Weblog as a Personal Thinking Space

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ABSTRACT

While weblogs have been conceptualised as personal thinking spaces since their early days, those uses have not been studied in detail. The purpose of this paper is to explore how a weblog can contribute to the process of developing ideas in a long-term complex project. To do so I use autoethnography to reconstruct my personal blogging practices in relation to developing PhD ideas from two perspectives. I first discuss my practices of using a weblog as a personal information management tool and then analyse its uses at different stages in the process of working on a PhD dissertation: dealing with fuzzy insights, sense-making and turning ideas into a dissertation text. The findings illustrate that next to supporting thinking in a way private notebooks do, a weblog might serve similar roles as papers on one's office desk: dealing with emerging insights and difficult to categorise ideas, while at the same time creating opportunities for accidental feedback and impressing those who drop by.

Categories and Subject Descriptors

H.4 Information Systems Applications

K.8 Personal Computing

General Terms

Documentation, Human Factors, Theory

Keywords

Autoethnography, electronic notebooks, personal information management, weblogs, writing

1. INTRODUCTION

Blogging is frequently viewed as a medium for public communication: it is reasonable to assume that those who do not want their words to be read by a broad audience would use another medium. However, while the need to communicate is a part of blogging, it is not necessary the primary reason for it. For example, in my own case, blogging grew out of a need for a place to organise my professional thinking and exploration; the readers, as well as writing for them, came later.

Weblogs have been conceptualised as personal thinking spaces

since their early days: as an *outboard brain* [1], a *personal filing cabinet* [2] or a *research notebook* [3]. In fact, the first academic publication on blogging discusses it in relation to developing research ideas [4], and the weblog of its first author, Torill Mortensen, has a telling title: "Thinking with my fingers". However, the specifics of weblogs used that way are not well studied. For example, studies of work-related blogging suggest that weblogs serve as a "trigger to elicit passion for knowledge" [5] and are used as a reference archive to support working on a document [6], however, they do not provide an in-depth view of the activities behind those uses.

The purpose of the study presented in this paper is to explore how a weblog can contribute to the process of developing ideas in a long-term complex project: I use autoethnography [7] to reconstruct my personal blogging practices in relation to doing PhD research. I look at the process of idea development from a personal perspective. While the public nature of blogging and the social effects of it are the essential ingredients in this process, the study is primarily focused on understanding how blogging aids developing ideas at an individual level and excludes the discussion of weblog uses for sharing knowledge or collaborative work.

The following two sections describe the case and methods used in more detail. Discussing the results, I first explore my practices of using a weblog as a personal information management tool. Then I analyse my weblog uses at different stages in the process of working on a PhD dissertation: dealing with fuzzy insights, sense-making and turning ideas into a dissertation text.

2. THE CASE

I started my weblog, Mathemagenic (blog.mathemagenic.com), in June 2002 as a place to organise my thinking. My work as a researcher gave me plenty of opportunities to find interesting and somewhat eclectic topics to blog about. In turn, blogging influenced work: experimenting with it resulted in narrowing down the focus of my PhD research to blogging practices of knowledge workers. Over time the weblog became my primary tool to collect and organise information relevant for working on the dissertation. At the time of this study it included 1490 posts, written between June 2002 and January 2008; in total more than half a million words.

To blog I used Radio Userland, one of the most advanced weblog platforms at that time, which allowed a lot of control and flexibility over one's content. Despite the time and effort that figuring out the intricacies of this tool required, it suited my needs for organising bits of relevant information. At the moment of this study (spring 2008) I used weblog functionality to its extremes in order to organise my work-related thinking and could

not think of parting with the metadata that accompanied my weblog posts, as it was essential for writing PhD dissertation. Blogging, as well as conversations and networking that came from it, became an integral part of my work, influencing the topics chosen for a study and methods used in a research process.

While in many respects my own blogging practices do not necessarily represent those of the majority of bloggers, they do correspond to the uses of journals as part of creative work [8]. In my research that I position as ethnographically informed, the weblog serves as a reflexive journal [9] and as a space to collect and organise observations, and as a placeholder for catching other relevant bits and pieces that do not fit elsewhere and could be best categorised as information scraps [10].

Studying individual practices has obvious drawbacks; however, it also provides an opportunity to study in-depth how blogging contributes to the process of developing ideas in a long-term complex project. This approach is similar to that of Thomas Erickson, who studied his own use of a personal electronic notebook to uncover synergies and longer-term effects that were not easy to study otherwise [11].

3. APPROACH

To explore how a weblog can contribute to the process of developing ideas I use autoethnography, 'an autobiographical genre of writing and research that connects the personal to the cultural' [7, p.739]. As a research approach it often involves reconstruction and analysis of one's personal experiences and practices. As a mode of reporting research results it fits into the tradition of confessional tales in ethnography [12] that include telling detail-rich stories, writing from a personal perspective, including emotions and personal details. While autoethnography is useful for providing an in-depth look into highly personal and/or rarely occurring phenomena, it requires purposeful confessional writing [13] to avoid turning a research report into an autobiography.

