



# HEALTHY SOCIAL CONNECTIONS

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A MULTI-DISCIPLINARY EXPLORATION

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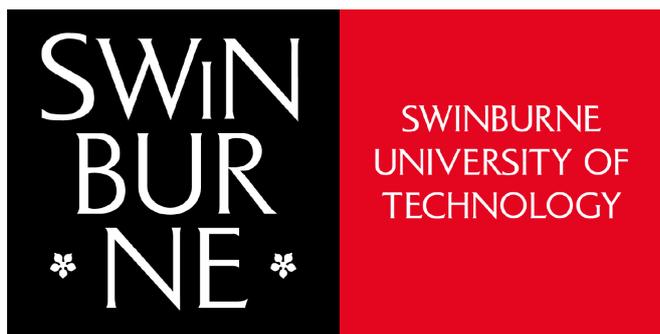
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## EXECUTIVE SUMMARY

This review provides a pragmatic exploration of the literature of social connection from multiple disciplinary perspectives. Based on a pragmatic review of literature, we first define social connection and then explore the relevance of social connection to contemporary discussions of social isolation and loneliness. We consider multiple avenues of literature relevant to social connection, including the concepts of ‘social capital’, ‘social ties’ and ‘social relationships’, and so on. The result of exploring the literature is a prototype or theoretical model that combines different disciplines’ perspectives and systematises these to produce a practical tool for considering social connectedness. We maintain that understanding social connections, the personal resources demanded to make and maintain these and the benefits therefrom is significant when considering interventions aiming to address social isolation and loneliness.

Focusing on social connection, rather than on social isolation and loneliness, encourages individuals to be mindful of the existing resources that people have, and foregrounds the practical mechanisms necessary to maintain or build on existing connections, such as time and emotional resources. The social connection model discussed in this report aims to ignite interest in a strengths-based approach to tackling issues of social isolation, rather than emphasising people’s social connection deficits. The Healthy Social Connections Model aims to:

1. **Encourage** understanding of social connectedness from a strengths-based perspective, focusing on one’s social resources rather than on personal deficits
2. **Propose value in drawing on and assembling literature from different disciplines** to enrich perspectives on social connection.

The *Healthy Social Connections* project designed a social connection model through a pragmatic search of the literature, and during several workshops between senior Australian Red Cross social innovation practitioners (hereafter referred to as ‘Australian Red Cross practitioners’) and researchers from the Swinburne University Social Innovation Research Institute (SIRI).

## Key Findings

Informed by a review of literature on social connection and brainstorming workshops with Australian Red Cross practitioners, we developed a Healthy Social Connections Model that encapsulates four dimensions of social connection. These dimensions include:

- **Social connection circles:** Based on the **social brain hypothesis** posited by primate anthropologist Robin Dunbar, there is a cognitive constraint on the number of connections an individual can maintain, which is based on time and emotional attachment.
- **Inputs, or personal resources that need to be invested to develop and maintain social connections:** There are two key types of personal resources that people invest in their social connections—time and emotional attachment. Depending on how close social connections are within a person’s social connection circles, more or less time and emotional attachment are required to maintain social connections.

- **Outputs, or personal feelings and resources for individuals that derive from social connections:** To maintain wellbeing, people need the feelings and resources they derive from social connections.
- **Connection types:** People invest their time and emotional attachment in different types of connections to give them the personal feelings and resources that they need in order to maintain wellbeing. These types of connections are most commonly human connections (e.g. with friends or family members that they connect with face-to-face, by phone, online or through social media). People can have other types of connections, such as with pets and technologies such as robots, and these types of connections are increasingly being researched.

Here we show how understanding people's social connections through the lens of these four key components can help to show, in a relatively straightforward way, some of the basic mechanics of social connection. The social connection model proposed here can be used to raise awareness about people's broad connections, and be used to underpin interventions to improve social connection for individuals and at the community level.

## Impact and Outcomes

The value we propose from the Healthy Social Connections Model is that it gives a platform to start to understand a very complex situation. The Model:

- **Acknowledges the changing nature and different types of social connections**, which includes relationships forged through social media networks and between humans and non-humans (e.g. animals, God, place)
- **Works from a multidisciplinary perspective** in which a diverse range of disciplinary perspectives (including health, psychology, sociology, anthropology) coalesce to produce a transdisciplinary synthesis
- **Provides a platform that works to improve social connectedness** of vulnerable populations
- **Adopts a pragmatic strengths-based approach** to improving people's social relationships, rather than focusing on the social ties they are lacking.

The Model demonstrates the importance of focusing on the pragmatic resources that people use to build social connections, and on the resources they need from their social connections.

