Using psychological mechanisms to reduce intergenerational ageism via intergroup contact.

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Abstract

Positive social interaction between members of opposing social groups (intergroup contact) is an effective method of prejudice reduction (Allport, 1954; Pettigrew & Tropp, 2006). This thesis explores how intergroup contact theory can be applied to age groups to reduce ageism towards older adults. Chapters 1 to 3 form the theoretical chapters of the thesis. Chapter 1 defines psychological processes underpinning ageism, provides details of its prevalence, outlines its consequences in society, and gives a justification for its reduction. Chapter 2 introduces the psychological processes underpinning intergroup contact theory and its different formations. This is followed by a literature review of intergenerational contact research, which identifies research gaps in the field and research questions addressed in this thesis.

Four empirical chapters then present findings from eight studies. In Chapter 4, Study 1 provides initial correlational evidence of the relationships between direct intergenerational contact, ageism and related psychological processes. Chapter 5 addresses the research question of whether extended contact can be successfully applied to age groups. Studies 2, 3 and 4 provide novel evidence that extended intergenerational contact reduces ageism and is effective via reduced intergroup anxiety, ageing anxiety and ingroup norms. These studies also support prior research demonstrating that direct contact reduces ageism via intergroup and ageing anxieties.

Chapter 6 presents two studies that extend the focus of the thesis to include age stereotypes. Secondary analysis of national survey data in Study 5 explores the perception of older adults' competence across the lifespan and friendships with older adults. The degree to which young and middle-aged adults perceive that competence declines with age is attenuated by having as little as one older friend. Building on these findings, Study 6 explores the relationships between direct and extended intergenerational contact, ageist attitudes and warmth and competence stereotypes.

Corroborating Chapter 4, both direct and extended contact predicted reduced ageism and are effective via increased competence stereotypes and increased warmth stereotypes.

In the final empirical chapter in the thesis Chapter 7 presents two studies that explore intergenerational contact theory in applied contexts. Using an experimental design, Study 7 evaluated an intergenerational programme in which students had conversations with older adults about their technology use. Compared to a control group, the experimental group rated older adults as warmer yet more incompetent. However, only warmth and not incompetence stereotypes formed indirect pathways to subsequent attitudes towards older adults more widely. Study 8 examined care workers positively and negatively experienced intergenerational contact with care home residents. Although care workers experienced more positive than negative contact, negative (but not positive) contact was associated with their attitudes towards care home residents and it generalised to older adults more widely. This indirect effect of negative contact to older adults was effective only for subtle and not blatant ageist attitudes.

Overall, the thesis provides a range of evidence suggesting that intergroup contact theory can be successfully applied to the reduction of ageism. It presents a detailed overview of current knowledge, corroborates existing evidence and presents novel findings for extended contact and mediators of both direct and indirect intergenerational contact.

CHAPTER 1. AGEISM: WHAT IT IS, HOW IT ARISES AND WHY IT SHOULD BE REDUCED

Abstract

This chapter opens with an outline of the aims of the thesis and an overview of its contents. This is followed by an introduction to ageism, and an explanation of how it is expressed and experienced, its psychological underpinnings and why there is a need to reduce young adults' ageist attitudes towards older adults. After providing a definition, examples of ageism in society are explored. Next, the conceptualisation of ageism as a tripartite of attitudes, stereotypes and behaviour is explained and psychological theories that form the basis of ageism are presented. This chapter closes with a discussion of why ageism should be reduced.

Thesis Aims and Overview

Ageism is an omnipresent social issue that is set to increase; the aim of this thesis is to explore psychological processes that reduce ageism. Intergroup contact theory is an established, successful method of prejudice reduction, which has been widely researched (Pettigrew & Tropp, 2006) and forms the basis of this thesis. Whilst prior research has examined relationships between younger and older adults as a vehicle to reduce ageism, few intergenerational studies have employed the intergroup contact framework.

The aims of this thesis are threefold. The first is to collate and critically evaluate prior research exploring intergenerational contact to gain an overview of current knowledge and identify research gaps. Second, this thesis seeks to extend theoretical understanding of intergenerational contact. It will empirically explore areas of intergroup contact that have not as yet been researched in the context of intergenerational groups (e.g., extended contact) and examine the psychological mechanisms through which extended and direct intergenerational contact work. Finally,

this thesis aims to examine intergenerational relationships in applied contexts. Together this work aims to establish a clear psychological understanding of how contact between age groups reduces ageism, empirical evidence to further that knowledge and illustrations of how these mechanisms work in the field.

Three theoretical chapters provide a background to the research conducted in this thesis. Chapter 1 explores ageism and describes how it is driven by social psychological processes proposed by social identity theory. Chapter 2 presents a detailed account of intergroup contact theory, examining the different forms of contact and the mechanisms through which it reduces prejudice. Research reviewed in Chapter 3 demonstrates that intergenerational contact experienced in everyday life, the workplace, health and social care settings and between friends or family members reduces young adults' ageism. This section also explores mediating variables, including intergroup and ageing anxieties and identifies a research gap relating to extended intergenerational contact. The theoretical chapters are then followed by 8 studies, each extending knowledge and understanding of how intergroup contact can be applied to address direct and indirect ageism across varying contexts and with different populations.

Study 1 (Chapter 4) surveys 231 young adults about their direct intergenerational contact and attitudes towards older adults. Of the direct contact methods examined, good quality direct intergenerational contact is the strongest predictor of young adults' attitudes. Contact quality is additionally related to intergroup anxiety and ingroup norms suggesting these variables may mediate the contact quality-attitudes relationship. Three studies in Chapter 5 (total N = 275) produce novel evidence that extended intergenerational contact reduces ageism, and that both extended and good quality direct intergenerational contact are related to positive attitudes towards

older adults via reduced intergroup and ageing anxieties. Extended contact is further mediated via increased positive ingroup norms about intergenerational contact.

Study 5 (Chapter 6) analyses national survey data of 16 to 95 year olds (*N* = 2053) to examine how intergenerational contact across the lifespan is related to a more subtle form of age prejudice; age stereotypes. In line with the cross-group friendship hypotheses, friendships with older adults attenuate negative stereotyping of older adults by younger and middle-aged adults. Study 6 surveys 201 young adults about their direct and extended intergenerational contact, age stereotypes and attitudes towards older adults. Both good quality direct contact and extended contact increase warmth and competence stereotypes, which in turn increases positive atittudes.

Chapter 7 explores intergenerational contact in two applied field studies. Using an experimental design and building on the findings from Chapter 6, Study 7 (*N* = 84) reveals that when intergenerational contact is experienced in a negative age-stereotype confirming context direct contact increases warmth stereotypes but decreases competence stereotypes. In turn, however, only the effects of contact on warmth forms an indirect path to attitudes towards older adults. Study 8 also examines intergenerational contact in a negative age-stereotype confirming context, additionally exploring the effects of negative contact. Care workers' (*N* = 56) positive attitudes towards care home residents are reduced by negative contact, but not increased by positive contact. Furthermore, the resulting attitudes towards care home residents generalise to older adults more widely, but on via subtle and not explicit ageism. The thesis concludes (Chapter 8) by summarizing the findings and discussing their implications for older adults, the wider community and UK policy and practice. Limitations and lines of future research are discussed.

What is Ageism?

Definition of Ageism

The term 'ageism' was first coined by Butler in 1969 and defined as "prejudice by one age group toward other age groups" (pp. 243). Whilst ageism is often synonymous with negative attitudes towards old adults, younger adults also experience ageism (Abrams, Eilola, & Swift, 2009). However, although young and old share positions of low status within society (Garstka, Hummert, & Branscombe, 2005), ageism towards older adults is conceptually different from ageism towards the young. 'Old ageism' is linked with decline and eventual death, whilst youth is associated with development (Iverson, Larsen, & Solem, 2009). The negative associations of youth will be superseded by transition to another age group, whilst negative aspects of old age only have the potential to worsen. Therefore, perhaps unsurprisingly, the majority of ageism literature focuses on attitudes towards older adults and older adults' experiences of ageism.

Butler (1975) later updated his definition of ageism by explaining that it is "a process of systematic stereotyping and discrimination against people because they are old, just as racism and sexism accomplish this for colour and gender" (pp.35). Although ageism is often compared to racism and sexism (Butler, 1975; Bytheway, 2005), it is suggested that unlike racial and gender stereotypes, age stereotypes are socially condoned and institutionalised (Butler 2002; Nelson, 2002; Palmore, 1999). For example, whilst birthday cards often feature humorous messages commiserating yet a further year of ageing, finding such a card commiserating being African American or female is both unlikely and socially unacceptable (Nelson, 2016). Despite this, ageism is researched less than racism and sexism (Nelson, 2005; North & Fiske, 2013), but is arguably more complex (Iverson et al., 2009).

Ageism in Society

Ageism is the most commonly experienced prejudice across society (Tasiopoulou & Abrams, 2008). As a deep-rooted, pervasive and tolerated form of prejudice, ageism can be experienced at both a societal and individual level (Abrams, Swift, Lamont, & Drury, 2016) resulting in institutionalisation, marginalisation and a loss of dignity (Nelson, 2002). This section presents examples of how ageism is experienced in health and social care and the workplace, which are relevant contexts explored in this thesis.

Ageism in health and social care. Whilst it might seem intuitive that those responsible for the care of older adults would not have ageist attitudes, research suggests this assumption is inaccurate. Treatment of younger and older adults can vary greatly, even when presenting with the same symptoms (Ford & Sbordonne, 1980; Hillerbrand & Shaw, 1990; Linden & Kurtz, 2009) For example, in an experimental study, physicians assessed case studies of identical depressed patients that differed only by age (39 versus 81 years old), but the diagnoses and recommended treatments varied greatly (Linden & Kurtz, 2009). Whilst younger adults were diagnosed with depression and anxiety and prescribed a range of relevant therapies, older patients were diagnosed with dementia or physical illness and prescribed only counselling.

It should be noted that not all healthcare professionals have negative attitudes towards older adults; a review of research conducted over the last 10 years has shown that attitudes can range from positive to neutral to negative (Liu, While, Norman, & Ye, 2012). However, expressions of ageism may vary depending on how they are measured. For example, although health staff report positive explicit attitudes, their implicit attitudes indicate higher levels of ageism (Nash, Stuart-Hamilton, & Mayer, 2014). Also, the language health staff use can subtly communicate ageism towards older patients (Billings, 2006; Cayton, 2006; Nussbaum, Pitts, Huber, Krieger, & Ohns, 2005) and condone ageism in communication with junior staff (McLafferty & Morrison,

2004). It is important to identify and reduce nurses' ageist attitudes, negative age stereotypes and gaps in their knowledge about ageing, as these can negatively impact older patients' quality of care and autonomy (Courtney, Tong & Walsh, 2000; Swift, Abrams, Lamont, & Drury, 2017).

In addition to attitudes of individual staff, ageism in health and social care also occurs at an institutional level. In a series of reports commissioned by the Department of Health in Britain, concerns about ageism were raised in relation to older adults' poor uptake of mental healthcare and cancer treatment (Centre for Policy on Ageing, 2009a, 2009b). Research also shows that older adults are excluded from clinical trials (Murthy, Krumholz, & Gross, 2004) and may not have the same access to treatment as younger adults (Fairhead & Rothwell, 2006; Royal College of Surgeons, 2012; Centre for Policy on Ageing, 2009).