In this study I use my weblog (weblog entries, links, tags, etc.). to reconstruct practices of using it for developing ideas for my PhD dissertation. In this process special attention is paid to *meta-blogging entries*, an unstructured documentation of my experiences of using the weblog to develop ideas that provides *in-situ* view of my blogging practices. However, not all aspects of blogging practices are visible in the weblog text or meta-data: some are reconstructed from a memory, using weblog content to aid recall.

To support the analysis of weblog entries they were categorised to indicate those relevant for the PhD work. From 1490 weblog posts written at the moment of the study (spring 2008), 640 were coded as directly relevant to the content of specific chapters of my PhD dissertation. The chapter reporting this study did not exist then; I used 157 weblog entries coded as related to it[1] to

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[1] Weblog entries used as an input for this study are accessible at blog.mathemagenic.com/categories/phd/chapter3 (only those in 2002-2007 are used). References in this paper are linked to the entries in the living weblog, with evolving metadata. The rationale behind this choice is at Researcher vs. blogger: My weblog as a data source (Mathemagenic, 25 April 2008).

identify and describe my blogging practices. Those entries were printed and sorted into piles referring to specific type (e.g. blogposts related to the relevant literature) or theme (e.g. categorisation and tagging). Then some of the piles were further sorted to identify entries to use as a "skeleton" for describing the results; arranging those to make a linear story resulted in the final structure. At the same time I looked at ways of aggregating or visualising corresponding patterns in weblog artefacts by exploring functionalities of my weblog software and other tools and "played" with the data. Ideas and interpretations that emerged in this process were included directly in the text.

The following two sections present the results of the study in respect to uses of weblog as a personal information management tool and to support turning early insights into a PhD dissertation. The results are presented as a layered account [14], where excerpts from my weblog are complemented by the commentary and analysis. In this case, combining visible traces of my thinking in the weblog and personal experiences of turning those into a dissertation, serves as a way to articulate practices usually hidden from weblog readers, at the same time proving transparency to the research.

4. WEBLOG AS A PERSONAL INFORMATION MANAGEMENT TOOL

Developing knowledge requires the filtering large amounts of information, making sense of it, and connecting the different bits and pieces to come up with new ideas. In this process, physical and digital artefacts play an important role [15-17].

In this section I use insights from the research on personal information management (PIM) [18] to understand how weblogs might be useful for dealing with information at a personal level. I discuss my uses of a weblog as a personal knowledge base. I take a somewhat narrow perspective on PIM activities, using as a starting point those proposed by Barreau [19]: acquisition of items to form a collection, organisation of items, maintenance of the collection and retrieval of items for reuse.

4.1 Forming a Collection

According to the cross-tool study of personal information management strategies [20], ways of acquiring information differ between tools. For example, files are usually self-created and placed in a collection, while emails arrive in uncontrolled way. Weblog posts have to be created manually (although there are plug-ins that simplify the process) and it is up to the blogger to decide what kinds of posts to write and how many of them should be written. In this section the activity of creating a post is viewed as an act of storing pieces of information in the weblog. I discuss what motivates my use of the weblog to store information, and what kind of information appears in weblog posts.

The use of weblogs to store information, as with any other information storage tools, is guided by multiple factors. An example of complex reasoning behind deciding which tools and strategies to use in such cases is provided by the study by Jones, Bruce & Dumais [21], which examined what people did with web pages once they found them, and the factors that influence the choice of a particular strategy to do so. Using those factors my reasons for using weblog as a tool to store information could be summarised as the following:

Portability, number of access points. I use multiple computers and I'm very likely to be online while working, so using weblog to organise my thinking resources fits my preferences for web-based applications.

Preservation of information in its current state and currency of information. To a degree, a weblog allows information to be preserved while providing access to an updated version at the same time. I usually quote the most relevant bits of external resources, so those quotes are preserved in their current state. The quotes are accompanied by a link to the original (if online), so an updated version is easily accessible. If the original disappears or is moved, it could be found with search engine or *Internet Archive Wayback machine*).

Context and reminding. Most of my weblog posts contain a commentary that provides a context for a specific thought or reference and I also use multiple strategies to establish connections between different entries. That context is enough to recall why a certain weblog post is there, and to remember to use it at a later stage (although for urgent tasks, a to-do list is more effective).

Ease of integration into existing structures. From one side, my weblog is a stand-alone tool that requires its own organisation and archiving. From another, it is a set of web pages connected by links, with permalinks, metadata and underlying standards. It is an integral part of my online presence and references to it could be easily included in a variety of other documents or systems.

Communication and information sharing. For me sharing information via a weblog is not a specific activity, but a by-product of writing. A weblog is not good for a goal-driven communication to a select group of people, but it is a perfect instrument for non-intrusive sharing of ideas in cases where the potential audience is not well defined.

Ease of maintenance. In my case most maintenance problems are technology-related and they are the result of choosing a blog platform that provides a high degree of freedom and flexibility.

