth that MacArthur brought.

Excerpt 1[2]

1. Interviewer: Dr MacArthur, one of the main research priorities in your team is in the ecosystem and watershed understanding of water resources. Why did you choose such a high level of complexity to look at? Why didn't you choose a lower level?

2. MacArthur: Um since I, since I started working on water quality about x[3] years ago, I, I realized that the kind of science we produce with basic research on water quality linking nutrient loading and how it affects water quality, the major help it can provide is to water utilities that supply drinking water, and um I realized that most of the processes drinking water utilities use, is uh treatment and disinfection while quality of water is actually a function of the source water you start with. And, that's where I started thinking, I said, "If we could actually develop some models and understanding of how ecosystems function at the source water, would be able to help the water utilities better manage the quality of water at the tap and improve human health."

Excerpt 2

108. Interviewer: Well, to me Canada is a very developed country, if you bring it to some parts of Asia or Africa, you might have the science but solutions are affected by many other things.

109. MacArthur: Oh yeah. Here it's, in Canada as well. You can call Canada as a developed country, but when it comes to environmental regulations and policy development we are not much different than any other developing or undeveloped nations!

110. Interviewer: Oh is it?

111. MacArthur: Absolutely! Uh there are places where water quality is so poor, it's amazing that it is still allowed to be used as a source water, okay?

112. Interviewer: That's surprising.

113. MacArthur: Yeah, it is, it is! So, on superficially we are a G-7 country but when it comes to environmental degradation um we are not any better than any other countries actually.

114. Interviewer: Was it a surprise when you found that out?

115. MacArthur: Oh absolutely! Uh I, and that's how most people actually have the myth that Canada is the pristine North? We don't have environmental problems? And we are one of the developed nations in the world, we don't have those kind of problems. But the moment I started working relating science and policy and regulations, linking these three, I realized that wow! We're not any more evolved than any other countries in the world! [21]

In response to the question about research priority in the first excerpt, MacArthur talks about the salience of water quality from his perspective. The interviewer asked him, "Why did *you* choose ...?" and he responded to give a historical

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2   Numbers within the excerpts refer to turns during the conversation.

3   For anonymity, some dates and places take the form of xxxxx or x.

narrative in which he is the main protagonist. Through the person-centered narrative (RICŒUR1990) his biography comes to be that of an expert scientist with a trained eye. He is not inherently the expert scientist, but in the turn-by-turn unfolding of questions and responses, focusing on him as a protagonist, the narrative comes to construct his identity in this way. Because of the questioner's focus on how he had come to choose a high level of complexity, MacArthur is the person who comes, in the response, to see what a group of scientifically competent people working in the water utilities (turn 2) fail to do—that scientific models and understanding the watershed are the ways forward for better water quality. He comes to initiate this idea of looking at the source water which is something that is new and hitherto unheard of but he is unable to do the science alone, he needs his team for he uses the subjective personal pronoun of "we" rather than "I" as he did earlier on. He may not have chosen the person-centered perspective in other circumstances, but in the present situation, the question itself sets MacArthur up to provide a particular response and thereby construct his identity in a particular way. [22]

By using the footing of self-reports in turn 2 and 115, he makes his personal claim of basic research and scientific discovery even stronger and more vivid as he describes his own *eureka* experiences. We see in Excerpt 2 (turn 115) that he changes to the footing of the common person three times to build his claim that most people are unaware of the serious problems in the environment in Canada. This comes perhaps as no revelation; if the people working in water utilities are unaware of the environmental situation in Canada (turn 2, and also in 37 below), how can lay people ever hope to understand? At the same time, this response needs to be seen in the context of Excerpt 2, which explicitly asked MacArthur whether the situation was a surprise to *him* when he found out. Even a scientist can be fooled as MacArthur admitted to being astonished initially about the extent of the environmental problems here in turn 115. This footing device somewhat mitigated the ignorance of the lay public and signified his alignment and sympathy for their lack of scientific training. MacArthur however, was not just any narrowly focused scientist, he was one performing in multidisciplinary modes, one who did not remain in the dark for long for he saw the truth of the matter "the moment" he started relating science and policy (turn 115). In these accounts, MacArthur's personal stake in scientific discovery was maximized and thus made his construction of himself as a scientist difficult to be challenged by anybody. [23]

Excerpt 3 below foregrounds MacArthur's stake as the scientist *par excellence*; he lives for his work and science is his life. An unassuming servant of science, he managed to gain the ear of government and industries for he was armed with the "truth" of science.