Elder abuse. An area sometimes linked to health and social care, which lacks understanding and research, is elder abuse. Ageist attitudes can give way to violations of older adults' rights to welfare and safety (Nelson, 2005; Sethi et al., 2011). In this way, ageism is likely to contribute to neglect, abuse and exploitation of older adults (Quinn & Tomita, 1986). Young adults' (N = 206) ageist attitudes are related to their proclivity to elder abuse (Yon et al., 2010) and a recent quantitative study of Korean caregivers (N = 627) in a long-term elder care setting demonstrated how ageism was directly related to elder abuse (Jin, 2015).

Collectively, this evidence suggests that within health and social care ageism manifests itself in various guises and presents a serious threat to the care of older adults.

Ageism in the workplace. There is a wide body of evidence suggesting that while older workers are viewed as more reliable, more loyal, and harder working than younger workers, they are considered inferior to younger workers on many other job-related attributes (Bennington & Tharenou, 1996; Fastenau, 1998; Pickersgill, Briggs,

Kitay, O'Keeffe, & Gillezeau, 1996; Ranford, 1987; Steinberg et al., 1996; Taylor & Walker, 1994; Ventrell-Monsees & McCann, 1994; Warr, 1994). A review of 117 studies (Posthuma & Campion, 2008) showed that age stereotypes that consistently affect employers' decisions relating to evaluation, promotion, selection, training and retention of older workers are that they represent low productively, are less able to learn, are more costly and resistant to change. For example, a survey of Australian hiring decision makers within industry (N = 128) revealed that older adults were unlikely to be hired, and this decision was correlated with ageist attitudes and negative stereotypes about older adults (Gringart, Helmes, & Speelman, 2005). Generally, older adults were seen as undesirable compared to younger workers, due to a lack of creativity, trainability, adaptability and interest in technology. Recent research shows that even when decision makers are unaware of a candidate's age, implicit bias communicated through age stereotypes result in an unwillingness to hire older candidates (Abrams, Swift, & Drury, 2016).

Collectively, these findings depicting the perceived low value of older workers stand in stark contrast to analysis of performance data of U.S.sales representatives (Liden, Stilwell, & Ferris, 1996). Not only did older adults perform better than younger adults on both objective and subjective work measures, but also subordinates of older supervisors performed better than subordinates of younger supervisors. Therefore, whilst ageist attitudes towards, and negative stereotypes about older workers are widespread, it is likely that these do not accurately reflect the worth and performance of older workers.

In concert, this brief review of ageism in society demonstrates the widespread nature of ageism and how older adults face negative attitudes and discrimination in many facets of their daily lives. The omnipresence of ageism creates the impression

that it is condoned by society and not recognised with as much severity as other types of prejudice, yet it is just as damageing (Nelson, 2002, 2005).

Components of Ageism

Tripartite Model of Ageism

Many theoretical explanations of prejudice support a tripartite model ageism (Kite & Wagner, 2002; Levy & Banaji, 2002; Cuddy & Fiske, 2002, Tomstam, 2006). This approach suggests that prejudice (ageism) comprises of a constellation of affective, cognitive and behavioural elements (Eagely & Chaiken, 1993). In the case of ageism, the affective element refers to feelings about older adults, the cognitive factor relates to old age stereotypes and the behavioural aspect to age discrimination.

Positive and Negative Aspects of Ageism

Each component of the tripartite model can be negative or positive (Kite & Wagner, 2002). Feelings about older adults can be either friendly or hostile. For example, young adults may feel positive towards their grandparents, yet the recent UK European Referendum exposed widespread hostile attitudes towards old adults (The Guardian, 2016), who were (incorrectly) held responsible for Britain's decision to the leave the European Union (Age UK, 2016). Likewise, behaviour towards older adults can be both hostile (social exclusion) and positive (helping).

Similarly, stereotypes of older adults can be both positive and negative. Early research identified both positive 'elder statesman' (Brewer, Dull, & Lui, 1981) and negative "inflexible senior citizen" (Hummert, 1990) subtypes of older adults. Additionally, the stereotype content model (SCM: Fiske, Cuddy, Glick, & Xu, 2002) proposes that older adults are perceived as warm but incompetent, which prompts paternalistic prejudice (Fiske et al., 2002). (How stereotypes and attitudes towards older adults are linked and affected by intergenerational contact is the subject of two studies in Chapter 6.)

Paternalistic Ageism

In addition to positive and hostile attitudes, older adults are also subject to paternalistic attitudes. In line with the sexist treatment of women (Glick & Fiske, 2001), helpful behaviour towards older adults runs the risk of becoming patronising. For example, offering an older person a seat may be helpful, but forcing them to take the seat implies the older person is unable to make a decision and their opinion is worthless (Cary, Chasten, & Remedios, 2016). Although similarities can be drawn between the benevolent treatment of women and older adults, because of the process of ageing this type of pacification can be more harmful to older adults. It has the potential to encourage older adults to become more dependent, which combined with ageing processes can be detrimental to their health and performance and reduce autonomy (Hehman & Bugental, 2015; Langer & Rodin, 1976; Swift et al., 2017).

Therefore, the positive, negative and paternalistic components of ageism mean that it does not present itself as a prejudice that is overt or easy to detect. In addition to explicitly expressed attitudes, ageism can be communicated subtly or below the level of consciousness.

Direct, Indirect and Implicit Ageism

Explicit or blatant ageism, are ageist attitudes that are expressed consciously, such as labelling older patients as ‘bed blockers’ and older workers as ‘job blockers’ (cf. Willetts, 2010). Although these ‘direct’ expressions of ageism are evident, they are less common than more subtle forms (Braithwaite, Lynd-Stevenson, & Pigram, 1993; Bugental & Hehman, 2007; Cesario et al., 2006). Less obvious ageist attitudes, including stereotypes and patronising behaviour towards older adults, can be conceptualised as indirect ageism. In addition to stereotypes and paternalism, a further indirect, subtle form of prejudice is dehumanisation (Haslam, 2006 p.252), which is defined as the ‘denial of full humanness to others’ (Chapter 7, Study 8 examines how

intergenerational contact influences both dehumanising and blatant ageist attitudes towards older adults.) Butler (1975, p.35) referred to the process of dehumanisation in his definition of ageism, "ageism allows the younger generations to see older people as different from themselves, thus they subtly cease to identify with their elders as human beings". Yet to date, very few studies explore the dehumanisation of older adults (Wiener, Gervais, Brnjic, & Nuss, 2014), although dehumanisation is commonly mentioned in relation to later life (Iversen et al., 2009; Berdes, 1987; Cayton, 2006).

Whilst stereotypes and dehumanisation can be thought of as indirect forms of ageism, negative attitudes towards older adults also operate on an implicit level (Levy & Banaji, 2002; Palmore et al., 2005). Perception of an older person can trigger attitudes below the level of consciousness that may lead to age discrimination. According to research, 95% of Americans hold implicit ageist attitudes, which is a higher proportion that those that have racist or sexist attitudes (Levy, 2001). In summary, ageism is a prejudice that can be expressed, communicated and experienced via various means.

Levels of Ageism

A further complexity of ageism is that it operates at multiple levels. The tripartite model of ageism describes individuals' attitudes towards older adults – this represents the micro (or individual) level. Macro (or societal) level ageism refers to institutionalised negative attitudes towards older adults, such as those evident within the workplace or health and social care sectors (McCann & Giles, 2002; Posthuma & Campion, 2008, Centre for Policy on Ageing, 2009a, 2009b). Macro level ageism also covers attitudes at a country level (Abrams, Vauclair, & Swift, 2011) and the presence of ageism in a cultural sense, such as literature, humour and media (Bytheway, 2005; Palmore, 1999; Palmore et al., 2005). Although originally conceptualised as a prejudice towards the old age group (Butler, 1969) an under-researched area is ageism at the meso

level; ageism between age groups (Hagestad & Uhlenberg, 2005). Understanding ageism as a prejudice based on an individual's social group membership (e.g., belonging to the old age group) is an approach proffered by social identity theory (SIT: Kite & Wagner, 2002; Tajfel, 1979). Social identity theory as a psychological basis for ageism will be explained more fully later in this chapter. This research area represents many opportunities for further understanding of ageism.

Unique Aspects of Ageism

Ageism encompasses factors that are not common to other prejudices. Firstly, the boundaries between age groups are flexible and undefined (Abrams et al., 2011). For example, the perceived end of youth and beginning of old age can vary depending on an individuals' own age or their culture (Abrams et al., 2011; Tasiopoulou & Abrams, 2006). A recent phenomenon that further confounds the issue of undefined age categories is that the number of categories used to describe age groups is increasing. The category of 'old' now encompasses a wider range of adults than a century ago (WHO, 2014), and this has prompted the advent of fragmented categories such as the 'younger old' and the 'older old'. Additionally, age can be measured both objectively and subjectively - for example, an older person may be chronologically older than they feel (Choi, DeNitto, & Kim, 2014).

A further distinctive feature of age is that younger adults will themselves, with luck, become a member of the older outgroup. Therefore, young adults' attitudes and stereotypes about older adults are in effect attitudes about their future selves (Nelson, 2005). Impending transition to the older outgroup gives rise to another unique element of ageism; negativity or anxiety about the ageing process itself. Ageing anxiety refers to concerns about ageing in relation to the self. It includes worries about the loss of physical and psychological capabilities, loss of close relationships (friendships and relatives), an increase in dependency and eventual death (Lasher & Faulkender, 1993).

Individuals do not naturally transfer between categories of other social groups (e.g., gender or race), but progressing to an older age group is an inevitable process that affects everyone. Many theories of ageism propose that a fear of ageing or death is an additional factor to ageism (Greenberg, Schimel, & Martens, 2005; Pasupathi & Lockenhoff, 2002; Wilkinson & Ferraro, 2002; Witebourne & Sneed, 2002). For example, terror management theory (Greenberg et al., 1986; Solomon, Greenberg, & Pyszczynski, 1991) suggests that ageism arises from a fear of mortality. Older adults serve as a reminder of this inevitability and thus create terror. In order for young adults to protect themselves and manage fear, ageism towards older adults may be manifested (Nelson, 2002).

It is argued that merely being aware of one's own negative stereotypes or implicitly held attitudes can attenuate prejudice (Equality Challenge Unit, 2014). Thus, knowledge and understanding of how ageist attitudes, stereotypes and discrimination are communicated via different modes of expression and at varying levels of society should help to combat ageism. However, a more profound understanding of the psychological conditions and mechanisms that give rise to ageism are required in order to build scientifically reliable prejudice reduction models.

Psychological Basis of Ageism

Social Identity Theory

As a prominent theory in psychology, social identity theory (SIT; Tajfel, 1981) provides a group based explanation for prejudice and discrimination. Its premise is that the self-concept is derived from group membership and can explain intergroup behaviour.

In addition to personal selves, individuals have a range of social selves resulting in multiple social identities. According to Tajfel (1981), social identity is "that part of the of the individual's self concept which derives from their knowledge of their

membership of a social group (or groups) together with the value and emotional significance attached to that membership" (p. 255). This value and emotional significance referred to by Tajfel (1979) creates a natural motivation to attain positive self regard and self-esteem from group memberships and can prompt a preference for the ingroup (ingroup bias) resulting in discrimination and prejudice towards other groups (Tajfel, 1971). Thus, SIT explains how group memberships influence intergroup attitudes and behaviours.

