Design for Well-Being:

Developing A Web-Services with Collaborative Media Elements to Support Self-Directed Recovery

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This paper is a research through design approach (Zimmerman et al 2007), that seeks to reflect upon several designerly practices in action. Chiefly it’s concerned with describing the development of a web-service with collaborative media elements, as part of a user-centred design process, to support physiotherapy patients during their self-directed recovery. The report also reflects on a failed first design attempt, and draws through that reflection describes the way I now choose to operate as a designer. The paper proposes a new definition of design for well-being which draws upon and combines work by Dodge et al (2012) and Miller & Kälviäinen (2006). Finally, the report also proposes a series of further steps to take in the futures to develop the web-service.
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1.0 Introduction

1.1 Physiotherapy & Physical Rehabilitation

Physiotherapy (sometimes referred to as Physical Therapy, or PT for short. To avoid any confusion this paper will refer to the practice as physiotherapy throughout) is a specialism within medical science that is described as a physical medicine and intervention rehabilitation, aimed at improving physical impairments, promoting increased mobility and motor function via physical examination, diagnosis of musculoskeletal or neurological problems, which leads to a prognosis, and a program of physical interventions (Petty 2012 pg.1-2). This work is normally carried out by Physiotherapists, but also increasingly the roles of Occupational Therapists and Chiropractors have moved into the field of physiotherapy (Petty 2013 pg.3). However, physiotherapy isn't just concerned with physical interventions, increasingly the field has come to encompass preventative measures including physical training regimes, ergonomics at the home and in the workplace, as well as education and research (Chambers et al 2013, pg.24). Physiotherapy is also now often provided in conjunction with other medical services, or as part of a wider more holistic medical intervention program (Atkins et al 2010 pg.3). The project within this paper seeks to address a specific concern within this broad, and highly complex field via the application of an Interaction Design process.

1.2 What Is Self-Directed Recovery?

The focus of the project is the proportion of the rehabilitation process that is conducted under no direct supervision, and is self-directed, it's therefore important to discuss the term 'self-directed rehabilitation' and to define the meaning of the term, and to discuss other terms used, which mean the same thing. The term self-directed rehabilitation is the one most commonly used by The Chartered Society of Physiotherapy (Jordan et al 2014). It is often defined as 'not directed' rehabilitation (Atkins et al 2010 pg.6), that is to say that it is any physical rehabilitation that is undertaken by an individual without guidance, or more specifically direct supervision from a rehabilitation expert, be that a doctor, physiotherapist or occupational therapist. This is a very broad definition, and is often described as not entirely useful, or accurate (Sluijs et al 1993), many of the physiotherapists contacted during the research work also referred to it as the 'Personal Training Program' or 'plan'. Although it goes by many different names it's important that there is clarification as to what is meant by these terms, and also settle on a term for use throughout. Generally speaking, the concept behind the differing terms remains the same, it is the physical work, or exercises that patients are required to do themselves, without direct professional supervision as part of their rehabilitation program. Initially the term self-directed rehabilitation was used, as it was the one most commonly used in professional literature, however, while conducting the second workshop the participants expressed a dislike for the term (see appendices 14), and agreed on using the term self-directed recovery, so that is the term used throughout this paper.

1.3 Who Undergoes Self-Directed Recovery?

The short and simple answer to that question is anyone who enters into a physical rehabilitation regime, because put simply the current paradigm for almost all physical therapeutic interventions, are heavily guided by a physiotherapy specialist at the start, with decreasing involvement over time, as the patient becomes more responsible for their own rehabilitation (Chambers 2013 pg.43). There are however a number of specialisms, and fields within physiotherapy that cover a wide range of medical
issues, and each adopt slightly different approaches to engagement and therapy:

**Geriatric**: This is arguably the largest individual field within physiotherapy (Ramaswamy & McCandless 2013 pg.541), and certainly the fastest growing (IBISWorld 2016). It covers a wide range of issues and conditions normally associated with people going through normal adult ageing, but is not necessarily restricted to older adults.

**Orthopaedic**: Primarily concerned with the treatment of disorders and injuries to the musculoskeletal system (Atkins 2010 pg.1). This form of physiotherapy is closely linked with the field of orthopaedic surgery, and is often the rehabilitation branch of a full orthopaedic medical intervention, and is as such strongly linked with hospital out-patient work. Orthopaedic physiotherapy therefore focuses on post-operative procedures, spinal injuries, amputations, broken and fractured bones, arthritis, sprains and serious acute strains to ligaments, tendons and muscles (Richards et al 2013 pg.340). Orthopaedic physiotherapy has cross-over with sports physiotherapy (Barrow & Walker 2013, pg.xvii-xix).

**Paediatric**: Concerned with the detection, diagnosis and treatment of congenital, developmental, skeletal, neuromuscular and acquired disorders within infants, children and adolescents. Paediatric physiotherapy utilises techniques and modalities employed within other fields of physiotherapy, given that it is a specialism that focuses primarily on a subset of the population, rather than any specific medical conditions (Brennan et al 2016 pg.535). Given the demographic focus, there is scope for improving compliance with self-directed recovery by increasing the collaborative aspects of tasks, building social communities, and support networks (Duda 1996).

**Cardiovascular & pulmonary**: Aims to increase individuals’ endurance levels and improve ‘functional independence’. Treatments include manual therapy to help clear fluid secretions from the lungs of cystic fibrosis patients, and improving cardiovascular endurance after transcatheter aortic valve replacement cardiac surgery (Sanghvi 2013 pg.147-165). Because of the nature of this specialism there is heavy involvement with the physiotherapist. Patients are required to do their exercises on their own between visits to the physiotherapist, but support is usually constant throughout their rehabilitation (Sanghvi 2013 pg.152).

**Palliative Care**: Is concerned with improving the quality of life and life expectancy of patients with both malignant and non-malignant diseases (Boog 2008 pg.5). Palliative physiotherapy provides a rehabilitative framework to slow, or halt any deterioration within functionality, ensuring patients have a good level of dependency, with the aim of maximising their quality of life (Tester 2008 pg.18).

**Neurological**: Deals with neurological disorders or diseases, and those who have suffered brain, and or spinal cord injury. Given the nature of neurological disorders often physiotherapists working within this field are dealing with issues such as balance, movement, muscle strength, fine motor skills, speech, impaired vision and loss of functional independence (Carpenter & Reddi 2012, pg.14-15).

**Integumentary**: Involving conditions of the skin and any associated organs (Moffat & Biggs Harris 2006, pg.xxi). There are many conditions and wounds (surgical or otherwise), as well as burns that can cause the skin itself to become an impediment to movement and functional independence (Moffat & Biggs Harris 2006, pg.17-18). There are two aims of integumentary physiotherapy, firstly promote healing of any wound, or easing of any skin conditions via the use of surgical instruments, dressings and other medical interventions (Moffat & Biggs Harris
2006, pg.1-5), secondly, via exercise, compression garments, management of swelling and other skin conditions, improve the patients’ quality of life and give increased functional independence (Moffat & Biggs Harris 2006, pg.9-11). There’s a large amount of contact with the physiotherapist within Integumentary physiotherapy (Moffat & Biggs Harris 2006, pg.4).

**Sports:** Sports physiotherapy is probably the most commonly known amongst the general population (Knowles 2015, pg.4-6). It is also the second most likely physiotherapy service you will potentially need in your life, after geriatric physiotherapy (Joyce & Lewindon 2015, pg.65-67). The field encompasses muscular, ligament and tendon injury management, be that via acute care, physical treatment and manipulation of the injury, rehabilitative exercise, and further injury prevention via education of motor skills and appropriate training (Rosenblatt 2015, pg.11-13). Given the nature of sporting injuries, quite often from the very start of the rehabilitation process there is a greater emphasis placed on self-directed recovery (Cook et al 2015, pg.394-395).

**Women's health:** Physiotherapy focused on women's health mainly addresses (but is not limited too) conditions and issues related to the female reproductive system (Sapsford et al 1998, pg.3). It is predominantly concerned with the prepartum (before child birth), and postpartum (after child birth care) (Sapsford et al 1998, pg.5-6). Quite often post therapy care support networks already exist within women's health physiotherapy, often as an extension of the prepartum support groups that already exist (Irion & Dunbar 2009, pg.20-21).

Although each branch of physiotherapy has different focuses, approaches and methodologies, they all contain as part of their ‘DNA’ a proportion of self-directed recovery (Sedgley 2013 pg1-2). This is primarily to do with the main function of all physiotherapists, and that is the teaching of coping mechanisms to their patients, so they are able to manage and control whatever issue(s) they have (Campbell R., et al 2001). Regardless of the differences given to the weighting between directed (with the supervision of a physiotherapist), and self-directed recovery within the various fields of physiotherapy, most fields give extra weighting over the course of a rehabilitation program to self-directed recovery (Moore 2012 pg.269-270). With the wide and varied range of specialisms, fields and medical conditions covered by physiotherapy, and by extension self-directed recovery, it’s impossible given the time-frame of this project to cover all specialisms within the design work. Given the patients available, the focus is on those who have been through either sports or orthopaedic physiotherapy, often referred to as the trauma therapies (Sedgley 2013, pg.10). Irregardless it’s important to be aware of the differences within physiotherapy specialisms at this stage, so as to understand how to adapt and further develop the web-service in the future.

1.4 Why Is Self-Directed Recovery So Important?

Most fields of physiotherapy give extra, and specific weighting towards self-directed recovery (Ridehalgh & Barnard 2012 pg.236), given this emphasis within the majority physiotherapy fields, it’s clearly vitally important to a patient’s success. So much of the focus within the research of physiotherapy focuses on the role of the therapist, their role as teacher and motivator (Sluijs et al 1993), on the exercises they instruct people to do (Hautala et al 2016), and although there is increasingly a focus on improving the outcomes of self-directed recovery (Peek et al 2016) much of it deals with how to breakdown de-motivational attributes (Hay-Smith et al 2016). Given the proportion, and emphasis placed self-directed recovery within the literature, it is clearly an important part of the healing process, that requires focus.

Without doing the self-directed recovery component of a rehabilitation program, the program isn’t
completed, and becomes far less effective (Morris & Pask 2015, pg.232). While some forms of physiotherapy (section 1.3) offer a greater degree of contact with therapists, some close to 100% contact (Sedgley 2013, pg.5), it’s still true that without complying, and accurately completing the program of self-directed recovery a patient hasn’t completed the program of rehabilitation assigned to them (Peek et al 2016). As an added complication to the issue of none compliance of any self-directed recovery program, if the program is in any way incomplete, or not accurately completed, then there is a significantly increased risk of repeat injury, or further complications that could lead to new injuries (Morris & Pask 2015, pg.235-236). It is therefore highly important that any self-directed recovery program is fully complied with, because without doing so not only is no rehabilitation program complete, but the likelihood of further complications is increased.

1.5 What Are the Main Challenges with Self-Directed Recovery?

There are two primary challenges, I use challenges instead of problems because of the specific definition and stance on design for well-being I have adopted (see section 1.6), identified within self-directed recovery:

1. People not doing the exercises they are given correctly, thus not getting the full benefit of the exercises at best, or at worst actively harming themselves or doing further damage (Cook et al 2015, pg.399).
2. People not doing the exercises at all, a lack of motivation or compliance to the training regime and exercises they have been given (Peek et al 2016).

While there are many ideas and theories about how to solve these issues within physiotherapy itself, and discussion about the nature of the challenges, mostly revolve around the function of the physiotherapist. There are some other associated challenges, however, these two issues are the core challenges facing self-directed recovery, the first is an issue of ‘accuracy’ doing the exercises correctly, while the second is one of ‘compliance’, actually doing the exercises, and this is how they’re referred to throughout the paper. Interestingly though, when interviewing former physiotherapy patients (see appendices 1, 2 & 3), none, apart from one expert divided the challenges into these two categories in the same way the research literature does, instead merging the two into one issue. So, from the perspective of a designer, the issues were worked jointly, in the way respondents and participants identified them.

To an Interaction Designer both challenges present interesting entry points into the ideation process. As part of further analysis of the literature and interviews with patients (see section 4.3.4) it was possible to generate potential problem statements (Cooper et al 2014, pg.110), such as:

- How can we ensure patients are doing their exercises correctly?
- How can we monitor patients progress?
- How can we motivate patients to do their exercises?
- How can we support patients during their self-directed recovery?

These design openings, were considered during the second ideation process. During the initial ideation process only the theme of motivation within self-directed recovery was considered for a number of reasons, and as such became the focus of the project, a mistake that will be covered in more detail (see section 3.0). The two main challenges, coupled with the problem statements outlined above provide a lot of scope within the design space (MacLean et al 1991) to tackle many different issues, and to take many different approaches to those issues. However, the more interesting approach was to attempt to bring all of these 'openings' together into a much larger and more holistic project.
that looks at the support that can be provided during the self-directed recovery phase within the physiotherapy process, mainly because of the feedback received during patient interviews (see appendices 3).

1.6 Design for Well-being

There has been an increased focus within public policy, and political discourse around the need to change how we, as societies, view our progress, all too often within the Western world there has been a predominance on using GDP, average income and other economic metrics as a means of recording the ‘health’ of society (Layard 2011, pg.127-128). There has been a shift in the political, and public discourse towards a consensus that the true measure societies should be judged by is happiness, and the concept of Well-being (Layard 2011, pg.114). There have been many attempts to describe well-being in terms of dimensions and descriptions, but the definitions of well-being have often focused on single aspects (Dodge et al 2012), however, Dodge et al (2012) have developed a working definition of well-being:

![Fig.1 See-saw definition of well-being (Dodge et al 2012, pg.230)]

This definition focuses on the idea of maintaining an equilibrium between the fluctuating state between challenges and resources (Dodge et al 2012). This definition is of particular use with regards to the processes involved in self-directed recovery, as it acknowledges the need to have at least resources equal to the challenges faced. So, if we understand the psychological, social and physical challenges within physiotherapy, we can design with the aim of providing suitable resources to achieve an equilibrium, and thus well-being.

Miller & Kälviäinen believe it’s possible to develop well-being promoting design heuristics by drawing on research and theories from psychology, sociology, health studies and anthropology amongst other (2006), and that we need therefore to understand not only the needs of the individual, but also the situation they are in fully. The key therefore to design for well-being is to develop a deep understand of the situation (Miller & Kälviäinen 2006), and then identify the challenge (Dodge et al 2012) this then helps to identify the resources required, and gives rise to ‘questions’ which, open up the design space. Further, by supporting effective action, prediction and control, social interactions and physical involvement the products and services we design we can promote well-being (Miller & Kälviäinen 2006). By facilitating collective action as a means to promote wider social well-being and designing platforms for collective, or collaborative intelligence (Hogan et al 2015) rather than addressing the ‘problem’ from the perspective of medical science, we allow those we design for to empower themselves, and attempt their own solutions.

Design for well-being is about moving beyond assistive technology, and seeks to help people transform their lives for the better by focussing the design on ‘quality of life’ (Larsson et al 2005). This contrasts with numerous approaches within designing for health care that seem at odds with the
desire to help people transform their lives for the better, and in a positive way. The widespread use of gamification in health and fitness apps (Lister et al. 2014), which seek to use gaming elements to illicit addictive behaviour. Indeed, gamification as a concept seems to ignore the needs of the user in favour of exploiting them for profit (Bogost 2014, pg.72-76). The use of addictive qualities of rewards for engagement often found within social media platforms are extolled as great design by some (Nodder pg.5-18). Design for well-being should be a rejection of such practices. However, to strike a note of caution, it is important to acknowledge that although the origins of the well-being movement in design, and beyond, come from a genuine wish to improve the quality of life of people, there is a danger that such methods can be exploited by those with desires on societal control, often for the purposes of private profit (Davies 2006).

1.7 Collaborative Media

With the rise of new forms of digital media, but especially social media platforms, we as audience no longer passively consume, we also create and design media (Löwgren & Reimer 2013, pg.4), this affords us a sense of 'ownership', and platform we previously never enjoyed. The characteristics of collaborative media are based around media services and tools that are easy to use, and that can be used in diverse ways (Löwgren & Reimer 2013, pg.14). These practices are collaborative, people generating content together to give rise to ‘something’ that is not possible for a lone user, and these collaborations often take place online (Löwgren & Reimer 2013, pg.14). In a sense collaborative media is gestalt, the increased population size linked via digital networks and platforms means that the cumulative effect of small contributions is turned into something of value (Shirky 2010, pg.61).

The Social Theory of Motivation states that not only are other people able to collectively motivate each other via group participation, but also that ownership of the methods of communication increase participation, and this could potentially lead to a 'virtuous circle', or possibly a downward spiral (Bourdieu 1998). This concept, that social media can lead to increased participation for good or ill, is something Atton (2010, pg.213-215) discusses in relation to alternative media outlets. It is this ‘potential’, one way or the other, that requires some careful consideration in the design process, especially considering the aim is to design a product to increase well-being, and as such developing a platform that encourages the negative, and addictive sides of such media (Sriwilai & Charoensukmongkol 2016) is not desirable, and the products we design should seek to do no, or minimise harm (Cooper et al 2014, pg.169). While a certain degree of stress, pressure, or challenge in the context of well-being (see section 1.6), is useful as motivation, too much can have deeply negative effects (Newton 1999, pg.241-250).

People experience social and collaborative media platforms in three functional regions; performance, exhibition and personal (Zhao et al 2013). Users also need to use such platforms to present and archive their data and contributions within these three, often competing, functional regions (Zhao et al 2013), this has implications for how to design collaborative media platforms to elicit the functions desired. The different characteristics of various media types also have an impact on the strength and type of social network ties created, and this suggests that different tiers of media usage support different types of information flow (Haythornthwaitea 2005), and thus relationship formations. Interaction Design doesn't have to be about re-inventing the wheel, or creating new applications and tools, it can be about appropriating digital platforms, like Facebook, Twitter etc. and using them for public discourse, or using tools we already have at our disposal, and just providing the space, and impetus for others to use them in certain ways.
1.8 User-Centred Design & Web-Service Development

Why user-centred design? Throughout my professional career, I have been a champion for advocacy (Dalrymple 2013), and stakeholder involvement in public policy (Wieble & Norstedt 2013, pg.125-134), and I have a background in psychology, where there is an emphasis on understanding the individual, as a designer I wish to continue with the principle of involving people in the processes that ultimately affect them. The initial plan was to attempt a participatory design process, because of its focus on stakeholder involvement in every aspect shaping the design, as well as the process (Bannon & Ehn 2013), however that didn’t work out (see section 3.2). User-centred design was the next logical choice, although user-centred design isn’t as intensive or involving as participatory design, it still focuses on engaging the user in the process, it requires user testing and provides a focus on upfront planning (Cockton et al 2016, pg.3). Given user-centred design approach grew out of cognitive psychology, and evolved into ‘cognitive fit’ (Pratt & Nunes 2012, pg.14), it’s a natural fit for anyone with a psychological background.

The initial idea was to develop a mobile app, however the choice of web-service was made for a variety of reasons (see section 4.4.3), but primarily because together with users it was chosen as the right design decision (see section 5.1.3), after originally choosing to design a mobile app. It also allowed the work to be situated within Interaction Design, Löwgren (2007, pg.1) states that interaction design is the “act of shaping digital products and services, considered design work”, which is both oddly limiting and expansive at the same time. The definition of web-service used is simple, a web-service is any piece of software that makes itself available over the Internet, and whose primary function is carried out via the Internet, meaning ancillary functions need not necessarily require a connection to function.

There was a real danger, given that the work was with an already existing service, that it may encroach on current established services, and practices. This would mean the work would contain an element of service design, especially around concepts of customer ‘journey’ and ‘experience’ (Reason et al 2016, pg.54-60), insofar as there being a potential to change the way physiotherapists connect, and interact with their patients long-term. To avoid a drifting into service design clear parameters were placed on the scope of the web-service, in short it should provide extra support and resources to those already partaking in self-directed recovery, and not replace, or re-shape any already existing services. However, it is important to note that the interaction design examples (see section 4.3.2) that seem to work best are those that are integrated within the physiotherapy service from the beginning, so ultimately some service design will be required eventually with the approach taken, just not now.

1.9 Research Focus

The literature review (see sections 1.4 and 1.5) identified several challenges facing patients undergoing self-directed recovery, concerning both compliance (Peek et al 2016), and accuracy (Cook et al 2015, pg.399). The interviews with patients (see Appendix 3) also highlighted some of the issues and challenges that the literature identified, although patients also brought up the theme of support, either the lack thereof, or how having support from various sources was vital to their successful recovery process. The projects scope is concerned with initially exploring the options available, and doing early prototyping, and user-centred design work. The main research question is:

**How can web-services with collaborative media components support physiotherapy patients with their self-directed recovery?**

The primary focus of the project is on finding a way to increase compliance and accuracy with
physiotherapeutic self-directed recovery, however the field of physiotherapy is wide and varied (Sedgley 2013, pg.1-21), and covers many specialism areas (see section 1.3), this report chose to focus on the fields of physiotherapy that deal with trauma injuries. There are therefore supplementary and more specific questions, such as:

- How can we develop support structures to help patients meet the challenge of doing their exercises accurately?
- What support structures do patients want to help them with monitoring their progress?
- What support is required to motivate patients to do their exercises?
- What support structures will enable patients to feel supported, and to be able to support others during their self-directed recovery?

It might not be possible to answer these supplementary questions within the time-frame of this project, but it is these questions, which will guide the process, and that the work will attempt to answer.

The design process will be a user-centred design for well-being process, it will be an iterative one with a focus on developing, together with users, the outline and framework for a collaborative media web-service. Although the focus of the design process is trying to answer the main question, and the supplementary questions, as part of a research through design process (Zimmerman et al 2007) the work will also seek to assess the value the specific approach to design for well-being, and whether it is of use during the design process, as well as assess the value of user-centred design. I come from a school of psychology that doesn’t like to refer to issues as ‘problems’ and believes in empowering people (Strawbridge 1999, pg.294-302), and as such I like the refocussing that this approach to design for well-being has in re-framing and rephrasing ‘problems’ as ‘challenges’. It might seem like a small difference, but I believe language has power to change our mindset, problems need solving, and challenges are overcome.
2.0 Background

2.1 The Global Picture

The issues surrounding self-directed recovery are very much real-world issues, that are present globally. According to an IBISWorld market research report (IBISWorld 2016), the physiotherapy sector in the USA is one of the most rapidly expanding health care sectors, predicting that the sector is worth roughly $32bn per annum. This increase in demand for physiotherapy services within the USA is attributed to an increasingly ageing, and longer lived society, as well an increased prevalence of chronic diseases, and an increasingly sedentary life style which, links with an increase in obesity. Meanwhile in Europe, according to an eumusc.net report “In some Member States musculoskeletal conditions make up to 12% of all hospital discharges” (eumusc.net 2015), although the European wide average rests at between 9% to 10%, Sweden is one of those countries that is closer to the 12% figure.

There is a sizeable proportion of hospitalised patients that will require some form of physiotherapy across Europe, much like the in USA, the eumusc.net report (2015) attributes the increase in demand to an increasingly ageing population, longer life expectancy, an increase in chronic diseases, as well as increased physical and sporting activity. This is only a proportion of those who access physiotherapy services, not all those who require physiotherapy services will be hospitalised before gaining access to them (Petty, 2013 pg.6). Socialstyrelsen figures state roughly 37% of Swedish citizens who access the country’s generous physiotherapy services (Swedish Association of Physiotherapists 2016) will have been hospitalised for their injuries, or condition, meaning the remaining 63% are either referred via general practitioners, or some other route (Ekman 2002).

This information points to a burgeoning sector, that’s greatly in demand across the Western world, and one that is only likely to become more in demand given current demographic trends across Europe, North America and South East Asian (UNFPA, HelpAge International 2016). Given the increased pressures and spend on physiotherapy services there has been an increase into research to improve services, much of this research though has focused on the role of physiotherapist, and the technical skills required (Jordan et al 2014), rather than looking at the entire process holistically (Kearney et al 2012). While this approach has led to great gains in physiotherapy practice, and directed care, given that physiotherapists and occupational therapists are a finite resource, and much of the work and exercise required under any rehabilitation program must be conducted under self-directed circumstances, it doesn't seem to be the most prudent area with which, to focus the vast majority of efforts, this does however, present interaction designers with an opportunity.

2.2 Physiotherapy in Sweden

The situation in Sweden isn't unique in many respects, it has many similarities with other European countries (eumusc.net 2015), insofar as Sweden offers similar levels of access to services, and a similar range of services found in most other European countries. Where Sweden does differ however, is that it offers a high degree of guaranteed access to physiotherapy services (Swedish Association of Physiotherapists 2016), patients don’t need to be referred by a doctor, or other health professional, and can book an assessment directly themselves. Producing a customer Journey map that looks somewhat like this:
Although this patient map does differ from those of the Swedish participants within this report (see Section 2.3). Like much of Western Europe, Sweden also has a large ageing population, and is also facing a demographic time-bomb (UNFPA & HelpAge International 2016), which will only serve to increase pressure on an already strained physiotherapy sector (Henriksson et al 2001). As if to emphasise the pressures currently felt within the sector, physiotherapist is a profession that has recently been added to the labour shortage list by Migrationsverket (2016). Of more interest however, is the high degree of repeat ‘customers’ to physiotherapy services in Sweden (Henriksson et al 2001), especially as non compliance with self-directed recovery increases the likelihood of repeat, and further injury (Peek et al 2016). All of this adds up to the large spend that the various Swedish Regions, and the Swedish State spend on physiotherapy services (Ekman et al 2005).

2.3 Patient Journey Mapping

To further understand the experience of Swedish participant’s patient journey maps (Trebble et al 2010) were produced, but they were also used as a means of exploring whether the focus was on the correct problem. Unsurprisingly the ‘standard’ patient journey map described by Swedish Association of Physiotherapists (2016)(see Fig.2 section 2.2) wasn’t an accurate representation of the journey’s Participants experienced:

This first journey involved an ‘unnecessary’ visit to a General Practitioner (Doctor), according to the Swedish Association of Physiotherapists (2016) before the patient was referred to a physiotherapist. This pattern of being referred via medical professional is repeated by a number of other patient journey maps (see Fig.5 and Fig 6). Given this is supposedly an unnecessary step, this presents a potential design opening. Upon further questioning, however, the first patient journey map looked more like this:
The patient confirmed that they had go through the process identified in Fig.2 on three separate occasions for the same injury. Confirming that if the self-directed recovery program isn’t complied with that the risk of repeat injury, or lack of progress in recovery results in patients re-presenting themselves to physiotherapy services (Morris & Pask 2015, pg.235-236) (Peek et al 2016). Again, this is a process that was repeated with two other journey maps:
These three patient journey maps confirm the need to focus attention on increasing compliance with, and accuracy of the self-directed recovery as identified in Section 1.5. The fourth patient journey mapped was another convoluted journey that did not ‘adhere’ to the standard journey:
Given this patient's journey started with hospitalisation for severe injury it was not likely to follow any standard procedure. However, the changing of physiotherapists three times seemed excessive, and resulted in what the patient described as an “awkward process that never really felt completed” and resulted in an associated injury, and treatment via a fourth physiotherapist. Maybe these changes in care were unavoidable, without exploring the reasons for the changes further it is impossible to say one way or the other, however, it does seemingly present a potential design opportunity, although probably service design. The final patient journey map was a more straightforward journey:

Despite this patient journey map being the closest to the standard journey, the physiotherapy was conducted by two physiotherapists, although the patient confirmed this didn’t cause any issues for their recovery, and they have yet to suffer any repeat, or associated injuries. The patient journey maps exposed two further potential design opportunities:

- The lack of accessing physiotherapy services directly
- The changing of physiotherapists midway through delivery of program

Although both can be turned into problem statements that could be addressed by Interaction Design, the first would be better served with a public education program, or advertising campaign and the second is more likely a question of service design (Polaine et al 2013, pg.5-6) insofar as it is more about changing cultural practice. The patient journey maps did however confirm that there is a problem with the self-directed recovery phase of the patient journey map.

2.4 Stakeholders

The next consideration was to see where within the stakeholder map the work would be positioned from a design perspective. During the initial attempt the positioning shifted, and ultimately ended up positioning the work from the perspective of the physiotherapist, a mistake reflected upon in section 3.4. To better understand the stakeholders involved a stakeholder map was produced:
This is a map purely focussed on the healthcare stakeholders, and the patient, and it shows a clearly lopsided relationship. Although the decision had already been taken to focus on the patient via a design for well-being perspective (see section 1.6), and conduct a user-centred design process (Pratt & Nunes 2012, pg.14-15), the uneven relationship in the stakeholder map reaffirmed this decision, as a designer, mostly with the patient, while understanding the patient and their challenges don’t exist within isolation.

After interviewing a number of patients who had been through a variety of physiotherapy processes (see Appendix 3) it was clear that the Healthcare Stakeholder map was only part of the picture:
Several respondents raised the importance to either their positive recovery processes of friends, family, spouses, work etc., or the negative impact such stakeholders had on their self-directed recovery. This concept of ‘support’ is what underpins the approach taken to tackling the problems faced by patients:

Essentially the web-service and collaborative media platform seeks to produce a fourth strand to the stakeholder map. One that is made up of fellow patients, who understand the difficulties faced by each other, and who can develop a mutual support network. Although participants identified their dislike for the term ‘rehabilitation’ (see appendices 14), and the particular association with substance misuser’s, one of the best, and most effective models in any rehabilitative process is that adopted by substance misuse support groups (Morgenstern et al 1997).

Substance misuse groups replace one dependency with that of another more supportive structure (Bombardier & Turner 2010, pg.253), and given that the nature of such support groups is diverse and diffuse there’s normally a broad base of experience for patients to draw upon (Galaifa & Sussmana 1995). This replacement of one support structure with that of another, and doing so with a high degree of success (McKellar et al 2003), is of interest to physiotherapy as the ‘drop-off’ in physiotherapist support, when patients start their self-directed recovery process, isn't normally substituted in any meaningful, or intentional way. The two processes might not be totally comparable, but the learning processes participants go through together collaboratively in substance misuse rehabilitation (Rae Davis & Jansen 1998) is a useful metaphor for part of the aims of developing a collaborative web-service. This insight was one initially observed within the initial failed work, and guided the direction
the project progressed in. Although the analogy remains pertinent to the work, it was initially made without reference to anything other than personal knowledge of human motivation, the fact that the workshop participants didn’t appreciate such links shows that although the reasoning may have been sound, the lack of empathy (see section 3.4) in the original process could’ve potentially placed the work at odds with the target user group, ignoring their well-being.
3.0 Reflections on Mistakes

3.1 The Need for Reflection

Given my initial work with this topic was less than satisfactory, and that I instinctively knew it wasn’t ‘right’ I felt before moving on I really needed to reflect on the process I went through, and the methodology, or lack thereof, I adopted. Also, important to me was understanding why I adopted these processes and methodologies, and why I took the positions that I did. In my previous studies within psychology, and my professional experience within public policy work I was always encouraged to reflect on my work, and practice, and to be self-critical. Doing reflective analysis on practices is of importance when trying to understand different ways of ‘knowing’, and can help illuminate just what sort of knowledge base any practice is based upon (Schön 1995, pg.21-37). Yet as a designer I had yet to do any self-reflection, and this was an identified weakness that clearly needed addressing, especially if I was to learn from my initial mistakes. I conducted a reflective analysis not only on my work, but also my notes and emails that formed part of the original work. Below are a series of honest reflections on the original approach and work.