## INTRODUCTION

In academic, policy and practice debates, there has been a growing interest in the topics of social isolation and the subjective perception of loneliness. Research has shown that those with fewer social connections are more likely to report a range of adverse physical and psychological health outcomes, such as cardiovascular disease and depression.<sup>1</sup> Identifying solutions to address social isolation, some psychological researchers have suggested the importance of increasing social connections in people's lives, indicating the power of social relationships as an antidote to loneliness and its negative health consequences. Surprisingly, however, despite being identified as an important physical and psychological health mechanism, 'the mechanics' of social connectedness have received notably less attention in academic debates and research; this has resulted in little consideration from different perspectives of what makes different types of social connections as well as how these draw on personal resources. This includes an examination of how a lack of the right types of connections can cause the wellbeing challenges that result in poorer health outcomes. When social connection is discussed, this tends to occur within disciplinary silos in which researchers from distinct disciplinary paradigms use different terms to describe what appear to be similar phenomena. We noted a gap when bringing together diverse disciplinary research related to social connection.

In the Healthy Social Connections project, we sought to combine literature from different disciplines to produce a conceptual, multidisciplinary model that is very pragmatic and intended to be understandable. We argue that understanding social connections as a series of circles that require time and emotional resources, rather than focusing on the connections that people lack, changes the conversation to one based on building people's existing strengths rather than focusing on their deficits. Partnering with the Australian Red Cross, the researcher team developed a multidisciplinary social connection model by exploring the diverse literature on the topic. Rather than using a deficit-based approach, which focuses on what an individual lacks in their lives (a feature that typically pervades much of the social isolation literature), we designed the Healthy Social Connections Model with a pragmatic resource-based focus. That is, we were interested in a) focusing on the multiple and changing definitions and types of social connection, and b) foregrounding our findings on social connectedness in terms of resource-based dimensions rather than deficits.

This report outlines the diverse disciplinary background of social connectedness as a concept, the process of collecting and combining literature on the topic, and the possible implications of using the Healthy Social Connection Model to underpin elements of community practice and to inform future research and policy.

## BACKGROUND

The term ‘social connection’ has previously been defined as ‘the dynamic, living tissue that exists between two people when there is some contact between them involving mutual awareness and social interaction’.<sup>2</sup> Social connection is typically understood in terms of face-to-face or human-to-human contact through friends, family, neighbours, and including carers, service providers, work colleagues and so on. Due to the rising popularity of social media networks and the notion that societies have become atomised due to modernity, our understandings of social connection have changed to adapt to our contemporary context. To address these changes, we re-conceptualise social connection, defining it as personal emotional attachments that can take shape via letter, through social media channels<sup>3 4</sup>, with animals<sup>5 6</sup>, carers or service providers<sup>7</sup>, and through metaphysical entities e.g., a god<sup>8 9</sup> or understandings of country<sup>10</sup>. The Healthy Social Connections Model addressed in this report reflects and acknowledges the changing nature of contemporary social life.

Social connection is an important feature of community-based interventions partly because of its potential to positively affect health and wellbeing. Public health and psychology research have shown that a lack of social connection can lead to adverse physical and psychological health outcomes<sup>11 12</sup>. Researchers in the field of business and entrepreneurship have also shown that social connectedness fosters community development and economic growth<sup>13 14 15</sup>, with those looking specifically at natural disaster resilience also finding that community members with more social connections are better able to communicate in natural disasters, and that communities with higher internal social connectedness have quicker disaster response and recovery rates<sup>16 17</sup>. Systematising the literature on social connection to create a more nuanced account of its main dimensions is, thus, a relevant task to promote future interdisciplinary research.

As the importance of social connectedness is discussed from a number of seemingly distinct disciplinary perspectives, ranging from public health, neurology, sociology, psychology, anthropology, communications, business, economics and community development, it is significant to look at the sometimes overlapping terms that researchers use to describe people’s social relationships. Terms such as social capital, social networks, social ties and social relationships are frequently used in the literature to describe social connectedness in broad ways. While these references may differ in terms of focus and scope, it is relevant to systematise the body of literature to try to distil from its information about the mechanisms of social connections, particularly where there are consistencies although precise terminology differs<sup>18</sup>. The *Healthy Social Connections* project aims to bring these diverse bodies of literature together and to create a social connection model that can be used across disciplines to both understand the changing face of contemporary social connections, and to tackle social isolation and loneliness in a strengths-based way.

## WORKSHOPS AND LITERATURE SEARCH

### Initial Workshops with the Australian Red Cross

Swinburne University researchers and senior Australian Red Cross practitioners participated in a number of brainstorming workshops in 2018. Red Cross practitioners expressed that while social connection was important in tackling social isolation and loneliness, and used frequently in their campaigns, the literature seemed to be divided into disciplinary siloes, leading to confusion about the different terms being used and which disciplinary perspectives to draw on. To address this issue, practitioners had several brainstorming sessions with Swinburne University of Technology researchers and used subsequent meetings to identify key reference materials.