With a few exceptions, most of my weblog posts are meaningful for me in some respect: they include quotes that resonate with my view on an issue, my commentary to someone else's words, descriptions of my own ideas or experiences. However, not all personally relevant information becomes documented in the weblog: given the public nature of my weblog, using it to describe experiences or observations that involve others is more challenging than doing that in a private collection. While in some cases I can do so in a generalised form, many such observations and experiences (together with associated insights) remain undocumented.

Many of my weblog entries include *dormant information* (inactive, but potentially useful) [20]: something I do not necessarily work on at the moment of writing, but expect to be useful in the future (e.g. an idea for some future work). In many cases these are ideas that could not be integrated into the current work or distract me from doing it (unless otherwise noted this and other quotes are from my weblog):

*For me blogging is as much about **releasing ideas from my brain** as about reporting interesting news to others. I blog*

bits and pieces of ideas to get rid of them on the path to what I want/need/have to do in the moment.

For example, now I really want to work on a paper on personal KM, but I have all these ideas about time, weblog research and corporate blogging on the way. I don't want to lose them and I can't switch to something else when they are still on my mental radar (so much that I woke up with ideas for blog posts :), so I'm blogging instead of working on the paper. In this case blogging is pretty much similar to filing things into 43 folders (see also: Getting Things Done) so they get out of your way :)

> *Time in blogging: catching a moment to write, 27-09-04*

Blogging that includes *active information*, used for working on a task at hand [20], is different: such information is easier to use directly when needed, so blogging becomes an unnecessary extra effort. Exceptions are those cases where the social nature of blogging plays a role; for instance those where the things that I actively work on might be of interest for others or those where I can benefit from feedback:

I'm almost finished with my methodology chapter. I haven't been blogging much while writing it, but it contains quite a few things where I either would be extremely happy with the feedback or I believe that some other "methodologically challenged" researcher could benefit from (without waiting for the whole dissertation to be published).

> *Methodology chapter: posting parts online, 27-09-07*

In sum, most of the weblog entries I create include personally meaningful information; dormant information, which might be useful for me at some point in the future (the value of it often becomes visible in retrospect); or information actively used at the moment of creating a blog post, in the cases when extra effort of sharing it in public is beneficial for myself or others.

4.2 Organisation

The ways people organise items in their collections depend on their personal preferences as well as systems they use. Organising strategy and effort are usually influenced by the likelihood of, and style of, retrieval, as well as a sense of ownership over information [20].

The simplest way of organising my weblog posts, *chronological organisation*, does not require any additional work: weblog entries are automatically associated with a date and time, which could be used for navigation or retrieval.

Another way to organise a weblog is to add references manually as self-linking or running titles. In my case an extensive *self-linking* is a result of using weblog for a quick documentation that results in writing many relatively short posts connected by links. In most cases those links are part of the text; however in some cases related posts are listed under "See also" or similar labels at the end of a post.

Running titles, where part of one post heading is repeated in another post, to make clear that there is a connection, are used for reporting from an event, or for a series of weblog posts on a topic, either intentionally broken into smaller interconnected pieces or emerging as a result of aggregating feedback and follow-up thinking. Posts connected by running titles are usually

written consecutively or with just a few other posts in between. A selection of post titles from 2005 provides an example:

20 April   *Being researched…*
           Networked identity

21 April   *BlogWalk 7: Mechelen, Belgium*
           Networked identity: links, relations and control

23 April   *On the road again...*

25 April   *Social Computing Symposium: just before*
           Social Computing Symposium: wiki, irc, blogs...

26 April   *Social computing symposium: community morning*
           Social computing symposium: BlogTrace demo

29 April   *Hosting imaginary friends*

More advanced forms of organising weblog posts include categorising them with additional metadata, which should be supported by weblog software. In my weblog, categories and tags are used for this purpose.

Categories are a built-in feature of the weblog software I use: a new post could be assigned to one or several categories and then placed into category-specific archives and RSS feeds. In the beginning I used them to categorise weblog posts by topic, but eventually stopped doing so: placing an entry into a category would create multiples of it in the archives, creating different online copies of the same post and potentially causing confusion when cross-linking. Since this functionality has not been actively employed in my blogging process, I used it for coding weblog entries for this study.

In contrast, *tagging* is an essential part of my blogging practice. It involves assigning a topic, which is essentially a combination of words of my choice, to a post. Indexes are then generated per tag, and a list of recent and most popular tags is shown. In addition there is an interface for managing tags (e.g. deleting or renaming tags and converting existing categories into tags).

Tags I use are not systematic: some refer to events, organisations, projects or products; others to the type of thing discussed in a post (papers, definitions), high-level categories (PhD or life) or specific topics. Topical tags are not necessarily exclusive: for example, those that refer to the broader theme of *relations* include the following tags (from most used to the least used): blog ecosystem, communities, blog communities, networking, blog networking, community straddling, social network mapping, lurking, community vs. individual.