3.2 Initial Mistakes

I was more acutely aware than anyone I believe that my initial work was problematic, indeed, the original title of the TP1 project was “Misadventures in Interaction Design: Exploring Motivation in Physical Rehabilitation”, was a title that acknowledged very openly, that as a design process, all had not been well, and indeed hinted that what was contained within was unsatisfactory in my own eyes. Below is a list of mistakes and my reflections on them, as well as the solutions attempted going forward with the work, the larger more fundamental errors are discussed below in greater detail in sections 3.3, 3.4 and 3.5:

<table>
<thead>
<tr>
<th>Mistake</th>
<th>Solution</th>
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| **Participatory Design (PD):** I knew PD was intensive and time consuming, and establishing working relationships was hard. A primary criticism of PD is that the effort required to form relationships isn’t always worth the reward (Kensing & Blomberg 1998). The approaches may have been badly worded for the target audience, and not well suited (Susanne & Iversen 2002). I started relationship building 5 months before TP1, but by the start I only had one contact, and that wasn’t firm. I accept I stubbornly clung onto the idea of PD for too long, however the real issue was that I didn’t have a plan B. | Before re-engaging with TP1 there was a need not only for a plan A and B, but C and D also:  
  * **Plan A:** Work with physiotherapist and patients.  
  * **Plan B:** Work with patients I found myself in Malmö.  
  * **Plan C:** Work remotely with contacts around the world.  
  * **Plan D:** Develop and work with personas.  

Knowing I had multiple back up plans gave me confidence to proceed with my work, and move on if progress wasn’t being made. Ultimately, I ended up with plan B. |
**Poor Ideation Process:** This in a way was coupled with reluctance to give up on PD. I wanted desperately to involve users in the entire process, including ideation, this led me initially to not wanting to ideate on my own. This was a foolish decision in retrospect, because even had I been able to engage fully in a PD process I would still most likely have needed to bring ideas for participants to discuss. When I did start to ideate, I didn’t fully open up the design space, or explore the options I identified fully. Then I narrowed down far too quickly on the design option I identified.

As part of my reflection-in-action, I analysed other processes I had been involved with that had been successful, and developed a ‘map’ of my design process (see section 4.2). Part of this was realising I need a lot of information to be able to ideate. The stages are:

- **Step 1:** Understand the problem fully.
- **Step 2:** Explore current design solutions, Interaction Design or otherwise.
- **Step 3:** Think crazy, open up. Allow myself to think what if, not what can I do.
- **Step 4:** Think Sane, narrow down. Then see if they really meet the requirements set out in the problem.

This is phase one. Phase 2:

- **Step 5:** Try to explain the ideas to other designers.
- **Step 6:** Listen to feedback.
- **Step 7:** Refine ideas, and narrow down further.

Using ‘sounding boards’ is a vital part of my ideation process, I need to have conversations.

**Moving Too Fast:** I wanted to try and engage in ‘designerly practice’, but really didn’t have a solid foundation to do so. Trying to change how I worked, without having a real plan, or an understanding of how I’d like to work. I was also ignoring my strengths and exacerbating my weaknesses. On reflection, I should have built on my strengths slowly, and used them as a strong foundation, or platform for moving into a design process.

I am a methodical and analytical person I should use these strengths in my design process. I have always needed to understand not only what I am doing, but also why I am doing it and how I am doing it. My solution was to bring four strands into my design process, as an upfront process:

- **Research:** Use my skills to fully explore the topic and design methodologies.
- **Interview:** Use my expertise in qualitative research skills to interview users.
- **Critique:** Use my critical analysis skills to critically evaluate relevant designs.
- **Designerly Empathy:** Doing all the above will allow me to develop a designerly empathy (see section 3.4).

Out of this work came my definition of ‘design for well-being’, which was a process of merging my past knowledge, with the designerly knowledge I have gained via reflection. By thoroughly researching not only my topic area, but also my design stance (Vermaas et al 2013, pg1143-1145).
**Retreating to what I know:** As a reaction to ‘moving too fast’ I retreated very quickly to what I know well, when my initial plan to pursue a PD process didn’t work out too well, but I did so without a strong reason or plan for doing so. It wasn’t an attempt to find my feet and relaunch my process, but a way to feel comfortable. This would have been fine if I was able to push forward with the work eventually. However, ultimately rather than pushing beyond where I was comfortable I got stuck in the process.

The solution to this was to list things that I was uncomfortable with, and attempt them:

*Sketching:* In the Bill Buxton (2007, pg.114) sense is something I’m not comfortable with because I’m not good at it. Although I appreciate its importance in representing the knowledge within your mind, and helping to reflect and generate new knowledge.

*Body storming:* As an analytical person, I’m normally far happier observing others with a notebook in hand. I wanted to be more physically involved within this process.

*Prototyping:* Given I didn’t really prototype first time around, I set out to do so this time as a necessity (see ‘Not a Prototype’ below).

I vowed I would do as much of these things as I could every week, and that I would try and do something designerly every week that I was not comfortable doing.

**Not a Prototype:** The ‘retreating to what I know’, coupled with a poor and truncated ideation process led to a poor first Prototype with little to no iteration, if it could be called a prototype at all. The reality was it was more of a social experiment that formed part of an initial ‘Design Plan’.

Set quite clearly as the ultimate goal to develop a prototype, even if it’s only lo-fi paper prototypes, and test it. Then to keep iterating on this prototype and to fully engage in this via a user-centred design process.

**Poor Time Management:** Realistically all the major issues with the initial work came down to poor project management at a macro level, and poor time management at a micro level. I had a schedule, but the moment things didn’t go to plan I didn’t realign my work streams or update that plan to ensure I was moving forward with the work. This resulted in me getting ‘stuck’ at certain points and the project stalling.

Be far more organised, and set a clear goal (see prototyping above) and move with purpose towards it, and adjust if necessary:

*Gantt Chart:* Developed a detailed project plan detailed down to the day.

*Time management:* Keep track of my time from day to day, and make amendments to my overall plan and adjust my end goal accordingly.

Then be disciplined and stick to it as best I can. If I am unable to stick to it assess why, are my timescales realistic, or am I not doing enough work? Be honest with myself.

A further issue was that I didn’t reflect on work during practice, this led to me being unaware of my
own failings as they happened. So, as the final lesson taken from the reflection, going forward with
the project I set aside 30 minutes a day to reflect on the work I had, or hadn’t done, by keeping a work
diary.

3.3 Was it a Question of Motivation or Something else?

The short answer is that it was something else, but that motivation was still an important factor that
needed careful consideration. As part of the problem of ‘retreating to what I know’, outlined above
in Table 1, I noticed what I thought was a useful trend within the physiotherapy literature (Hay-Smith
(see appendices 1), that defined lack of motivation as an issue. With a psychological background, the
topic and theories surrounding motivation are something I feel comfortable discussing at great length,
a mistake I will not make again here. There is no question that my knowledge of theories of motivation
is useful information to have, as it has allowed me to understand some of the issues raised during my
interviews (see appendices 1, 2 and 3), and the workshops far better, and this has helped me to define
the challenges patients face as part of my design for well-being approach more precisely. There exists
no fully unified theory of motivation (despite the best attempts of integrative theories), and certainly
not one that fully explains all human motivational phenomena (Ryan 2012, pg.3-10), Given there are
disagreements and situations where these various theories don't always work in explaining human
motivation (Locke & Latham 2006), it’s important to understand which theories are most applicable
to the situation you are designing for. However, theories of motivation are not a material that can be
shaped, they form part of the reality I as a designer am working in (see section 3.5), and beyond that
serve no further function in the design process.

3.4 Defining Empathy in the Design Process

**Empathy**

Noun

1. The ability to understand and share the feelings of another.

Oxford English Dictionary (2011)

The concept of ‘Empathy’ has gained some widespread notoriety in broader society recently (Bloom
2016, pg5-9), whether it is to speak for empathy (Bazalgette 2017) or indeed against it (Bloom 2016),
empathy is a topic very much in the public discourse. The dictionary definition of empathy is a little
vague, and isn’t helpful, it’s also very close to the definition of sympathy. Paul Bloom (2016, pg.165-
166) had difficulty in defining the term as well, settling on a definition used by philosophers like
Adam Smith, which they themselves defined as sympathy, and refers to the process of experiencing
the world as you believe others do. Psychiatrists and counsellors need a working definition of empathy,
it’s an important part of being able to understand patients, there are many working models, but
essentially, they all define empathy as the ability to understand somebody else’s experience from their
perspective, it is not about feeling their emotions (Raskin 2013, pg.1-15). This definition of empathy
might be of use to designers, but isn’t specifically ‘for’ designers.

Empathy too, seemingly, plays a significant role in design thinking, and is often described as being
key to designing meaningful products (Kolko 2014, pg.6). Empathy will also often take pride of place
at the front of diagrams showing the flow of the design process:
It is supposedly an important thing that ‘every’ designer ought to know, and has something to do with mirror neurons (Weinschenk 2011, pg.147-148), we should ‘take note’ of empathy because it is important, and all humans do it (Norman 2004, pg.137-138). However, what is empathy to design? Is it needed? And can it go wrong? The answer to the second questions is yes, and to the third question is an emphatic yes, and probably represents the second biggest mistake in the initial work, however, those themes will be explored further in sections 3.4.1, and 3.4.2, the first question, regarding the relationship between empathy and design is far more complex.

HCI and Interaction Designers deploy many different techniques to try and gain an emphatic understanding of users, based on narrative, biography, and role-play, these can be seen as attempts to meet the commitments of HCI ‘to know the user’ (Wright & McCarthy 2008). Designers are also now expected to translate experiences and emotions into their products (Koskinen & Battarbee 2003, pg.39). Indeed, there has been a consistent belief for quite some time that the success of the products we design, depends on our ability to empathise with users during the development process (Dandavate et al 1996). There are entire design methods that are centred around ‘empathy building’ such as participatory design (Yuan & Dong 2014), but it is not without its risks, the need to remain part of the action, and not going native and ultimately losing our objectivity (Dittrich & Lindeberg 2001). Yet despite all this focus, there seems little attempt to accurately define a designerly empathy, and quite often those that do seem to be veering towards sympathy for users.

In terms of designerly definitions Jon Kolko (2014, pg75-76) has provided the definition I find most useful, although not entirely satisfactory, that empathy for designers is about considering what it is
like to be the person we are designing for, yet still be analytical about that understanding in a phenomenological way. Designerly empathy shouldn’t be about the capitulation, or devolution of the designer’s responsibility to ensure they are making as positive an impact on their users lives as they can, to the user. Nor should it be about siding with users, and ‘enabling’ them because we ‘feel for them’, it should be about rationalising our understanding of their situation, and basing our design decisions on what we think, or know to be in their best interests in concert with them. If we allow our empathy to become sympathy we are no longer able to provide a rational and critical perspective on the design we are providing, and do a disservice to those who we seek to help with our designs. Conversely if we don’t pay attention to the needs and feelings of those we design for we become apathetic, and the things we design become apathetic too. We need to strike a balance and be informed by our users’ experiences, not forcefully guided by them, or ignore them.

3.4.1 Personal Background: When Empathy becomes Sympathy

**Sympathy**
Noun
1. Feelings of pity and sorrow for someone else's misfortune.
2. Understanding between people; common feeling.
3. The state or fact of responding in a way similar or corresponding to an action elsewhere.

Oxford English Dictionary (2011)

Clearly the definition of sympathy and empathy are close. In terms of the original work, I initially felt sympathy for physiotherapy patients, because of my own personal experience. It formed a large part of the motivation for originally choosing this topic and project, I even acknowledge in my original TP1 Report that my “personal experience has undoubtedly influenced this project”. In that one short sentence I probably exposed, and admitted more than I was probably conscious of at the time. I have indeed been through multiple physiotherapeutic interventions for multiple, and reoccurring sports injuries, as well as once for a brain injury. I was unable to keep to my self-directed recovery, I also wasn't able to do the exercises properly. I was a highly-motivated athlete, yet even I struggled at times with motivating myself to complete my self-directed recovery program. I felt I knew only too well the problems faced by those who undertake self-directed recovery programs. It took me personally three attempts after one initial rehabilitation program, before I regained full, and stable control of my right knee, but this ‘feeling’ wasn’t ‘self-design’ (Spool 2010, pg.7). This is often the problem with ‘being a native’ of the group you are working with, often it’s easy to confuse your experience for that of all within the group (Kanuha 2000). Early on with my analysis I could see that I was being sympathetic, and this was problematic as it stopped me being able to be objective.

3.4.2 Over Compensation: When Sympathy Becomes Apathy

**Apathy**
Noun
1. Lack of interest, enthusiasm, or concern.

Oxford English Dictionary (2011)

The reality is that I was aware a few weeks into my project that maybe I had drifted into feeling sympathetic towards the patients, and that my own experience meant that my ‘empathy’ had morphed into something more. Rather than taking a more considered and rational approach to my work, and trying to step back, and away from my own personal feelings, I feel as though I took a more drastic course of action. In my notes, I wrote I was “feeling too close” to the experience of the patients to act objectively, I chose to instead focus my efforts in attempting to understand and empathise with the
role of the physiotherapist. So, while the focus of my design was still the patient, I was actually proceeding with the project from the viewpoint of the therapist. When looking at Fig.10 stakeholder map I could’ve chosen to place myself with other potential support groups like friends and family, and develop something to help them understand what the patient was going through, but I didn’t. This was not only disrespectful to the patients’ needs, it also led to an apathetic design process. Apathy in design terms is the absence of a ‘designerly empathy’ for the end users, this could be because as a designer you haven’t collated enough information on your users, or topic field, but it could also be because of the focus being somewhere other than the users’ needs, as was the case with my original design process. In this sense, I believe apathetic design is when the design, or designers don’t have the focus on understanding the end user.

3.5 Not a Design Process

The reality is that in the cold hard light of day, I did not conduct, or follow a design process. I initially started along a path of a design process, I engaged with users, or patients, I attempted to generate working relationships to start a participatory design process, but none of it really worked out. I have covered in section 3.2, 3.3 and 3.4 the specific problems with my process, but the biggest problem was there was no design work, in the sense that my work didn’t provide a description of what my ‘artefact’ should be like (Cross 2006, pg.33). Like the artist, artisan and craftsman, designers work with and shape material to produce a form, but unlike the artist, artisan and craftsman, the primary functions of the forms produced by design are by their nature functional (Forsey 2013, pg.67-71). I shaped no material in my original work, just observed how others used materials provided to them. Design processes are normally shown looking like this in diagrammatic form:

![Design Thinking: A 5 Stage Process](image)

As can be seen from section 3.4 there was a problem straight away with the ‘empathise’ portion of the process. That not only led to an incomplete definition of the problem, but also looking at the problem, and defining it from the position of the physiotherapist, which led to taking what could be termed an apathetic design stance (see section 3.4.2). Although there was an ideation process of sorts, it was a truncated process that didn’t really allow for a full exploration of the options that had been identified. This was primarily because of a personal concern that any thesis project should ‘test’ something. So, I raced to the test phase while mostly ignoring the prototyping phase altogether, and what ultimately ended up doing was a social-science research program. Therefore, I needed to do two things:
1. Research what a design process is and what characteristics a successful design process should have.
2. Reflect on how I have worked as a designer when I have been successful, and map out the process (see section 4.2).

If you look at Fig.12 and Fig.14 above they’re indicative of the sorts of diagrams you often see when searching for design processes. Circles, or flow charts with arrows showing a distinct direction of travel. Every now and then arrows might go against the general flow, to indicate that sometimes within a design process there is a need to go back to an earlier stage because the path taken is not the correct one. Sometimes these diagrams are accompanied with, often vague, descriptions of what happens at each stage. While these images are useful starting points for reflecting on what our own process actually look like, They’re also mostly far too generic, and non-specific to be of any further use.

According to Nigel Cross (2006, pg.22-26) designers have a distinct way of working that differs from scholarly and scientific activities, insofar as the later problem solve via analysis, while designers do so via synthesis. This would suggest that designers spend more time generating possible solutions and testing them out, rather than over analysing the problem. It does not however tell us how much analysis is enough, or the proportions of analysis needed to start generative work. That arguably, is more of a function of the situation, and how any individual designer works. Coming from a scientific background, this necessitated developing an understanding, of the different ways in which, both scientists and designers operate within the world:

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<thead>
<tr>
<th>Table 2: Designers Vs Scientists</th>
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<tbody>
<tr>
<td><strong>Designers</strong></td>
</tr>
<tr>
<td>Act on material</td>
</tr>
<tr>
<td>Shape material</td>
</tr>
<tr>
<td>Propose possible futures</td>
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</tbody>
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This isn’t to say that scientists never act in ways designers do, or that designers do not rely on, or attempt to generate scientific knowledge, it’s just that their fundamental goals differ.

Where both science and design share a commonality, is in their dual need to understand the situation within which they operate (Ladyman 2002, pg.131-132)(Pratt & Nunes 2012, pg.90-91). Both the scientist and the designer need to have a sense of reality that is consistent to them. I as an analytical and rational thinker, often intentionally lean towards a scientific sense of reality, and a need for a detailed description of that reality before feeling comfortable acting on, and shaping materials. This is a personal modus operandi. What can be said, broadly, is that a design process should be a systematic, structured and concerted effort to understand a situation, and use materials to generate new, or re-shape already existing functional artefacts to provide a solution to a problem, or to improve the experience and lives of its users. It is not about further observations, or descriptions, it is about proposing and creating futures.
4.0 Design Methodology & Process

4.1 Re-evaluating the Evidence

As part of the reflections on the initial work (see section 3.0) firstly there was a need to re-conduct an evaluation on the evidence, both the initial literature review, and the interviews with patients (see appendices 1 and 2). The second part of the reflection on the previous design processes, and understanding what has worked in the past and what hasn’t, and understanding how I wish to work, this reflection led to a refocused design process (see section 4.2).

4.1.1 Original Interviews & Second Interviews

The initial interviews (see appendices 1) were not conducted in a manner I would normally conduct such interviews. Initially the aim was to move away from the sorts of interviews normally conducted in public policy and social sciences, and to focus on producing more UX orientated series of interviews (Portigal 2013), and attempt to extract useful information on various initial ideas uncovered during ideation. While the interviews retained the semi-structured form, rather than rigidly focussed on set formula. While the interviews weren’t ideal, the real failure was the initial analysis. The attention was focused far too much on the quick-fire questions towards the end of the interviews, and also potentially missed a really good suggestion for a force feedback vest to help cystic fibrosis patients (see appendices 1, Subject 1.3 interview). During the second analysis of the interviews, it was possible to view them from a greater distance, and draw out an interesting theme, that of ‘support’.

This encouraged further examination of the second series of interviews and reanalysis of them. The second series of interviews doubled down on the UX questionnaire design, and set a very rigid question structure and stuck to it. This was an attempt to ask specific questions about the functioning of an online support group. Apart from being awful interviews, that totally ignored clear cues from respondents who clearly wanted to talk about other things, again these interviews highlighted the theme of support as being important. Going back and re-analysing interviews after time had elapsed, not only for new insight, it also showed the need to conduct further interviews (see section 4.3.1). I had been used to working in tandem with other researchers, where they analysed my interviews, and I analysed theirs. I was out of practice with analysing my own work.

4.1.2 What did the Literature Really Say? Second Reading New Insights?

Although a user-centred design process places emphasis on developing in collaboration with users, it doesn’t propose that as a designer you start from ‘scratch’, the designer is still required to provide some form of stimulus, or prototype to start a dialogue (Pratt & Nunes 2012, pg.128). There were two strands to the literature review, the first is what the physiotherapy literature revealed about the challenges of self-directed recovery, the initial literature review identified these specific challenges:

- Lack of engagement with the exercise.
- Not knowing whether they were doing the exercises right.
- Exercises sometimes being difficult to do physically, and not knowing how to change them to make them easier / more manageable, or whether it is right to change them.
- Not understanding what the goal of the exercise regime was, or being able to see progress.
- Boredom with the exercise program and its lack of variety.
- Lack of challenge with the exercises, perceived as too easy.
- Difficulty fitting the training into busy life schedules.
- Not feeling supported, feeling alone.
- Having better / more important things to do.
- Feeling that any exercise is the same as the regime they had been given, the “I go running, so I don't need to do these stretching exercises” problem.
- Not understanding the importance of the exercise, a belief it was optional, and that the real treatment had been completed.

These were the broad themes identified within the literature, and formed the first part of the triangulation process (see section 4.3) and along with further patient interviews (see section 4.3.1) and critique of current design examples (see section 4.3.2) formed the basis of the inspiration in the ideation process (see section 4.5). The re-reading of the literature showed that the initial analysis was sound, and that there were consistent ‘themes’ appearing within the texts. However, it also highlighted an oversight, and one that corresponded with an oversight in the initial interviews (see section 4.1.1), although not always overtly or explicitly stated, the literature often acknowledged or referred to support for the patient suddenly ceasing, and a lack of anything within the service provision to replace this drop off in support (Peek et al 2016)(Cook et al 2015, pg.399)(Morris & Pask 2015, pg.233-234)(Ridehalgh & Barnard 2012 pg.237)(Hautala et al 2016)(Hay-Smith et al 2016). This realisation that support might be the key issue was one of the reasons design for well-being was explored, and guided in production of the definition (see section 1.6).

The second part of the literature review was to seek out what sort of interaction design solutions already existed, or search for trends. This literature review was mostly guided by ethnographic observations (Emerson et al 2011, pg.12-13) while in the gym talking with some of my fellow gym attendees. I observed how many customers using the gym were using smart devices, from smart phones, watches and one person even a laptop. The rise of ubiquitous computing and in particular, wearable technology means that most people are carrying at least one computing device on them at most times, and the increase of wearable computing technology in more and more items is only going to increase their access (Amft & Lukowicz 2009). Wearable technology in health and fitness have been around far longer than might initially be thought, nearly forty years (Butler & Luebber 2016). However, it’s within the recent past and the rise of mobile applications that wearable technology within health and fitness has not only started to gain mass traction, but become a booming industry (Asselin et al 2005).

Given this trend, and influenced by ethnographic observations made within the gym, initial ideation leaned towards creating applications for mobile and wearable technology. However, before wire-framing (Sullivan 2015, pg.36-37) any of the ideas and doing mock-ups, some early experiments using body storming were conducted, with myself acting as the ‘device’ to see if wearable technology was something to focus on. Intrinsically it felt this wasn’t the right approach, the very basic gamification approach (Pannafino 2012, pg.45) felt wrong. As expressed in section 1.6, the use of gamification in health and fitness apps to illicit addictive behaviour (Lister et al 2014), as well as the fact gamification exploits the user in favour of profit (Bogost 2014, pg.72-76) is at odds with the ethical stance that design should seek to do no harm, or at the very least mitigate the harm that it does. On a fundamental level I believe the definition of design for well-being, and gamification are incompatible, because rather than providing a resource to help the patient achieve their goals, gamification seeks to add a further challenge to an already challenging situation. In short it is an illogical approach. One new insight though was that it was necessary to critique Interaction Design examples (see section 4.3.2).
4.2 Refocused Design Process

As part of the reflections on practice, I mapped out how I have been working as a designer. I initially thought my work to be haphazard and unstructured, and this is something that had caused concern. However, upon reflection it’s clear to see there is a structure to the way I work, and it is actually highly structured, and admittedly, currently, front loaded. As discussed elsewhere, and in more depth below (see section 4.3) I have a need to fully explore and understand my design space (see section 4.4), and fully grasp the design situation. In short I need a lot of information to build a firm foundation for carrying the work forward, that’s not to say I need to know everything, it’s just that I need to know enough to be able to understand the reality I am seeking to change with my designs.

After defining the problem and gaining what I term evidence based empathy, I move into ideation and concept development, and usually do so by trying to think freely, or crazy (see section 4.5), but everything I do must be deliberate, and must be focused and systematic. I like having a set formula for structuring the way I work, I like thinking on my own, sketching and searching for inspiration, and when I feel happy or confident that my thoughts are coalescing then, and only then, I like to expose my thinking to others. This isn’t because I want to have ‘perfect’ ideas, or the ‘best’ ideas, it’s more about having well rounded and articulated sketches or ideas, around which we can have a shared and meaningful discussion. It’s about ensuring clear, structured, transparent and directed communication, with a purpose. I don’t like mess.

Moving into the prototyping and development phase I believe is where I am least secure in my own skills. Although I am gaining in confidence, the way I work in prototyping is also slow, very
methodical and with a lot of reflection and discussion with the materials I am using. In terms of the ‘ways of drifting’ identified by Krogh et al (2015) I don’t believe the way I work fits neatly into any one category. I feel like I straddle both the ‘serial’ and ‘probing’ ways of drifting. The serial drifting method is probably the most obvious one where I am concerned, it is structured and moves forward chronologically, and sequentially builds up knowledge and understanding, it’s very much like the scientific method of incremental data gathering, and apes most the way I was previously used to working. The ‘probing’ way of drifting might require more explanation, but again has parallels with my previous way of working as a policy officer, insofar as it is about identifying and pursuing opportunities in the environment, exploiting and exploring design ideas as they emerge through design work, this is something that happened during the workshops. This is the way I have organically chosen to work, I didn’t think about working in this very set and rigid frame, it’s just how I feel comfortable doing design work.

4.3 Defining the Challenge (Triangulation)

Before ideation there is a need to develop a strong understanding not only of the situation users (in this case patients) find themselves in by asking them, but also review literature within the field, and see what products and solutions are already available. Via this ‘triangulation’ of data it’s not only possible to properly define the problem, or challenge by validating findings from one source with the other sources, but also develop ‘Evidence Based Empathy’ (see section 3.4):

![Fig.16 Triangulation of Evidence to Develop Evidence Based Empathy](image)

This is the important first stage of my design process, where I develop my understanding and confidence for moving forward with purpose.

4.3.1 Interviewing Patients Again

After reanalysing the original interviews (see section 4.1.1) further interviews were conducted that were more in keeping with my style, and social science and public policy practices, a series of semi-structured interviews aimed at drawing out the experiential information from patients who had undertaken self-directed recovery. Then ‘Point of View Tables’ were used to extract the needs patients either identified explicitly or implicitly, and then sought to turn these into insights:
• Patients often require detailed information to help them understand the importance of self-directed recovery.
• Some patients need their self-directed recovery to be more fun, challenging or engaging.
• Some patients have other non-associated needs and self-directed recovery plans need to understand patient’s full situation and support needs.
• Some patients need peer-to-peer support from those who understand what they are going through, and to provide peer pressure.
• Sometimes patients need quick access to physiotherapists to help answer questions.
• Patients need clear, and personal goals they are in control of achieving, to empower them during their recovery.
• Most patients need help with time management and planning.
• Patients often need a way to communicate their issues to wider social networks (friends, family & work).

As with the first two sets of interviews, there were strong discussions around support structures and the lack of support structures. Those that seemed to be most successful with their self-directed recovery, also seemed to have a lot of support, whereas those who weren’t as successful had less support. With the above themes coupled with the strong narrative emerging from the interviews with regards support, and the challenges identified within the literature review, there was a strong basis for defining the problems, or challenges, and evidence based empathy had been developed for the users perspective and situation.

### 4.3.2 Critiquing Design Examples

This is the third part of the triangulation process before entering ideation, looking at current design examples within the field in an attempt at ascertaining any tacit knowledge the designs themselves might contain (Cross 2006, pg.26):

<table>
<thead>
<tr>
<th>Table 3: Relevant Design Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Name: Arm Coach</strong></td>
</tr>
<tr>
<td><strong>Look</strong></td>
</tr>
<tr>
<td><img src="image" alt="Arm Coach Image" /></td>
</tr>
</tbody>
</table>
### Project Name: Virtual Training®

<table>
<thead>
<tr>
<th>Look</th>
<th>Focus</th>
<th>Critique</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accuracy</td>
<td>Virtual Training was developed by Well-being Denmark, in conjunction with physiotherapists. Its primary aim is to provide rehabilitation help within the patient’s home. Virtual Training either uses Microsoft Kinect2 (advanced analytics) or webcam (standard analytics), to assess the patient's movements. It is not aimed at self-directed recovery, it’s integrated within current supported physiotherapy services. Results are received digitally by the therapist, who can take subsequent action. The system also includes a secure video communication platform to allow for remote service delivery.</td>
</tr>
</tbody>
</table>

### Project Name: fISEEYO

<table>
<thead>
<tr>
<th>Look</th>
<th>Focus</th>
<th>Critique</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Compliance through Accuracy</td>
<td>fISEEYO provides remote Physiotherapy sessions, including games and exercises to patients with upper limb motor functionality. fISEEYO uses the Geomagic Touch, a haptic pen, which allows patient to feel the weigh and surfaces of virtual objects, and gives force feedback. fISEEYO uses either live remote therapy sessions with a physiotherapist, or pre-recorded sessions. It also has pre-defined games that patients can engage with between sessions, there is also another ‘solo’ function which allows patients with whole arm exercises. fISEEYO isn’t a supplement to current service provision it’s an attempt at redesigning how treatment is administered, to remote delivery.</td>
</tr>
</tbody>
</table>

### Project Name: Warm Hands at Home

<table>
<thead>
<tr>
<th>Look</th>
<th>Focus</th>
<th>Critique</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Specific tool for developing support network</td>
<td>Is telemedicine service for COPD sufferers. It helps them monitor themselves and keep a diary, and share that information with doctors, friends, family etc. Warm Hands builds upon a pre-existing telemedicine system, and provides a new link between patient and health services. Warm Hands also allows sufferers to build their own care network by sharing their information and helping each other, and other primary stakeholders involved are the health system, especially nurses and doctors, but also physiotherapists.</td>
</tr>
</tbody>
</table>
### Project Name: Yogaline

<table>
<thead>
<tr>
<th>Look</th>
<th>Focus</th>
<th>Critique</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Yogaline Image" /></td>
<td><strong>Accuracy</strong></td>
<td>Yogaline began as an interactive belt for home yoga practice, but via several design iterations, and a co-design process with a physiotherapist developed into a physiotherapy aid. The final iteration used only a single sensor placed in the mid-back that measured displacement of the planes of the body. The concept could be applied to all parts of the body and essentially create a digitalized map of the subject’s planar body movement, allowing Physiotherapists to track progress and provide haptic feedback for users to increase accuracy of the exercises performed. Yogaline seeks to be a tool to help physiotherapists ensure patients know how to perform their exercises.</td>
</tr>
</tbody>
</table>

### Project Name: e-Health System

<table>
<thead>
<tr>
<th>Look</th>
<th>Focus</th>
<th>Critique</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image2" alt="e-Health System Image" /></td>
<td><strong>Accuracy with ancillary effect on Compliance</strong></td>
<td>The Netherlands has invested heavily in e-Health Systems, not only as a means of reshaping delivery of services but also as a means of offering new services. In this instance as a means of allowing discharged patients to contact their physiotherapists for small remote appointments via video calls, to seek clarity on their exercises. The original concept was to help patients with ensuring they were accurately doing their exercises, but it also improved compliance levels amongst some patients.</td>
</tr>
</tbody>
</table>

### Project Name: Websites Various (not specific)

<table>
<thead>
<tr>
<th>Look</th>
<th>Focus</th>
<th>Critique</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Websites Image" /></td>
<td><strong>Not intended for patient use</strong></td>
<td>Although there is no specific ‘design’ to analyse or critique, there are numerous websites that provide forums for physiotherapists. However, although these forums are for either fully qualified professionals or students, they invariably have sections for patients to ask questions, and they are normally the most active part of the forums. Despite not being designed for this function this is how most seem to use them. However, given the highly personal nature of many injuries, and the need for physiotherapists to ‘calibrate’ exercises for individual patients, it isn’t ideal. It does, however, show there is a need or demand for online support services.</td>
</tr>
</tbody>
</table>
The aim of this critique is not to assess what these designs are, but what the aim of them is, what it is they hope to achieve as an intervention within physiotherapeutic recovery. Each of the above examples addresses their specific issues in certain ways, ‘Arm Coach’ is a support tool to not only encourage patients, but to give more detailed and accurate feedback to the physiotherapist on their patient’s progress. In a different way the Virtual Training system seeks to do the same, and is a supplement to current guided recovery. It is this ‘quality’ I wish to take into my ideation process from these two projects, being supplementary or supportive of the processes that already happen.