### Literature Search

Guided by the initial brainstorming sessions and reference materials supplied by Red Cross practitioners, researchers at Swinburne University of Technology participated in a literature search on the topic of social connection. As different disciplinary traditions use a variety of terms to describe social connection, the following search terms were used to find the relevant literature:

- 'wellbeing' + 'family' + 'connection'
- 'wellbeing' + 'family'
- 'wellbeing' + 'friendship'
- 'friendship' + 'happiness'
- 'family relationship' + 'happiness'
- 'importance of family relationships'
- 'value of family relationships'
- 'family relationship' + 'Australia'
- 'social capital' + 'neighbours'
- 'wellbeing' + 'neighbours'
- 'happiness' + 'neighbours'
- 'benefits of social connection'
- 'social connection' + 'feelings'
- 'social connection' + 'benefits'
- 'social connection' + 'identity'
- 'human connection' + 'feelings'
- 'human connection' + 'benefits'
- 'social relationship' + 'benefits'

Research journal articles were collected from a number of disciplines. The Healthy Social Connections Model discussed in this report was not based on an exhaustive search of the literature because so many different terms and ways of alluding to social connection exist that we could not guarantee finding and covering them all. Rather, our review highlights some of the key aspects of social connection that have been raised consistently by researchers, even if from multiple disciplinary perspectives and using varying language. The literature review is open to further extension as relevant literature emerges.

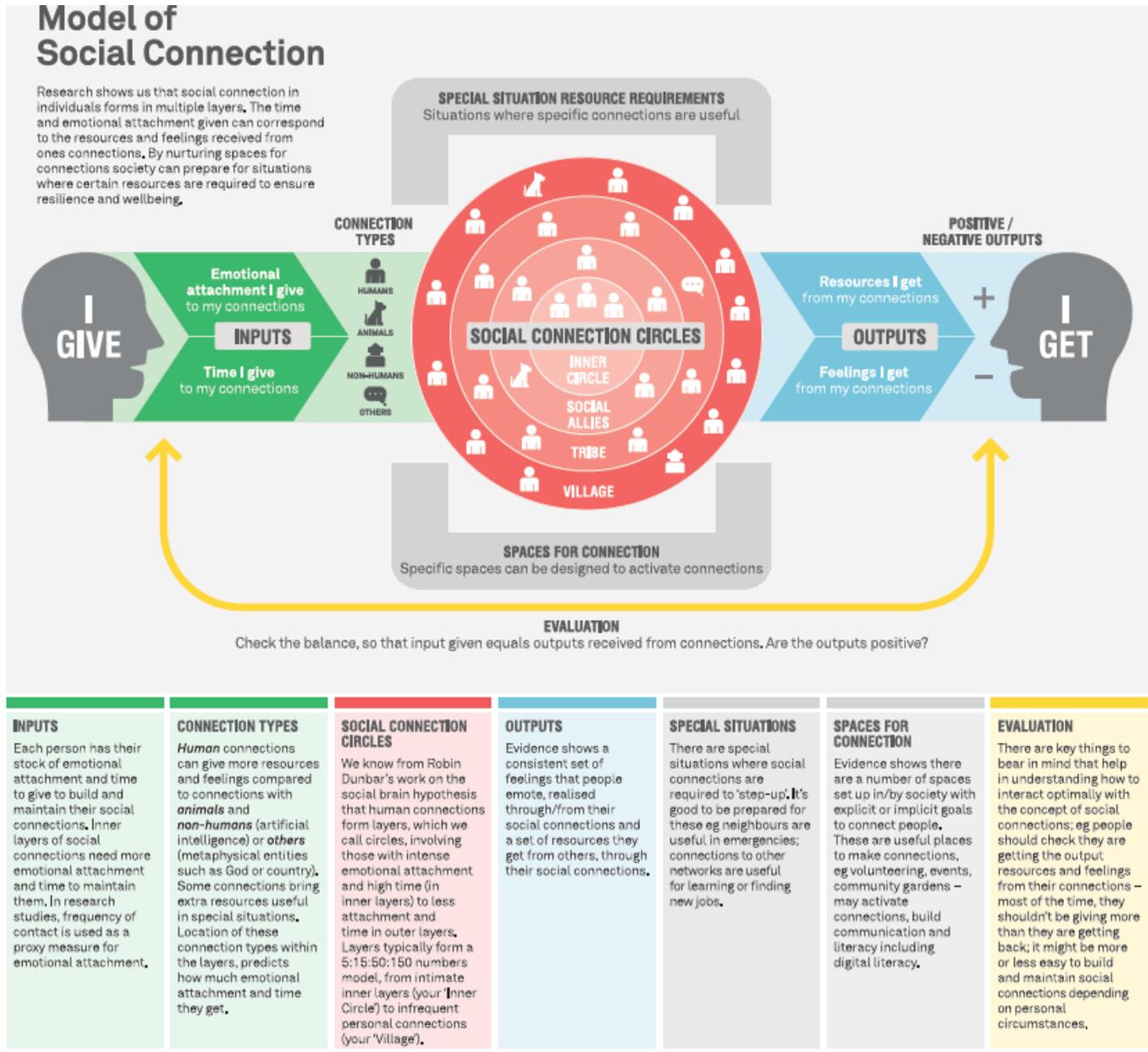
## DIMENSIONS OF THE HEALTHY SOCIAL CONNECTIONS MODEL

After reviewing the relevant literature and workshopping with Red Cross practitioners, we developed a set of themes, or dimensions, of social connection across disciplines. These dimensions include:

- Social connection circles
- Inputs: Personal feelings and resources from social connections
- Outputs: Personal resources used for developing and maintaining social connections
- Connection types

Below we outline each of the dimensions drawing on the disciplinary provenances responsible for them. The dimensions of social connectedness are also illustrated in Figure 1 (below).