Tagging provides a way to add personally meaningful metadata to my posts without restricting which tags should be used or how many of them are assigned. It is usually an ad-hoc process: when writing a blog post I either select relevant tags from the list or create a new one. The choice of terms to use as tags is influenced primarily by their relevance to my own thinking practice and it not necessarily easy to interpret for an outsider. For example, *knowledge mapping*, refers to weblog entries associated with one of the tasks in a project I was involved in. While I had multiple opportunities to use tags that would help users of external systems to find relevant entries in my weblog, I did not use them, since this would mean losing the personally meaningful tag-based navigation.

The multiple ways to organise content in the weblog allow great flexibility and provide an opportunity to combine the benefits of alternative strategies to organise information, *piling* and *filing* [22]. New items could be put into piles without thinking much about how they relate, but also "filed" together when the nature of connection between items is clear.

4.3 Maintenance

PIM studies suggest that once collections are created, little effort is spent in maintaining them [19, 20]; maintenance is usually restricted to occasional spring-cleaning or major changes in life/work, for example a new job. Those observations are true for my weblog: the biggest reorganisations of my weblog posts are either technology- or work-related. The first includes changing internal links after moving to another domain and converting categories into tags when tag support for my weblog software became available, while the second includes introducing new categories and coding archived posts while working on this study.

However, at a more granular level, metadata maintenance is a constant process that accompanies weblog writing. When retrieving an archived post to support writing a new one, I often add missing metadata and sometimes a link to a follow-up post.

In the case of my weblog, maintenance usually does not involve deleting or relocating weblog entries, since those actions might have an impact on any webpages that link to those entries, both my own internal links and external links from other sites. One exception is the removal of posts in specialised categories (unfinished posts and automatically included del.icio.us links) while coding archived entries and preparing the weblog for a migration to a new server during this study.

4.4 Retrieval of Items for Reuse

In addition to following links between posts, a weblog provides multiple ways to retrieve old posts. Compared to other tools I use to organise information, a weblog provides the most flexible and efficient way of retrieving old entries:

Just a brief thoughts about my ways of finding something in my blog:

-If it was recently I scroll

-If I remember the date and it's not too far from now, I use calendar

-If I know the words I used before I use Google search on my site

-If I can recall it by seeing its title I use All posts by title archive

-If I can recall associated theme I use liveTopics (I don't use categories anymore because they break RSS feeds)

                    How do I search my weblog?, 22-07-03

Similar to the preferences of others retrieving items from their own collections [20, 23], I do not use search frequently, but combine browsing with sorting or scanning of weblog posts based on their metadata.

The practice of looking for related entries in my weblog became an important part of my work. I use my weblog archives regularly, not only when working on a specific task (for example, looking for an input or a reference when working on a paper), but also for finding broader patterns.

Unfortunately, while tools to spot trends across weblogs do exist, there are not many ways to support discovering personally meaningful patterns in a single weblog. Working on this study provides an example: despite having access to weblog analysis tools as part of my research, sorting printed weblog posts was more beneficial for analysing my own blogging practices.

4.5 Summary

I create weblog posts to store personally meaningful information that either does not fit into current work activities (dormant information) or benefits from sharing it with others (e.g. by receiving feedback that could be incorporated into a paper I work on). This information is organised in multiple ways: via automatic chronological archives, links between posts, use of running titles, categories or tags; this organisation is ad-hoc rather than pre-planned. The effort put into organising information is paid back, because it provides multiple ways of retrieving it, which results in frequent use of weblog archives when working on a task, as well as opportunities to reflect on emerging patterns in retrospect. Except for specific occasions, such as coding weblog entries for this study or moving to another platform, maintenance of the meta-data associated with weblog entries is an on-going process integrated with regular blogging.

For me, the weblog is a flexible tool that addresses my information management needs in a way that fits personal preferences (e.g. for web-based applications or ad-hoc tagging). Being a web-based instrument, the weblog allows easy access to the stored information from multiple computers, keeping relevant external information with personally meaningful context and links to the originals, as well as sharing information with others in a non-intrusive way.

In sum, the weblog provides me with a space to create a repository of insights that otherwise would be scattered across different spaces or not documented at all. Once this information has been captured and organised, it becomes useful: in the following section I discuss in more detail how it contributed to my work on a PhD dissertation.

5. DISSERTATION WRITING

As Kamler and Thomson [24] rightfully point out, writing a dissertation is more than just a task of "writing up your research". Their work, as well as publications on alternative writing formats in ethnography [7, 12, 25] and stories told by writers themselves,[2] provides multiple perspectives to look at writing.

At the micro-level writing could be viewed as a sense-making process: "…writing and understanding are mutually constructed. Scholars write and think simultaneously and their writing develops their ideas and then pins meaning on the page" [24, p.81]. While personal practices of researchers in this respect, and their transparency of reporting it, might differ, there are cases where writing is the main method of inquiry or a substantial element of it [25]. Reflecting on my own research process, I conceptualise writing, for both my weblog and more formal academic publications, as a process that contributes substantially to the development of ideas represented in a text.