‘Warm Hands at Home’ is for this project a very inspirational design, and encapsulates much of the focus in terms of design for well-being this project has chosen to work with. As a tool, it builds on a service and digital network that already exists, it just simply seeks to give COPD patients an extra resource with which they can meet their challenges, and does so by enabling the patient to build and develop their own support network outside of the standard support networks (see Fig.10) much like this project (see Fig.11). The ‘how’ it does so isn’t as important as what it is attempting to do.

‘Yogaline’ originally wasn’t designed for use within physiotherapy, but was later appropriated for that use. It is a technological tool, for improving and giving an extra level of feedback between physiotherapists and their patients. Although at a surface level that might seem similar to ‘Arm Coach’ and its approach, the two are different, whereas Arm Coach monitors activity and provides a report, which is asynchronous, Yogaline is synchronous it happens in real-time and is an addition to the communication already taking place, not an artefact around which future discussion can be formed. This concept of providing an additional layer to already existing communication is appealing.

The Dutch ‘e-Health System’ and ‘fISEEYO’ both attempt to disrupt current service provision paradigms, which is something that might ultimately be required, but both seek to do so quite differently. fISEEYO’s goal is to essentially turn the physiotherapeutic interventions for patients with upper limb motor dysfunctionality into a remotely delivered service. Although this ostensibly is done to allow patients to remain home and not have to travel to appointments, in reality it is more about maximising limited physiotherapy resources, and thus is designed from the perspective of the therapist. The literature review has consistently shown how vital one-to-one contact with therapists is, and removing this seems to be to the detriment of the patient. Whereas the ‘e-Health System’ is about providing further support and a new service, a service patients can access as an added extra when they need quick guidance about something specific during their self-directed recovery. Rather than attempting to reshape service provision, it would be best to seek to enhance it.

The final design example is websites and forums that weren’t initially intended to be used as resources for physiotherapy patients. However, many patients are clearly seeking answers from the professionals who frequented such forums, so much so that many actually have specific forums for patient questions. It is clear that many of the professionals on these forums are highly uneasy about answering questions on a forum without knowing the patients, many simply tell people to seek out a physiotherapist in their area. The reservations of the physiotherapists on these forums is well founded, but it does show that people are happy to request information, and to engage with professionals via electronic communication. This is unsurprising given how comfortable we have become as societies with social media (Shirkey 2010, pg.88), indeed the participants who took part in the workshop chose quite often to communicate concepts via various social media services examples, or things like the original Xbox 360 OS, although these didn’t form part of my ideation process.
4.3.4 Comparing Themes and Slightly Adjusted Direction

To complete defining the challenge the themes that came from the interviews, and literature review were taken and merged, and then each theme was given a ranking of high, medium or low, depending on how strong the themes were in both the literature review and interview analysis:

<table>
<thead>
<tr>
<th>No.</th>
<th>Identified Themes</th>
<th>Literature Review</th>
<th>Interview Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Challenge of not knowing whether they were doing the exercises accurately</td>
<td>HIGH</td>
<td>LOW</td>
</tr>
<tr>
<td>2</td>
<td>Exercises sometimes being too challenging physically, and not knowing how to tackle the challenge going forward</td>
<td>MEDIUM</td>
<td>LOW</td>
</tr>
<tr>
<td>3</td>
<td>Understanding what the goal of self-directed recovery was to them was challenging, need clear and personal goals that empower.</td>
<td>HIGH</td>
<td>HIGH</td>
</tr>
<tr>
<td>4</td>
<td>Finding engaging with self-directed recovery challenging because it is boring, not challenging enough, or not fun enough.</td>
<td>HIGH</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>5</td>
<td>Challenging to fit their self-directed recovery into their schedules, and needing help planning and communicating this to others.</td>
<td>HIGH</td>
<td>HIGH</td>
</tr>
<tr>
<td>6</td>
<td>Challenging being ‘alone’, and needing some form of peer-to-peer support from others who understand their situation, and can help.</td>
<td>MEDIUM</td>
<td>HIGH</td>
</tr>
<tr>
<td>7</td>
<td>Challenging to understand that any exercise is not the same as their self-directed recovery, and that doing any exercise isn’t complying.</td>
<td>MEDIUM</td>
<td>LOW</td>
</tr>
<tr>
<td>8</td>
<td>Challenge of not understanding the importance of self-directed recovery and needing detailed information to help them understand.</td>
<td>HIGH</td>
<td>HIGH</td>
</tr>
<tr>
<td>9</td>
<td>Having challenging non-associated needs not fully taken into consideration in their self-directed recovery.</td>
<td>LOW</td>
<td>MEDIUM</td>
</tr>
<tr>
<td>10</td>
<td>Not having quick and easy access to physiotherapists expert knowledge to help answer their questions is challenging.</td>
<td>LOW</td>
<td>HIGH</td>
</tr>
</tbody>
</table>

The above ten issues formed the identified problems within my design area. I could have chosen those that interested me personally, however, I chose to place myself as a designer firmly on the side of the patients, but being aware of what physiotherapy experts had to say, I also was working with design for well-being, and both these influenced my selection criteria. First I drew out the issues that were ‘high’ within both the literature review and interviews, 3, 5 and 8. Next I drew out a single issue that was ‘medium’ in the literature review, but ‘high’ in the interviews, 6. Finally I selected the final issue that was ‘high’ in the interviews. These were then grouped and turned into my initial problem statements:

- How can we ensure patients are doing their exercises correctly?
- How can we monitor patients progress?
- How can we motivate patients to do their exercises?
- How can we support patients during their self-directed recovery?

These problems statements, or challenges as they are referred to within this work, were the basis of opening up the design space, and the start to the ideation process.
4.4 Design Space: QOC

‘Design space analysis’ (MacLean et al 1991) was used, which is an approach to representing design rationale, to help define the design space that is wanted to, and could be work within. Design Space Analysis uses Questions, Options, and Criteria (referred to as QOC) to represent the design space around an artefact or design process. Questions are first used to identify design issues, Options are then produced as a means of answering these questions, and finally a Criteria is selected for assessing and comparing the options.

4.4.1 Questions

The questions I used to identify design issues are in section 4.3.4 above, but these were filtered via the lens of design for well-being, as identified in section 1.6, and are reproduced here:

- How can we develop support structures to help patients meet the challenge of doing their exercises accurately?
- What support structures do patients want to help them with monitoring their progress?
- What support is required to motivate patients to do their exercises?
- What support structures will enable patients to feel supported, and to be able to support others during their self-directed recovery?

There were other potential questions, but these four were the ones that came through the strongest from reading the specialist physiotherapy literature, and were corroborated by respondents during the interviews.

4.4.2 Opportunities

Each question presents a number of unique opportunities, as well as opportunities that cut across the design opportunity themes:

<table>
<thead>
<tr>
<th>Questions</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>How can we ensure patients are doing their exercises correctly?</td>
<td>Develop wearable technology to accurately record movements.</td>
</tr>
<tr>
<td></td>
<td>Use motion tracking cameras to monitor movements</td>
</tr>
<tr>
<td></td>
<td>Give patients access to comprehensive, and personalised data and recorded therapy sessions online</td>
</tr>
<tr>
<td></td>
<td>Develop remote e-Health monitoring services to support patients when they need reassuring.</td>
</tr>
<tr>
<td>How can we monitor patients progress?</td>
<td>Give patients the ability to monitor and record their own progress in an online database.</td>
</tr>
<tr>
<td></td>
<td>Develop wearables that track patients progress</td>
</tr>
</tbody>
</table>
How can we motivate patients to do their exercises?

- Give them online tools to empower themselves in taking control of the process.
- Make their exercises more playful, fun or game like using ludic interactions and wearable technology.
- Enable them via collaborative media platforms to exchange stories with other patients with similar challenges, and form communicative bonds.

How can we support patients during their self-directed recovery?

- Combine aspects of the other opportunities together into a comprehensive support package
- Give them the tools to develop their own support structures (the ‘Warm Hands at Home’ approach)

4.4.3 Criteria

The final part of defining the design space, was determining the criteria used to refine and narrow down the design space to a manageable area within which to ideate. The criteria chosen were simple and uncomplicated, much like the desire for design artefact itself to be:

1. Did not wish to replace, or necessarily reshape how current physiotherapeutic practice operates. Whatever was developed needed to be an addition to what practice already existed.
2. Did not want to have to provide new and potentially expensive hardware, where either the service provider, or patient would have to bear the cost. Instead aim to use devices people are already likely to have, so as to be cost neutral.
3. It had to be focussed on the patient, and not any other actor within the wider support networks.
4. Whatever was developed needed to be potentially broad enough to cover all fields of physiotherapy, and the associated challenges that go with that, even if initial work was focused on a very specific field, the design had to be transferable.
5. As this was Interaction design it had to ultimately be working towards providing a digital intervention.

Given the first criteria above, there was a need to look for a ‘gap’ within current service provision where an intervention could be positioned that added something new, which is why the chosen focus was on self-directed recovery. Not wanting to provide new hardware also ruled out wearable technology, and the desire to work with devices people are already likely to own meant working with phones, computers and other similar ubiquitous devices. Although the choice of focussing on the patient didn’t really limit many of the opportunities, it was still a criterion that was important to include and state clearly. The final two criteria are what ultimately led to the focussing on apps, web-services and collaborative media.
4.5 Ideation Process

With the ‘design space’ defined, along with the desired qualities and values that the design of the artefact should exhibit, and address extracted from the literature review, interviews and critique it was possible to begin ideation.

4.5.1 Thinking crazy

Given that I need a lot of analytical data before I begin any ideation process I am aware that this can leave me very ‘left brain’ focused. As such I like to ‘think crazy’ and speculate about possible futures without feeling constrained by reality, what’s possible, what restrictions I may have placed on myself up until this point (design for well-being for example), and my own technical limitations, and give the right side of my brain a workout. It’s about moving away from the probable, plausible, possible and preferable (Dunne & Raby 2013, pg.2-6), it’s about forgetting mass and industrial production, and ignoring the need for marketability, and thinking about the fictional (Dunne & Raby 2013, pg.11), it’s about asking what if, and not how. I call this thinking crazy, and believe it’s an important for any ideation process that has hitherto been more analytical and rational, as it moves the process towards trying to be more creative:

<table>
<thead>
<tr>
<th>Table 6: Crazy Ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physiobot</strong></td>
</tr>
<tr>
<td>Lack of contact with YOUR physio getting YOU down? Well fret no more! Replace them with YOUR very own android! Physiobot is the physiotherapist YOU take home, who is there when YOU need them. Physiobot is trained in all fields of physiotherapy, and more than 100 types of massage (yes, we didn’t know there were that many until we Googled it). Featuring fully articulated joints for life like movement and accurate manipulation of YOUR body, Physiobot is the best therapist YOU’VE ever had, and they’re there just for YOU. Physiobot also features x-ray vision to properly assess YOUR musculoskeletal frame, heat vision to assess stress on YOUR muscles and ligaments, as well as sonar, fMRI and many others beside… Physiobot knows YOUR body better than YOU, which is totally not creepy and highly invasive in any way at all. Barton Industries is totally not responsible for any stalking behaviour that Physiobot may exhibit.</td>
</tr>
<tr>
<td><strong>ConPsyES</strong></td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>Do YOU have absolutely no self-discipline? Are YOU completely incapable of motivating YOURSELF for even the most basic of self-preservation tasks? If YOU’VE answered yes to both questions you should really go see a counsellor, because YOU’VE got some serious problems buddy, but if YOU can’t be bothered to do that, we’ve got YOU covered! ConPsyES is a totally safe computer chip that is placed sub-dermally into YOUR body, at the base of the skull, right on the spine, where all the good neural pathways are! The chip uses operant Conditioning to Psychologically encourage YOU to do YOUR exercises, YOU hopelessly lazy scamp, by either emitting an Electric shock or Serotonin. ConPsyES is the totally safe, morally ambiguous motivation system, which is absolutely highly ethically sound! Warning, extensive use of ConPsyES may cause psychopathy, emotional breakdown and or paralysis.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Digital Snitch</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Snitch is all of your mothers worst nagging qualities in digital form! A piece of software that ‘infects’ all your digital devices, sticking its nose into your life, and affairs like only a mother can, so that it can spy on you and tell if you are doing your exercises or not… and then publicly humiliate you, either way! Yes, just like your mother if you are doing your exercises well, digital snitch will post sickeningly pleasant praise about your meagre achievements, like only mothers can, on your social media platforms, making every day common achievements sound like you’ve won a Nobel Prize for something actually worthwhile! If you aren’t doing your exercises Digital Snitch will do it’s best to project the ‘disappointment’ and ‘shame’ that only mothers seem capable of doing, in the most public of ways… on your Facebook feed! Digital Snitch, we’re not sure it’s a good idea either! Barton Industries cannot be held responsible for any ‘loss of face’ or ‘public humiliation’ caused by Digital Snitch.</td>
</tr>
</tbody>
</table>
Glimpse
Glimpse, a look into YOUR future if YOU don’t comply with YOUR physiotherapy regime. Glimpse is made up of two highly plausible, none imaginary and totally possible components! The first is a large screen, designed to represent a mirror, the second is a full skin tight haptic bodysuit (designed mostly so our technicians can snigger about your beer belly). YOU, the patient wear the body suit, and then stand in front of the mirror, at this point our highly intelligent super-computer (which is totally not based on Cyberdyne Systems technology, and totally won’t evolve into Skynet) takes over and begins to use the haptic feedback suit to allow the YOU to feel how painful and pathetic YOUR body will feel within a number of pre-set years, if YOU don’t comply with YOUR self-directed recovery. Meanwhile the ‘mirror’ projects a future image of the YOU, the patient, so YOU can ask YOUR future self questions about YOUR dull and meaningless life, and how badly future YOU is functioning, and future YOU in the mirror will let YOU know what it is like to be YOU in the future. Suicide counselling provided free of charge as part of the extensive after care service package.

After getting all the crazy out, so to speak, and allowing the ideation to be ‘playful’ and more open minded, it is necessary to go back to trying to understand what was trying to be achieved with these ideas. What was the impact on users hoped for via the design? To recontextualize that information into a highly abstract goal, or set of goals. Here are what the crazy ideas were trying to achieve:

**Physiobot:** Was deliberately looking to replace the one-to-one relationship and support patients have with their physiotherapist. The reality is there wouldn’t be a problem with self-directed recovery, if the recovery was fully directed. A number of interviewees also seemed to express that the ending of support so abruptly harmed them.

**ConPsyES:** With ConPsyES the aim was absolutely playing with the idea of operant conditioning, although the inspiration was the V-Chip from South Park the Movie. The idea being to change behaviour via both positive and negative reinforcement, and physical stimulus.

**Digital Snitch:** This idea grew out of a conversation with one of the interviewees who was still undergoing directed rehabilitation, and who mentioned that their mother and partner were nagging them a lot, to ensure they were doing my exercises. My mother did the same to me, and I thought the idea of using peer or societal pressure to encourage or berate patients might be enough to encourage compliance.

**Glimpse:** This too was inspired by a conversation with an interviewee, who lamented that if they’d been able to talk to themselves in the future and be told about the troubles they were having now, they’d have been more motivated to complete their recovery program. The idea for the mirror came from the fairy-tale Snow White, whereas the haptic comes from the field of embodied interaction, and making the body physically feel different. The
raw idea though is giving patients knowledge about how things will be if the self-directed recovery is, or isn’t completed.

With these ‘qualities’ extracted, it is then possible to take these into the next phase of ideation, and try to move onto more ‘sane’ thinking.

4.5.2 Thinking Sane

As a starting point the focus of efforts was on answering the four supplementary questions identified in section 1.9, by seeking to develop either a series of independent ‘Apps’, or inter-linked features arranged together in an over-arching App. The choice to work with mobile phones / tablets as platforms, was because they are things most of us have access too, and satisfied my second criteria in section 4.4.3, and mean no need for additional expensive equipment. The fact that they are also portable, and already fit into our lives also made the choice seem logical. To try and meet the needs identified in section 4.3.4 and taking forward the ‘qualities’ and ‘aims’ identified in section 4.5.1 the following four basic concepts were developed:

1. A form of online communication tool that allows group discussion, and that aids in the development of dynamic support structures.
2. Progress tracker that allows patients to manage their own recovery process and empower them to take charge.
3. A tool to access physiotherapy notes / information relevant to patients’ injury and recordings of physiotherapy sessions.
4. An extra e-health service to provide access to brief support from the physiotherapist during self-directed recovery remotely.

I generated a few rough ideas around each basic concept, and then took these into the next stage of the process.

4.5.3 Piloting

Piloting was the second step in the ideation process. After deciding on the qualities and aspects that were to be explored from the ideation process (see section 4.5.2) some initial ideas around how the various facets of the web-service might function were sketched. The ideas were first sketched out, and having to explain these ideas to others, either via words, further sketches or more often than not wild arm gesticulations were a useful part of the ideation process for me. The simple act of having to describe and explain what the sketches mean highlighted to myself any glaring errors, or potential improvements to my ideas. The feedback and reflections of colleagues also proved useful in helping to further refine and narrow down the ideas, and ensure that they were ready to present to participants in the workshops.

4.5.4 Refining, Selection and Preparing for the First Workshop

After discussing and explaining the various options with colleagues a number of rough possibilities for each service / component had been developed, it wasn’t desirable for these options to be too highly polished, or complete, they just needed them to make sense, and for them to be able to act as boundary objects (Leigh Star & Griesemer 1989) between myself and the users within workshops, so it was possible to have meaningful discussions around the concepts.
<table>
<thead>
<tr>
<th><strong>Online Communication Tool / Service</strong></th>
<th><strong>Circles</strong></th>
<th><strong>Brain Trust</strong></th>
<th><strong>Physio Media Feed</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Circles</strong></td>
<td>The concept behind circles is quite a simple one, when a patient joins the service they can search for members of the service via several criteria (age, injury, locale etc.), and ‘follow’, or ‘friend’ people. This then allows users to try and develop their own support network of already existing members, by searching through circles and links. It also allows members to form groups, where communication can happen via specific and controlled channels. The concept was based on social network mapping models.</td>
<td><strong>Brain Trust</strong></td>
<td>The concept behind brain trust again is quite simple, many patients have questions, or things they want advice on when conducting self-directed recovery. Often these are questions that don’t need answering by a physiotherapist, so the concept is that you’d ask a question and tag it with themes around injury, or time management, or whatever and the service would allow, and then send that question to all relevant people in the network.</td>
</tr>
<tr>
<td><strong>Physio Media Feed</strong></td>
<td><strong>Physio Media Feed</strong></td>
<td>This idea was a straight ‘riff’ on current social media services, notably Twitter and Instagram, where associated posts enter your feed. There is the opportunity to send private as well as public messages. This was my least favourite idea, as A) it was unoriginal and B) social media does have addictive qualities that is at odds with my design for well-being approach. However, it is a well-established formula, and one most people are familiar with.</td>
<td></td>
</tr>
</tbody>
</table>
### Pathfinder

Pathfinder is based on the concept of following well-trodden ‘paths’ in mountaineering. The idea being that users keep a diary of their progress around their injuries, and this then links with other users so they can see what is possible, get ideas and tips, but also what happens when you don’t comply with your self-directed recovery program. This idea came out of comments made by several interview respondents who said that having knowledge of what self-directed recovery could achieve would help, but also the added motivation peer pressure brings, knowing others can follow your path might motivate people to make it a good journey!

### Progress Chart

This concept was born of the idea that having personal targets and goals helped motivate a number of the interview respondents. The importance of feeling empowered to take charge of a process born of relevant goals seemed strong. The concept was a way of setting goals that patients could aim for, either set as dates, or for the patient themselves to strive for, and record when they have achieved them.

### Knowledge Store / Database

### Video Storage

This concept was based on numerous responses and discussions with interviewees, who had said their physiotherapist had recorded their sessions, or that having their sessions recorded would have been useful. Although this service would obviously require input from the physiotherapist, and is potentially service design, the fact that some physiotherapists already provide this service means it isn’t too much of a stretch. If it proved difficult for physiotherapists to do however, a store of standard exercise videos could be produced as animations, and these accessed by patients, although the former situation would be preferable.
This concept is based on the third interview with Subject 1.3, the physiotherapy expert. She claimed that knowing more about the nature of her injuries, as an expert, meant she had more motivation to do her exercises. If all patients were given detailed information about their injuries, as well as the potential impact on their lives in the future, maybe this would provide motivation for some patients to comply with their self-directed recovery.

Originally these ‘sketches’ were drawn to convey the look of the ‘Apps’ on a mobile phone screen or a tablet, with buttons and full layout, however, after talking with a number of colleagues they managed to successfully argue that it was better to try and draw the ideas as ‘concepts’ to have discussions around, as entering a user-centred design process, there shouldn’t begin by ‘imposing’ a look to the concepts, and ideas. This seemed a logical approach as the idea was to try and generate those ideas from users, as well as how these ideas should function. However, relinquishing this ‘control’ was far harder for me than I thought it would be, and highlighted the prospect that I might be too controlling of these ideas when entering the workshops. This reflection was important as I didn’t want to be too rigid, or attached to these ideas if the users themselves saw things differently.

Another decision taken at this stage, with the help of my colleagues, was that I decided not to pursue developing a remote e-health service, for a number of reasons:

1. There wasn’t any access to a physiotherapist to discuss how this feature should work fully, plus, within the workshop environment it was uncertain how to present the idea / wireframe it.
2. The concept of e-health has already been ‘proven’ in the Netherlands, and other countries including South Korea (Lee et al 2009). Therefore, it would be a waste of what time was available to work with users on something that was already established.
3. It’s a boring concept to work on as an Interaction designer. Essentially, it’s a closed email service, or video chat, which is essentially dull.

With the concepts ‘sketched’ and the materials for the workshop prepared, a number of users who had indicated they would be willing to attend the first workshop were invited.
5.0 Development & Prototyping

This section is a description of the development and prototyping undertaken, as well as a description of the processes used, findings discovered in practice and reflection on and in practice.

5.1 Prototyping 1: Designing an App

Initially five people were invited to the first workshop, this was because of experience in conducting focus groups with even more people than that, and I was confident in my ability to both manage the workshop and record useful information. I deployed a trick I had used previously to spark discussion between participants, but also deliberately bottleneck the process, by not providing enough tools for everyone to be able to have one each specific tool, in this case scissors and Sellotape, although my ingenious users thwarted my Sellotape ruse by cleverly storing up pre-cut pieces! However, only three participants turned up to the workshop, and ultimately this was very fortunate, as managing three people, and still being able to record the valuable information they were producing was quite taxing.
5.1.1 Aims of the First Workshop

The aims of the first workshop were to introduce the users to the concept of paper prototyping and wireframing, as well as the broad concept for a patient focused support App, which changed to a web-service during the first workshop. The idea was then to have the users define and specify the tools and functions of the web-service, and how they might link together to form a cohesive service.

5.1.2 Reverse Wireframing and an Introduction to the Workshop

To designers of websites and mobile applications the concept of wireframing, and sketching using pens, paper post-it-notes and any other lo-fi office materials to hand is quite a common practice (Greenberg et al 2012, pg.105-108). However, to most individuals the concept, although simple, is still alien, and for participants without a design background, therefore a simple and fun way not only to introduce the idea, and attain ‘buy-in’ from participants was needed, it also proved that using such primitive technology could be of use. To achieve this the concept of reverse engineering was used as a metaphor, and a process developed termed reverse wireframing. The concept is simple, take a website, web-service, or mobile App the participants are familiar with, and then ask them to try and recreate the functions and behaviour of that product using the tools that will be used in the workshop.

The participants in the workshop chose Instagram as the application they wanted to reverse wireframe.

The users simulated the vertical ‘swiping’ action of Instagram.

After they had recreated the functions of Instagram, each of them were asked to generate an idea, or concept as to how they would improve on Instagram if they could:
<table>
<thead>
<tr>
<th>Picture</th>
<th>Description</th>
</tr>
</thead>
</table>
| ![Food Wars](image) | **Food Wars**  
Food wars was based on the idea that people flood Instagram with pictures of their food. The idea being that two friends could link their pictures of food together and then have their friends vote on whose meal looked better via a voting poll. |
| ![Landscape D’oh](image) | **Landscape D’oh**  
This was again a really simple idea, but one is surprising isn’t already a function of Instagram. The participant commented that Instagram was based on the idea of old Polaroid pictures, where people would write on them. This meant as a design the comments are always ‘fixed’ below the picture. However, this ignores the capabilities of smart phones. The idea was that when in landscape mode the image would appear on the left, and the comments on the right. This would allow users to swipe through comments while still having the picture visible, or swipe straight away to the next picture. |
| ![Dislike Button](image) | **Dislike Button**  
The third idea was born out of the frustration the participant had when they used to use Instagram, and their friends would ‘fill’ their feed with baby pictures and food pictures. He wanted a way to tell people ‘no one cared what you were eating, or that your baby threw up’. He added a dislike button. This obviously runs quite contrary to the normal desires of social media, which is to try and mitigate negative feedback. |
Although the ideas generated weren’t necessarily of value to the actual design process, having the participants understand not only what was possible with paper prototypes, but also what was expected of them, helped ease them into the workshop, it also revealed the level of involvement that would be required from a coordinator to help move the participants forward during the workshop. At this point the design concept sketches were introduced.

5.1.3 User-Centred Design in Action

After less than 4 minutes I had my first piece of positive feedback when a participant complained about the fact I was developing and App:

**P1** – Why are you developing it as an app? Why not a website for PC? I hate using my mobile phone for this stuff. My phone is my phone, that’s it.

For the rest of the conversation see appendices 6. Although the reasoning for developing an App (see section 4.5.2) seemed sound, realistically a web-service is more versatile, and can be restructured and designed to work across multiple devices. This was the first piece of feedback received that led to a change in the design approach. Although we did agree at the time to proceed as if we were still developing an App.

The first concept we tackled was that of the online communication tool. This generated an almost instantaneous insight too:

**P3** – I like all of the ideas, I like the circles thing, it reminds me a bit of Google Friends Connect and the groups thing on there, but I’m not sure these ideas are separate… I mean why can’t we have them all?

For the rest of the conversation see appendices 7. There was no reason why a communication tool couldn’t have all of the attributes I’d initially defined, and much more, it was really pleasing for me to see that the participants were already fully engaging with the concepts, and generating really useful ideas:

![Although it ruined one of my phone props, the ‘Feed’ sketches turned out quite well.](image-url)
The circles concept remained fairly close to my original idea, except for being able to add individual friends from groups, and ‘surf’ the links to find new contacts.

The ‘friends’ tool was fairly straight forward. The users believed it best for the service to ‘send’ you some potential matches based on your profile: injury, age, etc.

The next idea that was tackled was that of the ‘Progress Tracker / Patient Management Tool’, and it was at this point the users chose to abandon the mobile phone props altogether:

**Me** – You look like you’re struggling to fit that onto the phone.
**P3** – I am, I can’t draw that detailed, that small. Can I just use paper instead?
**Me** – Of course.

For the rest of the conversation see appendices 8. A short while later there was another useful insight, which taught the need to be very specific about what is required of participants, but also not to take for granted that we all approach things in the same way:

**P3** – This is what I’d expect it to do.
**Me** – That’s an interesting phrasing (P3’s name). What do you mean when you say it’s what you “expect it to do”
**P3** – Well this is how apps work, this is what you do, press a button on a screen and go to another screen.
**Me** – So it’s an expectation you have?
P3 – Yes.
Me – So is that how you would want it to behave?
P3 – I don’t know, probably not.

For the rest of the conversation see appendices 9. They also threw the concepts I had generated for ‘progress tracking’ and ‘patient management’ out very quickly see appendices 10, there was a brief, and funny interlude, where one of them suggested having a Tamagotchi type pet to organise your self-directed recovery around, and if you didn’t do your exercises it’d die:

A fun physiotherapy version of Tamagotchi consigned to the great ideas bin in the sky!

I really liked this idea, despite it being clear gamification (and thus anathema to my design for well-being approach), and wanted them to run with it, but the other two participants dismissed it fairly quickly as a ‘gimmick’ and something they wouldn’t use, in favour of their own joint idea, a simple calendar see appendices 11, but I did make a mental note of the Tamagotchi concept for future use. They moved on to designing how the calendar would function:

The calendar concept proved to be a very strong one. The users liked the idea of being able to plan everything around a central calendar. Record progress towards goals, arrange meetings with friends, plan exercises out and sync with your other calendars so you are fully in control of the process.
The users played around with the idea of viewing the calendar at different ‘levels’ monthly weekly etc. to see how it would look and could function.

Very early on it became clear that they had very different views as to which, ‘level’ daily, weekly, monthly would prove most useful, and decided that it should be possible to view the calendar how you please, and that the functions should stay the same despite ‘level’. They chose + and – buttons to navigate the levels rather than direct buttons for each, which goes against speed of navigation in favour of simplified layout.

It was at this point that the web-service, as it now was, started to take some real shape. The proposed App hadn’t been given any form of linking structure at all, this was partly because I wanted to see how the users would structure the web-service, and allow them to define what they thought was important, but also because I myself was unsure of how to best structure the service. If I’m being honest I genuinely believed the social media, or communications tool would end up being the hub of the design, off of which everything else would flow. This was a valuable insight generated by the participants themselves, and genuinely made me excited, and feel vindicated in going for a user-centred design process, here were users not only proposing something that looked very different to what had initially been proposed, but also taking very different design decisions to the ones I would most likely have made.

It was also at this point that it started to become a struggle to keep up with the users, as they had grown comfortable with the concept of paper wireframing, and as such they had started to work quicker, but also reuse ‘buttons’ and other post-it-note ‘features’ to very rapidly ideate and prototype. They had to be asked to slow down. They began suggesting very interesting ways in which the calendar could be used and linked with the Social Media aspect, they also pre-empted my ‘Knowledge Store / Database’ concept see appendices 12:
New calendar entry options. Very early on the users discussed being able to view ‘friends’ calendars, and whether this was a ‘good feature’, they decided the default should be that calendars should be private, with an option to share with specific ‘friends’.

One of the first concepts users wanted linked to the calendar was that of goals. They wanted the calendar to remind you of them either before starting the exercises, or just after, and to have check boxes for progress.

Users also wanted to be asked to record their progress on exercises after a registered exercise event had been, or should’ve been ‘completed’. Initially the idea was to tick yes or no, and if no give a reason for non-compliance, but they later decided that perhaps there should be a third option of partial completion of exercise, to show if it had been attempted.
When recovery milestones are completed, users not only wanted to record them on their own calendars, they also wanted to be able to automatically inform their friends on the platform, and possibly external to the platform to not only motivate themselves, but each other.

Users also wanted to be able to find links to videos and details about their exercise regime to come from booked sessions within their calendar. During workshop 2 this evolved into using the calendar to place specific exercises at different times of the day, splitting up the exercise regime, as well as recording the time each exercise took to do to help increase planning control amongst other things.

This continued until the workshop ended after two hours. Essentially the users took over and was possible to concentrate on observing the participants, and take pictures as they worked.