Figure 1. The Healthy Social Connections Model



Source: *Healthy Social Connections*, Swinburne Social Innovation Institute, Melbourne, 2018, used with permission

## Social Connection Circles

Primate anthropologist Robin Dunbar and colleagues, through the social brain hypothesis, argue that humans construct their social connections in layers depending on different measures of time and emotional attachment.<sup>19 20 21 22</sup>

**Circles are typically patterned into the “ideal type” of 5:15:50:150 social connections, with fewer connections in our intimate circles, and more connections in our less intimate circles.**

Based on neuroimaging studies with humans and monkeys, Dunbar and colleagues found that individuals have a cognitive constraint on the number of connections they have, with a layered patterning of intimate to less intimate ‘circles’ of connection based on using different levels of time and emotional resources. The information processing capacity of the brain is thus limited to the number of relationships that an individual can manage at the one time. Emotional closeness also correlates strongly with the amount of time people spend together. As time is limited, individuals are often forced to choose how to spend their time, and with whom.<sup>23</sup>

Evidence that social connections are structured into layered circles, thus, draws strongly on notions of allocating one’s personal resources of time and emotional attachment. Circles of social connections are typically patterned into the ‘ideal type’ of 5:15:50:150 connections, with fewer connections in more intimate inner circles, and more connections in less intimate circles.<sup>24</sup> Those connections that fall within our ‘inner’ circles receive much of our time and are more likely to have close emotional bonds with us than those falling in the ‘outer’ circles. For example, those in our innermost circle of social connection form our primary network and Dunbar terms them our ‘support clique’. In primate anthropology terms, these individuals buffer us from harassment within our social group and play a central role in moderating our interactions with the wider community. They are also those from whom we are most likely to seek advice and receive emotional comfort, and they are most likely to assist us in times of severe financial distress.<sup>25</sup> These findings have been replicated in many different studies involving social groupings, including in studies showing that medieval villages, hunting tribes and army units are organised following this layering pattern. While in ‘real-life’ social connection patterns there will be variations in numbers in human social connection circles, the notion that social connections are structured according to layered circles has been widely adopted. Indeed, the intuitive notion of social connection circles is mirrored in our everyday speech when we, for example, speak of our ‘inner circle’ of friends. Considering the rise of humans using technology to communicate, studies have shown the same pattern of layering can be found in social media networks, such as Facebook, Twitter and online computer gaming communities, and in mobile phone records. The importance of understanding social connection in terms of circles is a central component of this model.<sup>26 27</sup>

## Inputs for Developing and Maintaining Social Connections

Understanding the personal resources we can allocate as ‘inputs’ for developing and maintaining social connections is useful. The different circles of social connections, as proposed by Dunbar and colleagues, suggests that each individual has their stock of emotional attachment and time to invest in developing and maintaining their connections. More intimate inner-social connections require a greater amount of time and emotional attachment to maintain.

Emotional attachment is most commonly defined in the academic literature as the frequency of contact with another person.<sup>28</sup> Those with whom we seek close attachment require a high amount of time to maintain the intensity of the relationship. As such, time is sometimes used as a proxy measure for level of closeness with a social connection because it is a finite resource and thus can be measured.<sup>29</sup> The time-related costs of maintaining certain relationships can constrain the number of relationships that we can maintain at any one time. In primate anthropology, the amount of time and emotional resources one devotes to others is what differentiates the ‘circles’ of one’s social connections.<sup>30 31</sup> In other disciplinary traditions, however, the terminology around how we develop and maintain inputs varies even though it builds on a consistent notion. For example, Granovetter’s economic sociological work refers to ‘strong’ and ‘weak’ ties in which tie strength refers to the time spent with another person and the emotional intensity felt for them.<sup>32</sup> Similarly, in the health sociology literature, Thoits refers to ‘primary’ and ‘secondary’ connections, where primary connections are determined by how emotionally close we are to another person and secondary connections are defined as ‘less personal’ relationships which range in duration.<sup>33</sup> While terminology differs across disciplines, one message remains a remarkably consistent factor in distinguishing between different intensities of relationships with people to whom we are socially connected: that different social connections are categorised in terms of our differing emotional attachment and the time we devote to certain people in our lives.

## Output Feelings and Resources from Social Connections

In the Model, social connections are understood as bonds that people need in order to maintain their wellbeing. These bonds are centred around the feelings and resources one receives from their social connections.