Writing could be also viewed as an *iterative process*, where arguments are structured and restructured as they are presented to multiple audiences. For example, writing a working report or a conference paper prior to a journal publication is common academic practice. In the case of the dissertation, a much bigger and potentially more complex work, writing stand-alone pieces is an essential part of developing a way to present the whole. While in some cases those pieces might be publications on work-in-progress, they could also be "chunks" shared with supervisors and peers who discuss particular aspects of the work [24]. In the case of this research, writing a weblog post is viewed as one of the iterations in the writing process.

In addition, working on a dissertation is not a straight-forward process: parts of it are relatively well-defined tasks with deadlines and specific outcomes, but it is also about sensing interesting topics to explore, building background knowledge, planning what will turn into a well-defined task later.

This section describes the results of the study with respect to my practices of using a weblog at different stages of developing PhD ideas. It is structured along three phases in the process of idea development, defined as a result of a bottom-up process of grouping and organising coded entries of my weblog.

The first phase is *awareness and articulation*. This is the moment when a certain idea (or an aspect of it) first comes onto my radar, either brought to me by others or articulated as a result of reflecting on my own experiences or choices. I join those two together as they are often interrelated. Personal experiences shape what I pay attention to in interactions with other people, while articulation of my own thoughts is often prompted by events or conversations that involve others. Once ideas appear on my mental radar, they go through a *sense-making* phase: discovering different aspects of an idea, the meaning of it to me and its connections with other ideas. Finally, there is a moment where ideas are put to work and the process of *turning them into specific products* is started. In my case it is doing research and reporting about it in an academic publication.

These phases do not have clear boundaries between them. While being engaged in a sense-making process around an idea, I may become aware of, or articulate, new aspects of it; working on making an idea part of a product often prompts additional rounds of sense-making. However, the distinction is useful to look at the specific role that blogging plays in the process. The following sections discuss in depth how exactly blogging contributes during each of the three phases.

5.1 Awareness and Articulation

Before ideas grow and mature they are vulnerable: it is not necessarily clear why a particular topic is worth exploring. It is often difficult to relate it to the work one is doing at the moment and, as a result to find time for it. Although the image associated with doing research is often one of endless exploration, the reality is different: there are topical, political and financial limitations, as well as approaching deadlines (this is especially true when working on shorter-term research projects, such as those that accompanied my PhD work). In this context, blogging

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[2] For examples, conversations on writing with academics at Stanford University,

can serve as a way to create a space for investing in future ideas, even when under a pressure of current work:

It's a long time since I think about blogging in a frame of urgent/important matrix by Stephen Covey. It's easy to be "too busy" to work on important things when everyday urgent stuff piles up and requires its share of attention. In this case blogging creates a legitimate space for important.

There are two sides of it, reading and writing.

Reading weblogs as a way for prevention, preparation, relation and expertise building. It's like everyday exercise to stay fit – knowing what is going on, what are the trends, who are the people. It may feel as not very important in everyday scale, but every time when I face a new big challenge I appreciate it – like appreciating everyday exercises and being fit if time comes to run for your life.

Reading is also about taking time to develop ideas (I often think of "being pregnant with ideas" :), having time to explore, bit by bit, creating a space for emergent connections and associations. This is where writing comes into play as well.

For me writing is about catching ideas on the fly, growing and connecting. [...] Somehow the process of articulation is largely the process of idea development as well. Like a sculpture that exists only in a head of sculptor and needs to be moulded into physical shape to get a life, writing gives shape and life to fuzzy ideas in my head.

Still, reading and writing are very vulnerable. Unless you are at the "almost final product" stage, they are difficult to put in a list of deliverables and deadlines. They are rather small things that need everyday bit of attention, like everyday watering of a plant that would bring you fruits one day. Not urgent, but very important.

This is where blogging helps. It creates a space for those small activities. Through fun of "distraction" between other tasks to read weblogs, urge of writing a small bit of idea before it's lost in a middle of deadline, pressure and pleasure of knowing that there is an audience, others who may enjoy reading... Because it's so fun I steal time from urgent things to blog, but as a result I create a space for important, so ideas have a safe place to grow before they are big enough to become urgent in a list of all kinds of deadlines.

<div align="center">

Blogging as creating space for important, 21-02-05

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For me, the weblog provides two essential ingredients that allow me invest in future ideas: an instrument that fits the way I work, and a motivation to take time for it. While many professionals use their private notebooks for this purpose, I could never find enough motivation and discipline to make notes on fuzzy ideas that would go further than just a few keywords or a drawing. Blogging, providing a low threshold to write, also gives me an extra motivation to write properly: knowing that my writing is public helps me to go beyond "just a few keywords" and to write in full sentences, structure an argument so others can understand it, and provide some contextual information.

Compared to writing a document, which has a particular purpose and audience in mind (e.g. an academic article or a PhD dissertation), weblog writing requires less mental restrictions around what is appropriate. It is also easy to write a couple of paragraphs that do not necessarily connect to anything (yet), so a weblog can capture many seemingly random notes, providing fertile soil for unexpected ideas.