5.1.4 Validating & Evaluating Results (part 1)

The first workshop generated a lot of information, more than I initially thought it would, and collating it all and putting it together in a meaningful way proved a very difficult task. The users defined how they wanted the communication / support group tool to work, they also generated their own ideas around a tool for measuring their own compliance, that would generate statistics for them to analyse and that their physiotherapists could monitor. They created the idea of a calendar around which they could record their own personal milestones, arrange to meet up with other users, schedule workouts and generate automatic notifications for friends to see when you’d completed tasks. They also developed their own concept around resources to help with them accurately performing their exercises, and they brought all of these ideas together in a rough structure. To validate whether the web-services outlined met the themes identified in section 4.3.4, they were checked against them. The designs did that and much more, their designs tackled themes 1,3,5,6,7,8 and with theme 10, the e-Health Service essentially already designed, it is fair to say the web-service had basically covered the bases that had been targeted and more.

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5.2 Prototyping 2: Designing a Web-Service

After the first workshop it became clear that managing three participants at once was difficult to do, and so a workshop structure was devised whereby they essentially managed themselves. Towards the end of the first workshop the users were for all intents and purposes running the workshop themselves, this allowed for more observation and reflection, while still seeking clarification while taking pictures of what was happening. The aim going forward was to encourage this to behaviour again, by having each of them take turns role-playing being the logic running the ‘web-service’, with another being a user using the web-service, and the third user asking questions about why the service acted in that way, and whether the user was happy with that.

5.2.1 Device Attribute Comparison

During the first workshop it became apparent that developing the service as an App would limit those who might like to use it. So the decision was made to develop it as a web-service, that could then be tailored to meet the various design requirements of whatever device it was running on. To ensure that this didn’t lead to any compatibility problems with what the users had defined as their desired functions / tools in the first workshop, a device attribute comparison was conducted:

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Devices</th>
<th>Needed?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Desktop</td>
<td>Laptop</td>
</tr>
<tr>
<td>Portable</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Accelerometer</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Image recognition</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>GPS</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Video Recorder</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Camera</td>
<td>Maybe</td>
<td>Yes</td>
</tr>
<tr>
<td>Voice Recognition</td>
<td>Maybe</td>
<td>Yes</td>
</tr>
<tr>
<td>Touch Screen</td>
<td>No</td>
<td>Maybe</td>
</tr>
<tr>
<td>Screen</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Internet Connection</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

5.2.2 Aims of the Second Workshop

After the first workshop defined the various functions of the web-service, and even gave the web-service a central function, in the shape of a calendar, the second workshop was about generating and defining the sitemap. Although if the users wished to refine the functions of the various tools within the web-service then that would be encourage also.

5.2.3 Generating User Journeys

User stories had been informally generated in workshop 1 when discussing the various features, and when, where and how they would use them within their daily lives. Before moving onto the body
storming of the web-service this generation was formalised in what the participants called ‘User Journeys’ (see appendices 13), which are user stories (Cooper et al 2014 pg.103-104). Indeed the participants used the concept of travel within this workshop a lot, not just in describing user journeys, but also other concepts as well:

<p>| Table 10: Language Differences |</p>
<table>
<thead>
<tr>
<th>Professionals</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Story → Journey</td>
<td></td>
</tr>
<tr>
<td>Decision → Route</td>
<td></td>
</tr>
<tr>
<td>Terminator → Destination</td>
<td></td>
</tr>
</tbody>
</table>

Although the language usage might not be significant, that the words chosen were indicative of a journey is perhaps indicative of how the users viewed their experience of self-directed rehabilitation.

5.2.4 Role-Playing the Web-Service

The desired language of the users came up very quickly again, just after the development of the user journey maps:

P3 – Can I just say I really don’t like the phrase self-directed rehabilitation.
Me – OK, what don’t you like about it.
P3 – I know that’s what it is, I just don’t like it.
Me – That’s not what I asked, genuinely why don’t you like the phrase, what is it you don’t like and why?
P3 – I don’t know, perhaps it’s silly, but the word rehabilitation makes me sound like a drug addict or a criminal in prison.

We eventually settled on the word ‘recovery’ to replace the word rehabilitation, and the phrase self-directed recovery, but again having contact with actual users gave useful insights into how their minds work, and how often ‘professional’ language can alienate those we are seeking to help. Before the second workshop various props were produced to represent the components, the users had designed during the first workshop. The idea was that these props could be used to role-play as the web-service quickly, and to show how they would like the sitemap to look, and the service to run:

The components of the web-service prepared beforehand to aid rapid role-playing of the sitemap.

During the first sitemap role-play, an interesting adaption of Windows 8.1 Metro Tile system, a discussion happened around the unilateral design decision to remove the ‘like’ buttons from the social
media tool:

**P2** – It’s going to need like buttons, or the reaction buttons like Facebook.

**P3** – Yeah, you need to know you’re loved with social media.

*Me* – But this isn’t social media. The aim isn’t to be liked.

**P3** – Yes, but people will expect it, and want it.

The ‘like’ functions had been deliberately removed as a design decision, because the concept of ‘likes’ and normal addictive social media elements, did not, and do not fit in well with design for well-being, they are in fact anathema to it. This reaction had been partially anticipated, and it was inevitable that there would be some comment about it if noticed. The full conversation (see appendices 15) was quite robust, and even though I and participant 1 expressed our concerns around the concept of likes, the other participants who were big social media users stood firm, and demanded they be returned for the workshop.

The first site map concept seemed to be inspired by Windows 8.1 Metro Tile system, however participant two pointed out they didn’t own a PC and hadn’t for nearly a decade (see appendices 16). Nor had they owned a Windows phone, so to them it wasn’t a form of inspiration, however, the comparison was quite clear, and as a visual metaphor it’s useful when looking at the pictures:

The ‘Metro Tile’ idea did follow the design structure of Windows 8.1’s much derided interface. The various aspects of the service were treated like individual ‘apps’ that were linked together. Accessing or interacting with a tile would bring up the interface choices for that tile, and they would be overlaid above the others.

As above the idea was that all the interactions would take place in the same screen, with easy access to other resources and the ability to quickly link between ‘apps’ and ‘functions’.
Being able to call up features like goals either from the goals ‘tile’ itself, or the exercises ‘tile’ or the actual calendar itself, users said it was about having multiple ‘routes’ to the same destination.

The user whose idea the Tile concept was, said it was about being able to respond and switch between function as quickly as was possible.

The next idea ended up ultimately being the one the users collectively chose to ‘go with’. According to participant one, whose idea it was, he based it loosely around the original Xbox 360 operating system and it’s ‘blades’ concept. Although participant 3 also had a similar idea:

**P3** – *You’ve basically stolen my idea!*
**P1** – *How can I steal it if I didn’t know what it was? Besides it’s the Xbox 360 blades basically.*
**P3** – *OK it’s the same idea as mine.*

For the rest of the conversation see appendices 17. The group decided it was best to iterate around this concept:
The concept was based on the idea of having the calendar central to the web-service, with ‘tabs’ off to the various sides of whatever screen was being used to grant access to functions.

The ‘tabs’ are dragged into the screen whereby users would be able to interact with the various functions.

Dragging up the goals tab shows users their individual targets specific for their progress.
This then allows users to link with the Exercises tab, and look at which exercises might impact upon achieving their goals, and then to look at the resources for those exercises like videos, or guides.

Adding new entries onto calendar also opens various functional options.

Including sending messages to friends within the services.
5.2.5 Defining the Sitemap

This final workshop set out a fairly robust concept for the sitemap, it allowed quick access to every tool within the web-service, and linked everything to the calendar, which was the users expressed desire in workshop 1. The site map essentially looks like this:

![Web-service Sitemap Diagram]

5.2.6 Validating & Evaluating Results (Part 2)

The second workshop moved far quicker than the first, possibly because the participants were already used to the processes, or maybe just because there wasn’t nearly as much to cover in the second workshop. So the extra time was used to ensure that the web-service contained everything they had identified in workshop 1, and that they were happy with the sitemap, which participant 3 had drawn roughly on a piece of paper. They confirmed they were happy with the layout of the service, and that all the tools and functions were as they wanted them. As a parting gift they said this:

**P2** – I just want to say these workshops have been really fun.
**Me** – Well that’s good to know, thanks.
**P3** – Yeah I have to say I wasn’t expected it to be like this. I work with UX designers quite often and they’ll do user-centred design, but they give users really set and rigid forms to work with.

For the rest of the conversation see appendices 18. Although it is more than possible, and maybe probable that they were just being nice, it was a good and morale building note to end on.
5.3 Describing the Prototype

Below are a series of site map sketches showing rough page layout and functions:

### Calendar Homepage

Once users log in to the service they are greeted with the hub of the web-service, the calendar tool. The system default is set to daily, although users can choose to set it to monthly or weekly by clicking on it and selecting options. It is also possible to zoom in (move down a layer towards daily), or out (move up a layer towards monthly) by clicking on either the plus or minus buttons. To the immediate right of the calendar are three functions:

- **Sync** – Allows users to sync other calendars with their web-service calendar and vice-versa.
- **Arrange** – Allows users to view calendars of other users who are ‘friends’ and request to arrange meetings etc.
- **Plan** – Allows users to create appointments, or events in their own calendar.

To the bottom of the page are two tabs, Exercises and Goals. To the right of the page are three tabs, Feed, Circles and Friends. At the top of the page are two tabs, Statistics and injury, the left of the screen is reserved for e-health services. These tabs can be dragged into ‘view’ by pulling on them.

### Exercises Tab

The exercise tab lists all the exercises the patient has been prescribed during their self-directed recovery. Selecting an exercise users can either view a technical workbook description of the exercise, or choose to watch video sessions previously recorded with their physiotherapist.
Goals Tab

The goals tab is similar to the exercises tab, except it provides a list of previously agreed personal mobility or usability goals set with the physiotherapist. Clicking on the goal lists exactly what functionality the patient should have. There are check boxes to tick when the patient feels they have achieved the goal. This pins the achievement to the calendar and also informs the patients friends and circles of the achievement automatically. It is also possible to link to specific exercises that are related to achieving this goal.

Statics Tab

The statistics tab is an automatic monitoring of patient progression. Patients have to schedule exercises in their diary, and the calendar reminds them when the scheduled time is approaching. It requires users to acknowledge they are starting their exercises, and asked them for a report when they have finished. These reports form the basis of the statistics. These statistics, if entered truthfully, will allow users to see issues they are having with their self-directed recovery and maybe seek help.
### Injury Tab

The injury tab is a detailed repository of useful and detailed information about the injury the patient has suffered. Here it is possible for the patient to learn about their condition and fully appreciate why their self-directed recovery is so important. There is also a link to a ‘friends’ tab here. Accessing this specific friends tab reveals other people using the service who have similar injuries.

### Feed Tab

The feed tab is a general live-stream of comments from other users, who are either friends of friends, or have similar injuries to you. This is the space where you try and seek new friends, or ask other users general questions. There are a number of commenting functions:

- **Reply to comment** (which can be the following types of comment).
- **Brain Trust Question.**
- **General Comment.**
- **Video Comment.**
- **Picture Comment.**

### Circles Tab

Circles is a space where likeminded people can form groups to have private chat feeds, and arrange things as a group. You can also ‘surf’ your circles to try and find other associated groups, and individuals within them to friend.
## Friends Tab

The friend tab is where you can make direct contact and communication with your friends. Your friends are listed in alphabetical order, or by most popular (depending on preferences). Clicking on a friend brings up three options:

- **Check Calendar,** allows you to view a friends calendar and try to arrange a meeting or other event together.
- **Private Messenger,** is where all your private messages are stored. All of the reply options from the feed tab are available here too.
- **Links,** this allows you to check out the groups your friends are members of.
6.0 Discussion & Further Reflection

6.1 Where Does It Go from Here? Potential Next Steps

It’s clear that the work contained within this project represents only the very first steps of a design process, with a need for further iteration on the concepts to develop a more mature and maybe original interface. However, there is an initial sitemap and the functions of the various assets defined and how they link together down on paper as a first draft, but that is all. There has been no ‘proof of concept’ and there hasn’t been a digital prototype produced. The work in section 5.0 represents a strong and well-thought out concept, the next stages should be about proving that concept and confirming it has merit, further detailed iteration, and ensuring it achieves the broad aims set out in section 1.9.

6.1.1 Prototyping 3: Digital Wireframing the Web-Service

The next step in the process should be developing a digital wireframe of the web-service outlined in section 5.3. This will determine not only the feasibility of the interactions described in the paper prototype, but also allow users to test the concepts in an environment close to a completed product, to see whether there are any improvements or changes required. It would also allow for the testing of digital interactions, and for the development of stronger interaction concepts. A digital prototype would also allow for rough user and usability testing to see if the web-service does have any impact on patient’s compliance and accuracy within self-directed rehabilitation.

6.1.2 Prototyping 4: Developing and Exploring with Personas and Scenarios

It’s important to note that any move towards deploying personas and scenarios in further exploring the design would be a conscious shift away from the user-centred design deployed hitherto. However, there is a compelling case to be made for the use of personas and scenarios in exploring the design further before seeking to broaden the audience (see section 6.2):

1. It allows for rapidly exploring designs, no need for more users and workshops.
2. It allows preliminary exploration of patient types that might not be accessible to.
3. It allows for safe exploration of those patient’s needs, before fully engaging with them.
4. It allows for iterations in preparation for wider testing.

In terms of personas it would best seek to use detailed role-based personas that cover personality traits, behaviour and goals, for a more rounded persona, primarily because as I’m a trained psychologist and this is what I know well (Floyd et al 2008).

6.1.3 The Other Side of the Coin

Although this initial design work focused solely on the perspective of the patient, the critique of Design Examples (see section 4.3.2) showed that the designs, which prove most effective often integrate themselves with the already existing physiotherapy services. There are many aspects identified by users, like video recording of sessions, and access to ancillary physiotherapy services that would absolutely require the service to be supported not only by physiotherapists, but also other healthcare professionals, and Strategic Health Authorities. For that to happen the Support Service
would need to be of benefit, or provide value to both physiotherapists and Strategic Health Authorities. If the support service could be shown to increase compliance, and accuracy amongst patients undergoing self-directed recovery, then it would obviously help the tackle the issues facing services outlined in section 2.0, which would be of interest to Strategic Health Authorities. Physiotherapists might also like to see how their patients engage with their self-directed recovery, so having access to the statistic tools users specified they wanted might potentially be of interest. It is however the e-health part of the support service that would require most work with all parties, as it would require funding, and new service development.

6.2 Broadening the Intended Audience of The Web-Service

The aim behind the web-service was for it to be flexible enough, so that it could potentially be of use to all physiotherapy patients, however the project thus far has only engaged in user-centred design with trauma patients. Given my belief in the need to develop evidence based empathy, and the focus on design for well-being, clearly there is a need for doing further work with patients from different physiotherapeutic fields (see section 1.3), as there are clear differences in needs. As an example, patients receiving palliative care have a large amount of support, in the form of support groups and counselling (Skilbeck & Payne 2003), which raises the prospect that the approach proposed by the web-service might create support overload (Nelson-Jones 2001 pg.9-10). In these circumstances, too much support can be a source of further stress (Newton 1999, pg.245-248), and be counterproductive.

Meanwhile at the other end of the spectrum is women's health physiotherapy, and specifically postpartum care, although support groups often already exist, there are issues around attendance of such support groups (Meager & Milgrom 1996). Given such support networks usually require some form of attendance at a physical location, and given the stresses and pressure that having a new-born baby place on a family, and in particular the mother (Mahler et al 2000), attendance in such circumstances can prove difficult. So, the benefit of having a supportive web-service that can be accessed anytime and allows patients to manage their own schedule, might prove useful. However, although there are similarities between the various forms of physiotherapeutic intervention, it’s clear that each type of service would require a similar sort of user-centred design process to ensure any web-service was designed to meet the unique challenges they present. The approach taken to design for well-being would also demand such an approach, as defining the unique challenges is key to developing the right support mechanisms.

6.3 Design for Well-Being, A Useful Definition?

I don’t know whether the definition of ‘design for well-being’ developed in this project is of any use beyond this project, or for other designers, however, for myself, and within this project it has been a very useful guide for the design work. The coupling of Dodge et al (2012) ‘see saw’ definition, and using Miller & Kälviäinen concept of using research and theories from psychology, sociology, health studies and anthropology amongst others to develop a deep understanding of the situation (2006), gives a solid basis for developing interaction design work around. The definition not only helped in developing useful and interesting problem statements, or challenges, it also gave the project an approach to the design work, centred on developing resources to meet those challenges. Although there certainly wasn’t much headway made in terms of turning this work into a form of design heuristics, as Miller & Kälviäinen (2006) suggested was possible, there were some tentative first steps taken, and it certainly merits further exploration.
6.4 Thoughts on User-Centred Design

There are many reasons why following a user-centred design approach might be advantageous, the customer focus, iterative development that allows for considered growth from direct feedback in the design, and collaboration between users and designers increases the likelihood of developing a product that is meaningful and desirable (Cassim et al 206, pg.11-14). However, user-centred design does require considerable effort on the part of the designer, you need to plan very carefully to ensure you get out of the sessions what you need, not what you want, this is an important distinction to make, there needs to be a commitment to be open minded enough to allow the design to evolve organically into something the users would value, not what you think they would value. It’s not just about managing the workshop, or process, but also recording and shaping what happens in a meaningful way. It was certainly difficult, tiring, and stressful at times trying to keep track of everything that was happening during the workshops, but also keeping the users focussed and engaged with the process.

There is also an issue, of delineating ‘you’, as the designer, from ‘them’, as your users, it’s important to remember that you are a designer, your ‘job’ isn’t just to do what the users tell you, it’s to extract useful insight from engaging with them, but that line isn’t distinct. Or it certainly didn’t feel distinct at times during this design process, not until Workshop 2 where there was a disagreement with the users (see appendices 15) over the inclusion of social media like functions. User-centred design is also slow going, as you need users to participate so the project can move forward, and arranging workshops where all users can attend can be difficult. There is also a lot of work that has to go into preparing for the workshops, but ultimately, it was worth the added effort, as it provided very valuable insight from the users, that might not have been developed any other way, and the focus on the user also complimented the design for well-being approach.
7.0 Conclusion

It is at this stage that the report must be concluded, which is difficult to do on a project that hasn’t reached ‘completion’, and as such isn’t concluded. In section 6.0, various possible avenues for how the work should proceed are discussed, as well as exploring thoughts on two topics that were explored during the design process, user-centred design, and the specific definition of design for well-being developed during this process. So, all that is left is to go back to the main research question and the supplementary questions, to see how well the work has answered them, or indeed, if it hasn’t:

**How can web-services with collaborative media components support physiotherapy patients with their self-directed recovery?**

It could be possible to try and claim there is a firm answer to this question, but there isn’t. The work has only tentatively begun to explore the answers to this question. However, the design work contained within this report points towards, and hints at possible answers, such as by providing the tools to develop their own support network, or by providing information and answers when required. However, without testing the web-service, it’s not wise to make such firm claims.

In terms of the supplementary questions we can have significantly more confident in answering those questions:

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| How can we develop support structures to help patients meet the challenge of doing their exercises accurately? | Most patients wanted two things:  
1. Access to e-Health services  
2. More information (video’s etc.)  
There is no need for fancy wearables, or games or anything else. People just want information in various forms that’s accessible when they need it. |
| What support structures do patients want to help them with monitoring their progress? | They simply want a place where they can track what they are doing, and record their individual progress towards their personal goals, and the ability to share that progress with others who might also have an interest in their progress. |
| What support is required to motivate patients to do their exercises? | It depends very much on the user. However, all the respondents spoken to had subtle variations, some needed information, others personal goals and others friendly people to talk to. So, we provide a service which allows them to take power over their own motivation. |
| What support structures will enable patients to feel supported, and to be able to support others during their self-directed recovery? | Most respondents, and the users within the workshops felt that having access to fellow patients would enable them to develop their own support structures specific to their needs. |
In summing up though, the work needs further progression before any real conclusions can be made. The work presents a good starting point, and allows for others to use the findings contained within as foundations for further design work, but fundamentally it is about giving patients the tools and support needed to tackle the challenges they face.
8.0 Glossary of Terms

Unless specifically stated otherwise, when the following words and phrases are used within the text this is what is meant by them:

**Accuracy:** Doing prescribed exercises correctly, and as instructed by the physiotherapist. Sometimes referred to as adherence within the physiotherapy literature.

**Apathy:** In design terms apathy is the absence of a ‘designerly empathy’, which is a rational and analytic understanding, for the end users. This because either as a designer you haven’t got enough information to fully appreciate the situation the users are in, or because your focus is not on the users, and thus you haven’t tried to understand their needs.

**Artefact:** Is something that has either been shaped or created, with purpose, by human hands to serve some function.

**Boundary Objects:** Are things, or ideas used by members of different groups, that have different functions or meaning in each group, yet are similar enough as objects to play a useful role by allowing members of different groups to find common ground, as well as being able to communicate across boundaries, and work together even prior to achieving consensus (Leigh Star & Griesemer 1989).

**Collaborative Media Platform:** Is a website or service that allows users to generate content in a way that collaboratively creates a new whole, that is more than the sum of its individual contributions.

**Compliance:** Doing the prescribed exercise regime for as long and as often as prescribed, until the self-directed recovery program is completed.

**Design for well-being:** Is taking the See-saw model of well-being developed by Dodge et al (2012) and pairing that with Miller & Kälviäinen’s (2006) approach to using research methods from a variety of different specialisms to define the challenge users face, and then set about designing resources to achieve equilibrium that leads to well-being.

**Design Plan:** A document that sets out the scope, structure, rationale and aims of a design process, as to give guidance and direction during the design process.

**Design Process:** Is a systematic, structured and concerted effort to understand a situation and use materials to generate a new, or re-shape an existing functional artefact that either seeks to provide a solution to a problem, or improve the experience and lives of its users.

**Design Space:** My definition is based on that of Design Space Analysis, which is an approach to representing design rationale. It uses a semiformal notation, called QOC (Questions, Options, and Criteria), to represent the design space around an artefact or design process. The main constituents of QOC are Questions identifying key design issues, Options providing possible answers to the Questions, and Criteria for assessing and comparing the Options (MacLean et al 1991).
**Design Stance:** Based on Dennett’s (1971) work on ‘Intentional Stances’, and the analysis of the work by Vermaas et al (2013), in particular Intentional Designer Stance Predictions. Knowing how people will view what we create as designers, or how they will be interpreted gives designers the opportunity to position the work they do so that their intentions are correctly interpreted. My Design Stance on the project is outlined by my definition of ‘design for well-being’ and my ‘user-centred design’ approach to my work, I want to put the user at the centre of my work and empower them to achieve the goals they have within their self-directed recovery.

**Empathy:** Is trying to understand what it’s like to be the person we are designing for, in a rational and analytical and phenomenological way. We can’t become the people we design for, but we can try to understand their experience, and take an approach of rational compassion as opposed to emotional sympathy.

**Gamification:** Is the use of typical elements of games, such as, but not limited to, point scoring, competition with others, high-scores, and artificial challenge to things other than games to encourage engagement with a product or service, that itself is not a complete game.

**Gestalt:** My definition of gestalt is based on the concept that an organized whole is perceived as more than the sum of its parts, which is closer to the concept of ‘holism’, the idea that systems (physical, biological, chemical, social, economic, mental, linguistic, etc.) and their properties should be viewed as wholes, not just as a collection of parts, as opposed the German meaning of the word as form and shape.

**Material:** Anything that can be shaped by human hands to be given permanent form and function.

**Persona:** Are based on the second archetype identified by Floyd et al (2008), The role-based perspective. Such personas are based on data collected from both qualitative and quantitative sources, to generate detailed cognitive maps. These maps included personality traits, behaviour and goals, for a more rounded persona.

**Prototype:** A model, sketch or mock-up of any kind, based on design ideas that allow designers to test out their ideas quickly, without having to invest time and other resources that would be required to build a fully functioning artefact. In the context of this project that artefact would be a functioning web-service.

**Reverse wireframing:** Is a process I initiated with my Users in my first workshop, whereby I set them the task of representing an application they already used on their phones, using the paper tools I had provided for the workshop, to help them understand the process and to engage with it better.

**Scenarios:** Are the tool by which personas are given ‘life’ to explore a design and create data. Scenarios for me cover the background story, which gives impetus for the persona to act, and the narrative which is a time-based sequencing of events the persona enacts while exploring the design.

**Self-directed Recovery:** Often referred to within the literature as self-directed rehabilitation, or non-directed rehabilitation, this term is one preferred by the users who took part in my workshops, as they didn’t like the connotations with the term
rehabilitation. It does however share the same meaning, essentially being the exercises or interventions a physiotherapy patient must complete under their own guidance, as part of a prescribed intervention.

**Sitemap:** Communicates the structure of a website or application and shows how all the different pages, modes or functions are connected.

**Sketching:** Using any physical materials, pens, paper, cardboard, Lego, or whatever, to give physical form, or shape to design ideas contained within a designer’s mind, which allows for reflection on those ideas and the opportunity to generate new understanding about them.

**Sympathy:** Is about being too emotionally close to the users you are designing for, that it clouds your rational judgement and stops you being objective. The emotional closeness to the situations the users are in and stops designers taking an approach based on rational compassion.

**User-Centred Design:** Putting users in the centre of the Interaction Design process, by involving them in the iteration, and process of design itself. Taking into consideration their desires, needs and preferences in a way that develops products or services that satisfy them.

**Web-Service:** Is any piece of software that makes itself available over the Internet, and whose primary function is carried out via the Internet, meaning ancillary functions need not necessarily require a connection to function.

**Wireframing:** In the context of this work, wireframes are blueprints, or page layouts and functional descriptions of every page on a website. They depict the basic page layout and arrangement of content as well interface components buttons, navigation tools etc.


Swedish Association of Physiotherapists.; (2016). http://www.fysioterapeuterna.se/In-English/


## 10.0 Appendices

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Appendices 1

First Set of Interviews

Interviews conducted with physiotherapy patients during February 2016. Words in **bold** are mine, while words in plain text are those of the respondents.

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Hey (subject 1.1) how are you doing buddy?

Pretty good actually, did (mutual friend) tell you (his wife) finally got a job?

No he didn’t, that’s great news. I bet she’s so relieved isn’t she?

Well both of us are. I was starting to really feel the pressure as the only bread winner, and as you know, because you want to talk about it, I’m not in the best of physical conditions.

Your injuries are still playing you up then? I’m really sorry to hear that.

You and me both.

OK, I’m going to do the pre-interview drill. If for any reason you wish to stop the interview please feel free to do so. If there are question you can’t, or don’t want to answer, that is your prerogative. If after completing the interview you wish to receive a written transcript you can request one, and one shall be provided. If after completing the interview you decide you no longer wish your answers to be used as part of my research project you can request that all, or part of your answers be removed. I shall not use your name, or any identifying descriptions within my work, and the interviews will only be used by myself for the current project. Is that all clear?

As mud.

Brilliant, so we’re good to continue?

Yes fire away.

Right, just so you know I’m generally interested in anything associated with your motivation around your rehabilitation after the car crash. So the first question I have to ask is what were your motivation levels like after your injury, and did they fluctuate during the process?

You already know the answer to that question!

I think I do, but I want to hear it from you.

Well right after the crash I wasn’t very motivated at all. I was more devastated than anything, it took the physio’s a lot of time and work with me to get me motivated.

How did they do that?

I don’t know, I guess they just stuck with me and kept pushing me to do my physical workouts. I really did feel sorry for myself, and I think the physio’s were saints to put up with me.

You did have a fairly serious accident (subject 1.1) so I don’t think you should be too hard on yourself. What did you feel like after the injury?

Well, I was sorry for myself at the beginning, and then very hard on myself when I started doing the work. That swing from not wanting to do anything to expecting to be able to walk upright and move
my arm without pain, and do everything perfectly right away was mentally very hard.

And what coping mechanisms or tactics did you use?
The physio’s again, and my family and friends. All offered me lots of help.

So the initial work with the physio’s was properly planned out and you were able to get through it all OK?

Yeah, I think so, the work in the hospital probably took far less time than I think it did. I know at the time it felt like really slow going, but overall, it was a pretty quick recovery, or return to some form of normality.

Did you have any self-directed rehabilitation to complete? Things you had to do on your own after being discharged from hospital or or the physiotherapy service?

Yes I did, I was supposed to do work for about a year afterwards on my own I think. I say supposed to because although I did do it mostly, I have to be honest and say I didn’t really do them all the time.

So why do you think that was?

Life getting in the way, having to take care of the kids and family. Not being organised, and just not being motivated, or having that drive the physio’s provide. It’s hard on your own.

So what do you think would have helped with that?

I don’t know.

Shall I fire out some random ideas and you say the first thing that comes to your mind?

Oooh word association, do I win a prize?

Yeah, me psychoanalysing your crazy ass.

That doesn’t sound good.

Trust me it’s amazing! So… fitness app?

No, don’t do fitness.

Games?

Maybe, but I prefer RTS games, not sure how that’d fit in.

OK, but the idea of a game to encourage you to do your exercises?

No thanks, I like games, that’d ruin games for me.

Online support group?
Maybe, actually.

**Go on.**

Well having other cripples to talk to would’ve been nice maybe, other people you can whinge to, like a Facebook for cripples.

(laughing) Facebook for cripples, I wonder if I can get away with using that as my title for my thesis.

Probably not, it’s not very PC is it?

**No it really isn’t.**

Sorry.

**It’s OK, no one will ever know, I’ll keep it between us. But the idea of an online support group is an interesting one for you?**

Yes,

**And would you want it to be like a social media site, like say Facebook as you mentioned it?**

I don’t really know. I’d say I don’t do Facebook, but that’s a lie. I do. I do it a lot. Hell I’m doing it now with you, we could’ve used Skype like you said, but I just find it easier to use Facebook.

**I don’t mean to wrap this up too quickly, but I’ve got to interview (subject 1.2) in a few minutes and you know how impatient he gets.**

Do I ever. Love him to bits but he was totally born with a stick up his ass… don’t tell him I said that.

**Hell no, he’d shoot the messenger first any way! So wrapping up were there any things or tricks you used to motivate yourself, or Fitbit’s, treats, anything?**

I joined a gym!

**Oh, did you go?**

Yeah, about once and never went back.

**Ah, right. Anything else?**

Not really.
Subject 1.2: Interview notes 06/02/2016

Hiya Barton, good to see your ugly face.

**Well I thought I’d use my ugly face today to make you feel comfortable around me.**

(laughing) I do miss our chats.

**Me too chap, me too.**

How’s the noggin doing, did they find your brain in the end?

**No, they just found a rolled up ball of cat fur.**

That’ll explain it then.

**So are we done with the verbal sparring?**

I think so dear boy

**Good, I’ll get on with the old health warning. If for any reason you wish to stop the interview please feel free to do so. If there are questions you can’t, or don’t want to answer, that is your prerogative. If after completing the interview you wish to receive a written transcript you can request one, and one shall be provided. If after completing the interview you decide you no longer wish the answers you provided to be used as part of this research project you can request that all, or part of your answers be removed. I shall not use your name, or any identifying descriptions within my work…**

not even cockwomble?

**Not even cockwomble… I’ve totally lost my place now. I think I just have to say I’m only going to use this stuff in my work and no one else will be allowed to use it, you know the usual stuff.**

It’s all good, we can get on with it all now.

**Just so you know, because I don’t think I emailed you, I’m doing a project on physiotherapy…**

Hang on, aren’t you doing interaction design?

**Yes I am.**

What the bloody hell has that got to do with physiotherapy?

**Maybe nothing, and in a few months I’ll be in a right pickle. But, for now that’s my concern, I’m wanting to ask you about your rehabilitation process, and your motivation if I can?**

Sure, you’ve got me out of having to visit the in-laws so you can pretty much ask me what the hell you like.
Glad to be of service! firstly I’d like to know about your motivation levels after your injury, and did your motivation fluctuate during your rehabilitation?