**Social connection *inputs* refer to where one sits within a person’s social connection circles. The more time and emotional attachment one has to a person, the more likely that person is to reside in their inner circle.**

~

**Social connection *outputs* refer to the feelings and resources one gets from their social connections.**

While there is a body of literature considering the feelings and resources generated from social connections, different disciplines use different terminology to describe certain phenomena. This makes it difficult to systematise the literature.<sup>34</sup> For example, some papers focus on one

particular feeling or resource, rather than looking at feelings and resources as a ‘set’.<sup>35</sup> The difficulties involved in describing the ‘outputs’ of social connectedness have been cited as a challenge previously; however, we have managed to show in our analysis that the feelings people emote and realise through their social connections—as well as the resources they receive from others—can be seen as consistent and typologised as well as, to an extent, defined for future use. A depiction of output feelings and resources from social connections, based on the multidisciplinary literature review, is presented in Table 1.

**Table 1. Feelings and resources from social connections**

Feelings	Resources
Sense of own identity <sup>36</sup>	Access to advice, information, knowledge and assistance to solve information & decision problems <sup>37 38 39 40</sup>
Self-esteem and acceptance (you get the feeling that you are someone that others can like) <sup>41 42</sup>	Practical assistance/physical proximity <sup>43 44</sup>
Joy/happiness <sup>45</sup>	Affection/bonding <sup>46</sup>
Empathy/compassion (social connection increases prosocial emotion) <sup>47 48 49 50</sup>	Share traumatic experiences, cope with these, heal together, respond together <sup>51 52 53 54</sup>
Trust <sup>55</sup>	Trust from others and expectation of reciprocity <sup>56 57 58 59</sup>
Sense of security/protection/attachment/buffering from harm <sup>60 61</sup>	Encouragement <sup>62 63</sup>
Sense of belonging <sup>64 65 66 67 68</sup>	Mediated interactions with others <sup>69 70 71 72</sup>
Sense of control/accomplishment <sup>73</sup>	
Hope <sup>74 75</sup>	

## Connection Types

In addition to having ‘circles’ of social connection, with different inputs received and outputs produced, social connections can also be categorised into different ‘types’. There is evidence to suggest that different types of social connections are associated with different levels of feeling and resources. This literature lacks precision because different types of people connections (e.g. family and friends) are often conflated, especially in studies about the benefits of social connectedness on health and wellbeing. New and emerging research is also being done on social media networks, as well as on connections with non-humans (e.g. robots); however, this literature has generated inconsistent conclusions. Despite these limitations, however, we have captured the different ‘types’ of social connections discussed in the literature along with evidence about the levels and types of feelings and resources they help to realise, and these are shown in Table 2.

We acknowledge that the literature on connection types is messy. However, by combining the different ‘types’ identified by researchers, we are better able to understand where current academic discussions are being centred. As Table 2 shows, human connection types are complicated and can be subdivided into family, friends, neighbours and so on. These connection types tend to be associated with different levels of resources invested by individuals to maintain them, and with different levels and types of personal resources and feelings they can help to realise as outputs. The non-human connection types that people have can also be considered because there is some evidence about the impacts they have on the humans they are connected with. While animals may serve as loyal companions, they are less able to give resources (e.g. advice or help with problem-solving) or increase one’s social capital. However, they can induce feelings such as joy and a sense of identity. Each connection type can play a role in the circles of connection.

**Table 2. Social connection types and their characteristics**

	Connection types and their attributes as suggested from evidence	Characteristics in terms of effects on inputs/outputs
<b>Humans</b>	Family member	Needs less time to maintain connection – due to ‘kinship capital’
	Neighbour [located close-by]	Can be helpful in emergencies
	Service provider	Likely to have professional codes of conduct bounding relationships
	Someone who works in a different employment sector	Brings ‘bridging social capital’
	Someone who has societal status, power, prestige	Brings ‘linking social capital’
	Someone who is socio-culturally very similar	Brings ‘bonding social capital’
	A connection via social media [presumed physically distant]	Less able to provide some resources and, requires less time to maintain relationship
<b>Non-Humans</b>	Animals/Non-humans	Less able to give some resources (e.g. advice, help in problem-solving)
	Human replacements (robots)/ Animals	Less able to give some resources e.g. sense of acceptance by other people
	Human replacements (robots)	Less able to give some resources (e.g. advice, help in problem-solving)
	Metaphysical connection (God, country)	Less able to give some resources e.g. sense of acceptance by other people

## USING THE HEALTHY SOCIAL CONNECTIONS MODEL

This section of the report talks about the practical use of the Healthy Social Connections Model and its relevance in terms of theory-building. Limitations of the Model are also discussed as well as potential ways to enhance it for future use.

### Healthy Social Connections Model

The Healthy Social Connections Model is designed to be pragmatic and is informed by evidence. It highlights the personal inputs and outputs necessary to develop and maintain social connections, and shows that our connections form in ‘circles’, with those in our inner circle receiving most of our time and emotional attachment. In addition to these circles, it is also important to acknowledge the many different types of connections that people have be it through social media, with a pet, with a service provider or through more traditional through face-to-face contact. Practitioners working with vulnerable communities experiencing social isolation, and researchers looking at the social connectedness of certain people within vulnerable groups, need to acknowledge these dimensions in tandem when designing interventions to address social isolation.