Individuals can belong to many social groups, some are defined by fixed characteristics; gender, nationality, or age (Brewer, 1998; Nelson, 2005) and some are self-selected; professions, political parties or sports' affiliations. In fact, a social group can be arbitrarily created and exist when as little "two or more individuals… perceive themselves to be members of the same social category" (Turner, 1982, p.15). These social selves form part of the self-concept that guide behaviour in relevant environments. Different contexts trigger salience of a particular social identity, which causes the individual to act, feel and behave inline with that social group (Tajfel & Turner, 1979). For example, social identity as a football fan might become salient at the weekend and guide feelings and behaviour during a match, whereas a professional identity may become salient Monday to Friday and direct behaviour in the workplace.

A defining factor of social identity is that it imbues a sense of a collective 'we' that binds group members together and creates a distinction between 'us" and 'them' (Hogg, 2006). Ingroup members are those that share a given group membership, whilst outgroup members are those that have a different social identity. Studies of ageism towards older adults typically examine young adults' (the ingroup) attitudes towards older adults (the outgroup). Through the process of social categorisation we assign individuals to known categories (e.g., age groups), which provide information to guide our behaviour of how to interact with those groups and what to expect from those

groups. Grouping stimuli together and assigning them to a category is a functional process, as it saves cognitive effort and time. Categorising individuals to social groups occurs implicitly, and one of the first characteristics we notice about people is their age (Fiske, 1998; Kite, Deaux, & Miele, 1991).

Self-Categorisation Theory

Self-categorisation theory (SCT; Turner, 1987) is an extension of SIT and refers to the process of identifying as a group member (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). According to SCT, when a social identity becomes salient, an individual's perception of themselves and other ingroup members become depersonalized. The individual assimilates to ingroup norms, perceives themselves in terms of the groups' shared characteristics, and self-stereotypes. SCT also prompts an exaggeration of similarities between the self and other ingroup members, causing outgroup members to appear indistinguishable and homogeneous (Oakes & Turner, 1990).

A process known as optimal distinctiveness (Brewer, 1991) describes the motivation to ensure differentiation from the outgroup. Distinctiveness is required to maintain self-esteem and when not achieved, prejudice can arise in order to differentiate between ingroup and outgroup members (Hornsey & Hogg, 1999). Depersonalisation and assimilation to ingroup norms helps guide group members' behaviour. Linked to this, the subjective uncertainty reduction hypothesis (Hogg, 2001) describes a motivation to reduce uncertainty about how an individual should think, feel and interact with the outgroup. The self-stereotyping and adherence to group prototypes offers a stable framework to guide group members. These processes also have implications for intergroup behaviour and prejudice. In times of economic or social uncertainty, an increased need for stability can lead individuals to identify with extreme ideologies (Hogg, 2006).

Collectively, these social psychological processes explain how a need for positive self-regard, self-esteem and stability combine with automatic social categorisation to create bias towards the ingroup and prejudice towards the outgroup. Social identity processes provide a foundation for this thesis as they explain how prejudice can be derived from natural automatic processes operating below the level of consciousness. The ability of SIT to explain prejudice in this manner is particularly important for the study of ageism, which is often unrecognised as a legitimate prejudice compared to more hostile intergroup attitudes towards threatening outgroups. Even though hostile ageism is uncommon, ingroup bias arising from SIT processes can explain the prevalence of social exclusion and isolation experienced by many older adults in modern society.

From Social Categorisation to Stereotypes

As mentioned, social categorisation is a functional method for dealing with an otherwise overwhelming amount of incoming social information (Van Bavel & Cunningham, 2008). This heuristic process is described as 'understanding what something is by knowing what other things it is equivalent to, and what other things it is different from' (McGarty, 1999). Cognitive structures containing knowledge acquired via socialisation and experience, allow us to make sense of complex information by assigning social stimuli based on similarity to existing recognised categories. Newly encountered outgroup members, therefore, will be assigned to existing categories depending on the degree to which they match the prototype of that group. This process reduces the amount of cognitive effort that would be required to appraise each incoming stimulus as a novel piece of information (Fiske & Taylor, 1991).

The prototype of a social category can also be defined as a stereotype. Stereotypes are widely held, over simplified assumptions about members of social groups. They are also mental representations that hold expectations and beliefs about

members of social groups (Cuddy & Fiske, 2002). There are three consequences resulting from stereotypes (Mackie et al., 1996), outgroup members are perceived to be less varied than ingroup members (out group homogeneity effect: Park & Rothbart, 1982), individuals presented as members of the same group are perceived as more similar than individuals presented as members of different groups (Allen & Wilder, 1979) and ingroup bias, resulting in favouring the ingroup over the outgroup (Tajfel et al., 1971). All of these psychological processes resulting from the use of stereotypes have implications for prejudice towards outgroups.

Stereotype Content Model

While many unique stereotypes or subtypes of individual social categories exist (e.g., Duncan, 1976; Hummert, 1990; Hummer, Shaner, & Jay, 1998), Cuddy and Fiske (2002) present a universal model capturing the content of stereotypes allowing application to all social groups. The model postulates that to varying degrees, all social groups share characteristics along two dimensions (Fiske, Xu, Cuddy, & Glick, 1999). Rather than stereotypes reflecting a univalent construct ranging from positive to negative (e.g., goodness to badness), they can be captured by two dimensions; warmth and competence. Warmth refers to friendliness, sincerity and trustworthiness and competence is associated with independence, ability and confidence. Targets can be rated as high or low on each dimension, resulting in one of four combinations. Ingroup members and allies of the ingroup are usually rated as high on both dimensions, whilst dehumanised groups, (such as the homeless or immigrants) are perceived as low on both dimensions. Some groups yield mixed ratings; high on one dimension yet low on the other. For example, Asian Americans are perceived as low warmth yet high competence (Lin, Kwan, Cheung, & Fiske, 2005) whereas older adults and people with disabilities are perceived as high in warmth and low in competence (Fiske et al., 1999). The SCM further proposes that each category elicits a distinct type of prejudice (Cuddy

& Fiske, 2002); high/high groups generate admiration, low/low groups generate contempt, high competence/low warmth groups create envy, whilst low competence/high warmth (such as older adults) attracts pity. Furthermore, whilst perceptions of warmth are positively correlated with helping behaviours, low competence is linked to social exclusion (Cuddy et al., 2007).

Therefore, the SCM offers a well-supported, universal system for measuring the content of stereotypes. Accordingly, older adults are considered "Doddering but dear", elicit pitying, paternalistic, benevolent attitudes from others and may experience social exclusion as a consequence (Cuddy & Fiske, 2002). Therefore, compared to other theories of age stereotypes (Brewer et al., 1981; Hummert, 1990) the SCM provide a more accurate examination of the relationship between intergenerational contact, age stereotypes and ageist attitudes.

The Need to Reduce Ageism

At first glance it may appear that reducing ageism is solely beneficial for older adults, but there are multiple reasons why reduced ageism also benefits younger adults, both during their youth and as they progress through the lifespan. From a social justice perspective, reducing prejudice towards any group is morally correct. However, shifting demographics, living arrangements and the societal framing of ageing create a particular urgency to address ageism. This section presents some wider benefits of reduced ageism and why it is urgent to address this social problem.

Wider Benefits of Reduced Ageism

Reducing a fear of ageing. In today's youth-centric society, ageing is viewed negatively (Nelson, 2005). Older adults no longer hold a superior societal status (Garstka et al., 2005) and many young adults fear their own ageing (Allan & Johnson, 2009; Lasher & Faulkender, 1993), even children as young as 3 do not perceive growing old as positive (Seedfeldt, Jantz, Serock, & Galper, 1977). In fact, it was

predicted that over the course of one year $114 billion would be spent in the U.S. on products designed to mask facial and bodily signs of ageing (Crary, 2011). Importantly, research reveals that young adults' anxiety about their own ageing is linked to negative attitudes towards older adults (Allan & Johnson, 2009). Therefore, reducing ageism towards older adults may reduce anxiety about and negative attitudes towards young adults' own ageing processes.

Obstructing the internalisation of negative age stereotypes. Over and above an influence on discrimination towards older adults (Hehman & Begental, 2015; Langer & Rodin, 1976), negative age stereotypes have wider reaching consequences. For example, stereotype-embodiment theory focuses on the self-fulfilling nature of age stereotypes (Levy, 2009). Research in this area suggests that cultural exposure to, and internalisation of, negative age stereotypes along with their increasing self-relevance, perniciously influencs older adults' cognition, memory, physical ability and cardiovascular function (Levy & Leifheit-Limson, 2009; Levy, Zoderman, Slade, & Ferrucci, 2009). As young adults are vulnerable to subtle age cues (Bargh, Chen, & Burrows, 1996), pervasive negative age stereotypes in society can harm younger adults, because if internalised across the lifespan, they have the potential to damage future health. (Chapter 5 examines how intergenerational contact moderates the association between age stereotyping and own age across the lifespan.)

Encouraging social equality. Many countries legislate against age discrimination, the U.S. Age Discrimination and Employment Act, (1975) protects older workers against age discrimination relating to their employment, pensions and benefits. Similarly, The Equality Act (2010) was introduced in Britain to consolidate laws on discrimination in employment, education and training for people with 'protected characteristics' including age. Safeguarding the rights of older adults is becoming more important as the population ages (WHO, 2014) and incidents of ageism experienced by

older adults increase. For example, 91% of older Americans report experiences of ageism (Palmore, 2004), which takes the form of being patronised, ignored and treated as if incompetent. Therefore, attenuating the rise of ageism and understanding its subtle nature is imperative to protect vulnerable older members of society.

Supporting the health and social care sector growth. According to current demographic changes, future cohorts of older adults will continue to live longer and have fewer offspring to support them in later life (United Nation, 2007). This phenomenon increases demands on the health and social care sectors, requiring more and better-qualified professionals of all ages. Reducing young adults' negative attitudes towards older adults and ageing processes is an important first step in attracting an unbiased impartial workforce to these sectors. (Study 7, Chapter 8 examines how intergenerational contact experienced by technology students developing products for older adults influences age stereotypes and ageism.)

Supporting the economy. Arguably, having positive or realistic attitudes towards ageing is beneficial for pension planning. However, research shows that half of British workers are not saving enough for retirement (Scottish Widows, 2012). Young people prioritise spending in the short term over saving for the future, consider they have many years ahead in which to save and have negative views of ageing that inhibit pension planning (Pettigrew, Taylor, Simpson, Lancaster, & Madden, 2007). At the global level, nearly half of all people who have reached statutory pensionable ages do not receive a pension, and for many of those who do receive a pension, the levels of support may be inadequate (United Nations, 2007). Therefore, improving young adults' attitudes towards ageing may benefit future personal and national economy.

Additionally, as the population becomes older it is likely that the economy will become more reliant upon older workers (ONS, 2016). Under existing legislation, the number of older adults over State Pension Age (SPA) is forecast to increase by 32.5%

over the next 25 years, whilst the number of adults of working age is only projected to rise by 10.3% (ONS, 2016). The increase in the old age dependency ratio means there will be fewer people of working age to support the growing cohort of adults over SPA. Therefore, it is important to value, employ and train older workers, in order to supplement future workforces and support the economy.

Societal Factors

Demographics shifts. Demographic ageing is a recent social phenomenon in most developed countries (Kinsella & He, 2009; United Nations, 2015), which hastens the need to reduce ageism. Medical advancements and improvements in healthcare and living standards mean that people are living longer than in previous generations and this trend is set to accelerate over the next 30 to 40 years (Kinsella & He, 2009). In the U.S. the number of people aged 65 and over is expected to increase across the next three decades from 35.9 million to nearly 70 million. Reflecting this historically unprecedented demographic shift, a United Nations report (2007) estimates that by 2047 the number of older people worldwide would outstrip the number of young people for the first time.