My motivation stunk, it always has as you know. I’m glass half full kinda guy, and with my Ducati being totalled I wasn’t the happiest of campers. The broken bones didn’t help much either.

You went through some therapy in hospital right? How did you cope with that?

Well the physiotherapists in the hospital were pretty good actually. The whole work with the hospital as an in and an outpatient went pretty well. I mean I went from a crumpled ball of agony, to someone who can ride a motorbike again and only walks with a slight, and very manly limp.

What the hell is a manly limp?

I don’t know, but I’ve got one.

OK, a manly limp. Gotcha! Is that like a medical condition or something? Do they give you an ointment for that?

We’ve taken this as far as it’s going to go Jody, just accept I have a manly limp.

So where the hell was I? Coping mechanisms! Did you have any coping mechanisms or tactics you used?

I know you’re going to analyse this, but I did.

No judgement here buddy, it’s a safe space.

Well I kept imagining the prat in the BMW’s face, and I used him and his stupid face as motivation. I kept thinking if I can get well enough to walk to his house and punch him in his face I’d be happy.

(laughing) Wow, OK. So you had set yourself a target then?

Yeah I absolutely did, I’m sure you’re going to say I should have set myself healthy and productive targets. But sometimes anger can be good when channelled.

It can, as long as you don’t channel it outwards at somebodies face!

I never punched him, don’t worry.

Yet you mean?

You know me too well (laughing).

So OK, did you have any self-directed rehabilitation to complete? You know exercises and stuff you had to do on your own after being discharged from hospital, or the physiotherapy service?

I did, and I didn’t really do it. I did start but it was all just pointless really. I think I had got as far as I was going to get with the therapist.
What makes you say that?

It’s just true. I was busted up pretty badly, and I think to get to where I am today was about all I could expect. Maybe if the work with the therapist had continued, and they’d helped me more I would have improved slightly more. But me doing stuff on my own? No, that was not really going to help too much. I got to where I was going to get I think.

So do you think more physio time would have helped with that?

I really don’t know Jody. I got a bit depressed to be honest after the support stopped. Suddenly being left on my own with my manly limp… I don’t know, it’s demotivating.

I can understand that, if you were here I’d totally give you a man hug.

I need a man hug, girly hugs just don’t do it for me anymore.

Steady on chap! OK, well next up is the quick fire round where I say ideas and you give me the first thing that pops into your head with regards to how you might see them fitting in, or helping with your rehabilitation. Or not!

I think I’ve seen this on T’ telly box.

Don’t do a northern accent, you’re far too southern.

OK, but can I still eat gravy and chips with cheese.

I’m ignoring you... fitness app?

Beer.

C’mon dude, not got long to go now, can you just take this bit seriously?

Yeah sorry, just having a bit of fun. Sorry.

Fitness app?

Hate them. Wouldn’t work.

Games?

Counterstrike.

OK I asked for that one, if you behave for the rest of the interview I promise to play Counterstrike with you. Deal?

Deal?

So what about games to encourage you to do your exercises?

Possibly, it’d have to be entertaining though. None of this high score bullshit you get with the bloody Fitbit.
Do you have a Fitbit?
No, my boss does and I swear to God he thinks it’s going to turn him into an Olympic athlete.

So games are a maybe, but it’d have to be a game, and entertaining, not gamification?
Yeah that pretty much sums it up.

Online support group?
Yes. That might work.

Elaborate.
I’ve been to support groups for things before as you know, I’m actually a fan. The bereavement group I was part of had a private Facebook page, and it really did help knowing you had people to talk about this stuff too.

Yeah, I know buddy. You OK talking about this?
Actually yeah I am now. It’s still hurts, but I think both of us are feeling better about the loss now. It’s not perfect, but it is easier, and the group helped me a lot.

I’m really pleased to hear you’re in a better place about it all now, I really am.

Thanks

As to the online support group (subject 1.1) referred to the idea as Facebook for cripples.
(Laughing) Why is it Scottish people can get away with saying that sort of stuff, but we can’t.

Well, they do have to wear skirts so we have to give them something in return.
So true. Me and him could totally start a Facebook for cripples group, what, him with the car accident and me with the bike.

Is there anything else you can think of that might have helped, or anything you want to add?
I’ve been a good boy. Counterstrike please.
Subject 1.3: Interview notes 07/02/2016

Hello you, how’s the family? The little ones good?

Yeah they’re out with daddy right now kicking a ball in the park, so they don’t make Mommy very angry while she’s cooking Sunday lunch!

Daddy is a very wise man!

Daddy is doing what he is told!

As I said, daddy is a very wise man!

(laughing) He is, just don’t tell him.

Before I get going the books you sent over with (name deleted) are superb, thanks a lot.

You’re welcome.

When do you need them back?

Not for some time Jody, we’ve got them all at work in the library anyway, so you can keep them as long as you need them.

Well thanks, I might need to pick your brain at some point about some of this stuff though, would that be OK?

Of course.

You already know exactly what all of this is about right? I mean we’ve been talking about it for a few months now.

Yeah, you’re interested in helping patients with their PTP’s.

Yep, but I’m interested in your injury today. As I said, when I want your technical expertise, which I will I’m sure, I’ll contact you again.

OK.

So I’m going to read out you rights as it were. If for any reason you wish to stop the interview please feel free to do so. If there are questions you can’t, or don’t want to answer, that is your prerogative. If after completing the interview you wish to receive a written transcript you can request one, and one shall be provided. If after completing the interview you decide you no longer wish your answers to be used as part of my research project you can request that all, or part of your answers be removed. I shall not use your name, or any identifying descriptions within my work, and the interviews will only be used by myself for the current project. We good to go?

We are, but I might need to flip the spuds at some point.

Can’t have you burning your spuds!
No, that’d ruin Sunday!

So question number one, what were your motivation levels like after your injury, and did they fluctuate during the process?

I think my motivation levels were very high throughout, I was mostly annoyed that some angry patient had injured me.

Yeah, I remember. So why do you think your motivation levels were high?

For one, I’m a trained physiotherapist / OT, and for two I was constantly surrounded by trained physiotherapists and OT’s. It was pretty easy to stay motivated in that sort of environment.

That’s a fair point. So do you think having so much contact with other professionals, or the knowledge you have as a professional was more important to your motivation?

I don’t know Jody. Both were important I guess, knowing what my injuries were, and how best to tackle them and what would happen if I didn’t was a great motivator. But... then my friends and colleagues from day-to-day being there and helping me were so important too, they were stars the lot of them.

My next question was about what coping mechanisms or tactics you used, but I’m guessing you’re going to say you’re colleagues?

Obviously yes, but I actually have a Fitbit.

Oh ho ho. When did you get this?

Actually after the injury. Part of it was wanting to walk so far every day, and having a Fitbit actually helped me to record what I was doing.

So you had a gadget help you?

Yes.

And was it that helpful?

It was, I don’t really use it any more though, it’s in one of the kitchen drawers around here somewhere.

So do you think there is a role for this sort of stuff, wearable technology I mean in physiotherapy?

On that I don’t know. I think you have to be the sort of person who engages with that sort of stuff in the first place. I’m sure there are plenty of ways in which it could help, mainly with very specific things…

Like?

Well, I’ve had this idea for a rumble pack vest for loosening fluid secretions from the lungs of cystic
fibrosis patients.

**Maybe that can be my TP2 project?**

I’m sure some boffin will have already done something like that, but I’ve never seen or heard of it. Doesn’t mean it doesn’t exist.

**You were going to say something else, but I interrupted you. Can you remember what it was?**

No, what was I talking about?

**You were saying ‘there were ways these things could help’ and I sensed a ‘but’**.

A big butt?

**Probably.**

I don’t know, I was going to tell you about this gym equipment system we got, this sort of electronic service stuff in our clinic a while back to test out. Fit Links I think it was called. Let me Google it.

Yeah FitLinxx, that’s all one word F, I, T, capital L, I, N double X. It’s for people on too much testosterone who can’t spell.

**(laughing) so what did it do?**

Not a lot. The equipment helped measure power outputs and all sorts of other meaningless things. I think it’s really meant for use in gyms, for the sorts of people we see in the clinic far too often.

**What do you mean?**

We get a lot of keep fit types who don’t know when to quit, and eventually do themselves a mischief. They absolutely make the worst patients. They think they know just as much as we do, and that we’re gym instructors in lab coats. They’re also in quite toxic environments as well.

**The gyms you mean?**

Yes, they go back to their gym to do their rehab work, but they’re in an environment where their support network isn’t so much a support network, but a bunch of enablers. It’s why they quite often become repeat visitors.

**Interesting, never thought of it like that, I just assumed keep fit types would be the best patients as they’d be the most motivated.**

Oh they are highly motivated, unfortunately it’s quite often the case of a little information being dangerous.

**Thanks for that. You did have some self-directed rehabilitation to do, right?**

Yeah, like I said to you last week, it’s pretty standard that patients have work to do on their own, even if it’s not that much really.
And just like the directed stuff you didn’t find it difficult?

No, again, I had way more support than most people, you’ve seen my books right?

Yes.

Well, if you have access to all that, and training… well if you can’t motivate yourself, how the hell do you expect to motivate others?

That is a very good point. OK apart from the Fitbit, did you do anything else, or use anything else to motivate you, or…

No, not really… oh, I suppose (husband) used to drive me to nice stately homes to walk round on the weekends to give me something fun to do while walking.

Was that his idea or yours?

Oh, totally his. He has his moments. (laughing)

You’re far too much a goody goody two shoes (subject 1.3). The others have had problems. Right, for this next bit I’m going to say some things, and I want you to quickly respond with what springs to mind when I say them, with regards to self-directed physiotherapy, OK?

Yes

Ready?

Yes.

Fitness apps?

Good for some, bad for others.

OK, I know I said this was quick-fire, but I’ve got to expand on that!

Jody Barton! Breaking your own rules.

I know, I know, it runs in the family. But what do you mean?

Well like I said earlier on with the Fitbit, if you are the sort of person who engages with that stuff then great. It’s just my experience that most people don’t, and it’s those that don’t who it damages. I hate setting dates for patients, I try not to do it, unless I know they’re the sort of people who are motivated by that sort of stuff. I think giving people stats and figures and things is great in theory, but you’ve got to teach them what it all means, and let them know it’s OK to go at your own pace.

OK, that makes sense, I’ll get back to the quick fire stuff now… 3… 2… 1… Games?

Bad idea, rubbish, next.

Online support group?
Possibly a good idea.

**Why?**

Well physiotherapists, chiropractors and OT’s are support, then it eventually gets turned off, and perhaps having something to fill that void might be good.

And that’s daddy and the little ones back, and I need to turn my spuds, anything else real quick you want to ask me?

**No not really, I think it’s all covered. Enjoy Sunday lunch, and say hi to the family for me.**

Stick around the kids would love to speak to you.

**OK.**
Appendices 2

Second Set of Interviews

Interviews conducted with physiotherapy patients during August 2016. Words in **BOLD** are mine, while words in plain text are those of the respondents.

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Subject 1.1: Interview notes 06/08/16

Heya (subject 1.1)

Hellooo

You sound chipper?

Yeah my sons been picked for the footie tomorrow, first time he’s starting.

Bloody hell, he’s old enough to play football now?

Yep!

Crap I’m old. I need to get on with this I’m afraid, I’ve stupidly scheduled three interviews on the same day.

Cool.

So let’s go. How often do you use social media?

Not very often

What social media services do you use?

There’s other social media than Facebook?

Yeah apparently!

No, I’m not a social media fan Jody. I do Facebook because it’s expected, but I much prefer having real people around who can go to the pub with you when you’re feeling a bit down.

What do you primarily use social media for?

Keeping in touch with the parents, they’re back in Scotland and we don’t get to see them much anymore because they’re too old to travel, and dragging the kids to Aberdeen is just a non-starter.

That’s a shame. How often do you see them now?

Christmas, and that’s it.

I think I know the answer to this one, but do you view your social media ‘friends’ as a support group?

Yes, because I only have friends on Facebook I actually know, and I know my friends will be there for me no matter what, you all proved it after my accident.

I expected you to say no!

You know me, always willing to subvert conventions.
Subject 1.3: Interview notes 06/08/16

Hello you, good to see your face.

You too (subject 1.3)

So you failed!

Yes, I failed. Try not to sound too happy.

I’m sorry, it’s just nice to know you’re human too. I take it this means you’ll be hanging onto my books for a little while longer?

Maybe, or maybe I’ll choose to do an entirely different topic. Not sure yet.

So what's this interview about then?

Deciding whether there’s merit in tackling this from an interaction design perspective.

That I can’t help with!

(laughing) I know, just want to ask a few quick questions about social media usage.

Shoot

How often do you use social media?

All the time, I’m addicted.

What social media services do you use?

All of them, Twitter, Facebook, Instagram, Snapchat… you name it, I use it.

What do you primarily use social media for?

Keeping in touch with people, cat videos and knowing which celebrities are now officially fat.

Oh my God, you are not a celebrity watcher (subject 1.3), that’s a lie!

No I’m not, but that’s what my Facebook feed seems to be full of now.

Do you view your social media ‘friends’ as a support group?

Yes, I actually talk to people on Facebook about things that are quite personal too me who I’ve never met in my life.

Really?

Yeah, there’s a nurse in New Zealand and an OT from Boston USA. Talk to them all the time on Facebook… is that weird?
I honestly don’t know what’s weird any more (subject 1.3). That’s me done.
Howdy partner.

You’re still playing that cowboy role-play aren’t you?

No… maybe.

Do you think cowboys actually spoke like that?

Absolutely, and pirates said argh!

Alright… I can see it’s going to be one of those chats (laughs)

I shall endeavour to be more serious.

Thanks, did you get the email?

Yeah, sorry to hear you failed, but in all honesty you should have come back to Blighty to rest up any way you soft sod.

Would you have?

Erm… no.

Exactly. Anyway, let’s get to it, question the first, How often do you use social media?

All the bloody time. If LinkedIn counts then I’m almost never off the damn stuff.

I have no idea whether you’d class LinkedIn as social media.

Let’s say no so I can feel good about myself.

(laughing) agreed! What social media services do you use?

Apart from LinkedIn and Facebook?

Yes.

Well I Tweet a lot because I have followers who want to know what games I’m working on and all that malarky. I do Instagram now, because I’m addicted to posting pictures from tops of Welsh hills. I actually have been doing that because it’s encouraging me to get out and walk and its helping my dodgy knee.

Oh wow, that’s useful info.

I thought it would be.

So your Instagram friends are encouraging you?

Yeah, they give me likes when I post a nice picture from a hill, say nice things about me, just gives
me a nice little lift.

**OK what do you primarily use social media for?**

Staying in touch with the world, which seems insane, given its not real is it?

**Oh God don’t start me on the metaphysics today, I’m too tired!**

Sorry!

**Do you view your social media ‘friends’ as a support group?**

They can be, they have been, but that’s because they’re friends.

**I thank you for your time.**

Is that it?

**Yes.**
Can we hit this up quickly Jody? Had a crap day at work and I want to kill people online.

Sure, you good to go now?

Go for it.

How often do you use social media?

Far too much, everyday all day.

What social media services do you use?

Mainly Facebook, I follow a few bands on Twitter, but it’s shit. I use Instagram mainly to look at pictures of your cats (laughing).

What? You don’t like my food?

You don’t post food pictures.

That’s true, you really do use Instagram. What do you primarily use social media for?

Keeping in touch with dodgy blokes in Sweden! (laughing) Generally just keeping in touch with everyone, we’re all over the place now so it’s nice to have a way to be involved I guess.

I know what you mean, before moving here I hated social media. Do you view your social media ‘friends’ as a support group?

Yeah, but then again my actual support groups are on social media too, so I guess I’m weird like that.

OK, cheers. That’s it. Enjoy killing people.

You want to join me on Warfame?

Yeah, you can tell me about your shitty day.
Can I just say it’s really nice to finally meet you Jody?

Oh my God yes, this is the first time we’ve actually ‘chatted’ face-to-face isn’t it?

It is.

How strange, we’ve spoken via Facebook, Blogger and Boardgame Geek for how many years now?

It has to be nearly a decade Jody.

How the hell have we not done this before?

Life getting in the way?

So did you read my email?

Yes I read it Sir.

These are just really quick questions around social media usage, and your injury you told me about, shouldn’t take too long then we can talk about games!

That’s a deal.

How often do you use social media?

Not too often I’m old and prefer bars!

What social media services do you use?

I’m on Facebook for the grandchildren.

What do you primarily use social media for?

I don’t (laughing) my grandchildren send me messages and pictures, but that’s it really.

Do you view your social media ‘friends’ as a support group?

I don’t know, I’m only friends with my grandchildren and a few people like you.

I’m supportive.

True, but I wouldn’t rely on Facebook friends, I’ve got real world friends for that.

Thanks.
Appendices 3

Third Set of Interviews

Interviews conducted with physiotherapy patients during December 2016, January 2017 and February 2017. Words in **BOLD** are mine, while words in plain text are those of the respondents.

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Hey you, how’s the PhD going?

Don’t ask, my supervisor has got a new job at another University.

Ouch. How does that work in the US? Can you follow them?

Well my funding is from my institute, so I’m not sure I could transfer it. Even if I could, unless I want to move to move to the East Coast and New York, which I don’t... So that’s a no then. It’s OK, I’m in a really good department with lots of colleagues around who are interested in my area of work. I’ll be fine.

Well I’m sorry to hear that you’ve had that stress. Firstly thanks for getting up this early to help with my work.

My pleasure. What is it you need from me?

Well you said you’d been through physiotherapy, and I just wanted to ask you about that really, and the process, but specifically about the self-directed side of the therapy.

What do you mean by self-directed? Just to be clear.

Yeah sure, no problem. I’m defining self-directed rehabilitation in this instance as the work and exercise your physiotherapist gave you to do at home, or wherever, on your own. Both during the period of consultation, or after you’d been discharged from them. Is that clear?

Yeah I think so. You’re interested in the workouts I had to do?

Yes basically. So can I ask what injuries or reasons did you go through rehabilitation for?

Yeah sure, OK… erm… I’ve been through physical rehabilitation twice actually. The first time was when I was much younger 13 or 14, I managed to burn myself quite badly. We had a pool at home and I managed to spill some concentrated chlorine on my lower legs. So I had to go through multiple surgeries I guess you’d call them, only minor things, to repair my skin and allow me to move again after the burns had healed.

The second time was quite recent actually, about two years ago and is not quite as dramatic. I basically suffered a herniated disc on a dig site. Just from not lifting things properly. I can tell you now that I always lift with my knees and never carry too much weight.

OK. So I don’t think I’ve spoken to anyone who has had therapy for burns before, so yeah, I’m super interested in that. Could we talk about that first?

I guess.

What sort of rehabilitation were you prescribed?

Honestly, most of it was done by the therapist, there wasn’t really much that I had to do. I had to rub ointments on my skin daily, and put bandages on, but my mother did that for me any way, and at school if I had any problems the school nurse helped. All the teachers were great too, they’d let me
stand or walk in class if I needed to, so really I just sat back and let people take care of me. My mother even helped with my stretching exercises.

**How did that rehabilitation process go?**

I think it went really well. I still have slightly red and blotchy scars on my shins and calves, but otherwise I have no movement or restriction problems. I just don’t look so hot in a swimsuit.

*(laughs) I’m sure you look fine.*

Well (partners name) seems to think so.

**How is he doing out there? California is a lot warmer than the Rhonda Valley you know, I worry about him.**

He’s fine. He’s taken up pony trekking out here.

**Pony trekking? (Partners Name)? You sure?**

Yes (laughs). I think he thinks he’s a cowboy. We go together, it’s actually a lot of fun.

**OK then! From Rugby to pony trekking. On that bombshell lets move on! What do you think worked well?**

My friends and family.

**Is that it?**

No, but really there wasn’t much for me to do as I said. Lotion on the skin, and bandages of differing types. The PT I worked with was super enthusiastic. She was amazing. I still remember her fondly. I was convinced my legs were going to look like zombie legs for the rest of my life, but she helped convince me they wouldn’t. She showed me lots of before and after pictures of previous patients she’d worked with. I’m probably a before and after picture in her book now too.

**I think I already know the answer to this, but why do you think it worked so well? What were the factors for success?**

The support from the PT, my school, and friends at school who were super helpful, and of course my lovely mother.

**Sounds like everything went really well, but do you think there was anything that didn’t work so well?**

Apart from spilling chlorine on myself in the first place you mean?

**Yeah.**

No. My dad had really good health insurance from work, so I was very well looked after. Health insurance being a big thing out here in the States. It might have been a very different story if my family didn’t have good health care.
That’s straying into politics and I’m not sure my supervisor would think that’s Interaction Design based!

I’ve been meaning to ask actually, (partners name) said you were doing Interaction Design, and I have no idea what that is.

Can you promise not to tell anyone?

Yeah.

After 18 months studying it at MSc level I’m still not sure what Interaction Design is.

(laughs) well that makes me feel better.

I just tell people it’s about designing Apps and websites, but it’s not really. I think I’ve been coming to a definition that sounds a bit like it’s the designing of interaction’s between people and products, or services, that are usually digital in nature. I say usually, because I still think there’s scope for none digital interaction design, but some of the lecturers here would burn me at the stake as a heretic for saying that.

So you make Apps then?

(laughs) Yes, I make Apps. I think we’ve covered your leg injuries quite nicely, so can we talk about your back now? How did it happen and what was the injury?

I think I already said, it was a herniated disc in my lower back. I did it lifting a box of rock core samples. It just ‘popped’. I don’t know how to describe it. I just knew something bad had happened and that I was in pain.

OK, so what treatment and rehabilitation did you have?

Again, it was mainly my PT again. Lots of massage and chiropractic work. I have a feeling this is probably not what you are after is it?

No, no. It’s all good, it’s actually really helpful in one sense, because by the sounds of things you’ve been through two very heavily supported processes. Is that right?

Yes. Both injuries required lots of work to be done by the PT. I did and still do have stretching exercises that are designed to alleviate pressure on the lower back and my specific disc.

OK, can we talk about those. Did you do them, still do them, and how easy were they to follow?

They were made really easy to follow because my PT actually video recorded specific exercise sessions and sent me the videos via email. They also gave me a booklet on the exercises that was personalised. They actually produced an exercise book for me. Besides, you know (partners name) he played rugby and had lots of injuries and he made sure I did them.

(laughs) I can well imagine. Again, it sounds like this was a super successful intervention, but I’ve got to ask… did anything not work so well for you?
Actually yes, my faculty wasn’t great at first.

Oh, OK, do explain.

Well, it’s back ache. People get back ache right? They didn’t quite understand why I couldn’t do my teaching, or office hours. Or why I needed my desk changing and a new chair.

So they didn’t understand the extent of the injury?

At first no. I think some did, but some of the higher ups, the pen pushers and administrators didn’t. My colleagues I work with day-to-day were great and really understanding, and were willing to fill in, but I did have pressure from the top.

So what changed? Did it change?

Yeah, my PT wrote them a letter explaining my problem, and pointed out I hadn’t been given training on how to lift heavy objects. I think they became more understanding after that.

Yeah, I can see how that might help resolve any issues (laughs). So is there anything else you want to add?

No, I don’t think so. How are the cats?

They’re good I think. Wibbles is a pain as usual, he ate through the cable on my phone charger the other day.

So he’s still trouble then?

Yep. The others make up for him though. How is it being back State side?

Well I thought I’d escaped the Brexit madness and was thinking it was a shrewd move, but now we’ve got Trump to come. How’s Sweden? Perhaps we should move there next?

I think the whole Western world’s going mad, besides, I’m pretty sure the weather is way better where you are. Anyway, I have to go, I’ve got another interview in about 15 minutes and I need a cup of tea.

OK, well Merry Christmas. Oh before you go I need to point out that I’ve not really been discharged from my PT.

You still see them?

Yes, I got for check ups at regular intervals to make sure my back is still OK.

So just for your back then?

Yes, my legs were healed a long time ago.

So in essence you’ve actually had long term support for your back injury. I’m guessing that was pretty important and helpful, right?
Greatly.

Is that it, nothing more to add?

No. Merry Christmas again.

Same to you too.
Heya buddy, you all ready for Christmas?

You mean am I ready to gorge myself on food and alcohol?

Well ‘tis the season for gluttony.

True, true. Just finished the shopping yesterday actually. Left it really late this year.

Luckily I don’t really have that problem living away from everyone like I do now.

Must be nice.

It has its perks. Anyway, down to business.

Gotcha.

You know what the deal is?

Same as before right, asking about the motorbike injuries and my rehab?

Exactly. Oh, before you do I was just talking to (subject 3.1) and (mutual friend) is now doing pony trekking!

No f’ing way. He rides ponies? Are you sure?

Yeah totally, she said they do it together.

Oh man, that is the best Christmas present you could’ve given me (laughs). Ponies? Wow! And he used to mock us for playing Badminton. He is so going to get it.

I’m with you, not sure how to use the info yet, but he’s due some payback.

Absolutely.

Anyway, motorbikes, crashes and broken bones. If you could just run through the accident what happened and what injuries you had for me again that’d be great.

You want me to re-live my trauma? Aren’t you a psychologist? Isn’t that unethical or something?

No, not really, you’re confusing psychologist with psychotherapist again. I’m the one that doesn’t care about your feelings.

Hmm, not sure that’s what they taught us, but OK.

As you know I was minding my own business on a rainy spring day, obeying the laws of the land, when a jerk in a BMW pulled out of a side road without even looking and I T-boned him, flew about 6m before faceplanting on the road, breaking many, many bones in arms and busting my right knee.
Yep, I remember getting the phone call as I was your ICE number.

You know (girlfriend's name) is still annoyed about that.

That’s not my fault! Any way what rehabilitation have you gone through?

Lots. I broke my right wrist, my left arm and smashed my right kneecap. I also had fractures in both legs and my right arm. So I spent many, many weeks in and out of hospital.

So the first thing I went through was a lot of work around making my injuries and pins in my legs and wrist not hurt so much. Lots of manipulation.

Then it was learning to walk again, which was painful. Lots of work with the hospital staff. Exercises aimed mainly at helping to heal the muscles around the breaks and fractures. Stop pain, increase strength.

And as you know, when I left hospital, I returned on a weekly basis to the hospital as an out patient for strengthening and mobility work.

So what were your exercises that you had to do on your own? The self-directed stuff?

Well there were lots of individual exercises that I had to do for my wrist, and especially my knee.

Can you remember what those exercises were?

Yeah of course I can, they were drilled into me pretty hard. I had print outs of what I was supposed to do. So it was clear, it’s not like they were complex. Knee dips, flexing stuff. Pretty standard things from what I can gather.

So how did your rehabilitation process go?

Considering I can’t move my wrist properly, it still isn’t fully mobile, I can’t bend it back very much, and my knee still gives me pain, so no, it wasn’t massively successful.

Were there things you think worked well?

I think the post op work was good, I mean the pins don’t hurt me any more, although in cold weather I can feel them. I can walk, and working with the physiotherapists helped, but on the whole it wasn’t that successful no. I can’t move my knee properly, and I still have a bit of a limp.

So why do you think it didn’t work well? What were the factors for failure?

Oh nice, you calling me a failure now? (laughs)

You know what I mean. I meant no offense.

Just pulling your leg. Honestly it was just a bit of a pain to do the exercises. Literally and figuratively. I had other things going on at the time, I started a new job, we’d moved house, and I just didn’t have the time or motivation.

Were the exercises difficult to do?
Partly yeah, I had some pain specifically with my knee, and it put me off doing my exercises. In the end I felt like I was doing more damage than good, I had no way of checking it out, and the GP was no help, and I just accepted that this was likely to be it for me. I just lost my motivation, felt there were other things I should have been concerned with.

**How do you feel about it now? Do you think you’d have less trouble if you stuck with your rehabilitations?**

Everyone I know tells me yes, blah, blah, blah… but I flew head first off a bike at roughly 45mph and hit a concrete bollard Jody, and have 18 pins in my body. I just don’t think I was ever likely to be A OK again. Ever. Maybe I could’ve got some more movement back and strengthened my knee some more, but I can function. I think the real issue was the prat who pulled out on me.

**Is there anything that might have helped you stick with the exercises?**

I know you want me to say yes, and maybe that a website or something would help.

**No, not at all. I want you to tell the truth, tell me how you actually feel.**

Then the answer really is no. Short of having a physiotherapist throughout my rehabilitation and not being left on my own Jody, absolutely no. It just got in the way of my life and was too much of a struggle for me.

**That’s fair enough. It was a massive accident, which caused you a lot of injuries. I’m sorry to hear it’s still causing you jip. Have you tried going back for more therapy?**

No. I’m not sure they’d give it me, and even then I doubt I’d stick at it again. So what’s the point?

**OK. Is there anything else you’d like to add?**

Yeah, when are you going to invent bionic implants so I can replace my knee and wrist. That’s what you’re doing right?

**No, sadly I’m not that technically skilled. Catch you on the flip side.**

See you later chap, you planning on coming home any time soon?

**As soon as I’m clear to fly again, I’ll let you know.**
Hello (subject's name) thanks for agreeing to talk to me again.

Is it the same stuff as last time.

Yes, sort of, but I’m going to be asking a different line of questioning this time if that’s OK with you.

Yes, but it has to be quick because I’ve got things to do today.

OK let’s try and get through this quickly then. What rehabilitation have you gone through?

As I said last time, I injured the muscles in my right arm, the bicep doing weight lifting at the gym. I actually detached the muscle from my arm. And I had an operation to reattach the muscle.

Yes, I remember. What rehabilitation were you prescribed?

Initially as I said I had a pretty intensive course of treatment with the Therapy team post-op. I worked with them a lot on being able to twist and rotate the arm, but that started quite a few weeks after the operation, I had to let it heal before I started work on it.

Then I started on the homework. I had a lot of support from the district nurse and GP too. They kept on checking up with me. The exercises were pretty simple though, and weren’t really a problem for me. I mean I do a lot of cross fit any way, so doing the exercises wasn’t too much of a strain for me, and I was motivated to get the movement and strength back in the arm because my fitness is important to me. Got to keep the Grim Reaper at bay!

How did your rehabilitation process go?

I’d say my arm is back to 99% now. Well maybe not quite that high, but it functions well enough that I don’t notice it.

What do you think worked well?

Like I said last time, there were lots of people helping me. My usual friends at the gym gave me support, they encouraged me like they always did before the injury. It was important to my recovery that I had those friends, because it was very demoralising suffering the injury when I did. Doing cross fit was important to me and not being able to do it properly did depress me for a while.

So I guess in terms of why your rehabilitation was a success, you’d say your friends were important?

Totally. However, the therapist was also important, they gave me the exercises to do, and showed me how to do them. They also gave me incremental targets, which was important for me personally, having these stages to get to helped motivate me personally.

What do you think didn’t work well?

Like I said last time, I feel really lucky that everything turned out out fine. The operation went well. Post op went well and my recovery was perfect. I think the fact that I was a healthy and fit person.
before the injury was also key.

OK, I guess that’s it for now then, thanks again.

No problem.
Subject 3.2: Interview notes 07/01/17

Hi, is that (name of subject)?

Yes, are you Jody?

Yes I am, pleased to meet you and thanks agreeing to help me out.

It’s good, I’m not busy now.

Has (mutual friend) told you what it is I’m doing?

He said you were interested in talking about my hand injury.

Yes, I guess that’s true. Perhaps I should fill you in a bit on my background and what I’m doing first. Would that help?

Please.

OK, as you can tell I’m from England, and I’m here in Malmö Studying an Interaction Design MSc at the Högskola, and I’m doing work on a thesis project where I’m looking at how I can improve compliance with self-directed rehabilitation.

Can you explain that simpler? My English isn’t that strong.

