


IAN RUTHVEN



DEALING  
WITH CHANGE  
THROUGH  
INFORMATION  
SCULPTING

# **Dealing With Change Through Information Sculpting**

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# Dealing With Change Through Information Sculpting

BY

**IAN RUTHVEN**

*University of Strathclyde, UK*



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INVESTOR IN PEOPLE

*To John Rooney and Kayla Ruthven, with love.*

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# Table of Contents

List of Figures	<i>ix</i>
About the Author	<i>xi</i>
Acknowledgements	<i>xiii</i>
<b>Chapter 1 Introduction</b>	<i>1</i>
<b>Chapter 2 Dealing with Change</b>	<i>7</i>
<b>Chapter 3 Theorising Change – Information Sculpting</b>	<i>29</i>
<b>Chapter 4 Information Behaviour and Change</b>	<i>51</i>
<b>Chapter 5 Families and Relationships</b>	<i>77</i>
<b>Chapter 6 Work</b>	<i>97</i>
<b>Chapter 7 Health</b>	<i>115</i>
<b>Chapter 8 Sex and Sexuality</b>	<i>133</i>
<b>Chapter 9 Crime and Surviving Crime</b>	<i>155</i>
<b>Chapter 10 Information Sculpting and Transitions</b>	<i>173</i>
References	<i>193</i>
Index	<i>261</i>

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# List of Figures

Figure 1.	Crisis Decision Theory.	37
Figure 2.	Straus's Model of Religious Conversion.	38
Figure 3.	Role Exit Theory.	38
Figure 4.	The Transition Curve.	39
Figure 5.	The Transitions Cycle.	39
Figure 6.	Translocal Meaning Making.	40
Figure 7.	Result of Theory Synthesis.	41
Figure 8.	Initial Information Behaviour Theory of Transitions.	42
Figure 9.	Information Behaviour Theory of Transitions.	73
Figure 10.	Information Behaviour Theory of Transitions Augmented With Behaviours From Family and Relationships.	96
Figure 11.	Information Behaviour Theory of Transitions Augmented with Behaviours from Work.	114
Figure 12.	Information Behaviour Theory of Transitions Augmented with Behaviours from Health.	131
Figure 13.	Information Behaviour Theory of Transitions Augmented with Behaviours from Sex and Sexuality.	153
Figure 14.	Final Information Behaviour Theory of Transitions.	172

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## About the Author

**Ian Ruthven** is Professor of Information Seeking and Retrieval in the Department of Computer and Information Sciences, University of Strathclyde, UK. His research focusses on understanding how people interact with information, particularly in how they seek information and the barriers they may face in seeking information. He is a Visiting Research Associate at the University of Pretoria and has won several awards for the quality of his research, including the Tony Kent Strix Memorial Award for major contributions to the field of Information Retrieval.

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# Chapter 1

## Introduction

‘Nothing is so painful to the human mind as a great and sudden change’ wrote Mary Shelley (1818) describing events that change our world forever. We all face these challenging times in our lives, and major events such as illness, bereavement or new parenthood may require us to seek information and support at a time when we feel stressed, frightened or psychologically vulnerable. Alternatively, we may come to feel that our current life is no longer satisfying and we need to create a more meaningful existence, or a new opportunity may become available and we need to work out how to make best use of it. These major life changes are a natural part of being human but they disrupt our sense of who we are and how we live our lives. Dealt with successfully, these transitions can lead to increased resilience, new senses of meaning and purpose, and an improved way of living; dealt with badly, they can lead to a sense of powerlessness over our lives and an increased risk of serious illness.

Information is critical in tackling life transitions, but transitions may force us into new territories without even basic understandings of what to ask, who to ask or what information is available. Sometimes we may not even be able to name what is happening to us or have even a basic vocabulary with which to ask for help. But the information we obtain and how we use it determines how major life transitions change us and who we will become after a transition. This book is about the pivotal role of information as we reconstruct ourselves and our lives following a significant life event.