While longer life expectancies are a positive outcome, the expanding older population may face challenges such as increased negative attitudes towards older people (Nelson, 2005; North & Fiske, 2012). In a U.S. survey nearly 80% of respondents aged 60 years old or over reported having been discriminated against due to their age (Palmore, 2001) and a European survey revealed that ageism was the most commonly experienced type of discrimination, ahead of discrimination based on gender, ethnicity, disability, religion or sexual orientation (Abrams et al., 2009). Therefore, a rapidly ageing population combined with the prevalence of ageism creates an urgent need to understand factors that lead to the development of age-related attitudes in young people, so that it may be possible to reduce ageism.

Age segregation. A further factor contributing to ageism is that many younger adults do not interact with older adults on a regular basis, thus creating social distance between the two groups. In addition to global ageing, local communities are becoming increasingly age-segregated, a phenomenon referred to as the apartheid of generations (Franklin, 2014). Age segregation across the U.S.increased from 1990 to 2010 (Winker, 2013) and most young Americans lack neighbourhood exposure to an age representative cross-section of the U.S.population (Moorman, Stokes, & Robbins, 2016). Overall, younger and older adults in the U.S.are segregated to a similar extent as Hispanics and Caucasians (Winkler, 2013). Societal changes since the industrial revolution have lead to less age-cohesion, such as increases in divorce rates, single parent families, mobility and technology. Nowadays children are socialised to interact with same-age peers (Peacock & Talley, 1984) and have limited contact and knowledge of older people (Seefeldt et al., 1977). Increase age segregation and inexperience of other generations can be a conduit for misunderstandings and negative attitudes towards older adults, and prevents intergenerational communication of cultural and personal skills (Tice, 1985).

Intergenerational conflict. An emergent narrative within the media and academia is one of intergenerational conflict. Whilst older adults were viewed with compassion in the last century, ageing of the ‘baby boomer’ cohort has given rise to the perception of older adults as greedy, politically powerful and bad for the economy (Binstock, 2010). The growing older population will lead to an increase in government spending on pensions and healthcare, and although older adults will retain political power (voting rights) they will cease to contribute to the economy (via income tax) (Thurow, 1996). Instead, the financial responsibility will fall to the less affluent younger generation. Thus, in recent times, older adults have become a scapegoat for

economic tensions around the availability of welfare for all generations (Binstock, 2010).

In a bid to understand psychological processes underlying intergenerational tensions, the succession, identity, and consumption model (SIC; North & Fiske, 2012, 2013) describes three prescriptive stereotypes that outline acceptable behaviour expected of the older generation. Older adults should; 'move aside' and pass down enviable resources (e.g., retiring to make way for younger workers); not consume a disproportionate amount of society's resources; and act age-appropriately. According to the SIC, older adults' failure to adhere to these prescribed behaviours results in ageism. A recent study demonstrated how these prescriptive stereotypes accounted for avoidance of, and discrimination towards, older adults in the workplace, particularly when resources were scarce (North & Fiske, 2016).

On a more positive note, Foner (2000) suggests that intergenerational conflict is not inevitable and cites intergenerational bonds between families as a social force to stave off conflict. She further suggests that these intergenerational bonds could be extended throughout society to bring about solutions to societal problems. Therefore, although an increase in intergenerational tensions resulting from demographic and economic changes seem set to exacerbate ageism, increasing harmony between generations appears to offer a solution.

Summary

This chapter has examined ageism towards older adults, explored its complexity and exposed a need for further understanding. It is a widespread prejudice faced regularly by many older adults. Ageism is pervasive throughout society, cutting across the workplace and health and social care. Understanding ageism and its potential reduction requires examination of the psychological group processes and intergroup relations that drive prejudice, as explained by social identity theory. There is an urgent

need to address ageism as population ageing, age-segregation and intergenerational tensions increase. Reducing ageism is not only advantageous older adults but also carries benefits for the wider community. Improving intergenerational bonds has been suggested as a possible method of ageism reduction.

CHAPTER 2: LITERATURE REVIEW: INTERGROUP CONTACT THEORY

Abstract

A successful method of prejudice reduction that may improve attitudes towards older adults and decrease intergenerational tension is intergroup contact. This chapter presents an overview of intergroup contact theory (Allport, 1954), which is the primary social psychological theory underlying the research in this thesis. The initial section introduces the theory and sets forth theoretical definitions of direct forms of contact, including Allport's (1954) original hypothesis and subsequent reformations of the theory. Thereafter, cross-group friendships and indirect forms of contact are explained, followed by literature seeking to explain how intergroup contact reduces prejudice. The final section of this chapter presents a critique of intergroup contact and some unusual issues posed by applying the framework to intergenerational relationships.

What is Intergroup Contact Theory?

Direct Intergroup Contact

Allport's contact hypothesis. Gordon Allport's seminal contact hypothesis (1954) maintained that given the right conditions, uniting members of opposing groups could bring about a reduction in intergroup prejudice. The optimal conditions specified by Allport include equal status between group members, working towards common goals, intergroup cooperation and institutional support.

Allport (1954) posited that equal status was required within the intergroup exchange situation, whilst others argue that equal status is important whilst the groups approach the contact situation (Brewer & Kramer, 1985). A later meta-analysis of 137 studies revealed that although group status inequality increased bias in artificial, experimental groups this was not the case in applied settings (Mullen, Brown, & Smith, 1992). This finding has important implications for the design of applied interventions such as intergenerational programmes.

Working towards common-goals helps foster increased support between groups and improve intergroup relations (Pettigrew & Tropp, 2011). A caveat of this effect is that it is less powerful when intergroup cooperation is lacking (Gaertner et al., 1999). The classic Robber's Cave summer camp study (Sherif, Harvey, White, Hood, & Sherif, 1961) illustrates the importance of cooperation and common-goals. Boys were randomly assigned to one of two teams that competed on tasks. Following the competition hostility developed between the two groups of children. The experimenters then united the children to work on shared tasks designed to benefit all groups. This phase of the experimental design thus represented cooperation to work towards common goals. After completion of the cooperation tasks, hostility reduced and cross-group friendships were formed. Lastly, Allport (1954) hypothesised that support of authorities, law or custom improves the positive outcomes of contact via the creation norms of acceptance. Subsequent field research has uncovered support for this prerequisite within military and business contexts (Landis, Hope, & Day, 1984; Morrison & Herlihy, 1992).

Since Allport's (1954) initial hypothesis, further conditions have been identified. Cook (1962) highlighted the importance of intimacy within the contact exchange, a factor he termed as 'acquaintance potential'. Similarly, other scholars emphasize the opportunity for personal acquaintances between group members, especially when members are non-stereotypical (Brewer & Miller, 1984). Furthermore, Allport (1954) himself stresses the importance of intimate rather than trivial contact. In conclusion, the critical factors supporting successful intergroup contact can be outlined as equal group status, working towards common-goals, cooperation, supportive norms, intimacy and the opportunity for personal acquaintance.

Cross-group friendships. A form of direct intergroup contact incorporating many of the optimal conditions for positive contact outlined above is cross-group

friendship. Analysis of European probability samples identify that individuals with cross-group friends had significantly lower levels of ingroup bias (Pettigrew, 1998). Cross-group friendships reduce prejudice, and increase sympathy towards, and admiration of, outgroup members (Pettigrew, 1997). Having a friend who is an outgroup member is the most likely type of contact of to yield positive outcomes (Pettigrew, 1998). The superior power of cross-group friendships is attributed to their longterm and affective nature (Pettigrew, 1998). Some researchers argue that more accurate description of Allport's (1954) optimal conditions is that rather than being necessary factors, their role is to encourage a sense of interpersonal closeness present in cross-group friendships (Davies, Wright, Aron, & Comeau, 2013). Thereby, 'friendship potential' is indicated as an essential condition of ideal intergroup contact (Davies et al., 2013; Pettigrew, 1998).

Studies have operationalised cross-group friendships in varying ways, including merely reporting having an cross-group friend to more sophisticated measures such as levels of closeness, behavioural interactions with friends and the specific quantity of cross-group friends (McLaughlin-Volpe & Wright, 2002; Turner, Hewstone, & Voci, 2007). Meta-analytic research shows that the most powerful indicators of cross-group friendships' relationships with reduced prejudice are time spent with friends and sharing personal information (Davies et al., 2011). The majority of studies in the review measured correlational relationships between the extent of existing cross-group friendships and prejudice. However, Wright and colleagues' (Wright et al., 2002; Wright & Van der Zande, 1999) experimental research provides more information about the causal effects of cross-group friendships. White students met either ingroup or outgroup (Latina or Asian) partners four times over an 8-week period. Outcomes identified that whilst closeness felt towards partners increased for all participants,

compared to students who met white partners, those paired with cross-race partners reported less intergroup anxiety and ingroup bias.

There are obstacles, however, in the formation of cross-group friendships. Initially, there must be an opportunity to form the friendship. In situations of segregation, this is not always possible. Additionally, in some contexts, powerful social norms exist which inhibit the motivation to strike up outgroup affiliations. Encourageingly though, cross-group friendships can lead to prejudice reduction indirectly. Mere knowledge that an ingroup friend has a cross-group friendship relates to reduced prejudice (Paolini, Hewstone, Cairnes, & Voci, 2004; Pettigrew, Christ, Wagner, & Shellmacher, 2007; Wright, Aron, & Brody, 2008; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997).

In summary, a wide body of survey and experimental research suggests that cross-group friendships are the most powerful type of contact leading to prejudice reduction (Davies et al., 2011), and although barriers exist in segregated communities, the positive effects of cross-group friendships can be generated indirectly, by simply being aware that an ingroup member has an outgroup friend (Wright et al., 1997). This mode of contact is known as extended contact (Wright et al., 1997) and will be discuss in more detail later in this chapter.

Meta-analysis of intergroup contact research. In 2006 Pettigrew and Tropp conducted an extensive meta-analysis of 515 intergroup contact studies conducted from 1940 to 2000, in various contexts, with a range of outgroup targets. Results indicated that rather than Allport's (1954) optimal conditions being necessary components for successful contact they could be more accurately described as facilitating factors. Although studies adhering to Allport's (1954) conditions produced larger effects that other designs, contact overlooking the conditions was nevertheless related to reduced prejudice. In addition, the meta-analysis showed that not only were the effects of

contact robust in their reduction of prejudice, but that effects were generalisable beyond the original contact partner. Contact reduced prejudice towards the contact partner's entire outgroup (known as primary transfer effects), towards outgroup members in different contexts and even towards outgroups not involved in the original contact (known as secondary transfer effects). The meta-analysis also revealed that group status was a moderator of contact. Contact was more effective for majority group than minority group members. Authors' theorize that as prejudice is a prominent feature of minority group members' everyday lives, this may prevent them from fully benefiting from the advantages of intergroup contact.

Ten per cent of the target groups included in the meta-analysis of intergroup contact effects consisted of groups varying by age (Pettigrew & Tropp, 2006). This representative sample and the generalisability of contact effects suggests that intergenerational contact has the capacity to reduce ageist attitudes towards contact partners and other older adults beyond the contact situation.

Reformations of intergroup contact hypotheses. In addition to the conditions discussed by Allport (1954), researchers have endeavoured to explore when intergroup contact is most effective (Brown & Hewstone, 2005; Gaertner & Dovidio, 2000; Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993; Hewstone & Brown, 1986; Miller & Brewer, 1984; Pettigrew, 1998). These models draw on social identity theory (Tajfel & Turner, 1979). As discussed in Chapter 1, social identity theory reflects the notion that self-concept is derived from group membership and can explain intergroup behaviour. Awareness of social-identity within a particular context is known as group salience, a concept upon which many of the reformations of intergroup contact are based.

