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Analog Personal Information Management: Tracking 'Pen-and-Paper' Self-Organization Habits

Introduction

This term project analyzes my information behavior under a personal information management lens. I have always been interested in self-organizational systems (e.g. the layout of physical planners, emerging notation systems such as bullet journaling, various electronic calendar and task apps). After thinking about my personal methods of organization - and reaching the conclusion that despite constantly using electronic devices in my daily life, I have consistently relied on keeping a strictly "analog" system for organizing myself – I decided to utilize my pen-and-paper habits as the subject of this information behavior study. The primary goal of this project will be to analyze my personal information management system in order to better classify the methods I've been using, draw conclusions on how certain life events may affect my existing note-taking style, and based on my findings possibly adjust this system to make it a more effective organizing tool. As I already utilize a personalized notation system (within the pages of a physical planner) to record aspects of my daily life, no supplementary data was collected for the study. Instead, I coded five weeks of pre-existing notes from my physical planner. This data included my work schedule, daily to-do lists, general to-do lists, reminders for personal engagements, medical appointments, and tasks related to graduate school coursework. The data analysis portion of this paper incorporates classification of these notes, broken down by Action Type, into four Everyday Life Behavioral Categories. I also conduct an emotional analysis of my personal information behavior, as compared to the contextual life events against which the data was recorded. Specifically, I calculate positive and negative affects in order to determine my overall mood for each of the five weeks.

Literature Review

This literature review provides a synthesis of three published studies which relate to my personal information management study. Included in the review is a summary of Narayan & Olsson's (2013) "Sense-making across Space and Time: Implications for the Organization and Findability of Information," which discusses information organization behavior, specifically as applied to personal information management and personal information collections. The second component discusses grounded theory, and its idea of generating themes, meaning, and experience directly from collected data. The final source discussed is Zastrow's (2014) "PIM 101: Personal Information Management," and will touch upon the study's idea of digital versus analog personal information collection – including both the benefits, and downsides of digital PIM systems. The review will conclude with a summary of how these sources are applicable to the research on my personal information behavior analysis, "Analog Personal Information Management: Tracking 'Pen-and-Paper' Self-Organization Habits."

Narayan and Olsson's (2013) conference paper analyzes the results of their study pertaining to information organization-related behaviors. The authors suggest throughout that in order to help others improve upon their information organization behavior, one must first comprehend "more than an understanding of information organization as information professionals see it," but expansively a grasp on the user's "everyday situations, information experiences, information contexts and individual cognitive and mental models" (p. 8). The authors also discuss the inherent complications involved with personal information organization, including its nature of inter-subjectivity - the "coordination of meaning between oneself and others" (p. 8), and intra-subjectivity – "the coordination of meaning between one's own past and present selves" (p. 8). This latter idea is due to the different perceptions that exist within one's own self, as dictated through the passage of time – effectively, they claim that one will perceive information differently (even if it is their own information), as time passes and one's personal knowledge, as well as environmental and social contexts change.

The authors studied these aspects of information behavior in everyday life by conducting a daily diary study with 40 participants (34 of which successfully completed the study). The participants were asked to "maintain a detailed information journal or diary of their information-related thoughts and activities (including online and offline information seeking behaviors) for two weeks through a secure weblog" (Narayan & Olsson, 2013, p. 3). The authors claim several advantages of self-completion diaries for this sort of analysis, including their abilities to "examine life as it is lived," and "capture the little experiences of everyday life that fill most of our working time and occupy the vast majority of our conscious study" (Wheeler & Reis, as cited in Narayan & Olsson, 2013, p. 3). The paper also cites several other successful examples of diary studies in its own literature review.

Findings of their exploratory study include the observation that all information behavior involves "the process of making meaning through complex acts of coordination" (p. 7), including the coordination of – as mentioned above – meaning as translated between oneself and others, and between one's own perceptions. They also conclude that such information behaviors are "mediated through personal, social, and cultural contexts" (p. 8). Ultimately, their qualitative data suggests that the sense-making of one's information behavior is complex, as it must navigate all of these different experiences, perceptions, and contexts. They end the study with a call for more research in information organization behavior, as well as continued communication between information researchers and those developing information systems.