Excerpt 3

35. Interviewer: When um, how did this evolve? Did you decide at the beginning I want to work with so and so and so, or when you, or is it evolving like when you meet with one you realize that, I, I need to link up with this, something like that. How did all these partnerships come about?

36. MacArthur: Um, in 19xx I was taking my sabbatical. I was a professor at University of Mxxxx before coming here, and I was thinking of a sabbatical, I had a fellowship from Sxxxx, to go and work on Lake Lxxxx. Then I had a fellowship from Fxxxx um in 19xx, I served as an advisory committee on Cxxxx water department's panel, and they heard that I was taking a sabbatical, and they wrote to me say we would provide you a sabbatical fellowship if you came and help us, work with us, understand some of our issues. I said, "That sounds pretty exciting, this might be an opportunity for me to apply my basic science." Came without actually thinking how much I could do ...

37. MacArthur: ... started talking to utilities, talking to provincial government, federal government, and first response from some of the water utilities was, "Why do we care about source water?" That, that was the first response. Then I started giving talks, I said, "Well, this is why you need to care about it." It took me about a year and a half for me to convince government and industries that this is something worthwhile for them to do. So that's, and then it became, now, it is, it is a very very well recognized, well respected program not only in Xxxxx, in all of Cxxxx actually! [24]

Job security or an attractive salary did not feature in his account about being hired for a job in the Cxxxx water department (turn 36) when MacArthur was asked about the origins of all his research partnerships. On the contrary, it was the lure of doing and applying his basic science that brought him there even though there was no specific problem to solve in the first instance. Here we witness a man who was truly passionate about his job, one who pursued science for its own sake. Basic science is unbiased, disinterested and objective from MacArthur's point of view for he wanted to see where his research would lead him rather than being dictated by his employers' agendas. Being the expert with a trained eye, he brought along his novel ideas of tackling the water problem at the watershed that he had already developed by then. This of course brought him into conflict against a disbelieving audience very quickly. Again, MacArthur employed a footing of self-report that made it clear that he was in the thick of the action in watershed evangelism (turn 37). He was the prime mover in the eventual change of mindsets though it took about 30 months to do so. He employed rhetorical features artfully in these segments of discourse. We see an ignorant but willing water utility that become among the best in the land after MacArthur's efforts. He came, he saw (with his trained eye), and he converted. With similarity to the empiricist repertoire of scientists, MacArthur presented a view that science ultimately triumphs, that the truth would prevail no matter what (ROTH & ALEXANDER 1997). Again, MacArthur's use of stake and footing in this excerpt made his claims difficult to be discounted and strengthened his identity as an expert scientist and passionate crusader for the truth. [25]

6.2 Running an excellent program

Besides being a capable and committed scientist, MacArthur co-constructed the fact that he was also the leader of a top interdisciplinary team that he had managed to bring together. From the following two excerpts we realize that he is running an excellent program that is more than ready to tackle challenging problems in the field. Indeed, through stake management and footing, MacArthur has us understand that his research program is the "most unique in the world." But his program becomes most unique in the context of a question that asked him whether there are "any" comparable programs, and the geographical scope is set by the interviewer's mention of "Asia." That is, MacArthur responds to questions that he cannot predict, and which themselves are grounded in the interviewer's preconceptions that he cannot know. We can therefore say that a particular identity emerges from *this* interview from the transactions between the co-present interviewer and respondent. An informative example of the highly interactional nature of research interviewing arising from seemingly mundane elements in discourse is also presented below.