5.2 Sense-making

As with any writing, blogging is not simply formulating in words an idea already developed in one's mind. It is also about connecting, developing and redefining fuzzy ideas. When writing, I go through the weblog archives to explore connections with what is already there. Reading and rereading what I wrote before shapes and changes what I'm about to write: I often find something unexpected or see patterns obvious only in retrospect. Andy Clark [26, pp.172-3] compares this process to the growth of mangrove forests, where the threes come before the land:

It is natural to suppose that words are always rooted in the fertile soil of pre-existing thoughts. But sometimes, at least, the influence seems to run in the other direction. [...]By writing down our ideas we generate a trace in a format which opens up a range of new possibilities. We can then inspect and re-inspect the same ideas, coming at them from many different angles and in many different frames of mind. We can hold the original ideas steady so that we may judge them, and safely experiment with subtle alterations. We can store them in ways which allow us to compare and combine them with other complexes of ideas in ways which would quickly defeat the un-augmented imagination. In these ways [...] the real properties of physical text transform the space of possible thoughts.

Writing is not the only way a weblog can help make sense of one's ideas and grow them. For me there are two other components in this process: instruments that the weblog provides to connect my ideas, and the weblog's public nature. Tagging, for example, allows gathering ideas into digital "piles" long before I am able to explain why they belong together: I simply choose a new tag knowing that I don't have to explain it to anyone and that I can always change it in the future. Playing with different ways to connect posts in a weblog is very similar to sorting and coding research data to see what comes out of it.

Sharing fuzzy ideas in public also creates an opportunity for feedback. Over time I have learnt not to count on it, as it is difficult to predict whether anyone will comment and what exactly might catch their attention. However, I have also learnt to appreciate unexpected turns in my own thinking triggered by the feedback of others:

Last Friday I was feeling a bit guilty when I blogged instead of finishing the report I was supposed to finish [...].

Now, getting online after an offline weekend and discovering thoughtful comments from close colleagues and distant readers, I don't have any traces of that guilty feeling. Once more I feel how rewarding sharing your uncertainties with others could be... It will take time to digest comments and even more time to react, since urgent is still there ready to claim time...

And, on the meta level, this reminds me of a metaphor of Giuseppe Granieri that Riccardo brings commenting on my post about finding time to blog:

Lilia refers to blogging as a new, value adding, way to do things: thus it becomes just a different tool to organize your thoughts, daylife, research, whatever. [...]

Giuseppe instead chose to refer to blogging as a "batch" process, building up and refactoring in the backstage of our mind 24 hours a day, and requiring "practically" just those few seconds needed to actually write down the post.

I guess it's more: when you blog something you may trigger others' thinking on the issue, so then your own "refactoring in the backstage" gets connected with ideas of others, making the whole process more powerful and more rewarding.

<div align="right">

[Refactoring in the backstage](), 20-12-04

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Combined, reading and writing, organising my own ideas, and the power of the feedback that comes from doing it in public, result in developing sense-making practices that might not be that far from the way academic research is done:

*My main method of studying weblogs is not scientific at all. I call it **"everyday grounded theory"** (more on [grounded theory]()):*
- I read weblogs from my usual reading list and spot interesting themes.
- I start collecting examples or illustrations of these themes. Now I mainly use [del.icio.us]() to collect relevant pieces and "code" them. For example, I pick up posts that indicate something about [blog writing]() or [blog reading]().
- I think of interpretations and connections between themes. Usually I think in public, so my interpretations end up as posts in my weblog.
- Then collaborative part comes in. My interpretations are discussed (or not) and developed by others around me. They evolve and mature.
- Once in a while a pick up the matured ones and I write a paper pretending to be a researcher :)

Of course I use more "traditional" data collection methods (e.g. interviews) as well, but sometimes I feel that this is just to confirm/clarify/develop ideas that I've got from my "everyday grounded theory".

<div align="right">

[PhD: experiential research and everyday grounded theory](), 16-05-04

</div>

5.3 Turning into a Product

As discussed in the previous two sections my weblog provides a space to grow and develop my ideas. At a certain moment it becomes clear how different pieces are connected into a whole. However, those pieces are fragmented notes on thinking in progress and making "the whole" visible for others still takes time and effort:

I guess this is something my weblog has done for me: revealing a need to pull all the loose ends into a bigger canvas, to connect bits of ideas and to work them out. This bigger canvas requires time and focus, it needs more than a few minutes in between to write to my weblog. It calls for recognising that is really important and for giving it enough energy to grow. Setting priorities, making choices and time management.

<div align="right">

[The power of visible loose ends](), 23-11-03

</div>

For me, blogging makes the "loose ends" visible and creates a need to work on a bigger whole. In the context of my work, this is likely to be an idea for research or a publication to work on.

Like many other writers, when it is time to work on a publication I often struggle to start writing, dealing with the "blank page" problem. To overcome this problem many books on writing recommend starting writing without much thought about the quality of it ("shitty first drafts" as Anne Lamott calls it [27, p.21]). While writing "at least something", knowing that it is not likely to end up in a final document, might be a challenge, a weblog provides a legitimate space for it: since it might be of interest to others or as a documentation of one's thinking. For me working on a publication often starts from blogging:

When I work on a paper I often write posts related to it: informal notes that later will turn into formal paragraphs, side track ideas, paper summaries or just associations. Next to a good feeling of producing at least something it get's me into a writing mode: switching from blogging to paper writing is much easier then starting directly.