For my own analysis, I will be using Bowen's (2006) concept of grounded theory, which focuses on "continual interplay between data collection and analysis to produce a theory during the research process," as well as the mutual relationship between "data collection, analysis, and

theory" (p. 2). This approach relies on discovering, and analyzing any themes that emerge directly from the data. Bowen explains that "grounded theory is a popular research approach embraced by scholars in anthropology, sociology, health care, and many other fields," (2006, p. 2), and claims that its own theoretical framework is composed of sensitizing concepts – "interpretive devices" that act as a "starting point for qualitative study" (p. 2). In grounded theory, the extraction of patterns directly from recorded data enables the study to remain free of any "hypotheses or preconceived notions" (Bowen, 2006, p. 3), with the idea that any persistent themes will be made visible from the coded data, and any subsequent theories will thus be yielded directly from the source material. As Bowen (2006) synthesizes, this method involves "the researcher's attempts to discover, understand, and interpret what is happening in the research context" (p. 3), with an emphasis on qualitative data analysis. Grounded theory also relies on the concept of inductive analysis, namely that any "patterns, themes, and categories of analysis" will come directly from the data, rather than "being imposed on them prior to data collection and analysis" (Patton, as cited in Bowen, 2006, p. 2).

Much of the existing literature on digital PIM (Personal Information Management) and information behavior, discusses the difficulties in digitally organizing information within personal archives and libraries. For example, Zastrow's (2014) article "PIM 101: Personal Information Management" touches upon the downside of digitally archiving, versus archiving on paper: "Unlike analog materials, which can last decades or centuries in the right climate, 'store and ignore' doesn't work very well in the digital world" (p. 22). She then elaborates on these digital shortcomings, including: the issues of hardware/software becoming obsolete; problems with file transfer and format migration; and the difficulty in finding files, due to poor organization structure, or even because of cross-device/cross-platform use. Zastrow also (2014) discusses several shortcomings of cloud-based software when it comes to PIM: "Commercial services may go out of business, change the services they offer, accidentally lose your files, or delete content after a period of inactivity" (p. 24). This article, published as a short feature in the journal *Computers in Libraries,* does not discuss any specific studies undergone by the author herself. However, it does provide a concise, informative overview on the background of PIM, and also briefly incorporates findings on a study done on the digital PIM practices of writers – ultimately finding that the writers' main digital record keeping strategy was one of "benign neglect" (Zastrow, 2014, p. 23).

Narayan & Olsson's (2013) study emphasizes the organization and management of everyday life behavior, making it applicable to my own study of analog personal information management. My method of self-recording everyday life occurrences (e.g. appointments, reminders, tasks) as a way of recalling and organizing my daily life similarly falls under the lens of intra-subjective interpretation. In their paper, the authors discuss extensively the implications and troubles of searching for, and retrieving information that may have been recorded under a different perception: an endeavor that involves "a spatial and temporal coordination with one's own

past selves in a sort of cognitive and affective time travel" (Narayan & Olsson, 2013, p. 1). While I have been working on a personal self-organization system for years, and have therefore minimized most issues regarding intra-subjective reconciliation, the authors' understanding of information organization as "anticipatory coordination with one's future information needs" (p. 1) applies directly to my analog habits.

One of the aims of this personal information management study is to analyze any such themes that may emerge from my PIM system. I will be approaching this through a grounded theory approach, and specifically by way of inductive analysis. This approach in discovering any existing patterns, or themes within my analog PIM system will include the development of a coding process that incorporates the personalized characteristics described above, as well as an analysis of my information behavior in the contextual environment of any life events that were occurring during the data collection process. Any patterns in my information behavior that are encountered upon analysis will be extracted directly from the data.

I am also interested in determining whether there are any adjustments that could be made in order to improve the efficiency of my information behavior. One concept I'm interested in is my persistence in using analog methods, despite the fact that I am a regular user of digital tools (consistently using my Smartphone and personal computer in my daily life for communication, social media, and information gathering such as reading the news). While I am not analyzing my information behavior in terms of keeping a personal archive, several of my reservations about using digital tools to organize my daily life do apply to the factors discussed in articles such as Zastrow's. For example, before cloud-based software such as iCloud made information from apps like "Notes" automatically accessible on both my cellphone and computer, I found it difficult to move between devices. Even today, despite using iCloud, I experience frustration when, for example, I realize that I put something in my Google calendar, and it is not being reflected on my phone's built-in Apple calendar. Other times, I have started to use a digital tool (such as the "To-do/Tasks" feature in Gmail) as an organization method, and then found an issue with it, reverting back to my analog planner and risking the loss of information during this "back-and-forth" process. Several of these downsides to digital PIM, as touched upon by Zastrow and others, I find applicable to my own wariness in using digital tools as part of my PIM system. Similarly, the existing and emerging privacy concerns that are increasingly discussed in literature of digital PIM, (such as the collection of corporate data that may occur during digital personal information management), apply to my own pre-existing skepticisms.