Life changes disorder how we normally live our lives. Often the changes take place within ‘deeply meaningful and profoundly personal contexts’ (Clemens & Cushing, 2010, p. 1); areas of our lives that are not routine or everyday and therefore may require new and specialised ways of dealing with information. The established ways we have of interacting with our information worlds, ways that give meaning and consistency to our lives, have been referred to as our ‘mastery of life’ (Savolainen, 1995, p. 259). During a significant life change, this sense of mastery and personal coherence may be challenged, resulting in the need for information to help adjust to a new life. However, such adjustments may be hampered by factors such as stigma that rule out useful information sources, by complex information environments that lead to individuals being overwhelmed by too many information choices, and by difficulties in developing the new information behaviours necessary for dealing with a life change.

## 2 *Dealing With Change Through Information Sculpting*

In this text, I look at our information behaviours – how we provide, seek, access, share, use, deny, avoid, negate and create information – across the human lifespan to examine how people respond informationally to life changes. In tackling these changes, people are often asking critical questions about their lives and their understanding of how their lives will continue: ‘will I survive?’, ‘am I normal?’, ‘will I belong?’, ‘who can I trust?’. This book proposes a new theory to explain how we go about responding to change and the distinct information behaviours in which we engage to make this response.

### 1.1 **Characterising Life Changes**

In 1967, Holmes and Rahe (1967) published an influential list of 43 social changes and life events that required some form of personal adjustment. This list, commonly known as the Holmes and Rahe Stress Scale, was an attempt to uncover which life events were mostly likely to cause us stress and formed the basis for investigating the relationship between stressful life events and the onset of illness. Over 50 years later, the perennial interest in this topic is evidenced by the publication of the Major Life Events Taxonomy, a list of 121 life events that require some kind of social adjustment (Haimson et al., 2021).

Brown and Harris (1978) note a ‘formidable complexity’ (p. 85) in determining which life events are significant and which are not, not least because what ‘significant’ means depends on the individual to whom the life change occurs. Some events, however, require a more profound change to our lives and our sense of self than others: how these events affect us is a critical factor in determining which events are important. For example, Meleis (2010) talks about ‘physical debilitation, lowered immune system, a period of grief, a period of elation, an emergence of spirituality, and discovering of newfound meanings, and/or the experience of traumatic stress syndromes’ (p. 5) as possible consequences of a transition and it is these myriad consequences that force attention to a life change.

This book uses ‘events’ and ‘transitions’ as the units of analyses with transitions being a process between two stable states and events being what initiates a transition. A common approach to understanding transitions is to develop phase models, descriptions of transitions that differentiate parts of our lives, that have different regions and natures, and which give rise to different behaviours. These phase models provide descriptions of what happens in a process of change and how information providers can support change and as will be shown later, they can also form the basis of new theories on how we response to transitions.

### 1.2 **Axes of Life Change**

Successful information behaviour allows us gain a sense of control over everyday life, especially when things are changing. This text focuses on situations in which dealing with a life change requires new information and where information seekers may be in cognitively and emotionally stressful situations. Sometimes the events are associated with physically or socially challenging situations, creating

further challenges in accessing and making sense of new information. The nature of transitions, and the events that cause them, can result in different information behaviours, for example:

- A life change may be perceived as positive, such as a longed-for pregnancy, or negative, such as a diagnosis of a serious illness. Therefore, changes have different *valency*. Negative events are threats and we are evolutionarily programmed to pay attention to threats: to find their causes, predict their consequences and learn how to avoid them in the future. We often spend more time and attention on negative events, but a common reaction to negative events is denial, a control-gaining mechanism that buys us time to emotionally adjust to an event. As we shall see, understanding negative events results in more information work than positive ones.
- Depending on the level of *planning* available, the event may feel sudden or planned. Sudden changes occur with little notice and we must react immediately, even if the initial reaction is denial or information avoidance. Planned changes imply that we have some notice that an event will take place and have time to informationally prepare, at least in part, for the consequences of this change. Unplanned ones do not allow for preparation and we may need to make decisions without a proper information foundation, risking poorer outcomes.
- The *temporality* of change, differentiating between changes that are prolonged as opposed to changes that are acute, also impacts on our information behaviour. Prolonged life changes occur over an extended period and contain recognised stages with different information needs at different phases of the life change. Acute changes start and end over a short time period, typically with an intense nature that forces a pre-occupation with the life change. Informationally, acute changes mean finding and using information in short periods when we may still be struggling with the shock of the event itself; prolonged transitions allow us to pause and recover, think about options and obtain information from many sources.
- The *place* of change can be critical to dealing informationally with change. Many changes take place within environments that are familiar and established; other changes, such as becoming a refugee, moving into a retirement home or going to prison, force radical changes to our physical environment and we lose the feeling of knowing that comes from being associated with a familiar setting, including knowing where information is and how to access it. Moving to a new environment implies a new information environment in which our previously successful information behaviours may no longer function and we no longer know who to ask for information, or how to ask or whom we can trust.
- Some life changes may occur only once in a lifetime whereas others may occur multiple times and so *level of repetition* can be important. Most literature deals with first occurrences of life changes and the requirement to gain new knowledge. These initial experiences set the scene for how we tackle future life