> Excerpt 4
>
> 7. Interviewer: I see. Ok um interesting ... are there any such programs in let's say in Asia for example? Or Europe?
>
> 8. MacArthur: Nope.
>
> 9. Interviewer: None? Wow.
>
> 10. MacArthur: There is one program in Australia, in Canberra, where they are looking at source water, watershed processes, not at the scale that we are looking at, I think our program linking watershed through treatment and disinfection to human health, I think it is the most unique in the whole world.
>
> 11. Interviewer: Oh wow.
>
> 12. MacArthur: Yeah, it is very complex and it's going to take time and a lot of effort to do that but I think, I think we can do it! [26]

When questioned if there was a similar watershed program elsewhere that was comparable to MacArthur's, he initially denied it in turn 8. However, he conceded that there was indeed one in Canberra after the interviewer expressed genuine surprise by exclaiming, "None? Wow." These seemingly innocuous words had in fact threatened MacArthur's stake in his accounts about the exceptional nature of his program. Is there a possibility that such statements could be contested? MacArthur's repair strategy was then to concede that there was one that bore some resemblance but concurrently discounted it by saying that it was on a smaller scale. This management of stake served to restore his credibility as an objective informant—what he said must be true for he gave the "fine print"— MacArthur's program was perhaps the most unique in the whole world after all. In turn 11 whereby the interviewer subsequently expressed an amazed "Oh wow," this was interpreted as an acceptance of MacArthur's account. We say this with some confidence for turn 12 did not contain any elements further serving to protect MacArthur's stake but instead began with a "yeah"—MacArthur had

earned "permission" from the interviewer so to speak to continue with his version of the story. And so he asserted that while problems in watershed processes were complex, with time and effort he believed that they could conquer them as MacArthur's team was after all the best. Through this short episode we demonstrate the highly interactional nature of research interviewing; the choice of words as in "none, wow" or "oh, wow" that are so unconsciously uttered can affect the trajectories that interviews take. Unfortunately, these important features that enable meaning making in daily life to occur as ethnomethodology has alerted us are the very elements that are neglected when we fail to consider either interviewing as topic or as joint participation in an activity system.

Excerpt 5

33. Interviewer: So, Dr MacArthur, in what way do you think your team has found a niche in its area of science? Is it ahead or is it so specialized that few can match up to it? Speaking about your lab ...

34. MacArthur: Uhm, it is, it is not so specialized that people can't catch up with it, uhm, people will have tough time catching up with our, uh approach is because it takes a large group of interdisciplinary, people. Like I've been working with economists, I've been working with psyc-, environmental psychologists, I'm working with public health office people, I've been working with terrestrial people who do geo(?) and remote sensing type of modeling so that we can quantify land use on a watershed from an image and then link it to the water quality at the source. And we need partnership with water utilities and industries to do this. So very few group[s] can actually put all this together to address the issue. [27]

A top-notch program demands an equally talented team of people to manage which MacArthur describes here in this excerpt. The interviewer started off Excerpt 5 by inquiring about the distinctive features of MacArthur's research team, an issue that was close to his heart; in fact, the interviewer's statement is a trap that put the lab ahead of similar labs so that MacArthur might be said to blow his own horn if he did not moderate that statement. Either blowing one's own horn or belittling the team on the other end of the spectrum is highly undesirable so a middle course seemed to have been chosen by MacArthur. By stating "it is not so specialized" in turn 34, he initially made a modest claim. What followed next however became a counter claim; his inter-disciplinary team was in fact a tough act to imitate! This happened because the phrase "it is not so specialized" acted in retrospect like a "stake inoculation device" (that is, as a discursive device that inoculated against what was at stake). Combined with his personal footing in turn 34 where he listed the many different types of professionals that he routinely consulted with, we are now left with little doubt about the uniqueness of MacArthur's research team under his able leadership. It is no wonder that MacArthur's science is so cutting-edge, for an inter-disciplinary team of professionals supported him. Again, we state that this interaction that revealed his stake in his research team only came about in response to a query about it in the first instance. [28]

6.3 A life-long passion for science

Already we are acquainted with MacArthur as the quintessential scientist with many allies running a top-notch program in water resource management. During questioning about the factors that led to being what he was today, we find that it was a personal and natural decision for MacArthur from his youth to pursue science. Again, the request to account for his interests beginning with his youth constituted a horizon for MacArthur's response. This gave MacArthur the best job in the world for he was doing what he simply enjoyed.

Excerpt 6

65. MacArthur: Yes, yes. Well, I think when you try to understand you can use your curiosity driven research, innovation, in more you know, in depth than we're trying to fix things. It, it you know?