Data Analysis

I. Introduction

This study is aimed at analyzing my personal information behavior, and specifically my analog method of personal information organization. All of the data collection for this paper occurred

before the study began. The decision to use pre-recorded data was made for two reasons: to minimize any bias (and consequent behavior modification) in knowing that the data would be used for an analysis in information management; and because of time limitations, as the context in which this study was performed had a constraint of five weeks. In order to have at least five weeks of data collected (a range of time that represented both objectively busy, as well as less busy weeks in my personal life), as well as the capacity to analyze the data, I was therefore limited to using previously gathered data. A grounded theory approach was utilized to formulate any theories about my personal information management (PIM) system, as the goal of the study was not to impose a preconceived hypothesis onto my information behavior, but rather to extract any themes directly from the data. Any emerging theories will be made by defining and classifying pervasive pen-and-paper habits (such as color-coding, breakdown of behavioral categories, and symbols used), as well as by evaluating my information organization behavior within an emotional context. Therefore, this analysis includes a division of information behavior by actions (tasks and events) in the context of everyday life behavioral categories, as well as an aspect of mood analysis. Ultimately, the findings of this study aim to suggest any revised, or improved methods of personal information organization, as well as evaluate whether this analog method could be replaced (or assisted by) a digital counterpart. A theoretical discussion of this data analysis conclude this paper.

II. Methodology

The data analyzed for this study was pre-recorded, and extracted from a physical 2018 monthly planner, which is laid out in a weekly format. As the layout of the planner is by week, coding was in turn divided by week (with five weeks of recorded data in total). Each week was defined in the context of the academic year (for example Week 2: Spring Semester Finals Week), in order to give context to a level of "busyness" in at least one category. My PIM system already includes an analog classification schema, which utilizes symbols to denote different action types. This system has been adapted from the bullet journaling personal organization system (Bullet, n.d.). Table 1 includes a summary of this notation system.

Because this classification system already existed, the coding schema developed from the data was similarly organized by action type: therefore each "task", "task complete," "task not complete," and "event" were tallied, and counted per week, for an overall total of 199 recorded actions (combined tasks & events). For the purpose of this study, I have defined "task" as "an action to complete, or that has been completed." A completed task being one that is fully accomplished, and a task not completed one that has not been accomplished, and that therefore has (in most cases) been migrated to a future date for completion. An "event" is defined in this study as "an occasion, or happening that I am attending in some capacity."

ACTION TYPE	DEFINITION OF ACTION TYPE	REPRESENTATION & DESCRIPTION OF SYMBOL
Task	An action to complete, or that has been completed	• Single bullet point before task description
Task Complete	An action that has been fully accomplished	X An X placed over the task's original bullet point
Task Not Complete	An uncompleted action, which (in most cases) has been migrated to a future date for completion	> A dart placed over the task's original bullet point, signifying migration of task
Event	An occasion, or happening that I am attending in some capacity	○ An open circle before the event description

Table 1. A summary of the pre-existing symbol classification system utilized in my PIM system

In order to further classify these action types, I organized them within four different "Everyday Life Behavioral Categories" (ELBCs). These four categories include school, social, work, and Personal Life Management (PLM). A description of each ELBC, as well as examples of each action type within the categories can be seen in Table 2.

EVERYDAY LIFE BEHAVIORAL CATEGORY (ELBC)	DESCRIPTION OF ELBC	EXAMPLES OF ACTION TYPE (TASK) WITHIN EACH ELBC	EXAMPLES OF ACTION TYPE (EVENT) WITHIN EACH ELBC
School	Actions relating to Spring & Summer semesters of graduate school (MLIS Program at Pratt Institute), as well as student officer responsibilities	• Complete term paper for class • Post on Twitter about ASIS&T (student group) event	○ Class 11:30-2:20 - Information Technology ○ Meeting with group members for final presentation
Social	Actions relating to time spent with family & friends, as well as volunteer work	• Buy birthday gift for a friend • Type up minutes for PLSN (volunteer group) meeting	○ Birthday dinner at restaurant in Williamsburg ○ Dinner and movie at Alamo Drafthouse with boyfriend
Work	Actions relating to current job, as well as applications & interview processes for future employment opportunities	• Talk to boss about summer schedule • Complete job application for summer job in Montana	○ Work shift at library: 9-2pm ○ Job interview for library assistant position
Personal Life Management (PLM)	Actions relating to all other life organization needs, such as chores, appointments, & budgeting	• Make doctor's appointment • Create budget for May	○ Meeting with landlord about lease adjustment ○ Dentist appointment