The decategorisation model (Brewer & Miller, 1984). This theory postulates that enhanced outcomes are achieved by reducing the salience of social categories,

which in turn encourages more interpersonal relations between individuals (Brewer & Miller, 1984). It is suggested that lower group salience moderates the effects of contact to increase perceptions of outgroup variability, disconfirm stereotypes and increase generalisation to other outgroup members. Individuals relate to each other on an interpersonal level, rather than perceiving each other along dimensions of group membership. However, this model is criticised for producing potential negative perceptions of ingroup members (Brown & Hewstone, 2005). It is argued that enhanced outcomes are achieved by reducing the attractiveness of the ingroup, rather than by reducing negative feelings towards the outgroup.

The common ingroup identity model (CIIM; Gaertner et al., 1993). The CIIM suggests a different manner of group salience manipulation in order to enhance outcomes whilst avoiding the negative ingroup attitudes created by the decategorisation model (Brewer & Miller, 1984). Individuals are encouraged to focus on attributes shared by both the ingroup and outgroup. Emphasis on these aspects reduces salience of intergroup boundaries and creates the notion of a common superordinate identity shared by ingroup and outgroup members alike. Thus contact takes place on an intragroup level. Whilst this model has produced positive outcomes, especially in applied settings (West, Pearson, Dovidio, Shelton, & Trail, 2009; Houlette et al., 2004), like the decategorisation model, it is criticised for encourageing an abandonment of ingroup identity (Brown & Hewstone, 2005). This can be particularly damageing for minority group members. Indeed, research shows that intergroup contact via the CIIM is more successful for majority than minority group members (Dovidio, Gaertner, Neimman, & Snider, 2001).

The dual identity model (Dovidio et al., 2001). The dual identity model was developed to address criticisms of the CIIM. It overcomes the disparity of outcomes for majority versus minority groups by instructing individuals to retain a sense of their

subgroup identity whilst concurrently focusing on a superordinate identity. Research with majority and minority group members has reveal that the dual identity model works well for minority group members (Dovidio et al., 2001). This development adds particular value in conflict situations where there are clear classifications of majority and minority groups. It could also be informative for designs of intergenerational programmes in situations where the ratio of young to old individuals cannot always be determined. A criticism of both the CIIM and the dual identity model is that it may be difficult to sustain a superordinate identity in the long-term (Hewstone, 1996). This problem is addressed by the mutual intergroup differentiation model (Hewstone & Brown, 1986).

The mutual intergroup differentiation model (Hewstone & Brown, 1986). This model does not attempt to alter the structure of group boundaries within the contact situation but rather seeks ro create positive interdependence within the contact experience. This development is based on the notion that negative outcomes from contact interactions can be caused by threats to 'positive distinctiveness' of one's group (Tajfel & Turner, 1979). In order to overcome this Hewstone and Brown (1986) suggest that contact interactions should be constructed on an intergroup level and allow group members to have distinct but complementary roles, whilst working towards common goals. Group members should acknowledge the strengths and weaknesses of both the ingroup and outgroup.

Longitudinal intergroup contact theory (Pettigrew, 1998). Pettigrew (1998) suggests a reformation of contact theory where processes inherent in some of the previously discussed models overlap and interact to lead from initial short-term contact to the long-term legacy of intergroup friendship. He suggests that for cross-group friendships to develop from contact, partners need to pass through the processes of full decategorisation, salient categorisation and recategorisation (Pettigrew, 1998). Initially

contact should occur on an interpersonal level (decategorisation), as interpersonal contact reduces the distinction between groups thus leading to less ingroup bias and increase intergroup liking (Brewer & Miller, 1984). Next, it is ideal for contact to pass through a categorised phase, where contact partners become aware of their differential group memberships. This stage is required as the positive effects of contact with an individual outgroup member are more likely to generalise to the wider outgroup, when respective group memberships are salient during the contact experience (Hewstone & Brown, 1986). At the final stage, to facilitate the maximum benefits possible from contact, recategorisation into a superordinate or shared group is required (Gaertner et al., 1993). Thus Pettigrew (1998) suggests a longitudinal model whereby the psychological processes contributing to successful contact in the previously discussed models interact overtime to achieve optimal outcomes related with cross-group friendships (Davies et al., 2011). However, Pettigrew (1998) also stresses the importance having an opportunity to become friends, such as via contact that occurs repeatedly across various contexts, and he aligns this aspect to Allport's (1954) intimate contact and Cook's (1962) acquaintance potential.

The integrative model of intergroup contact (IMIC; Brown & Hewstone, 2005). After more than 40 studies based on their initial model Brown and Hewstone presented a revised version (2005). In the new model it is suggested that contact is most optimal when it additionally contains a level of intergroup salience. Therefore, it should include both intergroup and interpersonal dimensions. This awareness of group membership moderates the association between intergroup contact and intergroup relations by facilitating an individual-to-group generalisation of contact effects. When group salience is high within the contact encounter, intergroup relations are most positive and generalisation of the effects to a wider outgroup are higher. The revised model stresses that the effects of contact should not only be measured in terms of

explicit attitudes and stereotypes but should also include indirect and implicit attitudes, affect, trust and forgiveness. The new model additionally highlights the importance of mediating factors facilitating the contact-attitudes relationships. These include influential affective mediators (intergroup anxiety, empathy, perspective taking, self-disclosure) and cognitive mediators (knowledge of the outgroup).

In concert, Allport's contact hypothesis (1954) and the subsequent reformations illustrate when intergroup contact is most beneficial. These variables include, equal status between groups, working towards common goals, cooperation and institutional support (Allport, 1954). Additional moderators include group status (Pettigrew & Tropp, 2006) and salience of interpersonal identity and intergroup membership both in isolation and overtime (Brewer & Miller, 1984; Brown & Hewstone, 2005; Dovidio et al., 2001; Gaertner et al., 1993; Hewstone & Brown, 1986; Pettigrew, 1998). Additionally, IMIC model of contact touches upon the mediating factors inherent in the contact-intergroup association. These and other mediators highlighted in the literature will be fully explored later in this section.

Indirect Intergroup Contact

In addition to direct forms of contact whereby members of opposing groups encounter each other on a face-to-face basis, other modes of contact occur naturally, and artificially as components of intervention programmes. This section explores theory and research relating to extended contact and imagined contact. Although these two forms of indirect contact influence intergroup attitudes to a lesser degree than direct contact, they can form important initial stepping-stones to direct contact (Crisp & Turner, 2010).

Extended contact. This form of indirect contact operates via the a-friend-of-your-friend-is-my-friend phenomenon (Wright et al., 1997). Extended contact reduces intergroup anxiety, fosters the inclusion of the outgroup in the self-concept and changes

perceptions of group norms (Aron, Aron, Tudor, & Nelson, 1991). The 'inclusion of others in the self' (IOS: Aron et al., 1991) is a central component of extended contact. This inclusion encourages individuals to treat and think of outgroup members in a similar way to the self. As individuals are innately motivated to view themselves with positive regard, this positive judgment extends to others. Inclusion of the other in the self also improves expectancies of outgroup behaviours. Perceptions of outgroup norms about the ingroup and ingroup norms about he outgroup are revised due to increased closeness to the self.

Studies have demonstrated that, whilst controlling for direct contact with outgroup members, observing or learning about an ingroup member with an outgroup friend typically reduces prejudice (for a review see Vezzali, Hewstone, Capozza, Giovannini, & Wolfer, 2015). In fact, extended contact yields more powerful effects on those with less direct contact experience (Christ et al., 2010; Cameron, Rutland, Hossain, & Petley, 2011). It is hypothesised that seeing an ingroup friend interacting positively with an outgroup member increases the acceptability of cross-group friendships, enabling the development of friendships and improving intergroup attitudes (Pettigrew, Tropp, Wagner, & Christ, 2011). Watching ingroup members interact positively with the outgroup allows the observer to make positive inferences about ingroup norms that would be not be possible via direct contact. This process of prejudice reduction via changing relative social norms is thought to be unique to extended contact (Crisp & Turner, 2009).

In a bid to understand boundary conditions of extended contact researchers ran a series of school interventions to compare the various reformations of direct intergroup contact previously discussed (Cameron & Rutland, 2006; Cameron, Rutland, Brown, & Douch, 2006; Cameron et al., 2011). Using consistent methodology, results revealed that the intergroup model (Hewstone & Brown, 1986) and the dual identity model

(Dovidio et al., 2001) were superior to the CIIM (Gaertner et al., 1993) and the decategorisation model (Brewer & Miller, 1984). Collectively, these studies suggest that extended contact works best when group memberships are salient. Additionally, processes underlying the intervention effects were moderated by age (age range 6-11) (Cameron et al., 2011). Older children were more affected by changes in social norms. Author's hypothesised that this age effect was related to older children's higher level of ingroup identification.

Imagined contact. Whilst extended contact encompasses processes related to cross-group friendships, imagined contact reduces prejudice via the "mental simulation of a social interaction with a member or members of an outgroup category" (Crisp & Turner, 2009, p.234). This relatively new form of indirect contact (Turner, Crisp, & Lambert, 2007) involves the combination of intergroup contact and mental stimulation. Research has established that mental stimulation can have a powerful effect and can elicit behaviours commonly stimulated in response to actual experiences (Garcia, Weaver, Moskowitz, & Darley, 2002). Classic research replicating bystander apathy effects (Darley & Latane, 1968; Latane & Daley, 1968) has demonstrated the strength of mental stimulation. The bystander apathy effect is a phenomenon whereby individuals are less willing to help others when they are part of a crowd, compared to when they are alone. Research revealed that merely imagining oneself in a crowed room reduced helping behaviour. Adapting this paradigm, the imagined contact instructions ask participants to imagine a positive, relaxed and comfortable intergroup encounter with a stranger. It is hypothesised that during this task participants think about what they would learn from their contact partner, how they would feel during the experience, and how this affects their opinions of the stranger and the entire outgroup (Crisp & Turner, 2013). In this way, imagined contact mimics the processes that characterise direct contact. In an empirical study Turner et al. (2007) asked

heterosexual male participants to imagine a positive intergroup encounter with a homosexual male stranger. Compared to a control group, who imagined a hiking trip, those in the experimental group reported decreased ingroup bias.

Exploring moderators of the imagined contact effect, three experiments revealed that imagining contact with ethnic or national outgroup members lead to the projection of positive self-traits to the outgroup. Three moderators of this effect where identified; ingroup identification, majority group membership and salience of the self, rather than the group (Stathi & Crisp, 2008). It is hypothesized that the influence of imagined contact on the projection of positive self-traits was not as effective for minority group members as they have higher levels of ingroup identification (Simon & Brown, 1987).

It is important to note that the relationship between ingroup identification and imagined contact this is contra to that of extended contact. Extended contact is more effective for high ingroup identifiers because it involves the influence of ingroup members' behaviour (Crisp & Turner, 2013). This distinction of the varied effects of ingroup identification on imagined and extended contact presents interesting avenues for intergenerational contact research. For adolescents who are likely to be highly identified with their ingroup (Duckett, 1992) extended contact interventions may work best, whilst older adults, who identity less with their ingroup (Abrams, Eilola, & Swift, 2009), may react better to imagined contact.