Sorry, of course. I’m looking at ways to help people do their personal training after their injuries. Does that make more sense?

Yes.

You mentioned you had a hand injury, is that correct?

Yes, I severed some tendons in my hand when I was younger and a car door was closed on me.

You had you hand in the way?

Yes

Ouch. So what rehabilitation have you gone through?

I had an operation on the hand, to fix it. I had to wear a cast. Then I did my hand exercises with a doctor.

Was that with a physiotherapist.

Yes, sorry. I forgot the word.

Isn’t it the same in Swedish?

Yes, similar.
So what exercises did you do?
I had a lot of strength exercises, holding tennis balls and squeezing them. That type of thing.

How did your rehabilitation process go?
It was good. I can use my hand, and I play guitar now, so it doesn’t stop me from doing things. I still do hand strength work.

I play guitar too. What guitars do you own?
Just the one guitar, an Epiphone Les Paul in Cherry burst. You?

I have a few, perhaps when (mutual friend) next comes round you can come with him and take a look. My Current favourite is a PRS S2 Custom 24 fret in violet.

Nice. I’ve never played a PRS.

Well I think I can fix that! So what do you think worked well with your rehabilitation?
My therapist was very good. They helped me a lot, and they encouraged me to play guitar. I told them that I wanted to play guitar, but now I would not be able to play. They told me I would and I should buy a guitar and practice. That gave me a lot of courage.

So they gave you a target personal to you, to be able to play guitar?
Yes. That was good for me.

How long ago were you injured?
10 years or so now. No maybe closer to 15. So quite long ago.

Why do you think it worked well? What were the factors for success?
My therapist gave me lots of exercises and my parents helped me, but having the focus on being able to play guitar gave me courage, so that was big for me. Having a target.

Did anything not go well?
In the beginning I had a lot of pain with the hand, and maybe doing the exercise was hard. But I carried on, so that is it really.

OK, is there anything else you would like to say about your injury?
No.

Thanks for your help.
Subject 1.3: Interview notes 11/01/17

Hey you. How’s Sweden?

Good thanks. How’s the UK, and the kids?

Well the UK’s gone a bit mad, but apart from that it’s still the same. As for the kids they’re either at school or playschool so mommy is having a drink of red wine and chatting with you.

OK, so you know what my work is all about right?

Yeah physical rehabilitation and the problems concerning adherence and compliance with personal training plans. This is nice, for once I know more about something than you (laughs).

No arguments there, but I’m not really after your ‘expert’ opinion here, although it is a useful perspective (subjects name), I’m more interested in your broken foot and what happened.

I know, I read your email. So what do you want to know?

Well if we could start with the injury, how it happened and what rehabilitation were you prescribed?

I can do that, so I was working in a ward with a patient, and then another patient became aggressive and I went to go help the nurses and orderlies calm him down. As you know he shoved another patients cardiac monitor over, and with the universe hating me almost as much as it hates you, it landed squarely on my right foot. This caused complete breaks of the second, third and fifth metatarsal bones, stress or hairline fractures in a few of my phalanges, those are toe bones to you (laughs), and displaced cuboid and navicular bones.

Yeah, yeah OK, we’ve already established you know way more about this than me! So in laymen’s terms your foot was buggered?

That’s one way of putting it. It certainly wasn’t a simple injury, especially with the amounts of fractures and displaced bones.

OK, so moving onto treatment, what happened?

Well there were a few stages with an injury like this. Do you want me to go through them all?

Actually yes I would. It’s quite nice speaking to an expert who has actually been through the rehabilitation process.

Well the first thing that needed to be done was relocating the cuboid and navicular bones. Once that was done it was on to manipulating my fractured bones to ensure all the bits were where they needed to be. Then it was put in a cast and I was given painkillers.

Wait, so they did that without painkillers?

Yep, they had too. Couldn’t have given me any medication beforehand because they needed to know if they were making things worse. Plus some painkillers can increase the risk of clots or bleeds.
Good job I haven’t eaten.

I know right. Gave me a fresh perspective on how my patients sometimes feel.

So then I guess you were in plaster until the bones had healed?

Yep, normally with broken toes we just let them heal, but with the displaced bones and the amount of fractures, not just in the toes, but the foot itself, they had to put it in plaster.

What happened when they removed the plaster?

Well, the orthopaedic nurse took a tool called a plaster cast cutter, which is a handheld rotary saw…

OK, OK, if you’re going to be sarcastic I might have to end the interview!!!

(laughs) Obviously I went into see some physiotherapists about my foot. You know they say doctors make the worst patients?

Yes.

It’s not true of physiotherapists. Even though I’m more of an OT…

Occupational Therapist?

Yes, Occupational Therapist. Anyway, I knew from day one, even though I thought I knew what I was doing, I couldn’t actually do this on my own. I think sometimes with patients that I see, often they feel like they can just muddle through the injury, and they sometimes seem to be trying really hard to convince me that they’re really OK. Like I’m an examiner and they’re trying to pass a test. Putting on a brave face.

That’s interesting. How common do you think that attitude is?

Way more common than you’d think. Obviously it’s not all patients, and I’m not really comfortable sticking a firm number on it, which I know you’d like me to do stato...

Lies, all lies. Sorry, go on.

As I was saying, I’m not comfortable placing a figure on it because I haven’t really asked them, or recorded the attitude in any scientific way, but it is a thing. Certainly here in Britain. Maybe it’s the British keep calm and carry on attitude, but it can be an issue. First getting the patient to accept they need help, and then that they need help from you.

But you were happy for the help?

Yes. Certainly initially, I couldn’t walk on my foot properly, so even though I knew the sorts of exercises, stretches and manipulation I needed, I still needed someone to help me with them.

Plus it was really good to have a second or third pair of eyes looking at the problem. It’s like you were saying the other day with your course, you really like talking to the other students because it’s another perspective, and that can help. It was the same with me. We all do things a little differently.
OK, I’m guessing you had no problem understanding or remembering the exercises you had to do on your own, as self-directed rehabilitation I mean?

No not at all. As I’ve told you before though Jody, I really don’t think patients remembering their exercises is a big issue. We give workbooks with detailed notes and explanations that are personalised to our patients, and I think that is pretty much standard industry practice now right round the world. Physiotherapists also ensure that before they send their patients out into the world that they know how to do their exercises, and we, in our unit, also record sessions for patients with video cameras and give them the videos if they want them. Patients get a lot of support aimed at making sure they are doing the right exercises, and that they are doing those exercises right. The issue has always been people staying with the program until it is completed. Look at you and your hamstring tear, even though you were a motivated junior athlete you struggled to stick with it. If you’re honest with yourself you didn’t do all the exercises you were supposed to did you?

No, certainly not the second time. I think I stuck with it mostly the first time, but the second time it happened I was just really demoralised. The third time though I did stick with it.

Jody, this is me you’re talking to. I know you didn’t do all of the exercises you were supposed to!

No honestly I think the first time I did it pretty much by the book. I may have missed some, or even all the exercises on some days, but I did stick with it. Hands up on the second time though, I just didn’t have the will power. The third time it tore, I really did stick at it 100%. I still do my stretches every now and then too.

I believe, though thousands wouldn’t.

OK, moving on! So how did you find the motivational side of things?

I’m not a fair example Jody. I am definitely an outlier in your results.

Let’s say I agree, but could you humour me and answer the question any way, and maybe explain why you think you’re an outlier? You know what makes you different and why?

If I must. As a professional I already had 20/20 hindsight. I know exactly what happens if I don’t do my exercises. I see it every day at work. Even if I do all my exercises, and look after my feet like I do, I still know the likelihood is that I’ll end up with arthritis in my foot. Anything I can do to alleviate that the better. So my knowledge level makes me an outlier for starters.

Secondly there was the amount of support I had from my co-workers. Seriously, when we set our patients free into the world, and tell them to fly, they really don’t have any further support from experts. Unless it all goes horribly wrong and they end up back with us again. That didn’t happen for me. I finished my rehabilitation, and then went straight back to working with my physiotherapists at my day job. It’s not normal for a patient to have that sort of access, to that sort of expert support network. They could see if I was having problems and help me, and if I knew I was having problems there were plenty of second opinions at hand.

So guess what?

What?
Sticking with my PTP was super easy for me. It isn’t super easy for everybody though, and I know that better than most people. It’s hard.

There were a few things in your answers there that I’d like to pick apart if I can?

Shoot. I’ve still got wine.

So, you mentioned your knowledge level, and how that helps motivate you because you know what happens if you don’t do your thingy?

PTP.

Yep, PTP. That’s personal training plan right?

Yes.

OK. So how could we help patients understand the consequences of none compliance?

Good question, and if I knew the answer I’d be rich. Let me know if you find one!

You’ve got to have some ideas. What do you do now?

Well right now we just explain at great length the problems that patients are likely to have. The horror story scenario, I’ll even give examples of actual horror stories I know if they’re relevant to the patient. I just don’t think they ever believe me.

Why do you think that is?

You know when we were at school and we were told not to take that short cut across the train tracks because we’d almost certainly die a horrible death?

Yes, I remember.

We all still took the short cut didn’t we?

No! I never once cut across the train tracks (subject’s name). That would have been terribly irresponsible.

Jesus, you think I was born yesterday, we used to cut the track together. It’s the same with horror stories. Coming from teachers, or therapists it doesn’t ring true.

I know what you are saying. So who would they believe?

Probably no one. Look, either people take it seriously and listen to what you have to say or they don’t.

I don’t really buy that. As a psychologist I know there is always a way to get the message across. What if patients were paired with previous patients who had similar injuries, so they could tell their stories?

It might work I guess. It’s certainly worth a try. But what’s in it for the other patient, the old patient
coming back to tell their story? People are pretty selfish, and also to be fair, pretty busy. What’s in it for them?

I don’t know. Maybe a free physio check-up?

That could work. Thanks, I think I might suggest that.

But you are clear, your knowledge of the field really helped you focus and stay motivated.

Absolutely.

The other thing you mentioned was the support you had from your colleagues, how important was that?

Again, it’s hard to quantify Jody. But I know that on many occasions my friends helped me with things. I think it is important that friends and family help anyone through any rehabilitation process. It’s always easier when you have people in your corner cheering you on. It’s just that my corner was super experienced in rehabilitation work.

So I’m going to say you think your rehabilitation went pretty well then?

It did. I can have no complaints, and it’s like my injury didn’t happen.

Do you think there were things that didn’t work so well for you?

Not really, I think I had everything going for me though as a patient, and I know that’s not how everyone else experiences it. I’m sure if this wasn’t my day job I’d see things very differently. I don’t think the way support is often cut off to people helps either. But it is what it is. Is it any different in Sweden?

I can’t say for certain, but I really don’t think it is any different. Besides, although I’ve researched the Swedish system, there’s what it says on paper, and then there’s what actually happens in reality. Those two things aren’t always the same.

That’s true. I think we all do the best we can with limited resources, maybe we could use those resources better, but it’s not a terrible system.

Is that everything you want to say?

Is that everything you want to ask?

For now yes, thanks.
Subject 3.3: Interview notes 15/01/17

Long-time no speak (subject name).

I know it’s got to be 4 years now hasn’t it?

At least. So you keeping yourself busy?

The kids are!

Can I just say thanks for agreeing to help me out.

My pleasure Jody, besides, it’s just like old times. Feels like I’m having a one-to-one with you again.

Do you want me to get out your personal performance plan?

God no.

Good, because I hated those things too. Do you know what this is all about and why I want to interview you?

Not entirely.

Do you know what I do here in Sweden?

I know you’re studying again, I’m just not sure what.

What I’m studying isn’t really important for this interview, so much as what I’m doing with this project. I can bore you another time with trying to explain exactly what it is I’m studying.

Please don’t.

You mean you aren’t interested in what I’m doing?

Not really. Sorry.

Fair enough (laughs). What I want to do today though is talk to you about your physical rehabilitation you went through for your back injury. Actually, having said that, have you had any other injuries that have required physiotherapy, or was it just for the whiplash?

Actually yes, although I’m not sure it counts as an injury, or whether I want to talk about it.

If you are uncomfortable talking with me about anything, or you don’t want to answer any of my questions please feel free to say so. I don’t want you doing anything you’re uncomfortable with. So only talk about the things you want to. OK?

OK.

Good. Perhaps I should have led with that in my other interviews now come to think of it.
Jody Barton! You mean you didn’t do the whole ethics speech at the beginning of your interviews?

No I didn’t actually, that’s probably quite bad of me. I put it all in my interview request emails, but I certainly haven’t made it clear during the interview process itself so far. Gawd, I’d have disciplined you if you’d done that.

I know.

Do as I say, not as I do I guess. I’ll make a note of it.

Typical manager, one rule for you and another for us plebs.

I wasn’t that bad was I?

No. You were alright for a boss.

So would you mind telling me what rehabilitation you have gone through? And for what injuries or conditions?

Well the back injury, you know about. I was shunted from behind at a roundabout and ended up with pretty bad whiplash. The other time was after the birth of my eldest, after I had a caesarean section, and I’m not really comfortable talking about that.

No, that’s fine. We can stick with the back issues if that’s OK with you.

If you don’t mind.

Of course not. You’ve already explained that the injury was caused by a car accident, and that you had whiplash. How long was the rehabilitation process for that?

What with the physiotherapy team?

I guess I could have been much clearer. I’d like to know both really, how long were you with the team, and how long was the self-directed rehabilitation for after being discharged?

It was quite a few years ago now. I think my rehabilitation with the team was just two months if that. I think I was supposed to do my exercises for 18 months afterwards though.

You said “supposed to”, does that mean you didn’t stick with it?

I did try, and I stuck with it for a while. But no, I did not complete my rehabilitation on my own. Not even close. I probably gave up after two or three months.

And I’m already going off script, good job this is an open-ended interview eh?

(laughs) Is that what you call them. I say badly planned.

It’s all these difficult interviewees that side-track me. No, I’m going off script, why didn’t you stick with the exercise program?

Many reasons really. Firstly it was hard, secondly it was boring, thirdly I had more important things
to do and finally my neck felt OK after a few months, and I thought all I needed was rest.

**OK, my spider sense is telling me there is some regret there. Is there?**

Yes, you could say that. Right now I’m having to see a chiropractor for pains in my neck, and he thinks it’s to do with my injury and me not doing my exercises. Actually he’s told me that is exactly what the reason is.

**Perfect!**

You what?

**Sorry, not perfect for you, but perfect for me and my project.**

I’m glad my agony and misery is useful for something then (laughs).

**My project is about trying to help people comply with their rehabilitation programs, and it’s always useful to me to hear from those who didn’t stick with it, and ask why. I’m going to take your reasons one at a time if I could.**

Sounds like a plan.

**It is, just not a very complex one, but it’s all I have! Right so firstly you said it was hard, why was that and what was hard about it?**

Well for a start I had this awful boss who didn’t give me any time off, and who didn’t buy me a specialist chair and who didn’t let me work from home.

**Steady on, I know you ex-boss quite well!**

No, actually work was one of the few things that worked well. You were pretty good about time off and letting me work from home. Also the desk assessment you got for me helped. The new chair and monitor riser were great.

**You don’t have to suck up to me now, I’m not your line manager any more.**

No, but seriously, my current boss is a nightmare. She doesn’t believe I have neck problems that lead to headaches. She’s complained to HR about me needing to take time off for appointments.

**Well that sucks. So OK, what sort of difference does having a supportive work environment make?**

Well considering I didn’t do my exercises first time round probably not a lot. But in reality it really helped knowing that if I had any issues you and (my former boss) were there to support me. It meant I could go to appointments and not feel guilty. It also meant I had aids and adaptations at my desk that made my life easier.

**And not having that support?**

It’s pretty crappy. You need your work to be supportive if you are going to have any chance at a successful rehabilitation.
OK, I think that was another detour.

Probably. What did you ask.

I can’t remember exactly, let’s look at the notes. Yes, why was your rehabilitation hard?

To the point, the exercises were painful at times, I had these stretching exercises and they really left the back of my neck feeling tired and strained. I was also supposed to do them every day, and life often just got in the way. Didn’t help that hubby was often away for long periods of time with work either, as I had to look after the little ones.

You mentioned the exercises you did. Can you remember them now, what is it, almost a decade later?

Probably yes. Maybe not all of them and get the movements right, but I could have pretty good go. I’ve also been given very similar exercises by my chiropractor.

Yes of course. I’m sure that jogged the memory. So basically life, and not being fully supported at home?

That makes it sound like (husbands name) wasn’t supportive. He was, he just wasn’t there a lot of the time.

Sorry, didn’t mean to make it sound like (husbands name) wasn’t supportive, but let’s say him being away and unable to support you was a problem. Is that fair?

That’s absolutely fair.

And the exercises being tough? What would have helped with that?

I don’t know, I’m not sure they were “tough”, just that it made me ache sometimes and I wasn’t really sure whether that was good for me or not.

So maybe being able to phone you physio and ask if that was normal could have helped?

Yes, that would have been great. It’s almost like you’ve designed policy interventions before.

I was thinking of making it my next career choice you know. The next problem you had was… boredom. Why was that a problem?

Have you ever had to do neck exercises and stretches Jody?

No, can’t say that I have.

You wouldn’t have asked that question if you did. Not sure what would have made the exercises less boring, but they weren’t great. I’d rather have done the ironing than the exercises. I still would, but now I know I need to do them.

So I guess that covers the boredom aspect. I think you’ve probably covered the more important things to do as well, with looking after the house and work. Anything else to add in
terms of more important things?

No, that about covers it.

The last reason is also fairly self-explanatory I think too, you said your neck felt OK. What do you actually mean by that?

Well I could move it, and not have pain. I could sit on the sofa and watch TV without being in agony. So it just didn’t occur to me that things might not be fully OK.

That helps. Do you think anything worked well with your rehabilitation process?

Well the physiotherapists were great. In a very short space of time they actually helped me recover an awful lot. I think that ironically might have been part of the problem.

What do you mean?

Well, I made so much progress initially with the physiotherapists that when you start doing the exercises on your own you don’t really notice any improvement.

I thought that was what you were going to say. I think that probably wraps everything up. We’ve covered all the things that went wrong I think. Is there anything else you’d like to add?

Not sure. If I think of anything can I email you?

Of course.

Email received on 17/01/2017

Just wanted to add that part of the reason I found the exercises so hard was that there wasn’t really any space at home for me to lie flat on my back and do the exercises either.

Our Apartment in Clapham was really small. Not having the space to do exercises is probably a bigger problem for many people. Especially in big cities where square footage is such a premium.
Subject 3.4: Interview notes 18/01/17

Hej (subject name) Hvordan har du det?

(laughs) Oh my God Jody, don’t ever try to speak Danish again (laughs).

Still that bad?

Yes. It might be best we do this in English.

Yes you’re probably right. I’m just going to run through the pre-interview checks, to make sure you know you can end this at any time and what I’ll use the information for.

You don’t need to, I trust you.

Oh but I do. If at any time you don’t want to answer any of my questions please feel free to not answer them. If at any time you want to stop the interview you have the right to do that. I will also not use any names, or make any recordings available to other researchers. I will also not publish any information that might identify who you are, that’s to ensure your anonymity. I will produce a transcript of this interview for analysis work within my project, and this transcript, or sections of it may be published as part of that report. If you wish to view this transcript you may request a copy be provided and I will provide you with one. Is all of that clear, and is that OK with you before we proceed?

Yes, let’s do this.

(Partners name) told me you have been through physiotherapy, and quite recently too, what was it for?

Yes, I twisted my ankle recently getting out of a taxi while drunk on my birthday.

You rebel. So wait, that would have been November right?

Yes? Just before your birthday.

So are you still in rehab with it now then?

Yes, I’m still going to therapy, and I’m still having my joint manipulated.

So how is it going?

It’s going well so far. I’m walking without crutches now.

Have they given you exercises to do at home in between sessions?

Yes, I have a work sheet I’m supposed to go through every day.

And are you doing them?

Are you going to nag me as well now?
Are people nagging you?

My parents, my sister and of course (partners name).

So are they offering you any other support, apart from making sure you’re doing them?

Yeah (partners name) is doing them with me.

So you are doing them?

OF COURSE I AM (shouting)(laughs).

Sorry, just checking. So when do your physiotherapy sessions end?

In a two weeks’ time.

OK, so will you have some exercises to do by yourself afterwards?

I think so, they’ve been planning me for that. So I think so, yes. I have a book with my exercises, and I have an agreed list of things I want to be able to do again. The main one is I want to be able to dance the Lindy Hop again.

So they’ve developed some individual personalised targets with you?

Yes, we went through what I couldn’t do when I was injured, and what I want to be able to do again. Did I say that (partners name) was allowed into some of my therapy sessions with me?

No, but have you found that helpful?

For sure, it’s someone else knowing what I have to do, and being able to help me.

So they’ve helped you develop a support network?

Yes, but I think I would have one any way.

So how do you plan to stick to your exercise regime when your appointments stop?

Well I have targets and goals, so I’m going to focus on achieving them mostly. I think (partners name) will also help me, and I’m sure my mother will make sure I do them too.

So you have it all figured out?

I suppose so yes.

Can I ask if maybe video recordings of your therapy sessions would help you with your exercises? (Side note: I asked this question specifically because subject 3.4’s boyfriend informed me she was struggling to do the exercises properly).

Yes, I suppose that would be better than the book they have given me. They’ve told me lots of things about my exercises, and it’s a bit hard to remember if I do them right.
OK, do you think being able to talk to other injured patients might help.

Yes, I should have said. They’ve already done that. I’ve had some group therapy sessions with others, and I’ve made some friends through that.

OK, I think I have all I need for now. I hope your ankle feels better soon.
So did you understand my email and what I want to talk to you about today?

You want to ask me about the rehabilitation I had after my car accident right?

Well yes, if that’s the injury you had. Did it require physical rehabilitation and physiotherapy?

Yes, you know it did and lots of it.

Was this the only time you’ve required physiotherapy?

Yes, I have been lucky with not getting any injuries really. Just the motorway shunt with a truck… if you can call that lucky.

Well I guess it’s lucky you weren’t more badly injured.

I don’t know, a broken collar bone, a fractured skull, torn neck muscles, internal bleeding and cracked ribs was bad enough for me.

Indeed. I didn’t mean to imply you weren’t badly injured.

Oh yeah I know, wasn’t offended or anything.

So this is about the accident you had on the M5 when that truck crushed your car into the central reservation?

Yeah, it didn’t just push me into the central reservation, it pushed me over it and into oncoming traffic. I was lucky I wasn’t hit head on. The car flipped onto its roof as well.

Yeah, I remember. What rehabilitation did you have to go through in the end?

You’re just after the physical rehabilitation stuff right? You’re not interested in the counselling for post-traumatic stress?

I don’t know, was it important to your rehabilitation process?

Yes, very much so.

And did it help with your physical rehabilitation?

Yes it did, my shrink and physio spoke to each other often and tag teamed me.

They wrestled you after the injuries you sustained? That doesn’t seem wise!

Ha ha, very funny. You know what I mean.

Sorry, just trying to lighten the mood. So what therapy did you have to go through?

Well the main therapy in terms of physical therapy was around my broken collar bone, and my
shoulder, as well as strengthening my back and neck muscles. That lasted for 6 months with the physio team, and then I had a 12 month program that I had to do on my own, and I still have exercises I’m supposed to do, that’s the self-directed stuff you’re interested in right.

I’m interested in that mainly, yes, but anything you have to say about the whole process might be helpful, so tell me what you want to tell me and I’ll take it from there.

OK. Well obviously I was in a hospital bed for quite some time recovering. But after my collar bone was healed and the Doctors said it was OK the Physiotherapy started, and was pretty much a daily grind. I had 3 or 4 therapists that would see me depending on when my appointments were, and what shifts they were doing.

So you didn’t have a single therapist?

No not at first. When I was in the hospital I worked with whoever was available. After I left hospital though I was assigned a specific physio. That helped as it allowed me to build a good rapport with them.

And what did you work on?

At first it was getting movement back into my left shoulder. Actually no, that’s wrong. At first it was about making sure the metal pins in my shoulder weren’t hurting me restricting me, so it was mainly massage and them manipulating my joint. They also did work twisting and rotating my back at neck. Then we got onto the movement and exercise work.

So how long were you in the hospital for?

Just under two months I think. You never even brought me flowers.

To be fair I was living abroad at the time.

That’s a poor excuse (laughs).

You mentioned counselling, when did that start? Was it while you were in hospital or afterwards?

It was after I left. The Doctors noticed I was suffering from panic attacks, and anxiety. Still do, especially when driving, so they referred me for counselling.

Are you OK to talk about that, if you don’t want too it’s totally understandable.

No I don’t mind, it’s nothing you don’t already know. I struggled with the whole thing at first, and I don’t think I’d have been able to do anything, let alone my rehabilitation, if it wasn’t for the shrink.

So why was that important?

For many reasons, but mainly she offered mental support. She got in touch with the physiotherapy team and let them know how I was doing psychologically, and they let her know how I was doing physically. So really they linked up both services, and there was an extra person asking how my exercises were going. She still does.
Are you still seeing her?

Yes, not as frequently. But when I do she asks about my back and shoulder.

So would you say this was an extra layer of support?

Yes. Absolutely. (Subjects wife) was also great, she came to the early sessions when they let her, and helped me with my exercises. I don’t think I’d have been able to do it all on my own. I was lucky to have so many friends and family care, and a great therapist and bunch of physio’s, and the physio I worked with after leaving the hospital was great.

I think you’ve covered half of my questions without me needing to ask them. I’ll just look over the notes. I take it you think the rehabilitation process went well?

Yes, but there were set backs.

Oh, what were those?

Just after I was discharged from the physio team, I hurt my shoulder quite badly carrying the weekly shopping into the house. Stupid really. I over stretched myself and ended up having to be re-admitted to the physio team again. The second set back happened half way through my exercise program when I jumped out of my seat at a football game and tore my neck muscle again. That was really devastating.

I can imagine, I had a similar situation. So how did you get over those hurdles?

That’s where my counsellor came in again. She told me these things happen, and that it was normal. She really helped me stay focussed and motivated. She didn’t just deal with the mental trauma I suffered. As I said, it was really important for me to have that support available.

So for you it was the mixture of the two support services I guess, and friends and family being there for you too?

Absolutely. The physio spent a very long time making sure all the exercises worked for me, they made sure I knew how to do them, and they gave me lots of literature with drawings of how to do the exercises, and gave me notes on every one of them. Really super easy to remember what I needed to do.

So apart from the accident itself, it sounds to me like it all went really well. Was there anything you didn’t think worked well?

For me? No. I did beat myself up a little bit after the shopping injury, but that was resolved really quickly. They brought my family into the process, and that helped me so much.

OK. So nothing that was bad, or could’ve been improved for you?

Well some of the exercises were really boring and dull. But I suppose it’s not meant to be exciting is it?

I don’t know, I’m not a physiotherapist. However, I don’t think that’s the primary aim. So is there anything else you want to add?
No, I really ought to get back to work now, but if I think of anything else I’ll email you.

Thanks, take care.

You too Jody.
Subject 2.1: Interview notes 29/01/17

Hi, so are you aware of what this interview is going to be about?

Yes, I’m guessing it’s the same as the other interview, questions on my self-directed rehabilitation from injuries. Right?

Yes that’s right. I need to give you the pre-interview spiel first though, so hold onto your beard. If at any time you don’t want to answer any of my questions please feel free to not answer them. If at any time you want to stop the interview you have the right to do that. I will also not use any names, or make any recordings available to other researchers. I will also not publish any information that might identify who you are, that’s to ensure your anonymity. I will produce a transcript of this interview for analysis work within my project, and this transcript, or sections of it may be published as part of that report. If you wish to view this transcript you may request a copy be provided and I will provide you with one. In the event of an emergency face masks will drop from the ceiling and…

OK, OK Barton, I get the picture.

Is all of that clear, and is that OK with you before we proceed?

It is.

So what rehabilitation have you gone through?

What rehabilitation haven’t I gone through would be easier to answer!

When I was 15-16 I smashed my right wrist up quite badly, which fractured a number of small bones and displaced the joint severely, which also damaged some tendons I think.

Next, when I was at University I had a job working at a landscape gardeners, don’t ask, and when lifting some of the heavy equipment back onto the truck when a colleague slipped and dropped his end, this basically folded me in half and left me with two torn discs in my back.

Gawd, I forgot to mention when I was 5ish I managed to break my ankle and tear a ligament while playing in a field, because it was just my luck I found a rabbit hole to put my foot down while running!

I’ve also buggered my right knee up when fencing as an opponent was lunging at me he lost his balance and fell on my leg.

And most recently I’m actually currently seeing a physiotherapist to help with a trapped nerve in my shoulder because I now have to live a sedentary life because I’ve buggered my body up good and proper.

Wow, OK, I knew you had some injuries, but you’re falling apart!

I know (laughs), I used to say it’d be better to chop me up and use me for spare parts, I just don’t think there are many parts worth having as most of them are broken somehow.

OK, I have to try and carry on with my questions, just not sure where to start. So could you
go through the rehabilitation you were prescribed for each injury, if you can remember everything?

I’ll try, where should I start.

**How about your wrist injury first?**

Ah yeah, that didn’t go well. I stuck it out for probably a month. Then gave up as it seemed to be fine. I had lots of stretching and motion exercises, one which my friends dubbed the ‘camp seig heil’. That didn’t help, my mates basically taking the piss. I also had this resistance band thing too, which was supposed to help build up strength.

**You’ve already alluded to it so I may as well ask, how did your rehabilitation process go?**

Not bloody great! I don’t know whether it was boredom, lack of motivation or whatever, but I just stopped doing them. I started out really motivated to do them, because I had problems with my ankle from when I was younger, and I knew if I didn’t look after my wrist it would be buggered too. But as a 15 year old lad, left to do stuff like this on your own it was never likely to happen. My mom nagged me for a while and tried supporting me, but never really forced me to do them. I guess I’m just one of those people that needs a strong reason, or support to see rehab through.

**Looks like I’ve thrown my questioning schedule out of the window already!**

Sorry, at least we’re not talking about games and world politics.

**Yet you mean. So we seem to be taking these injuries one at a time, what do you think worked well with your wrist rehab?**

Can I say nothing?

**Yeah, but surely something stuck in your head, or helped?**

I guess the physiotherapist I worked with for about 2 months did a great job of helping me get most of my mobility, or useability, not sure of the term, back in my wrist. I suppose the fact I can still remember the exercises, what, nearly 22 years later means that they did a good job of teaching them to me. Or they were so awful they’re burned into my memory, like some traumatic experience.

**Well injuries are traumatic experiences. So why do you think it worked well? The teaching of the exercises and you remembering them I mean. What were the factors for success of you?**

Well the therapist spent a very long time telling me what to do with my exercises, and she made lots of notes on the workout sheets she gave me, including altering some of the drawings. That really helped, because she had to modify lots of the exercises because of complications with my damaged tendons.

**Do you think there could have been anything that would have made that process even more successful?**

Not sure, I guess actually having recordings of my sessions with her might have been handy. Another therapist did that. We covered an awful lot of things. I wouldn’t have minded her phone number either.
To be able to ask her questions? Or for other reasons?

(Laughs) other reasons, definitely other reasons. I was joking. I was a teenage boy and she was attractive, but actually after my one-to-one sessions stopped there were probably a few times where talking too her briefly to ask a question or two might have really helped.

OK so you didn’t get a date, apart from that what else do you think didn’t work well?

(laughs) the lack of date was the big one really. Seriously though, probably me. I didn’t work too well. I don’t know, I thought at the time my wrist was OK. I mean, I could pick up my joypad, or play using keyboard and mouse and that was good enough for teenage me. I thought it was back to normal. It was only during my degree, and the long hours typing on my laptop when I realised that perhaps my wrist was, how can I say it, less than good! Oh yeah and then in my 20’s when you and (a mutual friend) started trying to teach me guitar, and I couldn’t reach properly round the fret board it suddenly dawned on me that maybe I should have completed my rehabilitation.