For example, a social worker may use the Model to understand how a vulnerable member of the community (e.g. an unemployed single parent in receipt of welfare) experiences social connections in their day-to-day life. The social worker may initially look at how many social connections the single parent has and position them in relation to their circles of connection. From there, the social worker may also look at the different ‘types’ of connections the parent has, especially in relation to building social capital which may assist with gaining meaningful and stable employment. Focusing on the inputs and outputs of their social connections may also be useful to understand how much time and emotional resources are necessary to maintain these connections. In this example, the Model is used by both the social worker and the parent as a way of being cognisant of the connections the parent currently has and how to utilise these connections for future benefits.

### Turning the Social Connection Model into a Tool

In addition to using the Model in its theoretical form, we argue that it is also possible that the Model could be used as an online tool that works at an individual level; this online tool has been developed in a prototype form.<sup>76</sup> Designed as an online game that helps an individual explore their social connection patterns, this interactive tool would allow individuals to select from a variety of connection ‘types’ and drag them into their different ‘circles’ of connection. With the right inputs and the right tools built in, an interactive game or tool could be used to question:

- how one thinks about their social connections
- whether one’s current social connections are providing them with the resources and feelings they need
- about the strengths and weaknesses of one’s existing connections
- whether the strengths of one’s social connections can be utilised in emergency situations, life disruptions and so on.

Rather than pointing out one's deficits or lack of social connections, the tool would be designed with a strengths-based focus in mind and would be used to reassure those using it that the connections they currently possess are useful in their own ways. The tool would encourage those using it to think about their social connections and to question whether they have the time and emotional resources available to add new connections to their lives.

Following completion, the social connection tool would 'diagnose' the user's social connections and ask them if the evaluation was accurate. Participants would be given the option of evaluating the accuracy of the 'diagnosis' by re-adjusting some of their scores. Additionally, participants would receive a list of tips, depending on their life circumstances, regarding how to make other social connections. Based on factors such as their location, work situation and so on, participants would be given options to join a local community group or volunteer with a nearby charity. As such, not only could the Model be used as a way to increase our awareness of our existing social connections but could also be used to foster future social connections.

Other than using the tool at an individual level, non-for-profit organisations can also utilise the tool as a data collection device; this tool could provide an understanding of the dynamics occurring in certain communities to help build interventions that focus on strengthening and building on the social connections that people within vulnerable communities already have. After applying interventions to certain communities, not-for-profits can use the tool as a way to re-evaluate the social connections that people have made and to determine if their intervention facilitated growth in positive social connections. Non-for-profit organisations could also use the social connection tool as a way of encouraging people to assist with volunteering, as the tool would give a measure of the time and emotional resources people have available.

## Areas of Further Development

There are several limitations with the current model that require improvement. In its current state, the Healthy Social Connections Model is simply a theory. Further research and evaluation of the social connection literature is needed to refine the Model and validate it. As the Model is not based on an exhaustive review of the existing literature—due to practical limitations and differences in terminology between disciplines—a more comprehensive analysis of the literature is needed. Additionally, because the terms used to describe social connectedness vary (e.g. social capital, social ties, social relationships, belonging, etc.), a more in-depth exploration of all possible terms associated with social connection is needed.

Another major limitation of the Model is that it only considers social connections as positive. As some of the social connection literature shows, the social connections one has in their lives can also be negative, violent, threatening or embedded in problematic social structures that limit one's growth and future social connections. While the Model can be used to highlight desirable improvements in social connection, it does not currently take into account the sociocultural pressures that the individual may face that lead to negative social connections or prevent them from branching out and developing positive social connections. This limitation needs to be taken into consideration when working with certain communities that struggle to branch out of their own networks. Despite its limitations, however, the Model is useful for its pragmatic, resource-

based focus, its ability to address social isolation in terms of people's existing social connections, and its avoidance of discussions of deficit.

## CONCLUSIONS AND RECOMMENDATIONS

The *Healthy Social Connections* project highlighted the importance of looking at social connectedness as a pragmatic strengths-based approach to addressing social isolation. Analysis of the considerable, multidisciplinary literature on social connection shows that there are four consistent dimensions of social connection identified by researchers. These dimensions include:

- **Social connection circles** based on primate anthropologist Dunbar and colleagues' research on social relationships, which states that those in our inner circle receive most of our time and emotional attachment and those in our outer circles receive less
- **Inputs for developing and maintaining social connections** based on how much time and emotional resources we have available for future relationships
- **Output feelings and resources** that we get from our social connections
- **Connection types** understood traditionally in a face-to-face sense and less traditionally through relationships with non-human animals, metaphysical entities, place and via social media.

Researchers using the Healthy Social Connections Model are encouraged to examine all of the dimensions of social connectedness to get a more nuanced perspective of a person's existing social ties and resources. Converting the social connection model into an online tool could assist those working in not-for-profit organisations in evaluating the social connections of those living in vulnerable communities, and in implementing interventions based on the findings.