Table 2. A comparative description of each everyday life behavioral category, including examples of action types within each category

Another classification scheme that was adapted from my existing analog PIM, and subsequently into my coding schema included color coding. For example, all tasks for school were highlighted blue in my planner, and any social events were highlighted yellow. These were transcribed as such in the coding schema in order to more easily observe any recurring themes.

The emotional portion of this study was done in order to analyze any patterns in my emotional state, as looked at in the context of my analog PIM system. For this analysis, I chose to specifically assess my mood, rather than my emotion. This decision was made due to my mood being calculated by the week as a whole, rather than in the context of each task. Emotion is "used to specify feelings towards an event, object, or a person," making mood better suited to a more general, or longterm contextual evaluation, as it "implies feelings that cannot necessarily be linked to a particular event, object, or a person" (Yang & Bahli, 2015, p. 366).

The emotional analysis was measured by self-reporting, using a revised version of the Positive Affect (PA) and Negative Affect (NA) Schedule (PANAS) scale – specifically the PANAS Short-Form (PANAS-SF) scale. PANAS-SF utilizes two five-item scales measuring five positive affects (active, determined, attentive, inspired, alert), and five negative affects (afraid, nervous, upset, hostile, ashamed) (Karim, Weizs, & Ur Rehman, 2015). Each of these ten affects were measured on a likert scale of 1 to 3 (1 being very slightly/not at all, 2 being moderately, and 3 being extremely). The scores were then added (1 as 1 point, 2 as 2 points, 3 as 3 points), to get positive and negative affect totals per week. My decision to use the revised (short-form) version of PANAS, was in an attempt to minimize imprecise analysis, as the data was analyzed two to five weeks after its initial recording. I felt that this gap between event occurrence and recall was too long to properly evaluate my mood at the level of specificity asked for by the traditional PANAS test (which uses a Likert scale of 1 to 5, and 20 less-nuanced affects versus the more specified 10 used on the PANAS-SF).

III. Findings

Week Classification	**Total Number of Actions**
Week 1	37 Actions
Week 2	39 Actions
Week 3	44 Actions
Week 4	38 Actions
Week 5	41 Actions
TOTAL ACTIONS (All Weeks Combined)	199 Actions

Table 3. Total number of action types (Including Tasks Completed, Tasks Not Completed and Events)

The findings from this study have been interesting, as the results post-data analysis were not entirely as expected. For example, after calculating my action types, it emerged that the total number of actions weekly (combined tasks & events), remained fairly consistent across the five

weeks, with only a difference of seven action types between the least busy week (Week 1 – 37 actions), and the most busy week (Week 3 – 44 actions). Table 3 visualizes all weekly totals. While I chose to analyze this data inductively, and not place any preconceived hypotheses on my personal information behavior, I did presume that during my Spring Semester Finals week (Week 2), I would have hand-recorded more tasks to complete, as well as tasks completed. Therefore, the overall consistency was somewhat surprising.

Similarly, the week that I had recorded the most actions (Week 3 – 44 actions), was actually the interim week between Spring and Summer semesters. Before analysis, I had assumed that this would actually be my "least busy" week, as I was done with finals, and had not started work for my summer course yet. That said, when broken down by ELBC, the most number of tasks I had recorded on Week 3 (and the cause of the spike in numbers), were within the Personal Life Management category (22 actions) followed by Social (11 actions) category. Therefore, it is clear that I had recorded more personal, and social tasks/events in my PIM system during the week where I knew I did not have to focus on school. As expected, the 1st week of the study (the week before finals), I had the most tasks recorded under the School category (17 actions), with another small increase during the last week – the 2nd week of Summer semester (13 actions). Figure 3 represents a visualization of total action types by week. Accordingly, the week in which I had the most schoolwork (Week 1), also had the lowest number of recorded social actions.

