Narrative Analysis and the Design of Technologies to Support Research

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ABSTRACT

In this paper, I describe how I have used narrative analysis as a form of knowledge capture of research practices. I show how the personal narratives of research narrated by researchers provides an understanding of the immediate lived experience of research and of researcher's conceptions, feelings and questions about what it means to do research and propose that it is important to take these into account in designing technologies to support research.

Categories and Subject Descriptors

tbc

General Terms

Human Factors

Keywords

Narrative

1. INTRODUCTION

This work is part of the EPSRC funded project PATINA (Personal Architectonics Through INteraction with Artefacts) [4]. PATINA is an interdisciplinary project, which aims to develop a theory of research spaces as holistic 'architectonic' systems, or structures of experience, rather than distinct physical, virtual or mental worlds and to revolutionise the design of technologies for supporting research. The project will involve building wearable prototypes that can both enhance research objects by projecting related information back into their research space and provide researchers with the means to capture, record and replay their activities. This recording of research practice will also enable researchers to 'walk in the footsteps' of other researchers, allowing them to explore how the provenance of their developing ideas links with those of others, through shared objects that exist both online and in the real world.

But how exactly is this path travelled by the researcher to be recorded and represented and made retrievable to him or her and to others? If a researcher is to follow in another's footsteps, what exactly would these steps be? The sources consulted? The notes taken? The questions asked? The activities carried out? The stages completed? What is the experience of research that researchers would want to replay and retrace? What are the narratives of research that would be produced?

The significance of this question is quickly apparent if one compares and contrasts differing forms of dissemination of research that are now current, e.g a research paper, a blog, or a series of tweets. In each case the researcher narrates his or her research in different ways, probably at different stages, and produces different narratives. If the possibilities afforded to the researcher of capturing and disseminating their process of research were further expanded how might these narratives change and vary further?

My own role on the project is as a narrative researcher and, as part of my research to begin to answer these questions, I asked academic researchers from a range of subject disciplines to write a personal narrative describing a day of research. The aim was to get a sense of the different ways in which researchers experience the process of research and the meanings they find in it. In this paper I present a summary of my readings of these narratives and propose how they might inform further work towards the recording and replaying of research practice as part of the project.

2. BACKGROUND

2.1 Narratology

The relationship between the experience and practice of research and its dissemination in papers, blogs, tweets etc. might be thought of as having the same relation as that between the narratological terms 'story' and 'discourse' (used by Hargood et al in their work on on narrative generation [2]) where the story is the raw material and the discourse the way that it is told. Discourse encompasses point of view, as in the film *Rashomon* [3] in which the same event is told by three different participants who interpret it quite differently. It can also be a question of style or tone, e.g the same story could be told as a comedy or a tragedy. It might equally consist in a particular ordering of events. When a narrative starts at the beginning and goes on to the end, it tends to focus on **what** happens at the end. If, on the other hand, like many modern narratives it starts at the end and goes back to the beginning, the focus shifts onto the **why** and the **how** rather than the **what**. Telling a story in a different way thus fundamentally changes the story. Indeed it is the story.

In this paper, I use another narratological term 'narration' (see [1]) rather than 'discourse' to indicate the way that the story is told. This is partly because 'discourse', when removed from its strict pairing with 'story' is an increasingly widely used term, beyond the study of narrative, and also because narration intimates the presence of a narrator, which is appropriate in the context of the narratives I am discussing.

2.2 Narrative Analysis

Narrative enquiry and analysis in the social sciences employs the methods and conventions used in the production and

interpretation of fictional narratives to present and interpret narratives taken from life. One important reason for using this particular method is as a way of counteracting a common tendency in science both to abstract out from the individual to the structure, from the particular to the general, and also to assume an objectivity on the part of the researcher and what they observe that may well be illusory. Narrative enquiry assumes instead the subjectivity of experience. Its interest is in how people make sense of their own lives through narrative and it recognises and expects that the same situation, process or event may be narrated differently (See [5]). Within the context of the design of technologies to support research, narrative analysis focuses attention on research as part of the life of an individual, rather than as a set of abstracted structures or processes. This should provide relevant insights into the ways that researchers might want to capture and replay their process of research.

3. NARRATIVES OF RESEARCH
3.1 Methodology and Aims
I asked a group of researchers from a range of subject disciplines, including computer science, design, architecture and arts and humanities, to write about their experience of research. Researchers were asked to choose, as far as possible, a typical, rather than an atypical day of research; to note down their activities, where and when they took place, and, above all, what they were thinking and feeling about these various elements. They were then asked to write up these notes as a narrative of the day.

The writing up of the narratives was chosen instead of interview, in order to achieve greater detail than a verbal account and an extra level of conscious narration and meaning making. I wanted to see how people wrote up the intimate **process** of research, compared to how they write up its **results** for publication, and to see what meanings they found in it.

3.2 Researchers' narrations of research
The same unit of a day produced in fact quite different narrations by different researchers. For at least two of the researchers, moreover, the 'day in the life' chronology that I had suggested appeared inappropriate to the experience of research that they wanted to narrate and they substituted their own alternative structure in its place.