66. Interviewer: Interviewer: So, um you had this um natural curiosity, from a, from a young age?

67. MacArthur: Ahuh ahuh, yeah, I love, I love fishing, I love being outdoors, I love being in the water, it's a, it's a, natural actually.

68. Interviewer: Natural.

69. MacArthur: I'm doing what I love doing. And I think everybody should do what they love doing.

70. Interviewer: I'm sure.

71. MacArthur: And I'm fortunate that I, been able to develop a career in something that I cherished from my childhood. So ...

72. Interviewer: Um, that's great. Your parents were supportive of you doing science rather than medicine?

73. MacArthur: Um there were a few arguments here and there. But I said I, this is what I will enjoy doing. Becoming a doctor and you know, it's not something that I will enjoy doing ... it it, you know ...

74. Interviewer: Were you the oldest son?

75. MacArthur: Nope, nope.

76. Interviewer: Sometimes there are pressures on the oldest ...

77. MacArthur: Yes, yes. I think all of my brothers actually, we all had, we all had the grades, and excellence in school to go into medicine or engineering. All of us chose actually to be in fundamental science.

78. Interviewer: Oh?

79. MacArthur: Yes.

80. Interviewer: Then do you think your siblings had some influence on you?

81. MacArthur: Umm no I think we're, we grew up as very independent children, all of us, brothers and sisters. We decided to do, we did what we decided, we thought would be best for us, not like, what others thought we should be doing as an individual. And I think it's an upbringing that our parents gave us, that freedom actually, to think about ourselves. And while they suggested that you maybe you want to go into medicine, or engineering but do what you enjoy doing.

82. Interviewer: I think in Sxxxx, many parents, forcing their children to take up medicine, for the prestige.

83. MacArthur: Oh yes, I understand, yeah yeah.

84. Interviewer: Asian parents sometimes.

85. MacArthur: Like my brother, he, they wanted him to go into engineering because he was excellent in mathematics. He said, "No, I'm going into mathematics!" Now, he has a Ph.D. from Oxxxx and he's a Xxxxx physicist and he's a professor at University of Cxxxx, in Xxxx. So, he's extremely happy with what he does, so. [29]

The interviewer's questions about parental support opens opportunities to use other family relations in accounting for the special interests that ultimately led to his career as a leading scientist, and to the interviewer who had recruited him because of the perceived status as a leading scientist. Using the footing of his brother in turn 85 and of himself in turn 69 and 73, he illustrated the importance of doing what one enjoyed, in this case science, specifically water resource management for MacArthur. As worthy and noble as medicine or engineering might be as a profession, true love for the subject is a requisite. Research involving water issues was a natural thing for MacArthur which explained the recurrence of this theme during the interview. Indeed, once he claimed that it was "natural" in turn 67, it was difficult to discount his stake in his accounting. The interviewer in these excerpts seemed to be rather accepting of MacArthur's accounts and thus expressed assent or clarification type of responses that did not seem to lead to any interactional difficulties (e.g. threats to stake) for MacArthur here. [30]

6.4 Proclaiming objective truth

The power of a scientific fact should not only be seen in its elegance of theory but perhaps more crucially in its usefulness to society. Scientists no matter how brilliant like MacArthur need to expend initial effort to convince people about the value of some their ideas outside of their monastic communities. Resistance to the implications of his science by sheer ignorance, bureaucracy or politicking fortunately did not deter or prove to be much of an obstacle for MacArthur. To use the metaphor of a maverick scientist or lone prophet to describe him in Excerpt 7 would not be out of place here. MacArthur's identity from this excerpt is that of a voice that insisted on proclaiming objective scientific truth, which would eventually prevail over doubters.

Excerpt 7

116. Interviewer: Ok, having said that, do you think that there are some difficult issues outside of science, like politics that you have to tackle, or will have a great impact on your research?

117. MacArthur: The politics that will have great impact on my research?

118. Interviewer: Ahum.

119. MacArthur: Well, because I work on water, and drinking water, it is always very closely tied with provincial and federal politics. I try to be as independent as possible and provide my independent views ...