I think you’ve sort of covered what you thought didn’t work so well? Mainly your motivation levels as a teenager, but are there any other factors you can think of?

No, not really. Being a hormonal, spotty nightmare of a teenager going through an awkward goth faze probably about covers it. I didn’t think I needed to do the exercises as I was OK. I had this list of things I was supposed to be able to do, like a mobility check list, but honestly, they made little sense to me. I mean one of them was something about using a skipping rope, as if I wasn’t bullied enough at school for looking like a cross between uncle Fester and Laurence Llewelyn-Bowen!

OK point taken. Is there anything else you want to add to that?

Apart from the fact that I looked ridiculous with eyeliner?

Yeah, that’s not really in the scope of my work.

Shame.

Maybe for TP2.

What’s that?

My next thesis project. Right, I’d like to move on if that’s OK?

Sure.

Just checking my notes to see what injuries you said you had, can we talk about your ankle injury next, from when you were 5 or 6?

We could try, but it was a long time ago Jody. Not sure how much I can remember.

That’s OK, can we start with what the injury was and how you managed to do it?

Now that I can do. I was playing in a field with my older brother near our house, and I managed to find the only rabbit or mole hole in like a hundred miles or something, and put my right foot down
it while running. Turned over on it and broke the damn thing. My brother told me to stop being a baby and made me walk home.

I always knew there was a reason I liked your brother. So what happened?

Well apart from my mom being very angry with him, I got a cast, a few days off of school, and then my mom took me for meetings with a physiotherapist. But I swear I can’t tell you any more than that, and that my ankle hasn’t been right since. When I bugged my knee up a few years back the physio told me that my right leg was just over a cm shorter than my left leg, and that the mobility in my ankle joint was appalling. So I know it didn’t go well. I could ask my mom what happened and get back to you?

No that’s OK, not sure second-hand information is what I’m after. Probably best to move on to your knee injury now since you mentioned it. How did you do the injury, and what rehabilitation did you have?

Well I did the injury doing the incredibly manly sport of fencing. Totally macho. Except I did my knee in falling off of the piste as my opponent tripped and fell on me.

Piste?

It’s the strip of floor fencing is done on. He lunged, I moved, he fell on my right knee, my left leg stepped off the piste and my right knee took all the weight and buckled. It was not pleasant I can tell you that for free. My calm unflappable demeanour may have flapped a little, and a few expletives escaped my mouth. I was taken to hospital where they informed me in medical terms that my knee was buggered. I had an op on some ligament thingies, and had some damage cartilage cut out. So there were two phases of physio this time. The first was post-op stuff I did in hospital, and then as an outpatient for about two months, which was very intensive and I was off work for most of it, and then I had this mobility rehab that was done elsewhere at a dedicated physio centre.

OK, that’s interesting. So the physio work was done by two separate therapists?

Yeah, which I always thought was weird. Don’t get me wrong, there was a proper hand over between the two of them, and the hospital physio introduced me to the new physio about two weeks before the handover, and made me perform for him like a puppet so he could see that I was never going to be a ballet dancer. It was though not great to shunted off into another process like that, with another physio who did things very differently.

OK so I think I can probably guess, but how did your rehabilitation process go?

Actually not bad, for all my whinging both physio’s were great. The physio in the hospital was way more intense, and there wasn’t really much ‘work’ for me to do at home as it was done in the hospital with him. He was great, took photos and video on my phone so I could see what to do properly when I got home, and I did the things that I was actually supposed to do at home. He was great at explaining things and tweaked all the exercises to take into account my busted up ankle. I really got along with him.

And what about the second physio?

The second physio was a total jock, and not really my sort of person. You know the type, the sort that thinks you can’t ride a bike without wearing Lycra. I didn’t feel at the time like I responded
well to his Mr Motivator act, but actually he was great too. The hospital physio’s focus was totally on my knee, and getting some movement and use back in my knee. But the second physio took a whole body approach. He gave me exercises to do for my ankle and back to help with those injuries as well, and it was him who showed me my right leg was shorter. He told me getting inner soles for my shoes would help, and they do.

He also told me I needed to lose weight, and got me into swimming, something I still do twice a week after work. He also gave me his mobile number so I could phone him with questions, he set milestones with me that were important to me, like being able to ride my bike, without Lycra, and things like that. He offered me loads of support outside of my one-to-one sessions. He also did group work with me, where there would be other patients of his in the gym. That helped, like a broken person’s mutual support group.

So in all the process went well?

Yeah, my knee is absolutely fine. Well not fine, but I don’t notice that anything is wrong with it, and I can do all the things I did before the injury.

I think you’ve also covered what went well I guess, and also why it went well. Is there anything else to add?

Not really, the physio’s were great, and by now I also knew not doing my rehab work would lead to big problems down the line. So I had the motivation I guess after screwing my previous rehab sessions up.

So would you say the support offered by both physio’s was a key factor?

Yes, absolutely. But also having other patients around in the group sessions helped. I actually started going swimming with one of the chaps I met in that group. Still chat to him from time to time, and having someone else to talk to helped.

Again, I think you’ve touched on this, but what did you think worked less well and why?

It seems a bit churlish to talk about what didn’t work well, considering it all turned out fine in the end. However, yeah, the switch over between therapists didn’t help my mood at the time, and I felt like the first therapist was dumping me, so I had jilted lover syndrome. I understand why it happened that way, but the service / system didn’t really seem to have my personal interests at heart. Made me feel like I was a lump of meat, or a problem to fix. That could have been really demoralising I guess.

Can we move onto your back injuries?

Yeah, but they’re not really related.

OK, so which one do you want to talk about first?

My two torn discs?

Yeah sure, what happened there?

Well, are you sitting comfortably?
Yes.

Well I’ll start. Once upon a time I had a summer job as a landscape gardener, that paid me awfully, and made me do lots of manual labour and manly things. One day I was helping lift a wood chipper onto the back of a flat bed when one of the other guys lost his grip and I ended up folded in half backwards writhing in agony. Several lawsuits, and a Health and Safety investigation later, I didn’t have to worry about student debt ever again. I did though need a walking stick for a while.

Once again I cost the NHS loads of money in Dr’s bills and pain medication. I was also yet again put in touch with a physio. Except this was a really hands off approach. I only saw them once every fortnight and only for an hour, they gave me like a workout sheet which I’m sure I still have around here somewhere, but I was in agony, I was feeling sorry for myself, and I had other things on my mind.

So is that why you never offered to mow the lawn when we were living together?

Oh yeah totally, it was all to do with post-traumatic stress disorder, and nothing to do with me being a lazy sod.

So was the physiotherapist bad?

No not at all. She spent time tailoring the exercises to me, she made notes like the other physio did, and I did at least try sticking to my exercises. While I was seeing her, I was doing my exercises between visits. The problems sort of started when I went back to university a couple of weeks later. I couldn’t switch my treatment to a physio near my uni, and travelling 150 miles back home on a train or a bus with a bad back for an hours appointment just wasn’t ideal.

So it was a circumstance thing?

Yes and no. I mean yes, sure, going back to uni and having to stop the treatment early didn’t help, but it’s not like I didn’t know the exercises I was supposed to do. I just didn’t do them, and other things, like my final year and studying got in the way. My backs a lot better now after my knee injury though, as I said, that physio gave me exercises for my back as well.

So what would you say were the reasons for this therapy not working?

Well two things really. Firstly the NHS being inflexible and not being able to get a physio to treat me while back at uni, I guess I could have pushed it a little bit harder, but I wasn’t really motivated to do so really. Secondly I’ve already touched upon it, I just wasn’t motivated, and other things at the time seemed more important, and probably were to me. I suppose it comes down to that word again, support. I lost my support mid-way through treatment and it all went south after that.

So what about this trapped nerve then? How did that happen? You said it wasn’t anything to do with your previous back injury.

Well, I suppose given how your leg bones connected to your knee bone and all that, saying they’re totally unrelated probably isn’t entirely true. But, yeah, I currently receiving treatment for a trapped nerve in my left shoulder and neck area. It’s been caused by my sitting at my desk all day, and my mostly sedentary lifestyle. It just sort of crept up on me and one day I had terrible shooting pains and couldn’t move without being in absolute agony.
So what treatment are you having right now for it?

Well it’s sort of two fold. My physiotherapist is also a chiropractor. So I’m receiving two types of treatment from him. I have exercises, and normally physio treatment, and I’m also having by back cracked every now and then too. Honestly, I’m 100% doing all of my exercises and doing what I’m supposed to, and again he’s supper supportive. I few weeks back I wasn’t able to make an appointment because of pain. So he brought a fold up table with him after his normal shifts had finished and worked with me at home. He phones me as well to make sure I’m doing my exercises and that I’m not having any more difficulties. It makes a big difference.

He’s also invited the other half to my sessions, so she can see the work I have to do, and help me with my exercises, and that has been a great help. When I don’t feel motivated (she’s) there to help me out and make sure I do exactly what I’m supposed to be doing. He also wrote a letter to work explaining my problem and that I needed a work place assessment from an OT. He also explained to HR that sometimes I just might not be able to make it into work, and having the support from work as well has really helped.

So do you think that you’ll be able to do all the self-directed stuff when your appointments stop?

Yes, partly because I’m aware of what happens when you don’t, and partly because now so many people at work and home are invested in me getting well again, and have offered me support and help. So if I don’t do it, I’m letting them down too.

Right, I think we’ve covered all of your many injuries haven’t we?

I think so.

So could we just do some summing up maybe? Try to bring together some themes?

Yeah sure.

So what things do you think are important for doing your self-directed rehabilitation?

Well for starters you need to have had a good physiotherapist who works with you well. Not that any of my therapists were bad, it’s just that clearly some were better than others. I do think that’s really important to starting off right, and being able to maintain that motivation.

So what things did the good physiotherapists do, or help with?

Well this current chap, getting my wife involved was great. I don’t feel like I’m doing it on my own. The same was true with my knee injury, having a contact, but also other people who were doing rehab supported me helped. Also the various detailed exercise notes were useful, as were the video’s on my phone of my exercise sessions. That was good.

So what are the things that need to be avoided?

I’m not sure there is anything to ‘avoid’. I think if I’m being honest, where things have gone wrong it’s been my fault because I didn’t stick to my training. I don’t think it was ever really because I didn’t know what to do, or any other reason like that. It was mainly not being motivated or feeling
like there was a purpose to it, or even support. You are sort of left to your own devices mostly after your appointments stop, and that’s hard.

Anything else to add?

Yeah, you should invent a time-machine phone, so people can phone themselves in the future to understand how not doing their exercises will affect them in the future. Because if me back then could speak to me now I swear to almighty God I’d do my exercises religiously, and I’m saying that as an atheist.

So would you as a wise old sage be willing to maybe talk to others who have similar injuries to you and who are starting their rehab programs now?

Nice socially responsible me wants to say yes, and I guess I would be willing. However, I wouldn’t want it to become a full time job or a hobby. So they’d be caveats, there’s also the fact that I’m no expert, so I’d need to be careful about what advice I give because I could do more harm than good.

Right I think that’s all for now. Thanks.

No problem.
Hey buddy, how’s life?

Really good right now, just got a new job over in Germany, so that’s great.

Cool, doing what?

A mobile communications engineer. So what I’m doing now in the UK, but in Germany, for more money.

I know you liked being stationed there, so I take it you’re happy to be moving back?

Yeah, I’ll be in Berlin too so that’s brill!

Is this the first time we’ve spoken face to face in nearly 3 years isn’t it?

Yeah, if you can call talking on Skype face to face.

Can you tell I’m stalling?

No. Why?

Well I’m guessing as an ex-soldier your injuries are going to be quite bad.

(laughs) actually the injury I had that required physio had nothing to do with my military service. Nothing so exciting I’m afraid. I actually had a few trapped nerves in my back from my current job, just sitting at my desk.

Oh, well that’s not so bad then.

Yeah, I haven’t lost any limbs or anything, and most people I know who have visited physiotherapists have done so because of back or neck problems.

I need to do the pre-interview speech before we continue. So here it goes, you sitting comfortably?

Yes sir!

If at any time you don’t want to answer any of my questions please feel free to not answer them. If at any time you want to stop the interview you have the right to do that. I will also not use any names, or make any recordings available to other researchers. I will also not publish any information that might identify who you are, that’s to ensure your anonymity. I will produce a transcript of this interview for analysis work within my project, and this transcript, or sections of it may be published as part of that report. If you wish to view this transcript you may request a copy be provided and I will provide you with one. Is all of that clear, and is that OK with you before we proceed?

Yes, we’re good.

So what rehabilitation did you go through?
Well it was mainly massage work at first, I also had some acupuncture, and before you say it, I don’t think it really helped. It’s just I was willing to try anything to ease the pain at the time. They also gave me lots of stretching exercises to help with the pain. Mainly yoga type stretching, I actually do yoga now.

**Did your physio tell you to do yoga?**

No, it just seemed like that’s what I was doing any way, so I thought I may as well do it. It also gave me people to hang out with while working out, and also set times and schedule where I have to turn up, or I waste my money, and you know I hate wasting my money.

**How did your rehabilitation process go?**

I’m not sure how to answer that Jody. My back is fine, but I didn’t really stick to my self-directed rehabilitation schedule, is that what you called it in the email.

*Probably, it sounds like something I’d write.*

Well, I took up yoga instead. So that’s what helped me, obviously the initial work the physiotherapist did on helping me with the back pain was crucial, without that I’d still be lying on the cold kitchen floor praying for death.

**Was it that bad?**

Oh hell yes. I think anyone who has had back pain will confirm it is the absolute worst. You just can’t avoid it no matter what. There’s no position that helps, just makes you miserable.

**I think I can guess what you are going to say, but what do you think worked well? With your rehab?**

Well as I said the manipulation work at first. That was probably the only thing I got out of it, and once I realised my exercises were just poor man's yoga, I moved on to actually doing yoga.

**I figured that’s what you’d say. What do you think didn’t work well?**

Well just cutting the support off like they do, going from two visits a week for two months, to just nothing overnight doesn’t really help. They should faze the support out over a longer time I think.

**I know what you are saying but I think that’s beyond the scope of my work, I think that’s getting into the service design. Plus given the cuts to the NHS you’re probably lucky if you get any physiotherapy at all.**

Bloody Tories.

*I’m going to ask you something more specific about your yoga if that’s OK.*

OK, if it’s about me wearing yoga pants though I’m cutting the interview short.

(laughs) It’s not about yoga pants. No, I wanted to ask about you taking up yoga instead of doing your exercises. You said it was for two reasons right?
Er, did I?

Yes I’ll just check back my notes. Yes, you said that you did it because your stretching exercises were basically yoga, but the part I’m interested in is that you said it “gave you people to hang out with”, actually there were three reasons, you said it also gave you a schedule. Could you say more on that?

Like what?

Well, OK, let’s take the support aspect. How important was it to have other people around you to motivate you? Would you have carried on with the exercises had you not done yoga?

I can’t say for sure, because I suppose I was at least motivated enough to, you know, start yoga. I suppose I might have stopped. Yeah, it’s possible I would have stopped. Even as an ex-Marine I don’t think I’d have had the discipline to carry on with them. That’s the thing with military service, people think you learn discipline, you learn group think and how to fit in with the others. So maybe I just needed to be around other people?

Huh, I hadn’t thought about that, the “group think” thing.

Yep. Sure I was used to running with equipment for hours, but I did that with others who were suffering the same things. There was camaraderie. There was also normally a drill sergeant shouting at you too (laughs). Actually, having a yoga instructor at the front of the class telling me what to do helped. That’s a mildly depressing thought, my God, maybe all I want is somebody to tell me what to do with my life.

I think actually a lot of people need support (subjects name), I know when I went through my various rehabs it was hard to stay with it. I needed support from others too, I think it’s actually quite normal to be like that. Don’t worry military service hasn’t brainwashed you I don’t think.

I hope not, but either way, genuinely now I think about it, having the instructor tell me what to do and motivating me, and the others made it easier to ‘stay with it’ as you said. Although I guess I wasn’t really staying with it as yoga wasn’t what my physiotherapist told me to do. It worked for me though so I’m happy.

So the group of people at yoga and the support of the instructor was important to you? Just to be clear.

Yes.

OK then. I guess the last thing I want to ask you about is the aspect of the scheduling, and how that helped you. You said having a routine where you needed to attend was important?

Again yes, having specific days and times when I had to turn up allowed me to organise myself. Again, I’m someone who likes routine, although maybe I’m not so good at sticking to it.

So support, a schedule or routine, those were also important factors with you, I guess doing something to help your back.
That about sums it up.

*OK, then I think we’re good. Thanks for your help again.*

No problem.
Hey (subjects name), how is Stockholm?

It’s good thank you, still cold. You OK down in Malmö?

Yeah, Malmö is still here. So did you get time to read my email properly?

Yes I read it, and (mutual friend) explained to me what it is you are working on.

OK, that’s good. I unfortunately have a bit of official blurb I have to go through, so bear with me please. I need to get the official blurb out of the way first. If at any time you don’t want to answer any of my questions please feel free to not answer them. If at any time you want to stop the interview you of course have the right to do that. I will also not use any names, or make any recordings available to other researchers. I will also not publish any information that might identify who you are, that’s to ensure your anonymity. I will produce a transcript of this interview for analysis work within my project, and this transcript, or sections of it may be published as part of that report. If you wish to view this transcript you may request a copy be provided and I will provide you with one. Is all of that clear, and is that OK with you before we proceed?

That is a lot of words. Do you have to say that every time?

If I want to be a good researcher then yes. I actually forgot with the first few interviews and a former colleague pointed out to me this was less than professional, and shamed me and my professional pride. So there it is. You ready for my questions?

Yes, I’ve cleared my diary (laughs).

Let’s begin then. Firstly thanks for agreeing to this interview, it’s really helpful as most of my interviews so far have been with patients outside of Sweden. So thanks. Firstly could you describe the injury, or injuries you sustained that required physiotherapy, and how you sustained them?

I twisted my ankle on a walking trip, while on holiday in England actually.

Oh, whereabouts did you go walking?

The Lake District, near Lake Windermere.

I love the Lakes. So hang on, does that mean your initial treatment was in the UK?

Yes, I went to a hospital in Morecomb. Where they bandaged my ankle and gave me medication. But, that was all. I flew back to Sweden about 3 days later any way.

OK, so was it ligament damage you did to your ankle?

Yes. It wasn’t too bad though.

Well that was lucky. So what was the rehabilitation you were asked to do once you got back to Sweden?
Well at first I didn’t bother. I just rested the ankle like I was told to and took pain pills. However, after about 3 weeks it still wasn’t right, so my boyfriend convinced me to go see a doctor. The doctor told me to go see a physiotherapist, who told me I had damaged the ligaments in my ankle badly, and that there was lots of swelling still. So I had to rest it some more before they could do work on it.

**I knew walking was bad for your health! So they just told you to rest up for a few weeks?**

Yes, and then after the swelling stopped they got me doing light exercises to make the ankle strong again.

**Do you remember the exercises you had to do?**

Yes, it was only about 9 months ago I was injured.

**Oh, for some reason I’d assumed it was longer ago. How did the rehabilitation process go, are you still doing the exercises? Or are they finished now?**

I should still be doing them I think, but I haven’t done them for over a month. My ankle is fine now, so I don’t think I need to continue with them.

**So you think your rehabilitation process was successful?**

I think so, but my injury wasn’t that bad. I did my exercises for as long as I needed too then stopped.

**Was it easy for you to keep up with your schedule?**

No not really. I did them at work during my lunch break, so it was easy.

**Erm… I think I asked if it was easy to keep up with your exercises!**

Did you? Then yes, as I said I did them at work during my lunch break, it only took about 10 minutes a day, so it wasn’t hard.

**So why were you able to keep to you schedule so successfully?**

I like going walking, hence why I was on a walking holiday, and if I want to do more walking I need my ankles to work.

**So you had a specific target that kept you motivated?**

Yes exactly.

**So I’m guessing you think the rehabilitation process went well, but what do you think didn’t work well?**

Not going to the doctors when I first got back home. I should have gone straight away.

**Anything other than that?**
No, the physiotherapist was brilliant, she showed me how to do my exercises, and it worked.

**Well I’m really glad it worked well for you. Is there anything else you’d like to add?**

No, not really.

**Well I guess that’s a wrap then. Once again, thanks for your help.**

You’re welcome.
Thanks for popping round.

No problem, I’m only here to see the cats.

Whatever the reason, as long as you answer my questions we’re all good. This is the first one of these I haven’t done via Skype.

Really?

Yes, most of the interviews have been with people who aren’t even in Sweden.

I can maybe put you in touch with some friends here in Sweden if that helps.

Friends who have had physical rehabilitation?

Yes, I know a few. My girlfriend for example.

That would be great if you could.

OK then.

I need to get the official blurb out of the way first. So, if at any time you don’t want to answer any of my questions please feel free to not answer them. If at any time you want to stop the interview you have the right to do that. I will also not use any names, or make any recordings available to other researchers. I will also not publish any information that might identify who you are, that’s to ensure your anonymity. I will produce a transcript of this interview for analysis work within my project, and this transcript, or sections of it may be published as part of that report. If you wish to view this transcript you may request a copy be provided and I will provide you with one. Is all of that clear, and is that OK with you before we proceed?

Yes.

And do you have any questions before we start properly?

No, I think that’s good.

Let’s get started then. Can I ask what injuries you have had that required physiotherapy?

Well there was one accident, but two injuries.

Two for the price of one, bargain!

Exactly yes.

So what happened?

I was helping my father clean ice from his car window, and I slipped over and hit my left wrist hard, it broke. I also hurt the top of my leg, it popped out.
What your hip joint?

Yes.

So you’re never helping your father clean his car again?

No way. He laughed at me on the floor as well. He thought it was very funny, until I couldn’t move.

Do you mind if we talk about the two injuries separately as it might be easier for me to keep track of my questioning.

No, that’s fine.

Taking your broken wrist first, what rehabilitation did you go through for that injury?

You just want the therapy work right?

Yes, unless there was anything special about your plaster cast.

No it was normal I think, had it on for about 6 weeks. Then I worked with the physiotherapist for a few weeks getting it to work again, getting stronger and moving it. I had exercises to do at home as well.

It’s actually the exercises at home I’m really interested in. What exercises did you have to do for your wrist? Do you still remember them?

Yes, because I still do some of them now.

Are you still doing the self-directed rehabilitation? And by that I mean your exercise plan.

Yes, I’m supposed to do it for a year, and then maybe even carry on if it helps.

So your injury was last year around January or February time?

Yes it was. So it’s still recent.

And it sounds like you are sticking with the exercise plan you were given. Is that true?

I want to say 100% yes. However, I’ve not done my exercises every day, but mostly I do them.

OK, so thinking about the times when you don’t do your exercises, can you give me some of the reasons you don’t do them?

Because I’m lazy. No, sometimes when you come home from work you are too tired and you just want to sit down and listen to some music or read a book. Other times I am just busy, cleaning the home, or cooking. It can sometimes be hard to find time, but I try.

Do you have a schedule you try and stick too, say a specific time?

No. I don’t work regular hours, so my job doesn’t make that easy for me. I often work weekends too, so I never really know from week to week when I work.
So does work get in the way of your rehabilitation?

Sometimes. It was really difficult to explain to my manager after my cast came off that I couldn’t do everything I was needed to at work, because my wrist hurt and I couldn’t do things.

You’re a barista right?

Yes, and I know it’s not the most physically demanding work, but doing some of the things with a bad wrist just wasn’t good.

Did you manage to explain this to your manager?

Not properly, but I think he just accepted it in the end. Although he might not have been happy with it.

How is your rehabilitation process going for your wrist?

It’s going good. My wrist is back to normal really, it does hurt in cold weather, but I can use it, and I have no problems. So it’s fine.

Why do you think it has worked well so far?

Because I have done my exercises, and I have a girlfriend who nags me to do my exercises, and she does her exercises with me sometimes to keep me company.

You said she was injured too earlier on, is it a similar injury and do you support each other?

We support each other, but our injuries are not the same. She hurt herself dancing, and damaged her muscle. We do help each other though.

Is there anything that hasn’t worked well?

Apart from work, not really, it has been good. If I could have explained the problems to my manager better, and made him understand that would have been good.

OK, I think we’re done for the wrist injury, unless there is anything else you want to add, can we move onto your hip injury?

I think we covered it, so yes.

The hip injury was done at the same time and was a dislocation of the joint, correct?

Yes.

Were there any other complications, like fractures or ligament injuries?

I don’t know sorry. I just know it was badly bruised and painful.

So what treatment did you have for the injury?
They put my leg back properly on the day, and after I had to see a therapist to move my leg to help ease the pain in the hip. I also had leg balance and stretching exercises to do.

**How did they go?**

Well that’s how I met my girlfriend so it went very well thank you.

**Oh wow. Physiotherapy as dating service.**

Better than Tinder!

I’ll have to remember that next time I’m single. You mentioned balancing and stretching exercises, how did you find doing them?

I have... well, I haven’t really done them.

**That’s very honest of you. Did you attempt them at all?**

Yes I did. But my leg is fine really, I run and play sport so I figure my leg is getting exercise any way, and it’s good enough for me to play innebandy so…

**OK, sorry to interrupt, but indybandy what is that and how do I spell it?**

(laughs) In-ne-ban-dy. You spell it I, double n, e, b, a, n, d, y.

**OK so what is it?**

I guess it is easy to say it is ice hockey without the ice and a ball instead of the puck.

**You mean hockey?**

(laughs) no, it’s sort of like hockey but it’s more full contact I think.

**So it’s a team sport with sticks and physical contact?**

Yes.

**And your hip hasn’t given you any problems so you figure the injury is healed?**

Yes. If it wasn’t I would have big problems now.

**So you’ve had zero problems with your hip?**

No. Not yet any way, and I don’t think I will.

**So in essence you didn’t really attempt the rehabilitation? Because, what? You didn’t see a reason?**

Yes. It was fine any way.

**OK, can you contrast that with your wrist injury, where you yourself say you are mostly**
sticking to your exercises? What’s the difference?

Well my wrist didn’t do what I needed it to do.

For work right?

Yes, but also round the home. But my leg worked good enough for me.

So for one there was a clear need that led to motivation, your wrist, and the other, your hip, that wasn’t there?

Basically yes.

You said your girlfriend sometimes helps out, or works with you when you do your exercises right?

Yes she does.

Did she do that with your hip injury?

Actually yes she did, because she's a dancer and she has injured muscles in her legs many times, and she nags me that I should do them. But she eventually gave up.

So you aren’t listening to a professional dancer about leg injuries buddy? Can I just say I think that’s a little silly?

(laughs) Yes, but she needs her legs more than me (laughs) and I don’t put as much work into them as she does. My leg is fine, really.

There isn’t really anything I can ask you about the exercises for your hip injury then is there if you didn’t really attempt them?

No.

Would anything, or could anything have convinced you to do them?

Money?

(laughs) Bribes? Perfect! I’m going to Interactively design a bride system for the Swedish State.

I’d vote for it (laughs)

I guess that’s as good a point as any to stop. Thanks again.

I’m happy to help.
Subject 3.8: Interview notes 05/02/17

Thanks for popping round tonight for this interview (subject name), did (mutual friend) tell you what I was doing?

Yes kind of. Something to do with physical accidents and injury.

Well that’s pretty much it yes. Before I ask you any questions though I have to read you your interviewee rights. Do you mind?

No, I’m excited to hear my rights! (laughs)

Let’s go! If at any time you don’t want to answer any of my questions please feel free to not answer them. If at any time you want to stop the interview you of course have the right to do that. I will also not use any names, or make any recordings available to other researchers. I will also not publish any information that might identify who you are, that’s to ensure your anonymity. I will produce a transcript of this interview for analysis work within my project, and this transcript, or sections of it may be published as part of that report. If you wish to view this transcript you may request a copy be provided and I will provide you with one. Did you get all that, or do you need me to repeat it?

Sorry, I wasn’t listening, did you say something.

Ha ha, very funny. Are you good to go?

Yes, I think so.

I think I know what injury we’re going to talk about, but can you explain to me the injury you had, and how you got it.

Yes, I slipped on the ice and landed on my bum and broke it.

(laughs) I’m sorry, it’s not funny, I didn’t mean to laugh.

No, it is funny. (both laughing) Breaking your bum does sound funny.

I’m not sure we’re going to make it through this interview alive you know. I might need a G&T.

Make me one if you do.

It’s a deal. Deep breaths, compose myself. Phew. OK, I think I’m good now. OK, OK, ahem. To be clear you were ice skating and you fell over and broke your tail bone, which is called the coccyx, is that correct?

Yes, that’s right.

So what rehabilitation have you gone through with this injury?

Well mainly it was just resting until it healed, and then I went to see a therapist who showed me some exercises to do. They also worked on my lower back a lot to help with the pain.
I remember you were in a lot of pain, and for quite some time. What sort of help did you get?

They gave me some things to help around the apartment, I had pillows to sit on and for bed to stop me rolling over.

So there were what we call aids and adaptations involved. You mentioned some exercises, what were they and were they difficult for you to do?

They were really easy exercises, mainly stretches, and twists. I also had to do squats, and dips. So they were all easy to do.

Did you do them as often as you were supposed to?

No. Not at all.

Can I ask why?

It was painful at first, so I didn’t do it as often as I should at first, but as the pain got less I was able to do them more. The physiotherapist told me this was OK, and I shouldn’t do too much if it caused pain.

So you were acting on advice from the physiotherapist, so you weren’t really just not doing the exercises, you were doing as much as your therapist advised you too?

Yes, that’s true.

So it sounds like you were able to stay focused, and do your exercises. Why do you think that was? What motivated, or helped you?

Well, having to take a doughnut pillow everywhere with me I went was embarrassing (both laugh)…

So it was embarrassment?

Partly. I also have a lovely husband who helped me lots, a sister who is a nurse and lots of friends who’d visit me and help if they could. The pain was also a good motivator, so working until it stopped was really important to me.

So how did your rehabilitation process go? Is it all better now? No adverse side effects or anything?

No it’s fine now, my bum no longer hurts me. (laughs)

Well that’s good! What do you think worked well?

I don’t think there was too much for me to do really. The exercises were simple, I had a lot of help from people I know, and it was really clear what I needed to do, when and why. Also being told that a certain amount of pain was normal, but sharp pain and other things weren’t, made me confident to in knowing when to stop and when not to stop.
Why do you think it worked well? What were the factors for success?

Well, when I realised the exercises were making my bum look good I was happy to do the workouts (laughs).

So what you’re saying is the secret to getting physio patients to comply with their training regimes is making sure their workouts improve the physical attractiveness of their behinds?

(laughs) It would be a good start.

I’m not sure I can suggest the incorporation of ass workouts for all physio patients!

Aww, that’s a shame (laughs). I think it is just that it was easy to know what I needed to do, and when I needed to do it, and the exercises weren’t really hard.

OK, we’re almost through everything now, just a few more questions and we can have that G&T I mentioned. What do you think didn’t work well?

No. It went very well.

You sure you’re not just saying that to get the G&T quicker?

No, it really was fine.

So it all went well?

Yes, is that all you want to ask?

Yes I guess it is, so I guess it’s time for that G&T?
Appendices 4

Points of View Tables

Point of view tables (PoVT’s) were used as part of the analysis of the third set of interviews, but also as a precaution in case my initial plans of working with patients wasn’t able to progress, the PoVT’s would form the basis of developing personas that would have allowed me to continue my work.