In summary, extended contact and imagined contact offer two types of indirect contact, which are especially helpful when opportunities for direct contact are low. Whilst imagined contact works by mimicking the psychological processes of direct contact, extended contact operates in a purely psychological manner by improving perceptions of the acceptability intergroup contact and increasing perceptions of the prevalence of cross-group friendships.

Mediators of Intergroup Contact

In addition to studies identifying when intergroup contact yields positive outcomes, a large body of research examines how such benefits are achieved. These studies focus on the psychological variables that account for the relationship between contact and beneficial outcomes and can be classified as cognitive or affective. The main mediators identified include the reduction of negative affect, such as intergroup anxiety (Stephan & Stephan, 1985) and the increase of positive affect, such as empathy and perspective taking (Batson et al., 1997). More cognitive routes include general knowledge of the outgroup (Turner, Hewstone, & Voci, 2007; Pettigrew & Tropp, 2011) and social norm change (Cameron et al., 2011), whilst active routes include self-disclosure (Davies et al., 2013; Turner, Hewstone, & Voci, 2007).

Intergroup anxiety. It is suggested that anxiety related to the threat of unpleasant intergroup contact is a fundamental component of intergroup relations and is experienced either prior to anticipated contact, or during actual contact (Greenland & Brown, 1999). In their seminal article exploring intergroup anxiety, Stephan and Stephan (1985) suggest that it arises from an uncertainty of outgroup customs and norms of behaviour, and concerns that contact may lead to misunderstandings, embarrassment, discrimination and rejection. In addition to increasing prejudice, anxiety can encourage an avoidance of contact situations (Stephen & Stephan, 1985). Subsequent research has revealed that positive intergroup contact reduces anxiety across many contexts and outgroups (Islam & Hewstone, 1993; Voci & Hewstone, 2003; Paolini et al., 2004; Stephan, Stephan, & Gudykunst, 1999). A study measuring attitudes towards immigrants in Italy identified that intergroup anxiety mediated the relationship between contact and both explicit and subtle measures of prejudice (Voci & Hewstone, 2003, study 1).

Furthermore, studies utilizing neuroscientific methods provide support for the meditational effects of intergroup anxiety. After an intergroup encounter with a black confederate, white participants reporting high prior outgroup contact exhibited lower levels of physiological stress on indices of threat based on patterns of neural and hormonal cardiovascular responses, than those with low prior outgroup contact (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001). Together these studies illustrate the potent capacity of intergroup anxiety to facilitate reduced prejudice effects arising from contact.

A meta-analysis of mediators of the direct contact-prejudice association identified intergroup anxiety and empathy to be the most powerful (Pettigrew & Tropp, 2008). Additionally, anxiety is also a powerful mediator of imagined contact (Turner et al., 2007) and whilst effective, is not as integral to extended contact (Davies et al., 2011; Eller, Abrams, & Zimmerman, 2011; Gomez, Tropp, & Fernandez, 2011).

Empathy and perspective taking. Although intergroup anxiety is a positive predictor of prejudice, which intergroup contact reduces, empathy and perspective taking are negative predictors of prejudice that positive contact increases. Many researchers consider empathy and perspective taking as similar psychological mechanisms, and some hypothesise that perspective taking constitutes the cognitive component of empathy (Pettigrew & Tropp, 2008; Swart, Hewstone, Christ, & Voci, 2011).

It is suggested that the positive outcomes of empathy are created via the recognition that both the ingroup and outgroup share aspects of life experience and destiny (Brown & Hewstone, 2005). Research shows that altruistic motivation inspired by imageing how another individual feels can generalize from an outgroup member to the whole outgroup population (Batson, Chang, Orr, & Rowland, 2002; Batson, Early, & Salvarani, 1997). Imagining a drug addict's feelings lead to increased empathic

concern for the drug addict's welfare, which mediated improved attitudes towards drug addicts as an outgroup (Batson et al., 2002). A study focused on contact-prejudice associations showed that Italian hospital workers who reported high levels of contact with immigrants in the workplace, also reported low levels of prejudice which were mediated by increased empathy (Pagotto, Voci, & Maculan, 2010). Furthermore, a study investigating pathways from contact to improved intergroup attitudes towards an African American outgroup, revealed that perspective taking was linked to reduced intergroup anxiety (Aberson & Haag, 2007). White students who reported high prior contact also experienced increased perspective taking which in turn related to decreased anxiety. Subsequently, anxiety was associated with reduced stereotyping and improved intergroup attitudes. Collectively, these studies suggest that empathy and perspective taking not only mediate the contact-attitudes relationship but are also related to other established mediators of reduced prejudice. Whilst empathy and perspective taking have both been identified as a facilitating variables for extended contact (Andrighetto, Mari, Volpato, & Behluli, 2012; Turner, Hewstone, & Voci, 2007) only perspective taking has been identified as a mediator of imagined contact (Husnu & Crisp, 2015).

Knowledge. Increased knowledge of the outgroup was initially thought to be a mediator between contact and reduced prejudice (Allport, 1954). It was believed that learning about the outgroup and appreciating intergroup similarities would foster improved relations. However, this runs contra to Brown & Hewstone's (2005) integrative model of contact which maintains a level of salience of group differences is required for successful contact. Indeed, a later meta-analysis of anxiety, empathy (and perspective taking) and knowledge identified that knowledge has the least mediational effect (Pettigrew & Tropp, 2008). It is suggested that it may be necessary for anxiety to be reduced before knowledge of the outgroup can play a major role in the relationship between contact and prejudice reduction (Pettigrew & Tropp, 2008).

Self-disclosure. Self-disclosure is the voluntary sharing of personal information between one individual and another (Miller, 2002) and is integral to the formation and maintenance of positive interpersonal relationships (Altman & Taylor, 1973; Reis & Shaver, 1988). Receiving intimate disclosure increases interpersonal trust and liking of the discloser (Collins & Miller, 1994) and is likely to be reciprocated, leading to mutual interpersonal attraction (Laurenceau, Barret, & Rovine, 2005). Self-disclosure also creates intergroup affiliations, and has benefits for both sharer and recipient. For the recipient it decreases intergroup anxiety and for the sharer allows a degree of control over the information they choose to reveal (Brown & Hewstone, 2005). It is linked to friendship and empathy (Pettigrew & Tropp, 2008) and mediates both direct and indirect forms of contact. It is particularly effective in cross-group friendships and extended contact (Davies, Wright, Aron, & Comeau, 2013; Turner, Hewstone & Voci, 2005.)

Ingroup norms. Ingroup norms are a set of beliefs, attitudes and behaviours shared by a social group (Cialdini, Kallgren, & Reno, 1991), they define a group's consensus on attitudes and values accepted by the ingroup and provide a template of how an exemplar group member should behave. Research has shown that both cross-group friendships and extended intergroup contact improve the perception of positive ingroup norms about the outgroup, which in turn lead to positive outgroup attitudes (Davies et al., 2013; Turner et al., 2008). It is suggested that the indirect role of ingroup norms in contact-attitudes relationship occurs for two reasons (Davies et al., 2013). Being treated normally by ingroup members following intergroup contact confirms that contact is typical of, and accepted by, the ingroup. Further, when ingroup characteristics are uncertain, individuals can use their own behaviour to inform knowledge and understanding of behaviour that is typical of the ingroup (Otten & Bar-Tal, 2002; Otten & Epstude, 2006).

Critique of Intergroup Contact

A limitation of many intergroup contact cross-sectional studies is that selection bias hampers interpretation of the causal sequence of effects (Pettigrew, 1998). For example, frequent and good quality contact between younger and older adults is likely to improve young adults' positive attitudes towards older adults, but it may also be the case that young adults with positive attitudes towards older adults seek out more intergenerational contact and experience it as good quality contact. Whilst an extensive programme of research has harnessed robust support for the causal direction of cross-sectional studies, methods can be employed to overcome this limitation. Experimental designs involving random participant allocation circumnavigate the selection bias. A further solution is provided by longitudinal designs which measure contact and attitudes at sequential time points allowing data analysis which tracks attitudinal change over time relative to contact experienced (Binder et al., 2009; Brown, Eller, Leeds, & Stace, 2006; Eller & Abrams, 2004; Swart et al., 2011).

A second issue when designing intergroup contact studies is the many suggested optimal situational factors (Pettigrew, 1998). In addition to the well-documented factors previously discussed (Allport, 1954, Cook, 1962), researchers have also posited that successful contact requires common language, voluntary contact, a prosperous economy, initial non-negative views and stereotype disconfirmation (Ben-Ari & Amir, 1986; Cook, 1978; Wagner & Machleit, 1986). However, it is strongly argued and meta-analytic research provides evidence consistent with the perspective that these conditions form facilitating factors rather than essential conditions of contact (Pettigrew, 1998; Pettigrew & Tropp, 2011).

A further criticism that has developed across six decades of intergroup contact research is a positive contact bias (Pettigrew & Tropp, 2011). As the field has focused on prejudice reduction it is unsurprising that positive contact is the main focus of

research. However, in recent years studies have explored the effects, conditions and mediators of negative contact (Dhont, Cornelis, & Van Hiel, 2010; Graf, Paolini, & Rubin, 2014; Paolini, Harwood, & Rubin, 2010) and established that rather than positive and negative contact forming extremes of a quality dimension they are distinct constructs that work via independent psychological processes (Barlow et al., 2012; Pettigrew & Tropp, 2011). Therefore, whilst a reduction of ageism is the objective of successful intergenerational contact, consideration should also be given to situations in which negative contact may arise.

In summary, the causal sequence of effects should be considered in the design of intergroup contact research, and where possible experimental or longitudinal designs employed. Contact lacking facilitating factors indentified in previous research is nonetheless worthy of investigation, and potential negative contact between groups should not be overlooked.

Considerations when Applying Intergroup Contact Theory to Ageism

Research employing an intergroup contact framework to reduce ageism should consider unusual or unique psychological processes operating within age relations that are not observed in research of other social groups. These include the conceptualisation of generations and age, age group labels, age boundaries, group status and transition between age groups. Each factor presents a potential moderator of intergenerational contact effects.

What is a generation? The term intergenerational contact itself can be defined as intergroup contact between individuals from different generations. In basic terms intergenerational contact indicates contact between younger and older adults or children and older adults. However, labels for many more generational groups exist; childhood, adolescence, young adults, middle age and older age. Increased societal focus on childhood, delayed transition to adulthood and increased longevity over the last 50 years

has influenced further demarcation of age groups and the advent of further labels such as tween, teenager, young adult, middle-aged person, senior citizen, elderly person, younger old and older old. Therefore, psychological processes underlying and influencing intergenerational relations may vary. For example, a young adult's ageing anxiety is likely to be differently affected by intergenerational contact with an actively ageing, 65 year old, than a infirm, dependent older adult of 90 years old. The degree to which individuals or society endorse terms for different generations provides a wide and fruitful research field for psychologists to examine.

Subjective age and age identity. As mentioned in Chapter 1, the term age also varies by definition, it can be conceptualised both chronologically and subjectively. Younger adults' subjective age is older than their chronological age, whilst older adults' subjective age is younger than their chronological age. Research also provides some weak evidence that subjective age is linked to negative attitudes towards older adults (Keith, 1977; Ward, 1977), suggesting that subjective age may moderate intergenerational contact effects. In addition to subjective age, age identity provides an influential component of intergroup relations. Age identity describes the degree to which an individual identifies with their age group. Research across multiple outgroups establishes that prejudice can be predicted by the extent to which people positively identify with their ingroup (Abrams & Hogg, 2001; Tajfel, 1981) and that younger and older age groups have a stronger age identification than middle-aged adults (Abrams et al., 2009).