120. Interviewer: As a scientist?

121. MacArthur: As a scientist and I think I, almost all the time have the integrity of giving my views regardless of whether my funding depends on government, my funding depends on industries or not. Like Cxxxx water department is one of my major sponsor, I still criticize them, publicly. Not criticize them, but provide suggestions that this is where you could improve, you could do, you could have done this better. So while they are my sponsor, so

122. Interviewer: Are they appreciative?

123. MacArthur: Absolutely! Sometimes we have arguments about it but most of the time, they accept my suggestion. While it goes against their current view, they appreciate it.

124. Interviewer: Ok. so.

125. MacArthur: You couldn't find similar situation in many places actually. That water utilities trying to take suggestions, and be criticized and actually accept that criticism.

126. Interviewer: Maybe in that sense Cxxxx is developed!

127. MacArthur: And very unique watershed, water utility, you wouldn't see that in most cases.

128. Interviewer: You mean our Sxxxx?

129. MacArthur: Cxxxx water department is a very progressive, very progressive water department. Ok, you wouldn't see that kind of situation [in] many many places.

130. Interviewer: Was that perhaps one of the reasons why you were keen to work with them?

131. MacArthur: Absolutely! And it, the reason when they invited me to come and develop the program is an indication that they're willing to learn, do their job better.

132. Interviewer: Ah, ok. Quite nicely ties in.

133. MacArthur: Exactly, yeah! [31]

The interviewer began by querying MacArthur about some outside pressures like politics that might have influenced the conduct of his research. After clarifying the trend of thought, MacArthur picked up the prompt suggested by the interviewer and instantly adopted the label of the independent and objective scientist in turn 121. As such, when this fearless scientist spoke, he spoke for objectivity and truth which all (rational) others had to listen to. It was a universal truth, not just MacArthur's truth. The water department knew that MacArthur's views were out of the ordinary yet they asked him to come and develop it, to change it for the better (turn 131). And because the water department was willing to accept suggestions and learn (turn 123 and 131) from the invited authority that they sponsored, Mac-Arthur considered them as very progressive and praiseworthy. Indeed, in turn 121 the word "criticize" was perhaps too strong a word to use and MacArthur corrected himself to say instead that he "provided suggestions." This was felt to be a move that indicated his stake in the good name of his employer, the Cxxxx water

department despite the occasional differences of opinions between them. The relationship with the water department was symbiotic—the scientist with the new scientific principles and a water department that was willing to take chances and improve. The water department was progressive as MacArthur was; indeed, he identified very closely with them (turn 130 to 133). We reiterate that aspects of MacArthur's identity that presented themselves here were in response to these questions, in the context of the activity system of that particular interview event. [32]

6.5 Science seems complex but it's a matter of communication

Doing excellent science with a fantastic team was an undeniable source of pride for MacArthur the top environmental scientist. Yet, he aspired to extend and share these otherwise esoteric facts beyond academia or government to wider society. Framed by the interviewer statement about scientists who talk above the heads of normal people, MacArthur described himself as the expert communicator of science as the opening vignette in this article demonstrated—he wanted to bring sparks to peoples' eyes when he explained his science. Though he was not always successful in this regard at the beginning of his career, this was a job that he clearly enjoyed and excelled in now.

> Excerpt 8
>
> 150. Interviewer: ... A comment by some of the hatchery people, the people that work on the field is that sometimes, not always, but sometimes scientists just speak over their heads.
>
> 151. MacArthur: Ahuh, oh yeah, oh yeah! Like I did too. When I started this chair program, and started giving talks, um I did not create, as much, as much spark in peoples' eyes who were listening to me when I started, now I do. Now I create sparks, doesn't matter what level of people they are.
>
> 152. Interviewer: Ok, can you give me an example? What do you mean by create sparks?
>
> 153. MacArthur: They say, "Wow! Why didn't somebody do it, before? You know, you're telling us that we don't understand that? You're showing us that, this is so simple to understand, why don't we do it?" I say, "That's the problem! That, making you understand this complex science in a simple manner is not an easy job." But I'm, I'm really grateful that people actually understand what science I do. Now, I can put it in their language, that's why you see the sparks in people's eyes! "Wow, is that what he mean? Yeah, I didn't know that!" You know? So ...
>
> 154. Interviewer: Do you consciously try to relate it to issues affecting the people in that community?
>
> 155. MacArthur: Absolutely! That's my first and foremost job as an Xxxxx Chair, that's my first job. To convey my science in a manner that people actually can use them, understand them? Where it matters? Not among my peers? [33]