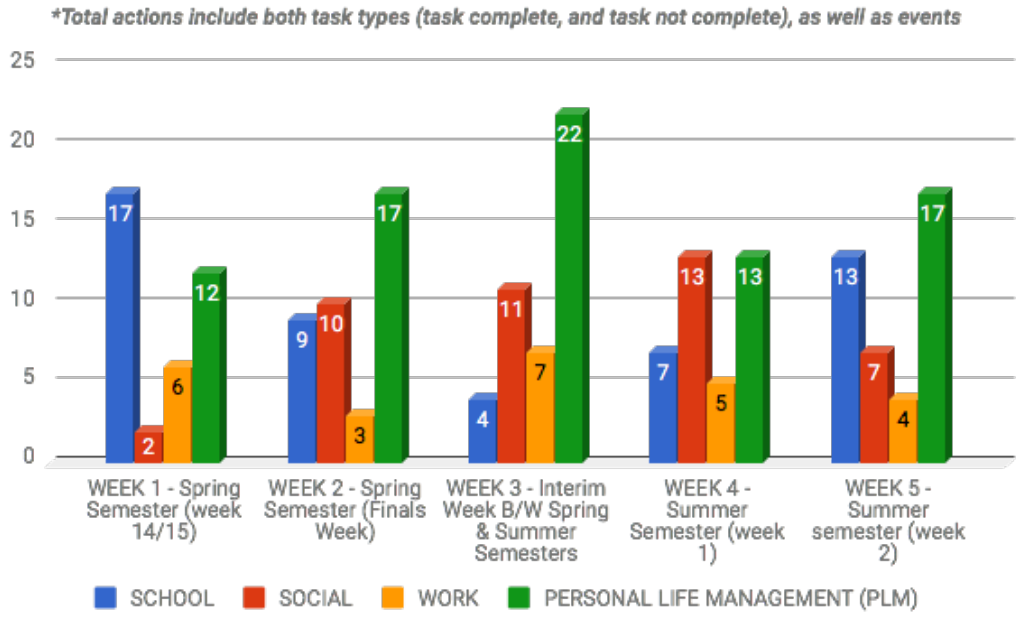

Figure 1. A visualization of total actions per week, organized by everyday life behavioral category