One researcher produced a generalised model of research, conceived as a five stage process that he moves through as a researcher from beginning to end of any particular project: *'unfocussed reading'; 'get an idea/identify a problem that needs a solution'; 'focussed reading'; 'develop solution'; 'write up solution'.*

Another researcher framed the process of research quite differently, telling her **life story** as a researcher: beginning with her experience as a student and charting her ups and downs through various professional academic structures and institutions, up to the present day. Research for her constitutes a personal and professional journey, in which she has undergone a series of personal and professional metamorphoses, travelling through various professional and academic institutions. Her narrative focuses attention on the way that the narratives of research produced and circulated within institutions can either help or hinder researchers and indeed can define their identities and determine to a large extent their professional and personal trajectories.

Both these narrations in fact reflect the professional and research structures within which each of these researchers operate. The first researcher is a computer scientist whose own research involves the production of generalisable models. The second researcher is a manager whose job it is to oversee and facilitate research structures and environments. These larger narratives of research are interwoven very clearly with their personal narratives.

Those researchers who wrote up their research process as a 'day in the life' also produced a variety of narrative forms. One researcher wrote a 'stream of consciousness' narrative in the present tense, which provides a kind of cross-section of research processes put under the microscope as he spends the day working from home. His narrative is a dense tapestry of interwoven threads of thinking, reading, writing, responding to emails, organising, scheduling, book-keeping, raising purchase orders, discussion, making coffee, eating, shopping and other domestic chores. This tapestry of threads is kept from becoming an unmanageable tangle, however, by his ability, as a thinking, feeling individual, to move between multiple strands of thought and activity. Moreover he takes pleasure in this holistic mix of activities, writing *'This is work! Answering emails, thinking, making coffee, writing, talking and spending time with my son. Worth the rubbish bits'* and terms it *'a privilege'*.

Another researcher controls the multiple strands of activity he has running simultaneously in his research by structuring his narrative of his day into one to two hour slots, which provide discreet containers to separate off and manage the his diverse activities. He characterises his day as *'a mix of control and anarchy'*.

Indeed, most researchers presented the process of research as a varied, often quite fragmented activity, even as it is productive. Although they experience and manage research in different ways, researchers seem to agree that research combines 'focussed' with 'unfocussed' activity, in which chance, gut feeling, hunches, personal and collective inspirations and enthusiasms, brainstorming, discussion and collaboration play an important part.

3.3 Time-spaces of research
As well as producing a range of narratives, which ordered the experience of research in different ways, researchers also narrated their experience of time and space as part of the research process, providing insights into key time-space formations through which research is structured. These include the experience of collaborative research; the particular properties of digital time and space; the importance of liminal spaces, such as trains, planes and other journeys, where much productive research takes place, and the existence of a time-space of thinking: in which a train of thought is integrated with a physical movement through space, such as walking, cycling or indeed writing, sketching and doodling. For all the researchers, research as an activity is dispersed across space and time, spanning personal, physical and digital space.

4. CONCLUSIONS AND FURTHER WORK

The capture and analysis of these personal narratives of research provides an understanding of the immediate lived experience of research and of researcher's conceptions, feelings and questions about what it means to do research: including what kind of research they value or otherwise, the problems they face and the strategies they employ. Research as an experience is narrated differently by different researchers, giving a sense of the variety and subjectivity of human experience. A researcher might variously experience their research process as an ongoing journal of activities; as an important episode in their life story; as the key stages in the cycle of a project; as a particular theme connecting various projects, or as part of a particular cluster of interdisciplinary activity around a particular concept or subject.

Each different structure of experience, if represented to others as 'footsteps to follow in' could provide different insights: such as how the researcher structures their process; how long it takes them; where a researcher's particular interests lie; geographical concentrations of particular types of research, or interdisciplinary sites of interest. The time-space of research might equally constitute a map of achievements, or a step on a career path that stretches into the future.

At the same time these research narratives also suggest some experiences that researchers seem to have in common. Researchers seem to agree that research combines 'focussed' with 'unfocussed' activity, in which chance, gut feeling, hunches, personal and collective inspirations and enthusiasms, brainstorming, discussion and collaboration play an important part. Developing effective ways of understanding and representing these processes would produce very different narratives of research to those narrated in research papers.

Furthermore, particular time-space formations, such as collaborative, digital, liminal and the time-space of thinking, seem to emerge as common themes, even if the individual experiences of them differ.

A conception of research time-space, which recognises this variety of research narratives might facilitate the design of more effective technologies to document and retrieve research processes.

What would be the implications, for instance, of designing a research space drawing on a paradigm of research as a tapestry evolving through time? Or indeed of conceiving of research as the life story of a researcher, shaped by the institutions of research; or again as the daily chronicle of what has been achieved; as the compartments in which the researcher sorts her different activities; as a train of thought, begun in a conversation, turned over in one's head on a cycle ride, sketched out in a notebook in a cafe, put on the shelf for two months, expanded with reading etc; or as the collaborative time-space of communication, spanning countries and continents and thinking that is created in discussions and collaborative work on shared documents and in telcos?

These are some of the questions that we will go on to explore.

5. REFERENCES

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