Excerpt 8 shows a mix of footings by researcher and participant that together built up an argument on the desirability of communicating complex science to the people. The interviewer in turn 150 reported a comment by some salmon

hatchery workers about how scientists sometimes spoke over their heads. This footing device served to distance himself from possible blame and to minimize his stake in case he was incorrect in his assertion. However, this change in footing was unnecessary as MacArthur aligned with the same position that sometimes "scientists speak over peoples' heads," himself included. After this admission of guilt, MacArthur turned around and depicted himself as the scientific expert (turn 151 and 155) that brought light and sparks to peoples' eyes when he revealed the truth. Again, the stake inoculation devices in "like I did too. When I started ..." (turn 151) and in "that's my first and foremost job ... my first job" (turn 155) served to prevent potential threats from undermining his account. This truth of environmental science is a paradox; on one hand many (simple) things remain unanswered while explaining these issues in a simple manner is a complex task. Nonetheless, MacArthur the science communicator had persevered and succeeded which he articulated by using multiple footings of an imaginary and appreciative audience that began to see the light once he started giving talks (turn 153). We are unsure whether what he told the public was identical to what he had tried to convince local government about but it is ironic that the latter were so skeptical about MacArthur's research that he had to expend more than a year to convince them. In contrast, MacArthur could persuade the public almost instantaneously. [34]

7. Discussion and Conclusions

Our empirical data contributes to the small group of studies whereby identity and issues of self-presentation are produced and reproduced in research interviews. We exemplified our approach by showing how in one interview setting, stake and footing performed and managed these concerns. In doing so, a scientist came to be identified as a full-fledged member of the scientific community with many characteristics expected of scientists by society including expertise, objectivity, passion and disinterestedness. He came to be a typical scientist who had loved science from his youth, and who did science for the sake of discovering something new rather than for other motivations. And being the expert with a trained eye, he saw what others who were similarly educated in science in the water department failed to see. MacArthur undertook the duty to communicate the voice of scientific "truth" to the local water authorities, government and the lay public—a task which he clearly very much enjoyed. Above all, he came across as a person who wanted to make an impact, a meaningful contribution to all levels of society through his work. [35]

At the same time we recognize that in our study, the interviewer was not a naïve inquirer without preconceived notions of what to ask or behave as researcher. Neither was MacArthur a naïve expert who answered queries only in response to our prodding. Rather, he was embedded in and enacted the discourse practices becoming of a respected, influential scientist and faculty member, who collaborated with the researcher to produce the recorded (and subsequently transcribed) interview as a product. Indeed, without the participation of the *researcher*, MacArthur's identity in the interview would not have arisen in that manner. MacArthur and the researcher together performed institutional talk and

enacted identities in their intersubjectivity of how such events should normally proceed. The research interview became not just an elicitation of information but also a site of co-production, management and presentation of identities and Self, which we know as a process whereby the interview itself becomes *topic*. In the language of activity theory, we describe this situation as researcher and informant participating within the same activity system without "objectifying" the informant. We describe the object as the completion of the interview to a mutually satisfactory level in which identity emerges from this process. We emphasize that these facets of MacArthur's identity arose within the context of that particular interview and the historical events that preceded and influenced the interview that we had with him. Thus, we come to the conclusion that identity is a situated accomplishment, an outcome of activity rather than its precedent, and that its formation depends on numerous unknown contingencies. [36]

There are however much broader lessons from our analyses for researchers using interviews as data collection tools. Neglecting interviews as special types of situations—that the interviewer and interviewee co-construct and from which the interview content emerges as a contingent product—would in fact create a naïve and unproblematic acceptance of interview data at face value. Though unacceptable from our point of view, it is nonetheless a frequent and serious shortcoming in the social science literature. Research interviewing is always a special situation created by the researcher in all senses; a loose parallel from the field of quantum physics has alerted us about the interactional effects between observer and the observed (whether light appears as a particle or wave depends on how the physicist and nature interact). Unlike the non-living systems that physics deals with, research participants are always active agents embedded in unique cultural-historical environments and who necessarily co-opt researchers into their meaning-making processes. [37]

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