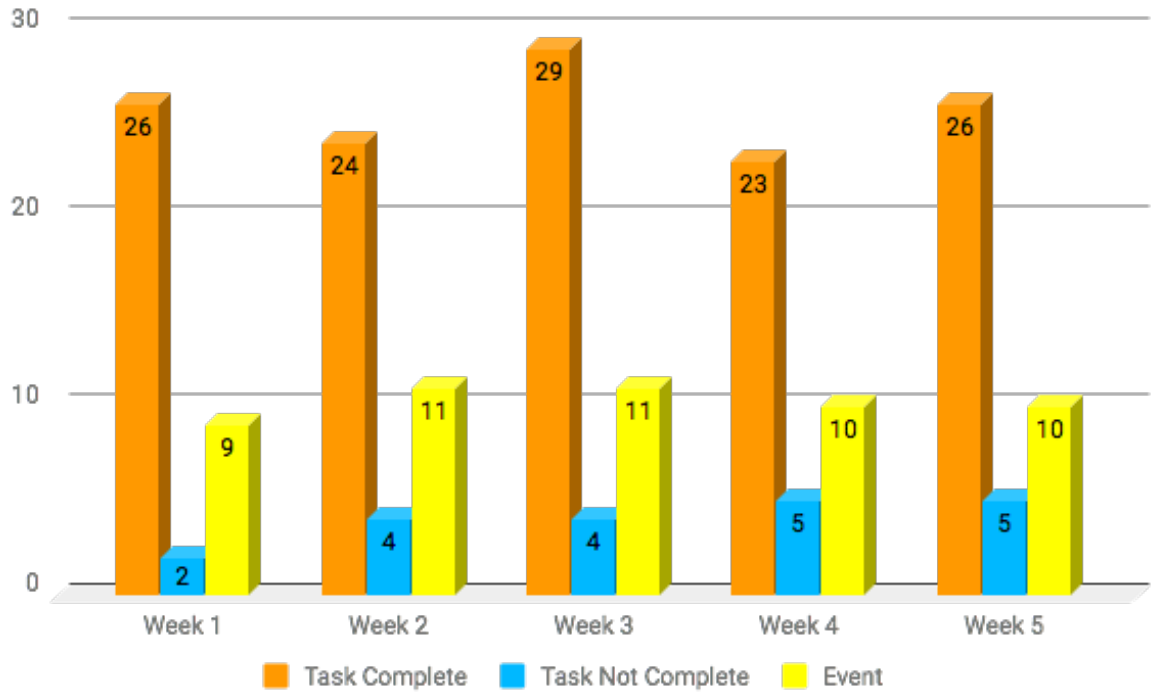

Figure 2. Breakdown of Total Action Types: Visualized by Week

An analysis of my PIM system by action type (task complete, task not complete, event), as visualized in Figure 2, also shows consistency throughout the five weeks. Despite slight variations in numbers, completed tasks were recorded at more than double the number of events, and on average at five times the number of tasks not completed. I am inclined to say that my personal satisfaction at physically crossing completed tasks off in my planner is what leads to both an overall higher number in tasks per week, and especially leads to the higher number of tasks completed, than not completed.

The emotional analysis also illuminated a somewhat unexpected finding. Specifically, that Week 4 (which took place at an objectively less busy week in terms of action numbers - 38 actions) had the highest number of negative affects, and suggests the week in which my mood was the most negative. Once again, this could be explained by the types of actions recorded in my PIM system. I did not specify what the actions were as part of my coding schema, or for the public results of this study, (only tallying which ELBC they fit into), however they were clearly noted in my organizational system. For example, 8 of the 13 PLM actions on Week 4 were related to medical appointments, or other “chores” with negative connotations. Therefore, while the overall number of actions recorded was not higher than other weeks, the number of tasks with stronger negative affects attached (in particular afraid, nervous, and upset) was highly

increased. The data also showed that the weeks with the highest score in positive affects, or the weeks in which my mood was the most positive, were weeks in which the most number of actions recorded were related to school (Weeks 1 & 2). As gathered directly from the PIM recorded data, the affects most closely related to these actions were active, determined, and inspired. Table 4 visualizes positive/negative affect numbers per week, as well as the total number of affects for all weeks combined. While the purpose of this study was not to analyze my overall mood throughout the five weeks, rather focusing on each week, it was interesting to see that my total positive affects (55), were 17 points higher than my total negative affects (38). It would be interesting to further research my recorded action types during different personal, academic, and professional contexts of my life, in order to analyze whether the number of positive affects consistently ranks higher than negative affects.

Week One: Spring Semester Week 14/15	POSITIVE AFFECT TOTALS	14
	NEGATIVE AFFECTS TOTALS	6
Week Two: Spring Semester Finals Week	POSITIVE AFFECT TOTALS	13
	NEGATIVE AFFECTS TOTALS	6
Week Three: Interim Week Between Spring & Summer Semesters	POSITIVE AFFECT TOTALS	9
	NEGATIVE AFFECTS TOTALS	6
Week Four: Summer Semester Week One	POSITIVE AFFECT TOTALS	9
	NEGATIVE AFFECTS TOTALS	11
Week Five: Summer Semester Week Two	POSITIVE AFFECT TOTALS	10
	NEGATIVE AFFECTS TOTALS	9
WEEKLY TOTALS	POSITIVE AFFECT TOTALS	55
	NEGATIVE AFFECTS TOTALS	38

Table 4. A summary of the results of mood evaluation, as determined by a self-reported PANAS-SF scale

Conclusion

The aim of this personal information management study was to analyze my pre-existing analog PIM system in order to observe, and extract any persistent patterns or themes. This process was done by electronically coding five weeks of pre-recorded analog data, categorized by action type (tasks completed, tasks not completed, and events) within the context of four Everyday Life Behavioral Categories (School, Social, Work, and Personal Life Management/PLM). The resulting data collection enabled me to observe which of the weeks (contextualized primarily around spring and summer graduate school semesters) had the most recorded actions, as well as how many action types occurred by category. The goals of this study were to determine any themes in my information behavior, as well as ascertain whether my currently analog information organization system could be supplanted, or assisted by a digital counterpart. I also included an emotional analysis component as part of this study, in which I used a revised version of the PANAS scale, the PANAS-SF (Short-Form) scale, to self-report total numbers of positive and negative affects per week. This allowed me to visualize my weeks in terms of

mood, and analyze during which weeks (contextually, in terms of schoolwork and number of actions) I was in a more positive, or more negative mood.