Who is old? A further issue of age groups that may affect intergenerational contact is the imprecise nature of age boundaries. Whilst membership of other social groups may be more distinct (race, ethnicity), a target's perceived age can vary by own age, time, context and culture (Abrams et al., 2009; Tasiopoulou & Abrams, 2006).

The juncture at which a person becomes old can depend on the age of the perceiver. For example, 16 – 24 year olds consider old age starts at 56 years old, whilst for adults over 80 years old it is 69 years old (Abrams et al., 2009). Age estimates also change overtime. Survey research tracking estimates of old age over a 4 year period from 2004 to 2008 (Abrams et al., 2009) reported that the start of old age increased from 58.6 years old to 66.4 years old. Although this increase could be explained by differences in the survey design, the notion that the old age boundary is being pushed up over time is supported by recent data indicating that currently the threshold of old age stands at 74 years of age (Ipsos Mori, 2016). Therefore, contact between individuals of different age groups maybe considered as intergenerational contact by some, but not others and may vary overtime. This second point is important as it devalues findings from dated intergenerational research, thus increasing a pressing need to examine age relations in the current social climate.

Context is an additional moderator of age boundary estimates. On average old age starts at 62.7 years old (Abrams et al., 2009), but this drops to 50 years old in the workplace (DWP, 2010). This means that a 51 year old may be considered as middle-aged in an everyday life context, but old in the workplace. Consideration should also be given to the variation of perceived attainment of old age across occupations. For example, an old television presenter is likely to be much younger in chronological years than an old judge. Age categorisation also varies across cultures, which can impact intergenerational contact. For example, a British 23 year old is likely to perceive contact with a 56 year old as intergenerational contact, because in Britain young adults estimate that old age starts at 56 years (Abrams et al., 2009). However, a young Greek may be less likely to perceive a 56 year old as an older adult, because on average Greeks perceive that old age starts at 68.2 years (Abrams, Russell, Vauclair, & Swift, 2011). Therefore, when designing intergenerational contact studies researchers should

bear in mind that the perceptions of age boundaries may vary by participants' own age, cultural background and the context of contact.

Who is powerful? Age boundary estimates and the degree to which individuals identify with own age can also influence the power and status operating within intergenerational contact. Group status across the lifespan has a curvilinear trajectory; younger adults and older adults are similarly viewed as low status, whilst middle-aged adults inhabit positions of high power and status (Garstka, Hummert, & Branscombe, 2005). This group status differential presents some issues when applying intergroup contact theory to younger and older adults, as both may feel disadvantaged or marginalised compared to the middle-aged group. Whilst intergroup contact literature demonstrates that interactions between same status group members (Hewstone et al., 2005; Hewstone, Cairns, Voci, Hamberger, & Niens, 2006; Hewstone et al., 2008) varies from contact between majority and minority groups (Tropp, 2006), research examining contact between two low status groups is rare. Additionally, intergroup contact traditionally examines dichotomous groups yet age as a social group has multiple categories (young, middle-aged, old age). Group status presents further complexities when crossed with the variation of age boundaries. For example, when a young adult encounters a 58 year old they may perceive it as contact with a middle-aged adult or older adult, dependent upon their old age boundary estimate. The former encounter presents contact with a status differential, as the younger adult is lower status than the middle-aged adult (Garstka et al., 2005). Yet the latter example presents contact where both parties are perceived as equally low in status.

Age trajectory. A final unique aspect of age groups and intergroup contact, is transition between groups. Although individuals can transition between other groups (religion, disability) age is the only group where all members either anticipate joining the outgroup group (getting older) or have previously belonged to the outgroup. This

anticipated or prior outgroup membership is likely to effect intergenerational relations in a manner not experienced with other social groups. Membership of an unattractive outgroup (such as old age) may evoke fear in young adults (Lashner & Faukender, 1993), older adults' prior membership of the outgroup may evoke nostalgia which is linked to enhanced social connectedness (Wildschut, Sedikides, Routledge, Arndt, & Cordaro, 2010).

Summary

Chapter 2 provides an overview of the social psychological theory of intergroup contact and a summary is displayed in Table 1. This chapter explained direct forms of contact and highlighted the success of cross-group friendships. It also provided detail of theoretical models citing group salience and longterm frequent contact as important components for successful contact. Intergroup anxiety, empathy, knowledge, social norm change and self-disclosure were outlined as psychological mediators of contacts' effects. Recent evidence was presented demonstrating that prejudice can also be reduced by indirect forms of contact; extended and imagined contact. These may prove particularly useful for the reduction of ageism considering the prevalence of societal age segregation mentioned in Chapter 1. Intergroup contact is not without its limitations, and this chapter also explored the difficulties of interpreting causal sequences in contact research and the positive contact bias. This chapter ended with an examination of the unique factors created by age groups, which may present challenges for the application of intergroup contact to the reduction of ageism. Chapter 3 provides a critical review of intergenerational contact research.

Table 1. *Summary of types of intergroup contact.*

Types of contact	When it works best and favourable conditions	How it works	Advantages	Barriers and conditions that affect success
Friendship	Regular, personal contact.	Sharing personal information	The strongest type of contact.	Lack of opportunities for personal contact. Social norms that discourage friendships.
Direct contact	Equal group status, cooperation, institutional support and common goals. Personal contact. Awareness of social identities.	Reduces anxiety about contact. Increases empathy. Increases perspective taking. Increases knowledge of the other group. Allows personal information sharing.	Can lead to friendships. Translates into prejudice reduction programmes / interventions. Can be encouraged in institutional settings e.g., the workplace.	Segregated societies. High vs. low status groups. Large vs. small groups. Superficial contact. Social norms that discourage contact. Anxiety about direct contact.
Extended contact (Having a friend	Awareness of social identities. Less experience	Positively challenges social acceptability of having	Useful in segregated societies. Provides a first step to direct contact	Lack of friends. Lack of friends with friends in the

who has an outgroup friend)	of the other social group.	outgroup friends. Inclusion of other in self. Reduces anxiety about contact.	via reducing anxiety.	other social group. Weaker effects than direct contact.
Imagined contact (Imagining an encounter with an outgroup member.)	Imagining the encounter in great detail.	Reduces anxiety about contact. Increases empathy. Increases perspective taking.	Useful in segregated societies. Provides first step to direct contact via reduced anxiety. Useful when no friends have crossgroup friendships. Economical to use	Weaker effects than direct contact.

CHAPTER 3: REVIEW OF INTERGENERATIONAL CONTACT LITERATURE

Abstract

This chapter reviews research examining intergenerational contact. It includes a wide variety of research methods and designs including surveys, correlation studies and experiments. Ageist attitudes towards older adults can be reduced via direct intergenerational contact, intergenerational friendships, within families, in the workplace and in health and social care settings. Although a considerable range of studies have demonstrated that imagined contact reduces ageism, extended intergenerational contact presents a gap in the literature. Additionally, few studies examine the mediators of intergenerational contact, and some findings are divergent. Thus, more research is required exploring the processes that underlie intergenerational contact's reduction of ageism. Elements of this chapter appear within the published report: Drury, Abrams, and Swift (2017). Making intergenerational connections: What are they, why do they matter and how to make more of them. Age UK, London[1].

Direct Intergenerational Contact

This section reviews the intergroup contact literature that focuses on younger people's experience of direct contact with older adults. It is divided into five sections; direct contact with older adults in everyday life; cross-group friendships; coworker relationships; health and social care contact and family contact. A summary of the literature review is presented in Table 2 at the end of this section.

Direct Intergenerational Contact in Everyday Life

Outcomes: Dependent measures related to direct intergenerational contact in everyday life. The majority of direct intergenerational contact research focused on

[1] This report also contains a literature review of applied intergenerational programmes and recommendations for best practice. The main findings of the report feature in the General Discussion in Chapter 8.

experiences during everyday life investigates attitudinal dependent measures and reveals that positive intergroup contact is related to more positive outcomes (Bousfield & Hutchison, 2010; Hale, 1998; Harris & Fielder, 1988; Hawkins, 1996; Hutchison, Fox, Laas, Matharu, & Urzi, 2010; Knox, Gekoski, & Johnson, 1986; Luo et al., 2013; Schwartz & Simmons, 2001; Tam, Hewstone, Harwood, Voci, & Kenworthy, 2006). In addition, one experimental study demonstrates how intergenerational contact between strangers can increase prosocial outcomes of younger adults and cognitive outcomes for older adults (Kessler & Straudinger, 2007). Both negative explicit and implicit attitudes towards older adults are reduced by intergenerational contact (Bousfield & Hutchison, 2010; Hale, 1998; Harris & Fielder, 1988; Hawkins, 1996; Knox et al., 1986; Luo et al., 2013; Schwartz & Simmons, 2001; Tam et al., 2006). Explicit measures include those designed to gauge general prejudice (GES; Wright et al., 1997) and other scales focused specifically on ageism (Fabroni et al., 1990; Rowland & Shoemake, 1995; Rosencranz & McNevin, 1969; Sanders, Montgomery, Pittman, & Balkwell, 1984; Tuckman & Lorge, 1953a).

Early research using a scale which measures the degree to which respondents agree with descriptions of older adults (Tuckman-Lorge Old People Scale, 1953) revealed that the frequency of contact young adolescents had with older adults was unrelated to ageism (Harris & Fielder, 1988). Further intergenerational contact research featured an attitude-assessment instrument, the Ageing Semantic Differential (ASD: Rosencranz & McNevin, 1969), which is designed to measure descriptive and evaluative attitudes towards older adults. The ASD's instrumental-ineffective dimension (e.g., active-passive) and autonomous-dependent dimension (e.g., self-reliant-dependent) reflects descriptions of older adults whilst the personal acceptability-unacceptability dimension (e.g., friendly-unfriendly) is more evaluative and therefore more accurately captures attitudes. Research using the ASD revealed that the quality of

undergraduates' contact was related to outcomes (Knox et al., 1986). Specifically, contact was more predictive of the evaluative dimension rather than the descriptive dimensions. Finally, the three-factor Fabroni Scale of Ageism (FSA) (Fabroni et al., 1990), which captures a combination of attitudes and discriminatory behaviour, has also been used to measure ageism and demonstrated a relationship with intergenerational contact (Luo et al., 2013). In summary, intergenerational contact has a wide-ranging effect on explicit attitudes toward older adults, as measured by a range of scales designed to capture prejudice and ageism more specifically.

In addition to explicit attitudes, this body of research has produced evidence that contact is related to indirect and implicit attitudes (Schwartz & Simmons, 2001; Tam et al., 2006). In a cross-sectional survey of 62 students, respondents were asked to indicate the percentage of older men and women they perceived possessed stereotypical traits of older adults (Schwartz & Simmons, 2001). These included a list of 15 negative and 15 positive traits that were based on prior research investigating stereotypes of older people (Schmidt & Boland, 1986). Positive stereotypes included the degree to which participants believed older adults were wise, patriotic, generous and courageous. Negative stereotypes included being senile, stubborn, complaining and forgetful. Results identified that higher quality, not frequency, of contact predicted more positive indirect attitudes as indicated by a lower score on the stereotype assignment measure. Additional research using a similar semantic differential revealed that more positive overall indirect attitudes towards older adults were predicted when college students (N = 420) had been close to an older adult who was not a relative (Hawkins, 1996). These findings suggest that indirect attitudes are related to contact in the same manner as explicit attitudes; via contact quality, not frequency.