## 4 Dealing With Change Through Information Sculpting

changes of the same kind, including our information work, and also form part of our general approach to solving problems.

- The *manifestation* of life changes may be visible or invisible to others. Visible changes encourage others to push information to us but can also force unwanted information and judgement upon us. Invisible changes allow us to ignore a change until we are ready to deal with it, but we may then have to reveal the change in order to ask for information and this revelation may itself create a barrier to information seeking.
- Many life changes carry elements of stigma, and the level of possible *stigmatisation* can affect our information behaviours, with more stigmatised situations leading to more anonymous forms of information seeking, using narrower ranges of information sources, and involve more risk that we obtain biased information.
- A major axis, and probably the major one, is *origin* of change: is change something that is external and happens to us (a redundancy, a lottery win) or something internally motivated which we encourage to happen (a new job, a change of religion, etc.). This axis has promoted many important models of change and associated information behaviours.

Each life event and the subsequent transition will fall somewhere on these axes. These are not a complete set of ways to describe life events, and other axes are possible, but they are sufficient to show that the nature of an event creates different contexts for how we respond informationally to an event.

### 1.3 Information Sculpting

If life events create different contexts, then how do we go about creating responses to life's problems? This book proposes that the process of creating an information solution is a process of shaping, an ancient method of human interaction with the natural world. Shaping works on a series of approximations with typically large, coarse, initial actions to crudely shape a solution, followed by a series of more detailed, fine-grained approximations to a specific solution. These solutions become ones that we can curate, adapt and use as models for understanding and explaining our lives to ourselves and others.

The book will use the process of sculpting, also a shaping process, as an analogy for this process of information shaping. Sculpting appears across human cultures and is rich in metaphorical potential. Through a process of creating analogical mappings between these two forms of shaping, I hope to demonstrate the value of this way of thinking about creating information solutions and its benefits in thinking specifically about transitions.

Chapter 2 examines major theories that deal with changing lives, including coping theory, meaning-making and stigma. Even though life events can be very different, it is a central proposition of this book that, from an information perspective, we can model the process of transition within the single theoretical framework of Information Sculpting. This framework is detailed in Chapter 3

based on the theories in Chapter 2. Chapter 3 proposes that transitions can be viewed as three processes: Understanding a life event, Negotiating how we change in response to the event and Resolving how we will live in the future. In Chapter 4, I explain major Information Science approaches to understanding information behaviour and use these to transform the theory into a theory of information behaviours during life transitions.

In Chapters 5 to 9, I then enrich this theory by looking at transitions as they have been dealt with in the research literature under the key headings of Family and Relationships, Work, Health, Sex and Sexuality, and Crime and Surviving Crime. Each of these major life areas augments the theory with additional concepts and empirical evidence, leading to the final presentation of the theory in Chapter 10.

What is critical to all these transitions is changing identities; reconstructing our sense of self and how we interact with the world around us. This self-making process is key to what we see as a significant event as these events challenge our sense of who we are or they raise interesting new potentials to be different. The process of undergoing a transition, therefore, is one of making, unmaking and remaking ourselves. Information Sculpting describes how we become different to what we were before.