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<th>Needs</th>
<th>Insight</th>
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<td>Middle-aged father with family. Work requires lots of road travel, very little spare time. Still suffering with reduced mobility after severe accident.</td>
<td>Broad support network to meet complex physical, social and psychological needs.</td>
<td>Already has extensive network, support was key to his success.</td>
</tr>
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<td></td>
<td>Help understanding what is and isn’t possible with his injury, and a roadmap of what needs achieving.</td>
<td>didn’t receive detailed enough information on what his injury meant for him.</td>
</tr>
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<td></td>
<td>A way of making the exercises more meaningful, or engaging.</td>
<td>The monotony of PTP put his recovery at great risk.</td>
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<tbody>
<tr>
<td>Young professional, in long-term relationship, with serious depression issues.</td>
<td>Needed psychological support to help with motivational issues arising from non-associated self-esteem and depression.</td>
<td>Lack of acknowledgement about his situation by professionals caused disillusionment. He needed more professional help, like subject 1.1.</td>
</tr>
<tr>
<td></td>
<td>Needed others to talk to about his injury and his struggles.</td>
<td>Used to support groups, and talking about his problems with others. As he didn’t have this outlet with his injuries he clearly felt isolated.</td>
</tr>
<tr>
<td></td>
<td>Needed access to experts during PTP to answer queries that cause him concern.</td>
<td>Naturally a cautious person, and a worrier. If he had access to professionals to allay any concerns or answer questions he might have stayed engaged.</td>
</tr>
<tr>
<td></td>
<td>Needed educating on how his PTP would have improved his quality of life</td>
<td>He doesn’t believe his PTP would have helped him, when it almost certainly would have. Better education and information required.</td>
</tr>
<tr>
<td>User Description</td>
<td>Needs</td>
<td>Insight</td>
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<tr>
<td>------------------</td>
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</tr>
<tr>
<td>Needed to be given firm targets he could manage</td>
<td>Better planning and structuring would have given him a firmer way of fitting things in with his life. Some kind of personal organisation tool.</td>
<td></td>
</tr>
</tbody>
</table>

**Subject Code: 1.3**

<table>
<thead>
<tr>
<th>User Description</th>
<th>Needs</th>
<th>Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare professional, trained physiotherapist and nurse, working as OT. Mother, with busy home life, physically very active.</td>
<td>Didn’t need much, because was already highly educated in field</td>
<td>Being educated well about the human body and the injuries means a greater sense of control and compliance.</td>
</tr>
<tr>
<td></td>
<td>Had lots of support from professionals during PTP</td>
<td>Ongoing professional support during PTP process increases compliance.</td>
</tr>
<tr>
<td></td>
<td>Needed a supportive family</td>
<td>Family members who understand the injury are able to provide a supportive environment, bring family and friends into the process could be helpful.</td>
</tr>
<tr>
<td></td>
<td>Needed strong personal goals</td>
<td>Having clear aims and targets to shoot for increases motivational drive, and sense of control over the situation.</td>
</tr>
</tbody>
</table>

**Subject Code: 2.1**

<table>
<thead>
<tr>
<th>User Description</th>
<th>Needs</th>
<th>Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle-aged man with multiple injuries and mobility issues. Self-employed writer and games designer. Life is highly unstructured, making long-term planning difficult.</td>
<td>Needed to understand implications of non-compliance.</td>
<td>Not understanding how non-compliance with PTP would affect mobility and health in the future caused a lack of interest in multiple processes. However, after a few failed processes and increased understanding he is now able to motivate himself, sadly for some injuries that is now too late.</td>
</tr>
<tr>
<td></td>
<td>Needed a tool or mechanism to help him arrange time for exercises and physical work.</td>
<td>Hectic and chaotic life means he needs to be able to plan for his exercises. He needs a detailed understanding of what undertakings are required, and a tool to help structure these things</td>
</tr>
<tr>
<td>User Description</td>
<td>Needs</td>
<td>Insight</td>
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</tr>
<tr>
<td>Needed companionship and support from those who understood his struggles.</td>
<td>As a highly social individual he likes to talk about things with people. Having a support group to talk with about things would have provided a useful outlet for him, and allowed him to fit support in with his lifestyle.</td>
<td></td>
</tr>
<tr>
<td>Needed access to professionals during various PTP’s to answer simple questions.</td>
<td>Lack of understanding and information became a barrier to compliance.</td>
<td></td>
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</tbody>
</table>

**Subject Code: 2.2**

<table>
<thead>
<tr>
<th>User Description</th>
<th>Needs</th>
<th>Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Electrical engineer employed by large US municipality. Older male nearing retirement, with a lot of contact with grandchildren. Very active with children’s soccer coaching in his area. Still very physically active and plays sport.</td>
<td>Needed support of people who understood his need to be physically active.</td>
<td>Having a group of people to do exercises with, and to mutually motivate helps build a support network that increases motivation and compliance.</td>
</tr>
<tr>
<td>Needed clear goals and targets to hit.</td>
<td>Target setting and goal orientation helps create a drive and focus long-term that creates impetus to continue with PTP.</td>
<td></td>
</tr>
<tr>
<td>Needed clear reasoning behind their training plan, and what the exercises were for.</td>
<td>High degree of knowledge about exercises and PTP increased likelihood of compliance.</td>
<td></td>
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</tbody>
</table>

**Subject Code: 3.1**

<table>
<thead>
<tr>
<th>User Description</th>
<th>Needs</th>
<th>Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young female, academic researcher living in USA. In long-term relationship. Highly driven and motivated individual, very politically active and social aware. Very busy lifestyle.</td>
<td>Needed strong support from PT professionals.</td>
<td>Having long-term ongoing access to professional support has helped improve motivation and compliance.</td>
</tr>
<tr>
<td>Needs to know why she is doing things, has to have information to give her a reason to comply.</td>
<td>Being highly informed about her processes increased her willingness to engage and comply with them.</td>
<td></td>
</tr>
<tr>
<td>Needed a way of better communicating her condition with employers.</td>
<td>Having a tool or artefact which she could discuss her issues with her management team would have been helpful.</td>
<td></td>
</tr>
<tr>
<td>User Description</td>
<td>Needs</td>
<td>Insight</td>
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</tr>
<tr>
<td>Needed more supportive employer.</td>
<td>Lack of understanding from employer threatened her recovery. Bring informing employers into the process, it might help.</td>
<td></td>
</tr>
<tr>
<td>Needed supportive partner to encourage and help make time for exercises.</td>
<td>Having a support network that understands your issues, and can help with organisation is beneficial.</td>
<td></td>
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</table>

**Subject Code: 3.2**

<table>
<thead>
<tr>
<th>User Description</th>
<th>Needs</th>
<th>Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young single male, works as a coder for large games studio. Very demanding job, eats into his social life, but still manages to go to way more parties than I do!!!</td>
<td>Needed a very personal target and goal that was specific to him (playing guitar).</td>
<td>Having a very personal goal and target encouraged him to engage with his PTP.</td>
</tr>
<tr>
<td></td>
<td>Needed a supportive therapist to get him started, and who understood him.</td>
<td>For all the work around PTPs and compliance, reality is if the patient doesn’t have a good relationship with their PT and vice versa, it becomes a very difficult process. Nothing I can do about that really.</td>
</tr>
</tbody>
</table>

**Subject Code: 3.3**

<table>
<thead>
<tr>
<th>User Description</th>
<th>Needs</th>
<th>Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government policy analyst with high pressure, and very ‘public’ role. Mother with two young children, and a husband whose work often takes him away from home.</td>
<td>Needed more engaging exercises to reduce the boredom.</td>
<td>If the exercises are dull and boring people often disengage. So either make them interesting somehow, or provide a stronger driver to engage with them to overcome the boredom.</td>
</tr>
<tr>
<td></td>
<td>Needed supportive work environment.</td>
<td>When had a supportive environment at work, didn’t actually help with engagement, but now she has unsupportive environment she is aware of how important it is. Again, a tool or artefact that allows employers to be part of the process might help.</td>
</tr>
<tr>
<td></td>
<td>Needed a supportive home environment.</td>
<td>Not sure how to tackle this one. However, there is a clear need to feel someone has your back, and there are people out there who can support you.</td>
</tr>
<tr>
<td>User Description</td>
<td>Needs</td>
<td>Insight</td>
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</tr>
<tr>
<td>Needed physical space to do exercises.</td>
<td>Again, not sure this is an IxD issue, maybe exercises tailored to home environment, video chats to show therapist the environment she has to engage with. Or maybe a tool for planning out time and locale to be able to do the exercises prescribed.</td>
<td></td>
</tr>
<tr>
<td>Needed help planning out time to do exercises</td>
<td>Linked with above comment. A tool to help her schedule her exercises into a very busy schedule might have helped.</td>
<td></td>
</tr>
<tr>
<td>Needed access to professional advice during PTP.</td>
<td>Not being able to get answers about the pains and aches she felt after doing her exercises discouraged her. Being able to ask quick questions of an expert would have helped.</td>
<td></td>
</tr>
</tbody>
</table>

Subject Code: 3.4

<table>
<thead>
<tr>
<th>User Description</th>
<th>Needs</th>
<th>Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danish product designer who works at large interior design firm in Copenhagen. Have a very busy social life, including being a member of two bands, and a dance club. Live in ridiculously small apartment with long-term boyfriend.</td>
<td>Although seemingly annoyed by the support she is receiving from her family &amp; friends, without her boyfriend being there it’s clear she would struggle. She needs a support network.</td>
<td>Having a supportive home environment is important, how can we help those who don’t have this, convince friends and family to help? Maybe a document or service they could get reports about the how, what and why of the PTPs could foster more supportive environments?</td>
</tr>
<tr>
<td>Needs a personal target to encourage her to engage, in this case being able to dance again.</td>
<td>Have clear personal goals she is in charge of and controls is key. A tool to keep her focused on these targets would improve compliance.</td>
<td></td>
</tr>
<tr>
<td>Needs more information on exercises, struggles to know if she’s performing them accurately.</td>
<td>Video recordings of her apparently complex exercise routine might help her to perform her exercises accurately.</td>
<td></td>
</tr>
<tr>
<td>User Description</td>
<td>Needs</td>
<td>Insight</td>
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</tr>
<tr>
<td>Needs external support of other physiotherapy patients.</td>
<td>Having a support network who is going through the same things helps normalise this for her, and let helps her to engage, and feel encouraged.</td>
<td></td>
</tr>
</tbody>
</table>

**Subject Code: 3.5**

<table>
<thead>
<tr>
<th>User Description</th>
<th>Needs</th>
<th>Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single middle-aged male, who leads very active life-style. Is a former soldier in the British military, and has very particular ‘quirks’ in how he needs his life ‘ordered’. Is in the middle of planning a move abroad. Sedentary work environment, at odds with his outdoor physical life-style (complimentary maybe?).</td>
<td>Needed to be challenged by exercises to maintain engagement. Chose to yoga instead</td>
<td>The lack of challenge meant he became bored of his exercises. Something that added extra challenge to the workout, maybe gamification and high-scores might have kept him engaged. Maybe going back to the physiotherapist to get more challenging exercises might have helped too.</td>
</tr>
<tr>
<td></td>
<td>Needed a support group around him when doing exercises.</td>
<td>Having people with him at Yoga helped to develop a support group, a tool that did the same around his PTP might’ve kept him compliant.</td>
</tr>
<tr>
<td></td>
<td>Needed to structure his exercises in a way that it was part of his routine.</td>
<td>A planning tool that helped him structure his time and fit his exercises in would’ve helped.</td>
</tr>
<tr>
<td></td>
<td>Needed some form of punishment (in his case fiscal) for not engaging with exercises.</td>
<td>This is the first time ‘punishment’ has explicitly been voiced as a need. Clearly the stick is important to some people, how do you build it into a structure?</td>
</tr>
</tbody>
</table>

**Subject Code: 3.6**

<table>
<thead>
<tr>
<th>User Description</th>
<th>Needs</th>
<th>Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young female, living alone, with physically active hobbies. Works in national film archive and is required to spend a lot of time travelling because of her work.</td>
<td>Needed impetus to actually seek out physiotherapy.</td>
<td>Some wider public education on the importance of seeking help for physical injuries would have helped raise awareness, and maybe helped her to seek help sooner.</td>
</tr>
<tr>
<td>User Description</td>
<td>Needs</td>
<td>Insight</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Needs reason to stay engaged with her PTP.</td>
<td>Needs reason to stay engaged with her PTP.</td>
<td>Although she feels she has achieved her goals (or I think she does) perhaps she needs a reason to stay engaged with her PTP till the end?</td>
</tr>
<tr>
<td>Needed a place or way to fit her exercises into her daily life.</td>
<td>Needed a place or way to fit her exercises into her daily life.</td>
<td>Doing her exercises at work and being able to do so was clearly important. Having a way to develop a set routine, and supportive environment are important.</td>
</tr>
<tr>
<td>Needed a personal goal / reason to engage with her PTP, in this instance being able to go for long walks again.</td>
<td>Needed a personal goal / reason to engage with her PTP, in this instance being able to go for long walks again.</td>
<td>Again, having a personal goal or target, and being in charge of reaching that target seems to be a strong motivator.</td>
</tr>
</tbody>
</table>

Subject Code: 3.7

<table>
<thead>
<tr>
<th>User Description</th>
<th>Needs</th>
<th>Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young male, living with girlfriend. A professional barista, who trains others in how to be a barista, as well as helping run a coffee distribution company for whole of Scandinavia.</td>
<td>Needs a supportive work environment.</td>
<td>A way of communicating his injury and needs to his manager would have helped.</td>
</tr>
<tr>
<td>Needs a way to help organise his schedule so he can plan to make time for his PTP.</td>
<td>Needs a way to help organise his schedule so he can plan to make time for his PTP.</td>
<td>A personal planning tool, or a progress tracker would have helped.</td>
</tr>
<tr>
<td>Needed the company and support of someone else to help him with his exercises.</td>
<td>Needed the company and support of someone else to help him with his exercises.</td>
<td>A way for people to be able to organise group work out sessions / develop mutual support networks.</td>
</tr>
<tr>
<td>Needed a reason to engage with his leg exercises, doing other physical activity isn’t the same as doing your PTP.</td>
<td>Needed a reason to engage with his leg exercises, doing other physical activity isn’t the same as doing your PTP.</td>
<td>Need a way to show him that playing sport is not the same as doing his PTP.</td>
</tr>
</tbody>
</table>
### Subject Code: 3.8

<table>
<thead>
<tr>
<th>User Description</th>
<th>Needs</th>
<th>Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle-age female photographer, married, no children. Travels a lot with work to do corporate photo-shoots. Likes being physically active.</td>
<td>Needed guidance and information to feel she was in control of the process and able to make the right, and informed decisions.</td>
<td>The more informed she was, the more empowered she felt. A tool that can fill in the blanks for patients, or give them that confidence could help others feel empowered.</td>
</tr>
<tr>
<td></td>
<td>Needed public embarrassment to drive her motivation and compliance.</td>
<td>Again peer pressure is mentioned. The concept of others judging you as motivator, hints at the need for social circles to be aware of your progress etc.</td>
</tr>
<tr>
<td></td>
<td>Support from family was also key, in particular her husband.</td>
<td>Again, support networks are important, having people to support you is key.</td>
</tr>
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</table>
Appendices 5

Select Pictures from Workshop 1
Appendices 6

First Workshop: Conversation 1

P1 = Participant 1
P2 = Participant 2
P3 = Participant 3

**P1** – Why are you developing it as an app? Why not a website for PC? I hate using my mobile phone for this stuff. My phone is my phone, that’s it.

**Me** – I’ve chosen to focus on a phone App because I had to choose a platform to work with, and smart phones are things we all have, and most people use them for other things too. Plus they’re portable, and people carry them around, but there’s no deeper reason or logic behind it than that really. Do either of you have a preference for accessing these services in another way, say tablets, or PC’s?

**P2** – Me? No way, I do everything on my phone. I don’t even own a computer.

**P3** – I don’t have an issue either. I do have a PC for my graphic design work, but I don’t really use it for much else. Well cat videos obviously.

**Me** – But you (talking to P3) use your iPad a lot don’t you?

**P3** – Yes I do. Mainly for watching films, Facebook, reading books, that sort of thing. But I use my iPhone for those sorts of things too. I carry my phone with me all the time, but I don’t my iPad.
Appendices 7

First Workshop: Conversation 2

P1 = Participant 1  
P2 = Participant 2  
P3 = Participant 3

P3 – I like all of the ideas, I like the circles thing, it reminds me a bit of Google Friends Connect and the groups thing on there, but I’m not sure these ideas are separate… I mean why can’t we have them all?
Me – There’s absolutely no reason why you can’t have all the ideas, or why they should be separate or exclusive. These (pointing at sketches) are just here to start a discussion, which is what they are doing.
P1 – I don’t like the idea of Physio Media, I wouldn’t use it. I have Facebook, and that’s it for me.
P3 – But other people would, so we should keep the idea and work with it.
P1 – No, I’m not saying don’t have it, just I don’t like it. I like the Brain Trust idea of asking a question, and the App then sending my question to relevant people and me getting answers back. That’s useful.
P2 – Yes me too, the Brain Trust is the best idea I think. But that could be part of a Twitter feed type thing, you just hashtag you comment with questions and relevant themes like Jody said.
P3 – It shouldn’t be hashtags, maybe a drop down tick box…
Me – this is all sounding really good, could you start wireframing what it would look like for me?

Short while later...

P2 – How would you find friends?
Me – I don’t know, how would you want to find friends?
P2 – Maybe you could set up a profile like Tinder and then match based on injuries?
P3 – Tinder for the wounded (laughing), but it’s not a bad idea.
P1 – Why couldn’t your physiotherapist just put you in contact with people they know you might get on with, or have similar interests? I mean they would know who is on here right? You said at the start it would be a closed service.
Appendices 8

First Workshop: Conversation 3

P1 = Participant 1
P2 = Participant 2
P3 = Participant 3

Me – You look like you’re struggling to fit that onto the phone.
P3 – I am, I can’t draw that detailed, that small. Can I just use paper instead?
Me – Of course.
P1 – Can I have some paper as well, your cardboard phones look cool, but they’re no good to work with.
Me – Shall we just give up on the phones altogether then? After all, I have agreed to develop this as a web-service now so sticking with them isn’t necessary.
P3 – If you don’t mind, just seems a shame because you’ve gone to the trouble of making the phones.
Me – It’s no problem, this is why I’m doing this, to learn what you guys want to do.
Appendices 9

First Workshop: Conversation 4

P1 = Participant 1
P2 = Participant 2
P3 = Participant 3

P3 – This is what I’d expect it to do.
Me – That’s an interesting phrasing (P3’s name). What do you mean when you say it’s what you “expect it to do”
P3 – Well this is how apps work, this is what you do, press a button on a screen and go to another screen.
Me – So it’s an expectation you have?
P3 – Yes.
Me – So is that how you would want it to behave?
P3 – I don’t know, probably not.
Me – So what would you want to happen, try to ignore your expectations of apps if you can.
P3 – I’d just want the information to appear next to the calendar I would still want to see that.
Me – Can I ask you guys, are you also answering so far based on your preconceptions, or expectations on apps you’ve used, or on what you’d want to happen?
P1 – For me I’ve very much been thinking like (P3’s name), that this is what I think it’s like, not what it could be like.
P2 – Me too, I suppose I’ve not been dreaming about how it could be.
Appendices 10

First Workshop: Conversation 5

P1 = Participant 1
P2 = Participant 2
P3 = Participant 3

P2 – So these would be set goals agreed with the doctor?
Me – Yes that’s the idea, that you’d agree targets with your physiotherapist that would be personal to you.
P2 – So would that include set days to have them completed? Because that’s what the Progress Chart makes it look like.
Me – In my original specification for this I don’t think I said one way or the other... (interrupted)
P2 – I don’t like it when people tell me I should have done things by certain days, if I don’t it makes me feel like a loser, like I’m somehow not doing good enough.
Me – Did that happen to you during your rehabilitation?
P2 – Yes, I was supposed to be able to do certain leg stretches by a certain day, and I couldn’t.
Me – And that upset you?
P2 – Yes, it made me feel like I was failing.
P3 – I had a different experience, I was told to keep a diary and record when I hit the targets we had agreed together, record my progress for me, no pressure except the pressure you put on yourself.
Me – Do you all think that would be a better way of doing it? Having goals to achieve, but you decide when you’ve achieved them?
P2 – Yes, we all take different times to do things, you shouldn’t feel bad if you don’t hit some other persons target.
P1 – That means these concepts aren’t that great an idea any more.
P3 – I didn’t like them anyway... sorry (looks at me).
Me – No, no don’t worry about it, as long as we come up with a concept that works for you.
Appendices 11

First Workshop: Conversation 6

P1 = Participant 1
P2 = Participant 2
P3 = Participant 3

P1 – I’m crap at organising myself, my mom used to pull her hair out at me, so a calendar is really good idea to help me.
Me – Yeah, but surely you have other calendars you can use on your phone?
P1 – Are you forgetting I hate phones?
Me – OK, but what about your PC? You have calendars on that, I know you do.
P1 – Yes but I don’t use them.
P3 – So what would make this one different?
P1 – It would be part of a wider piece of software that I would use, so making it central I would use it.
Me – So you would use this calendar because there are other functions attached?
P1 – Yes, having everything link off the calendar would be good.
P2 – I agree, a calendar is a good idea for planning and managing yourself. Everything should be linked back to it too, it should be at the centre of it all.
Me – So everything should link to a calendar?
P3 – I would just like a calendar that synced with my other calendars, I have so many problems syncing everything with my phone, tablet and computer. It really annoys me. But yeah, if it’s about managing your time then really it should be a calendar of some kind.
Appendices 12

First Workshop: Conversation 7

P1 = Participant 1
P2 = Participant 2
P3 = Participant 3

This conversation required no prompting, or involvement from me.

P1 – Do you know what would be really cool?
P3 – What?
P1 – If you had your personal set goals attached to your calendar, and when you could do them you ticked them and it recorded the date and time when you achieved it.
P3 – Yeah I like that idea.
P2 – It could also generate a message to your friends, telling them you’d achieved something, it’d be nice if it let people know, that could make others feel good and encourage them to try.
P3 – Yes! Sharing good news, I like it.
P1 – What if the calendar generated other information for you?
P3 – Like what?
P1 – Like stats on when you did your exercises? How long it takes you to do them. I mean I was told my wrist exercise should take no longer than 15 minutes, but they actually took closer to half an hour.
P3 – I had a similar issue.
P2 – You could also record what exercise you did and didn’t do, and maybe write why you didn’t do them.
P1 – Why would that be useful?
P3 – I can see how it would be useful…
P2 – You could record your workouts daily, and if you are honest about what you do the calendar could generate statistics for you to check up on how closely you are sticking to the rehabilitation.
P3 – Yeah, and if you start slacking it could inform your physiotherapist automatically for you…
P1 – And then they could kick you in the butt. Nice. I get it. So how would it look?

A short time later…

P1 – It could have guides to your exercises linked as well, so when you hover over the exercise like this (miming the action) a guide to that exercise pops up.
P3 – like from your work book?
P1 – Yeah, like an interactive work book
P2 – You could have animations too because it’s digital, like videos of what you are supposed to do, so you do then right.
P3 – We spoke about this earlier when Jody mentioned having access to physiotherapists via an e-service, if this is an integrated service that works with the physiotherapist, why couldn’t they record your sessions? My physiotherapist gave me so much information every time. If that was recorded and I could watch it back that would be great.
P2 – Like a personal work out video.
P1 – So when hovering over the exercise like this (miming the action), you get an option to play related videos?
P3 – Yes.
Appendices 13

User Journeys

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User Journey 1

Participant 1

**Background:** Wakes early and likes to prepare for his day ahead by reading news sites and Facebook.

**Needs:** His days aren’t formulaic and change from day-to-day, planning out his day is important so he can achieve what he needs to.

- Prepares Breakfast and starts browsing the Internet
- Opens web-service and logs in
- He visits his calendar.
- Checks his personal goals, and his progress towards achieving them
- Plays videos of his exercises to remind himself.
- Syncs his work calendar with his web-service calendar.
- Spots some free time in his calendar in the afternoon for exercises.
User Journey 2

Participant 2

**Background:** Wakes early and travels to her workplace very early. She is a professional dancer who likes to socialise with her fellow dancers before work begins. She incorporates her exercises into her dance warm-up routine.

**Needs:** to know she’s not alone in her struggles. She likes having others to talk to and support her.

During her lunch break she like to check up on her social media

Opens web-service and logs in

She visits her calendar.

She visits her message feed.

She re-visits her calendar to check to see if she can attend

She books the time in her calendar

She records that she has completed her daily exercises.

She reads her friends messages and responds

She sees some of her friends in group 1 want to meet for Fika.

She sends a message to the group informing them of her attendance.
Participant 2

Background:
Self-employed graphic designer. Her days need to be highly structured to make sure she can plan everything she needs to do. As she works from home she often tries to arrange lunches outside with friends. Also has problems with being able to physically do certain exercise.

Needs: to know she's not alone in her struggles. She likes having others to talk to and support her.

Sits at her desk (9:00) and reads her emails, and checks workload

Logs into her work calendar and assigns her hours for work

Opens web-service and logs in

She visits her calendar.

She syncs her work calendar with physio calendar

She compares her calendar with her friends

Two friends are free for lunch and she sends invites via calendar

Both friends respond they'd like to meet for lunch

She makes plans to fit her exercises in after work at 6:00

11:30 Receives a response to her query

Using calendar function she books the lunch date

Takes picture of the chair she uses for her exercises

Using brain trust function she posts query to social media tool
Appendices 14

Second Workshop: Conversation 1

P1 = Participant 1
P2 = Participant 2
P3 = Participant 3

P3 – Can I just say I really don’t like the phrase self-directed rehabilitation.
Me – OK, what don’t you like about it.
P3 – I know that’s what it is, I just don’t like it.
Me – That’s not what I asked, genuinely why don’t you like the phrase, what is it you don’t like and why?
P3 – I don’t know, perhaps it’s silly, but the word rehabilitation makes me sound like a drug addict or a criminal in prison.
Me – Do you two not like the phrase?
P2 – It does sound weird. I didn’t know why, but I agree with (P3), it doesn’t sound right.
Me – P1 what about you?
P1 – I don’t really mind or care, it’s not like it means anything outside of this meeting for me. If the others want to change it, that’s OK.
Me – P3 so what would you like it to be called? Are you OK with the ‘self-directed’ bit?
P3 – Yes that’s fine, because it is self-directed, but I don’t know.
Me – Well lets start throwing out words, and see which one we like.
P2 – I don’t know enough English.
Me – OK I’ll get the Thesaurus out and start saying words you let me know which ones you like.
What about Improvement?
All – No
Me – The next three I don’t think make sense to me, but, overhaul, reclamation and reconstruction. Any of those grab you?
P3 – None of them make sense like you said.
Me – Oh here’s one, recovery?
P1 – I like that one.
P2 – Me too.
Me – lets carry on though, what about healing?
P3 – Yeah, it’s not bad, but I think recovery is nice.
P2 – What about exercise?
P1 – No, because it’s not really exercise. I think of exercise as something you chose to do to stay healthy. Whereas this is about fixing a problem.
Me – So are we OK with calling it self-directed recovery from now on?
P3 – Yes I think that sounds good.
P2 – Maybe we come up with something better later on.
Appendices 15

Second Workshop: Conversation 2

P1 = Participant 1
P2 = Participant 2
P3 = Participant 3

P2 – It’s going to need like buttons, or the reaction buttons like Facebook.
P3 – Yeah, you need to know you’re loved with social media.
Me – But this isn’t social media. The aim isn’t to be liked.
P3 – Yes, but people will expect it, and want it.
Me – OK, but why?
P2 – Well it’s what makes you go back to it, getting likes.
Me – That’s my concern, according to my research it becomes addictive...
P1 – I just hate social media, everyone taking fake pictures so their friends can pretend to like them.
Me – (laughing) not a fan then P1?
P1 – No, I hate Facebook, and I’m only on it because my mom makes me. I was on Instagram, but the staged pictures of food, dogs (waving arms), it got annoying. I don’t care what people are eating!
P2 – but you’re not social.(laughing)
Me – He raises a fair point though doesn’t he?
P3 – what do you mean?
Me – OK, you two are fans of social media right (both indicated they were) so have either of you ever done something ‘fake’ or ‘staged’ to perform for followers or friends to get likes?
P2 – Well that’s what everyone does though, try to make your life seem as interesting as possible.
P3 – (laughing) I always take pictures of my food, and I have gone to restaurants in the past because they make pretty looking food, so my food pictures will get likes.
Me – but is that the goal here? I mean...
P3 – You want people to engage with the community though don’t you?
Me – Yes but for the right reasons.
P2 – I thought you said the purpose of this process was to understand us users?
Me – OK fair enough, point taken, I’ll let you put like buttons on things. But only for now, I’m the designer and I reserve the right to be arrogant and decide what’s best for you (laughing).
P2 – Well I’m the computer, and the computer want the like buttons back!
Appendices 16

Second Workshop: Conversation 3

P1 = Participant 1
P2 = Participant 2
P3 = Participant 3

Me – This really, really reminds me of the Windows 8.1 Metro Tiles.
P3 – Me too, I thought they were good.
P2 – What were the Metro Tiles?
Me – You know the Windows 8.1 operating system, it had apps and software represented on a screen as a serious of coloured tiles and…
P2 – Never seen it.
Me – You never saw Windows 8.1?
P2 – Nope. Don’t own a PC, and haven’t for over 10 years.
Me – Wow, what about a Windows Phone?
P2 – No I always use Samsung Galaxy phones.
P1 – I told you, she’s a Luddite.
Appendices 17

Second Workshop: Conversation 4

P1 = Participant 1  
P2 = Participant 2  
P3 = Participant 3

P3 – You’ve basically stolen my idea!  
P1 – How can I steal it if I didn’t know what it was? Besides it’s the Xbox 360 blades basically.  
P3 – Ok it’s the same idea as mine.  
Me – So you are happy with how this sitemap works?  
P3 – Yes except I’d have the three social media tools on the right like this (moves post-it-notes)…  
P1 – That actually works better because it looks better.  
P3 – Well I am a designer, just sayin’. Plus the feed tool and friends tools are thin and tall (holds up tools) so they would fit alongside the daily view, which is the standard view you’ve chosen nicely.  
P1 – Yeah.  
Me – Would you all choose the daily view of the calendar as standard then?  
P1 – I would, because I can’t plan more than a day ahead any way.  
P3 – Me too.  
P2 – And I’m rubbish at planning so perhaps a day-to-day approach would be best for me too.  
Me – I’d totally go with the month view, or weekly view.  
P1 – (draws on a post-it-note) It’s OK, there’s an option to select a different view of the calendar and set that as your default (sticks post-it-note on calendar)
Appendices 18

Second Workshop: Conversation 5

P1 = Participant 1  
P2 = Participant 2  
P3 = Participant 3

P2 – I just want to say these workshops have been really fun.  
Me – Well that’s good to know, thanks.

P3 – Yeah I have to say I wasn’t expected it to be like this. I work with UX designers quite often and they’ll do user-centred design, but they give users really set and rigid forms to work with.  
Me – Well to me that’s not user-centred design, the idea is to listen to users and allow them to shape the design.

P3 – Well maybe some of the people I work with need to go back to school.  
Me – Or maybe I’m doing it wrong. (laughs)

P3 – No I think this is how it should be done.  
Me – Well it’s good to know that you’ve found the workshops fun, but is there anything else that could’ve improved them?

P2 – Glitter pens! (shouting)

P1 – More snacks?

Me – Gotcha, what about unicorn stickers and beer?