<div align="right">

[PhD blogging and paper writing](), 23-04-04

</div>

Alternatively, I start writing by going through my weblog archives to identify previously written weblog posts that might be reused. Even if those weblog posts cannot be included directly in the final work, they often provide ideas on how to structure the arguments, or could be used as a draft to be revised later:

Adding a few weblog posts to the outline with jotted arguments makes a trick: it is 7 pages now – something that feels as an achievement.

<div align="right">

[Two papers, me in between](), 17-03-05

</div>

Often finding a way to organise arguments in a bigger document, such as a dissertation, requires multiple attempts and involves, for example, drafts reviewed by peers or presenting work-in-progress on various occasions [24]. In that respect a weblog offers an opportunity to explore ways to structure arguments at a micro-level, as it provides an audience to present them to.

Posting parts of a document-in-progress provides an additional benefit in that readers' feedback may be gained, and that could be incorporated in the final version and improve its quality. The weblog is also useful for finding people who are interested in reviewing the document as a whole (and also providing emotional support):

Last week I had a crazy idea of finishing a paper earlier than expected... [...] I had lots of discussions with colleagues [...] on the earlier versions of the paper and was in a middle of reworking it... What I needed most on Friday was a "fresh eye" view on it as well as English check :)

So after hesitating a bit I ended up asking for help in my [PhD crisis post]() (which probably made it more dramatic as the crisis has not much to do with the paper :)

I didn't expect to receive so much support... For me it was more than offers to review the paper, but more of emotional "hang in there" that make going though difficult times much easier... So, thanks a lot for all who reacted!

<div align="right">

[Blogging and paper writing](), 3-10-04

</div>

Finally, a weblog could be useful to notify potential readers when the paper is finished, and to share it with others. While a formal publication usually takes a lot of time and is not necessarily accessible to everyone who might be interested, weblogs not only provide a direct way to reach some of the readers, but also a possibility for viral recommendation of the work via other blogs.

5.4 Summary

Since writing a weblog post does not require much effort, it could often be fitted into working on something else, providing a low-key way to articulate emerging insights and "park" them somewhere until the moment they are needed. Reading other people's weblogs and engaging in conversations with them provides a way to become aware of issues and themes that might be useful later on. Over time, ideas on a topic accumulate and connections between them become clearer. Browsing through archives when writing a new post, multiple ways to organise posts, as well as the feedback that comes from the readers, turns blogging into a set of sense-making practices that I call "everyday grounded theory".

In the case of research writing, blogging not only creates the need to connect multiple fragments into a bigger whole, but also helps with working on it, turning ideas into a product. The text of relevant older posts can provide an inspiration or be reused in a document. Writing a new weblog post at this stage can facilitate getting into a writing flow or provide a way to structure an argument before it becomes part of a final product. The readers' feedback on work-in-progress helps to strengthen it. When a document is finished, a weblog provides an additional channel to distribute the work.

Although the choices of what and when to write are my own, the public nature of the weblog results in additional motivation to document emergent ideas and to put more effort into clarifying them for others, and a legitimate place to share thinking in progress. Interaction with others helps to make sense of emergent insights and to convert them into a product.

6. CONCLUSIONS AND FURTHER RESEARCH

A weblog provides an opportunity to create a flexible personal information management system. In my case it serves as a low-threshold way to create personally meaningful content: writing in small chunks that are easy to fit between other activities, contextualising and including information which is not relevant for specific current goals, but might be used in the future. This collection is organised and maintained in a flexible and personalised way, using chronological archives, tagging or connecting posts via links or titles. Once there, weblog entries and the associated metadata are retrieved, reused, and analysed to see how ideas are connected to each other.

While there are other tools that could be used in those ways, the public nature of blogging provides additional opportunities. Not only does it increase the motivation to write and discipline to provide content that others can understand; it also results in sharing information that would otherwise be hidden in a private collection. As a side-effect of blogging, sharing emergent insights this way does not require much additional effort. It is also non-intrusive, as readers can decide themselves if, what and when to read, and it provides a way of reaching audiences that one might not know or not think of beforehand. When information in a weblog is relevant for others, their feedback and further development of it enriches the one's own thinking about a topic.

As well as being used as a personal information management tool, a weblog can also support the process of developing ideas over time. Table 1 summarises how different stages of idea development are supported by the activities around the weblog content.

Table 1. Activities vs. stages of idea development

Stages / Activities	Awareness and articulation	Sense-making	Turning into a product
Low-threshold creation of blog entries	Capturing fuzzy ideas in short bursts.	Developing ideas while constructing a weblog post.	Getting into writing flow. Posts as non-scientific drafts.
Organising and maintaining content in flexible, personally meaningful way	Ad-hoc categorisation, piling.	Playing with connecting posts in different ways, to make sense of the ideas behind them.	Trying out multiple ways to structure an argument.
Retrieving, reusing and analysing	Becoming aware of patterns of one's own interests and connections between ideas.	Exploring archives for connections while writing. Sorting, looking for patterns.	Need for integrating into a bigger whole. Reuse of existing content.
Engaging with others around blog content	Motivation to document ideas, to write better, to contextualise.	Feedback and contributions of others that help to establish connections.	Feedback and contributions of others. Draft document review.