### Recommendations

We recommend that future application of the Healthy Social Connections Model take into consideration a number of key factors, including:

- building on the existing Model by adding theories from multiple disciplinary perspectives
- using the Model as a way to highlight the social connections that the person currently has, rather than focusing on the connections they are lacking
- focusing on the four dimensions of social connectedness in future research looking at the topic in an effort to better systematise the literature
- acknowledging that social connections can be negative and applying this nuanced perspective when using the Model
- working collaboratively across disciplines to strengthen the interdisciplinary importance of social connectedness.

Future iterations of the Model should explore and evaluate the Model more explicitly in terms of the impact of negative social connections on people's lives, which may impact on social isolation and a lack of social connections. Research conducted using the Healthy Social Connections Model in the future should also use it as a way of evaluating whether social interventions and programs are effective in developing and maintaining social connections in vulnerable communities. While

simply being cognisant of our social connections is an important first step to understanding the resources that we have, encouraging people to build on their social connections and establish a stronger sense of community is the ultimate end goal of this research project.

## ENDNOTES

- <sup>1</sup> Holt-Lunstad, J. (2018). Why social relationships are important for physical health: A systems approach to understanding and modifying risk and protection. *Annual Review of Psychology*, 69, 427-458.
- <sup>2</sup> Dutton & Heaphy (2003), as cited in Martino, J., & Pegg Frates, E. (2015). The connection prescription: Using the power of social interactions and the deep desire for connectedness to empower health and wellness. *American Journal of Lifestyle Medicine*, 11(6), 466-475.
- <sup>3</sup> Burke, M., & Kraut, R. E. (2016). The relationship between Facebook use and well-being depends on communication type and its strength. *Journal of Computer-Mediated Communication*, 21, 265-281.
- <sup>4</sup> Sinclair, T. J., & Grieve, R. (2017). Facebook as a source of social connectedness in older adults. *Computers in Human Behaviour*, 66, 363-369.
- <sup>5</sup> Amiot, C. E., & Bastian, B. (2015). Toward a psychology of human-animal relations. *Psychological Bulletin*, 141, 6.
- <sup>6</sup> McConnell, A. R., Brown, C. M., Shoda, T. M., Stayton, L. E., & Martin, C. E. (2011). Friends with benefits: On the positive consequences of pet ownership. *Journal of Personality and Social Psychology*, 101, 1239.
- <sup>7</sup> Douglas, J. M. (2013). Conceptualising self and maintaining social connection following severe traumatic brain injury. *Brain Injury*, 27, 681-735.
- <sup>8</sup> Green, M., & Elliott, M. (2010). Religion, health, and psychological well-being. *Journal of Religion and Health*, 49, 149-163.
- <sup>9</sup> Lim, C., & Putnam, R. D. (2010). Religion, social networks, and life satisfaction. *American Sociological Review*, 75(6), 914-933.
- <sup>10</sup> Moreton-Robinson, A. (2003). I still call Australia home: Indigenous belonging and place in a white postcolonising society. *Uprootings/Regroundings: Questions of Home and Migration*, 23-40.
- <sup>11</sup> Cacioppo, J. T., & Hawkley, L. C. (2003). Social isolation and health, with an emphasis on underlying mechanisms. *Perspectives in Biology and Medicine*, 46(3), 539-552.
- <sup>12</sup> Holt-Lunstad, J. (2018). Why social relationships are important for physical health: A systems approach to understanding and modifying risk and protection. *Annual Review of Psychology*, 69, 427-458.
- <sup>13</sup> Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology*, 78, 1360-1380.
- <sup>14</sup> Putnam, R. (1993). The prosperous community: Social capital and public life. *The American Prospect*. Retrieved from: <http://prospect.org/article/prosperous-community-social-capital-and-public-life>
- <sup>15</sup> Uzzi, B. (1999). Embeddedness in the making of financial capital: How social relations and networks benefit firms seeking financing. *American Sociological Review*, 64(4), 481-505.
- <sup>16</sup> Akarna, Y., Chaplin, S., & Fairbrother, P. (2014). Role of social networks in community preparedness for bushfire. *International Journal of Disaster Resilience in the Built Environment*, 5(3), 277-291.
- <sup>17</sup> Aldrich, D. P., & Meyer, M. A. (2015). Social capital and community resilience. *American Behavioural Scientist*, 59(2), 254-269.
- <sup>18</sup> Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health & Social Behaviour*, 52(2), 145-161.
- <sup>19</sup> Dunbar, R. (1993). Coevolution of neocortical size, group size and language in humans. *Behavioural and Brain Sciences*, 16, 681-735.
- <sup>20</sup> Dunbar, R. (1998). The Social brain hypothesis. *Evolutionary Anthropology*, 6(5), 178-190.
- <sup>21</sup> Dunbar, R., & Spoor, M. (1995). Social networks, support cliques and kinship. *Human Nature*, 6(3), 273-290.
- <sup>22</sup> Dunbar, R., Arnaboldi, V., Conti, M., & Passarella, A. (2015). The structure of online social networks mirrors those in the offline world. *Social Networks*, 43, 39-47.
- <sup>23</sup> *ibid.*
- <sup>24</sup> Dunbar, 1998