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## Chapter 2

# Dealing with Change

This chapter presents major theories of life change with a particular focus on psychological accounts of how we change. A key theme of many studies of change is coping and the various types of coping behaviours that may be necessary when facing a life event. Coping is typically presented as an individual activity, but it is often entwined with others' coping and we each cope in our own ways. This can cause tensions when shared lives start changing in different ways, requiring negotiation about whose needs are important and whose coping is being attended to (Anderson & Fourie, 2014, 2016).

Coping can be made difficult by any perceived stigma attached to the life change. Stigma has been shown, repeatedly, to act as a barrier to information seeking, forcing those affected to change their information seeking behaviours. Stigma arises out of social environments, and our ability to deal with life changes can be facilitated or made worse by these social environments; a recurring theme within this text is the value of our social networks and our social capital to manage change.

An important concept in dealing with a transition is meaning-making; how we attempt to construct new interpretations of our lives following a transition. This process of psychological discovery is a common reaction to change but also can arise from the need to force change within one's life and create a new sense of meaning and value through change. In this chapter, I present an information focussed account of meaning-making.

Throughout the book I shall refer to how professionals from different disciplines create theories and models of information behaviour and how these models direct the provision of information. Here, I shall look at Transitions Theory as a specific example.

## 2.1 Coping

Coping theory presents a huge literature but most work on coping is strongly influenced by Lazarus's Psychological Stress and the Coping Process (Lazarus, 1966) in which coping is seen as a set of cognitive and behavioural responses to a situation that is causing cognitive or emotional stress. There are many ways to cope including problem-solving coping, emotion-based coping, biological coping and religious coping. Each form of coping may require different information

## 8 *Dealing With Change Through Information Sculpting*

seeking strategies and we may switch between approaches or use a mixture of them during a coping episode (Krohne, 2002).

Problem-solving coping seeks to remove the cause of stress by changing the nature of a situation and helping us take better control of the situation. This may require information seeking to understand the nature of what is being faced or to find solutions. This cognitive approach to problem-solving can be very effective when the problem can be controlled and when we can find the means to control the situation.

Emotion-based coping strategies, on the other hand, focus on a re-appraisal of the situation and emotional modifications to change the person's emotional relationship to the situation (Liang, Xue, Pinsonneault, & Wu, 2019). This does not seek to solve an underlying problem although it may help us feel we are coping better and thereby be able to take more control of our situation.

Biology-focused coping affects behaviour and responses to stress using techniques such as meditation to reduce stress responses and increase the ability of an individual to function whilst people with religious belief – most of the world's population – can find support in religious-based coping (Baldacchino & Draper, 2001; Koenig, George, & Siegler, 1988; Pargament et al., 1988). Pargament et al. (1988) posit three styles of religious problem-solving: self-directing (God allows me to solve my own problems), deferral (God will let me know what he wants me to do) and collaborative (God is my partner), observing that religious people may use similar coping mechanisms as non-religious people but conceptualise them differently.

Iwasaki, Mannell, Smale, and Butcher (2002) suggest that leisure-based coping enhances problem-focussed coping and is associated with better recovery from mental illness (Iwasaki et al., 2014). Aside from work in bibliotherapy, e.g. Gendreau and Ross (1979), Glavin and Montgomery (2017), Sridhar and Vaughn (2000), there seems rather little Information Behaviour work in this direction.

There is a strong imaginative component to coping. Pro-active coping is an important aspect of some negative life events as psychologically and emotionally preparing for events can make subsequent coping easier (Folkman & Moskowitz, 2004). Hamburg and Adams (1967) also discuss this preparatory side to coping, claiming that 'Worrying can be viewed as a form of coping behaviour when it contains a preparatory recognition of potentially difficult aspects of life situations, along with an opportunity to rehearse ways of dealing with them' (p. 181). This anticipation can be supported by information seeking, bolstering oneself with information against what may be coming our way.

### **2.1.1 *Coping and Information***

Although many studies from the coping literature mention information seeking as a coping approach, most, even in major reviews of the topic, e.g. Folkman and Moskowitz (2004), say maddeningly little on what information is sought or how it is sought in any detailed sense.