In light of existing literature, Narayan & Olsson's (2013) paper on the sense-making of information organization, as well as their discussion of individualized personal information management, can be read in terms of the intra-subjectivity of my own personal information system. Several aspects of my current PIM system, as well as my information behavior, can also be explained by Lansdale's (1988) study of the psychology of personal information management. Despite being written in the 1980's, with the aim of discussing a transition into the 'paperless office' – a concept that now seems outdated – his theory of how we "handle, categorize and retrieve information on a day-to-day basis" (p. 55) is very applicable to my own analysis.

Narayan and Olsson's (2013) definition of information organization behavior: "the process of analyzing and classifying materials into defined categories," and incorporating an individual's "own organization methods and schemas" (p. 1), essentially provides a framework for this entire study. My personalized pen-and-paper style of notation, which incorporates a self-created "schema" of classifications such as color-coding, and the use of different symbols, has been defined into Everyday Life Behavioral Categories, evaluated, and analyzed for themes regarding numbers of action types, and their emotional contexts. The existence of my pre-existing classification system was made apparent by the overall simple, organic development of the coding schema created for this study. As my actions had already been defined by type, both by color and by symbol, the only "extra" classification that had to be done was categorization by behavioral category. The four ELBC's were defined for the purpose of this study. Even so, because of the physical layout of the planner, upon analysis I realized that I had already tended to group action types within their categories together (for example, all class assignments to complete were written next to each other within their respective due date), despite not having defined these categories pre-study. Therefore, even the categorization of action types was, to a certain extent, visibly apparent, adding to the general simplicity of the coding process.

Furthermore, Narayan & Olsson's discussion on intra-subjectivity in terms of personal information, and the concept of organizing information in anticipation of one's own future information needs (p. 1), can explain why I organized my behavior in such a way – specifically, by action type. In effect, each task and event recorded in my planner, and subsequently coded for the data analysis, represented such an anticipation. For example, when a thought entered my mind that I knew was necessary to remember later (e.g. "I'm low on dish soap," as I washed the dishes), or I was encountered with a future concept such as a planned engagement (e.g. "Yes, I will schedule my next appointment for four weeks from today"), I had automatically put a reminder directly into my planner. Respectively, these two "anticipations" would have been entered as a task to complete: "buy dish soap", and an event: "Doctor's Appointment, 1:30pm,

April 27." My habit of automatically looking at tasks to complete (both every day, and every week), may explain the overall high number of completed tasks, versus uncompleted tasks. For example, if I had not remembered to write down a task immediately, and instead only recorded one task, or several tasks at a later time, it is very possible that my uncompleted tasks would have added up, and been at a much higher percentage to my completed tasks.

In this way, I have learned to coordinate and anticipate my future information needs by way of a specific information organization method, and further defined this method in order to keep my completed tasks at a higher number than my "migrated," or unfinished tasks. This method in turn has been individualized, yet standardized (utilizing the pre-existing schemas as discussed earlier in this study) in order to minimize any frustration in recalling an imprecise information need during an altered, future perspective. The authors' discussion of context as dictating every information action, similarly applies to my own information management system. Paraphrasing Chatman (1999), they state that "we can neither recognize the significance of information in the present nor recall it in the future without a context relating that information to our life-world" (as cited in Narayan & Olsson, 2013, p. 1). In application to this study, this concept can be seen, for example, in my method of color-coding every graduate course in yellow, and labeling it with the course code in lieu of course title. This only makes sense when analyzed in my personal academic context, or academic 'life-world:' yellow highlighting means it is a specific event – a graduate course; and the label INFO-608 means it is the Human Information Interaction course, taught on Saturdays as a Pratt MLIS summer graduate course. I do not recall any instances of looking at an action in my planner and not understanding its meaning, or not being able to make sense of its context. Furthermore, it explains why I had higher levels of action types within certain categories, depending on the contexts in which they were noted. A specific example of this is during Week 3 – Interim Week Between Spring & Summer Semesters. As this was not a week in which an academic context was in focus, the most action types were recorded within both social and personal contexts. Adversely, during Week 1, (the week preceding spring semester finals), the academic context of my life *was* the most in focus, thus increasing the level of action types recorded within the School category. This sense-making of my organizational system within the theory of contexts may further explain my increased level of completed tasks throughout the five weeks – during finals week, I did not have a choice to disregard school tasks, which necessitated their completion. In conjunction, during the interim week between semesters, I had to complete several actions (both social, and personal), that I would not have time to complete once my summer semester had started.