- <sup>25</sup> Hill, R. A., & Dunbar, R. (1995). Social network size in humans. *Human Nature*, 14(1), 53-72.
- <sup>26</sup> Alessandretti, L., Sapiezyski, P., Sekara, V., Lehmann, S., & Baronchelli, A. (2018). Evidence for a conserved quantity in human mobility. *Nature Human Behaviour*, DOI: <https://doi.org/10.1038/s41562-018-0364-x>
- <sup>27</sup> MacCarron, P., Kaski, K., & Dunbar, R. (2016). Calling Dunbar's numbers. *Social Networks*, 47, 151-155.
- <sup>28</sup> Hill & Dunbar, 1995
- <sup>29</sup> Roberts, S., & Dunbar, R. (2011). The costs of family and friends: An 18-month longitudinal study of relationship maintenance and decay. *Evolutionary Human Behaviour*, 32, 186-197.
- <sup>30</sup> Dunbar, 1995
- <sup>31</sup> Dunbar & Spoor, 1995
- <sup>32</sup> Granovetter, 1973
- <sup>33</sup> Thoits, 2011
- <sup>34</sup> ibid.
- <sup>35</sup> e.g., Baumeister & Leary, 1995
- <sup>36</sup> Thoits, 2011
- <sup>37</sup> Aldrich, 2012
- <sup>38</sup> Arendt, L. A., & Alesch, D. J. (2015). *Long-term community recovery from natural disasters*. Boca Raton, Florida: CRC Press.
- <sup>39</sup> Every, D., & Richardson, R. (2017). Building the Disaster Resilience of the Homeless Community. Report prepared by CQ University and the Red Cross in collaboration with VCOSS, NCCARF and ShelterSA for the National Emergency Management Project. Retrieved from: [https://www.redcross.org.au/getmedia/1b7132b1-cd55-4988-8352-cd200350ccb7/Building-the-disaster-resilience-of-the-homeless\\_2.pdf.aspx](https://www.redcross.org.au/getmedia/1b7132b1-cd55-4988-8352-cd200350ccb7/Building-the-disaster-resilience-of-the-homeless_2.pdf.aspx)
- <sup>40</sup> Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F., & Pfefferbaum, R. L. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology*, 41, 127--150.
- <sup>41</sup> Gonzales, A. L., & Hancock, J. T. (2011). Mirror, mirror on my Facebook wall: Effects of exposure to Facebook on self-esteem. *Cyberpsychology, Behavior, and Social Networking*, 14, 79-83.
- <sup>42</sup> Thoits, 2011
- <sup>43</sup> Norris et al., 2008
- <sup>44</sup> Thoits, 2011
- <sup>45</sup> Diener, E., & Seligman, M. E. P. (2002). Very happy people. *Psychological Science*, 13, 81-84.
- <sup>46</sup> Seppala, E., Rossomando, T., & Doty, J. R. (2013). Social connection and compassion: important predictors of health and well-being. *Social Research*, 80, 411-430.
- <sup>47</sup> ibid.
- <sup>48</sup> Thoits, 2011
- <sup>49</sup> Walton, G. M., Cohen, G. L., Cwir, D., & Spencer, S. J. (2012). Mere belonging: The power of social connections. *Journal of Personality and Social Psychology*, 102, 513.
- <sup>50</sup> Waytz, A., & Epley, N. (2012). Social connection enables dehumanization. *Journal of Experimental Social Psychology*, 48, 70--76.
- <sup>51</sup> Jones, 2017
- <sup>52</sup> Norris et al., 2008
- <sup>53</sup> Seppala et al., 2013
- <sup>54</sup> Thoits, 2011
- <sup>55</sup> Seppala et al., 2013
- <sup>56</sup> Aldrich, 2012
- <sup>57</sup> Arendt & Alesch, 2015
- <sup>58</sup> Every & Richardson, 2017
- <sup>59</sup> Norris et al., 2008
- <sup>60</sup> Thoits, 2011
- <sup>61</sup> Walton et al., 2012

<sup>62</sup> Thoits, 2011

<sup>63</sup> Walton et al., 2012

<sup>64</sup> Baumeister, R. F., and Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497--529.

<sup>65</sup> Diener & Seligman, 2002

<sup>66</sup> Seppala et al., 2013

<sup>67</sup> Thoits, 2011

<sup>68</sup> Walton et al., 2012

<sup>69</sup> Aldrich, 2012

<sup>70</sup> Arendt & Alesch, 2015

<sup>71</sup> Every & Richardson, 2017

<sup>72</sup> Norris et al., 2008

<sup>73</sup> Thoits, 2011

<sup>74</sup> Norris et al., 2008

<sup>75</sup> Stoddard, S. A., Henly, S. J., Sieving, R. E., & Bolland, J. (2011). Social connections, trajectories of hopelessness, and serious violence in impoverished urban youth. *Journal of Youth and Adolescence*, 40, 278--295.

<sup>76</sup> Soltani-Panah, A., De Cotta, T., Farmer, J., & Aryani, A. (2018). The circles of connections: An evidence-based social visualisation tool to diagnose strengths and weaknesses of your social connections. *The Journal of Community Informatics*, 14(1), 17-37.