Using weblogs as a knowledge base, and then as an instrument to support PhD work, creates synergies, as the effort that goes into creating and organising entries later pays off by providing more ways for retrieval, and a better quality of the material to be reused. In turn, the experience of reuse or unexpected discoveries that older posts bring stimulates putting more effort in creating new entries. In that sense a weblog works as a "trusted external repository" [28], where fuzzy ideas could be safely "parked" to free one's mind to work on a task at hand.

When used for developing ideas and turning them into products, the public nature of blogging provides a "window onto practice" [29] that gives others an opportunity to observe one's working practices, creating a potential for a technology-mediated

apprenticeship. It also provides visibility for "rejected" ideas and work-in-progress, so others might develop alternative interpretations and make other uses of those. While this potentially increases competition, it also provides a valuable input for the author's own work and creates opportunities for collaboration. Using weblogs to present partial results to an audience helps in shaping the final product, similarly to the way in which presenting PhD work at conferences helps in crafting the way it is presented in a dissertation [24].

However, the public nature of blogging also influences the idea development in less positive ways. It limits what is written, and how it is written, so it is not as reliable as a private notebook for documenting all important thoughts or observations. While "everyday grounded theory" works because it is embedded into everyday routines, it lacks a systematic approach. Even though they are in the public domain, weblog posts do not always receive feedback, and those comments that appear do not necessarily serve the research interests. In addition, dealing with fragments of information in one's own weblog and those of others is a challenge. Those concerns are especially relevant in academic settings since, compared to other types of work, doing research requires one to be systematic and to maintain neutrality.

The findings presented in this study correspond to personal accounts of other bloggers discussing uses of their weblogs for organising their own thinking [1-4] and reports of weblog uses to store, organise and use information in professional settings [5, 6, 30, 31]. The synergies between using a weblog to collect and organise ideas and uses of those in supporting specific tasks are similar to those described by Erickson [11] in the case of a personal electronic notebook. The possibility of a feedback in the case of a weblog provides an additional motivation to contribute. However, writing in public also results in limitations on what can be written that do not exist in a case of a personal tool.

The literature on personal information management allows for the comparison of the findings to existing research at a more granular level. Although at first sight using a weblog for collecting and organising thoughts calls for comparison with personal notebooks or digital collections created by other tools, I find more parallels with the studies that look at information represented by the paper artefacts on desks and in personal archives [16, 22, 32, 33].

For example, the type of information included in my weblog, and the role it plays in developing ideas, echoes the discussion of the role of paper on the desks to support knowledge work in the study by Alison Kidd [16]. According to it, spatial layout of papers in the office serves as a holding pattern for the ideas that knowledge workers "cannot yet categorise or even decide how they might use", as a primitive language that reflects models of the world still being constructed, as contextual cues to recover the state of their thought after an interruption, and as demonstrable output of the progress.

Not being tied to specific tasks and bounded by the expectations and format of a bigger document, my weblog allows the inclusion of dormant information and the capturing of ideas under construction. Flexible categorisation provides a way to replicate the spatial arrangement of documents on a desk: chronological archives, tags and links allow "piling" entries together and

indicating relationships between parts of emergent mental structures. While contextual cues around a weblog post do not support returning to an interrupted task in the way that the layout of papers on a desk do, they play a similar role in helping to recover the state of mind that was present at the moment of writing the post, which is useful when returning to an idea that has been "parked" for a while.

Finally, the public nature of a weblog gives others an idea of the work in progress, in a similar way to the papers on one's office desk. In that respect, a weblog bears more similarity to one's office than to one's digital spaces: as a personal space that others could visit as guests, a weblog serves social functions similar to paper archives in sharing resources, building a legacy and impression management [33].

While existing publications and feedback on this study from other bloggers suggest that bloggers use their weblogs to organise and develop their thinking, more research is needed in order to explore the frequency of such uses and the conditions stimulating them. In that respect, the view of blogging as an experience of flow states [5] provides an intriguing starting point. Another interesting research direction would be the exploring of connections between a task at hand and specific blogging episodes: how much and in what cases blogging is used to "park ideas", and when it directly contributes to one's work on the task.

The connection between the functionalities of weblog technologies and their uses for personal information management needs further examination. The similarity between the roles my weblog plays in supporting my work and those of paper collections in other studies indicate a need to explore the affordances of weblog technologies from PIM perspective and possibilities of learning from blogging when designing other tools, in particularly those that support managing information scraps that do not fit current tools [10]. In addition, the potential for learning from information accumulated in one's weblog calls for a development of tools allowing the exploration of patterns in those traces that are aimed at bloggers themselves, supporting casual information visualisation [34].

7. ACKNOWLEDGMENTS

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