While Narayan & Olsson provide a framework for my information organizing behavior, Lansdale's concept of information organization, and what he sees as a metaphor for how our 'paperless' offices will one day function, may help to provide - at least in the future - a potential digital alternative to my current PIM system. Specifically, Lansdale touches upon such concepts as physical piles being a "visible manifestation of an information handling strategy," and

"concepts such as in-trays and filing cabinets, artefacts of a paper-based technology" (p. 57). He puts these ideas into a psychological context, by claiming that each analog (or physical) method of information organization "may transfer sensibly to a computer-based system, because they have a genuine function and fulfil a cognitive need" (p. 57).

He also discusses the psychology of writing down reminders – something which directly corresponds with my information behavior methods. As he writes, "the use of reminders avoids the need to have to remember what to do, or to maintain a checklist of things to do, by relying upon our ability to scan and recognize information relatively easily" (p. 57). This psychological theory offers another hypothesis as to why I utilize my analog method of writing down actions. In Lansdale's train of thought, (as combined with a sense-making framework), all of the actions I wrote down were reminders recorded in anticipation of a future information need, and composed in order to actually "avoid" remembering what I had to do. The last aspect of Lansdale's study that I will discuss is his theory of how people actually remember, and recognize their information needs. Namely, he believes that they partially do this by remembering "attributes of colour," as well as shape (p. 63). This can also apply to my information organization system, which already utilized the characteristics of color-coding (different colors to signify different action types), and shapes (different shapes classify tasks as completed, or migrated to a future date). Both the ideas that all of my recorded actions were written as ways for me to quickly "scan" my information needs, as well as the fact that I had already generated a shape and color schema in order to mentally make note of these reminders, may also be indicators of why completed task numbers remained higher than uncompleted tasks.

Emotionally, the data analysis revealed that my most positive moods were during weeks in which an academic context was heightened, and my most negative mood occurred during the week in which I had the highest number of tasks with negative connotations to complete. This was also the only week (Week 4), in which negative affects scored higher than positive affects. Further research can be done to explain these specific outcomes, however it can be theorized using concepts of sense-making, that this overall higher score of positive affects could be due to a high level of intra-subjective coordination, and consequently a low level of frustration due to any misperception in my information management behavior. In a literal sense, this would translate to a more generally positive mood resulting from pride, and feelings of success stemming from high levels of completed tasks. This would mean that my positive moods are more contingent upon the act of completing tasks, rather than the nature of the tasks themselves. While I do not currently have psychological theories to support this idea, I can say that personally I am in a much more positive mood when my levels of accomplished tasks are higher than my unaccomplished tasks.

If examined under Lansdale's psychological concept of physical systems as metaphors for larger information retrieval systems, it could be surmised that my own physical PIM could easily be supported by an existing digital information system. Certainly, there is no shortage of calendar, or note-taking apps available for iPhones and personal computers (both of which I use very frequently for other purposes). However, as most existing literature on digital PIM is about personal archiving, and proper digital record-keeping of personal documents, more research is needed in order to find a system that would directly offer everything I currently do by "pen-and-paper" to organize my everyday life. This would include the option of defining tasks by their status (completed, or migrated), as well as color, and in some cases by symbol, in order to provide what Lansdale cites as "cue enrichment" (p. 65) as an effective way to remember information. Also, as I am accustomed to regularly checking my physical planner as a way to "avoid" the need to remember tasks and events for the day, and I have individualized my notation method in order to minimize any intra-subjective disconnect, a comparable digital platform would have to similarly provide a comprehensive overview of my information needs by day, and by week. This concept of a single "view" is why I consider the utilization of such separate apps as Notes (for tasks), and Calendar (for events), an unacceptable barrier due to the need for cross-platform operability. While Google does now provide both a calendar, and a "task list" view on one screen, the problems of cloud-based software discussed in such literature as Zastrow (2014), namely the issues of obsolete technologies, corporate data mining, and privacy concerns, are areas of further research in digital PIM that are beyond the scope of this paper, but that nevertheless currently act as personal barriers to my own digital PIM implementation.

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