Later research corroborates the contact-stereotyping relationship (Hale, 1998). A study of self-reported contact quality revealed that respondents experiencing high

quality contact scored lower on a stereotyping measure when compared to those experiencing low quality contact. Furthermore, this study revealed the same pattern of outcomes on a measure of knowledge about older adults and ageing processes. High quality contact was related to more knowledge. This is an important finding, as mentioned in Chapter 2, outgroup knowledge mediates the contact-attitudes relationship (Pettigrew & Tropp, 2008). This finding suggests that knowledge may mediate the contact-stereotype relationship but this pathway was not tested.

Research using the implicit associations test (IAT; Greenwald et al., 1998) has demonstrated a relationship between intergenerational contact and implicit attitudes towards older adults (Tam et al., 2006). Seventy-nine undergraduates indicated the frequency and quality of their prior intergenerational contact and their explicit and implicit attitudes towards older adults. The IAT measured the degree to which participants automatically associated older and younger names (Elsie/Zoe) with positive and negative evaluations. In this test, ageist attitudes are displayed when participants are faster to pair young names with positive traits and old names with negative traits, compared to pairing old names with positive traits and young names with negative traits. Results revealed that positive implicit attitudes were uniquely, directly and positively predicted by contact frequency. The finding that implicit attitudes are predicted contact frequency alone is in direct contrast to the Schwartz and Simmons (2001) study, which suggests that contact quality and not frequency predicts indirect attitudes as measured by stereotype attributions. A confound of Tam et al.'s (2006) methodological design may provide clues for these divergent results. It is possible that their contact frequency scale does not measure merely the quantity of contact, but also quality. The frequency measure featured two items, the amount of prior contact with older adults (1 = *very low*, 7 = *very high*) and how many adults respondents knew 'pretty well (e.g., know their names, could chat to easily)'. The second item introduces

an element of contact quality to the measure. Listing only older adults whose names respondents knew would omit older adults whom they had regular contact with but whose names they did not know (for example, an aloof neighbour). Additionally, only recording older people with whom participants 'could chat to easily' would omit older people with whom they had negative contact. Therefore, the findings do not reliably show that contact frequency alone predicts positive implicit attitudes, but more likely the frequency of positive contact. However, this critique does not explain why contact quality was not related to implicit attitudes in the Tam et al. (2006) study. Differences between the IAT and stereotype assignment trait may explain these divergent findings; because it measures an unconscious reaction, the IAT might represent a measure of more indirect, deep rooted ageism than the stereotype attribution task. However, these studies do highlight the power of contact, as implicit attitudes are less easy to change than explicit attitudes (Wilson et al., 2000).

In addition to attitudes and stereotypes, contact is also related to affect, behavioural intentions, future contact expectancies and contact intentions (Bousfield & Hutchison, 2010; Hutchison et al., 2010). Results of an undergraduate survey also revealed that prior intergenerational contact was associated with reduced intergroup anxiety (Bousfield & Hutchison, 2010). This relationship is important as it suggests that findings from intergroup contact research relating to other target groups (Pettigrew & Tropp, 2008) are applicable to groups based on age.

In addition to attitudes and feelings, it is important to establish whether intergenerational contact affects behaviour. Such a study is lacking from the literature, but good contact quality is related to more positive behavioural intentions towards older adults, such as intentions to donate to older adults' charities and to help, or to spend time with, older adults (Bousfield & Hutchison, 2010). Additionally, when young adults had experienced more frequent, good quality intergenerational contact they were

more likely to be willing to engage in contact with older people in the future, and have more positive expectations about such encounters (Hutchison et al., 2010).

The final study described in this section demonstrates how intergenerational contact impacts young adults' prosocial behaviour and older adults' cognitive performance (Kessler & Staudinger, 2007). In a laboratory experiment 90 older women (aged 70 - 74 years old) and 90 younger girls (aged 14 - 15 years old) were randomly assigned to one of three conditions in which they formed a dyad with either a same aged or opposite aged partner. Dyads then collaborated on either a life problem task or a media problem. These tasks represented domains in which older and younger adults were expert, respectively. For younger adults, dependent measures tested their pro-social behaviour (volunteering to help other young adults) and communion goals (indicating less agentic, self-focused behaviour). For older adults, their cognitive performance and cognitive-affective complexity (CAC; Labouvie-Vief & Medler, 2002) were tested. CAC is the ability to view events and individuals in an open, tolerant and complex manner, by focusing on positive and negative aspects simultaneously. Prior research indicates that older adults are deficient in CAC (Labouvie-Vief & Medler, 2002).

Although there were no differences between groups in relation to young adults' communion goals, those who collaborated with older adults on the life problem task were more prosocial that those collaborating with a younger adult. Additionally, they were more prosocial than old-young dyads that collaborated on the media problem. This finding suggests that intergenerational contact in contexts where the older adult is stereotyped as competent prompts younger adults to be more prosocial. This outcome has important societal implications, but is not informative about prosocial behaviour towards older adults.

The outcome was similar for older adults. Those working on the life problem

task with younger adults scored higher on CAC than those collaborating with older adults, although there were no differences between these groups, in relation to older adults' cognitive performance. However, when compared to multigenerational dyads that collaborated on the media problem, older adults in the old-young dyad that worked on the life problem scored higher cognitive performance. Overall, this study suggests that intergenerational interactions in which the domain favours expertise of the older adult result in better cognitive outcomes for older adults and prosocial behaviour of younger adults.

Taken together the literature reviewed in this section informs that, in addition to more specialized measures focused specifically on ageism, direct intergenerational contact in everyday life is related to the many of the same outcomes as intergroup contact between other groups. This would suggest that variables which mediate intergroup contact-prejudice relationships with other groups, may work similarly for intergenerational contact-ageism. An important area not researched in this literature is the effect of intergenerational contact on behavioural outcomes.

Moderators: When does direct intergenerational contact in everyday life reduce ageism?

Quality and frequency of contact. Across the research reviewed , contact has been measured as a) the frequency of encounters b) the quality of interactions and c) a composite measure, which combines both frequency and quality. Although the wider literature suggests that contact quality is the stronger predictor (Pettigrew & Tropp, 2006), both quality and frequency reduce prejudice (Hewstone, Rubin, & Wills, 2002).

Research examining the relationship between the frequency of intergenerational contact and ageism is mixed. Various studies report beneficial outcomes from frequent intergenerational contact (Allan & Johnson, 2009; Luo et al., 2013). For example, a cross cultural study of over 1,000 American and Chinese university students revealed

that young adults experiencing frequent interactions with non-grandparent older adults report reduced ageism (Luo et al., 2013). However, earlier intergenerational contact research identified that frequent intergenerational contact was not related to ageism (Harris & Fielder, 1988). The study examined attitudes towards older adults and time spent with older adults over the past year. Respondents were divided into three comparison groups; those reporting high, medium or low contact frequency. Analysis of variance revealed the groups did not differ in their attitudes towards older adults, suggesting contact frequency does not predict reduced ageism. Furthermore, studies report no association between intergenerational contact frequency and attitudes even when the analysis focuses purely on young adults experiencing good quality contact (Schwartz & Simmons, 2001). Therefore, when young adults experience good quality intergenerational contact they are more likely to report positive attitudes towards older adults, regardless of whether the contact was frequent or infrequent.

Research that measures both quality and frequency of contact suggests that quality is the stronger predictor. A study using 57 items to measure different aspects of intergenerational contact including the frequency and quality of contact with a range of older adults in many contexts, identified that the variance in attitudes towards older adults was mostly explained by the quality of contact with older adults in everyday life (Knox et al., 1986). Similarly, later research measuring both intergenerational contact frequency and quality revealed contact frequency was unrelated, but contact quality was a significant predictor of outcomes (Bousfield & Hutchison, 2010). However, this study used only single items for each contact measurement, so may lack content validity. Nevertheless, research featuring multi-item measures shows that good quality contact is positively related to favourable outcomes (Hale, 1998; Schwartz & Simmons, 2001). Measuring contact with a scale of items designed to tap context, quality, intimacy and satisfaction of the contact, Hale (1998) found that intergenerational

contact quality was associated to young adults' knowledge and stereotyping of older adults. One study has examined intergenerational contact by combining measures of contact frequency and quality, and uncovered strong evidence for contact's relationship with optimal outcomes (Hutchison et al., 2010). What is unclear from this research, however, is whether such effects would hold were contact analysed singularly as individual dimensions of frequency and quality.

Whilst overall the research examining contact frequency is inconsistent, what can be concluded from this review is that the quality of intergenerational contact appears to be a stronger indicator of outcomes. More research is needed to explore differences of when each dimension reliably predicts attitudes, and whether this varies depending on the outcome measures.

Target gender. Research examining differences in gender effects of intergenerational contact is rare and divergent (Hawkins, 1996; Schwartz & Simmons, 2001). Schwartz and Simmons (2001) found that whilst respondents experiencing high quality contact reported more positive attitudes than those experiencing lower quality contact, attitudes did not vary depending on gender of the older adult with whom the contact was experienced. Alternative research examined whether intergenerational contact (with either gender) differentially affected attitudes towards older men and women (Hawkins, 1996). Hawkins asked participants about their attitudes towards three age groups; 65 to 74 years old, 75 to 99 years old and those aged 100 years and above. Results showed that closer contact with older adults predicted positive explicit attitudes towards women in all three age groups, but when attitudes were directed towards older men, contact was only predictive for the two older age groups. This suggests that intergenerational contact is more effective towards a wider range of older women than older men. More research exploring gender differences of targets and

participants is required to corroborate this finding and create a more robust understanding of intergenerational contact gender effects.

Mediators: How does direct intergenerational contact in everyday life reduce ageism?

Intergroup anxiety. In line with intergroup contact research on ethnicity and race (Islam & Hewstone, 1993; Richeson et al., 2003), correlational data reveals that the relationship between intergenerational contact and outcomes is mediated by intergroup anxiety (Bousfield & Hutchison, 2010; Hutchison et al., 2010). Anxiety fully mediated the relationships between contact and outcome variables including; attitudes, behavioural intentions, outcome expectancies and willingness to engage in future contact. As intergroup anxiety has been identified as the key mediation variable within the wider intergroup contact literature (Pettigrew & Tropp, 2008), this finding supports the notion that intergroup contact theory works similarly in its application to ageism as it does to other types of prejudice. However, research has yet to confirm any other cognitive or affective meditation of intergenerational contact and attitudes towards older adults.

Summary. This section highlights that intergenerational contact with older adults in everyday life can have beneficial outcomes relating to explicit and implicit attitudes towards, and stereotyping of, older adults. However, these effects appear more reliably predicted by contact quality than frequency. Contact is also related to behavioural intentions, future contact expectancies and future contact intentions. Intergroup anxiety mediates the contact-outcomes relationship, in addition to self-disclosure, intergroup anxiety and empathy with grandparents.

Future research. In order to address anomalies in the literature, future research should aim to replicate intergenerational contact studies to examine whether and when contact frequency, in addition to quality, predicts attitudes. Also, more exploration of

the effects of intergenerational contact on implicit or indirect attitudes is required. Only one study reviewed examined the effects of intergenerational contact on stereotypes and to date no studies have explored how contact predicts dehumanisation of older adults. Due to the increasing dependency of older populations, it is particularly important to examine the effects of intergenerational contact in contexts that confirm or refute negative age stereotypes. One study explored this concept, but did not examine attitudinal or stereotype outcomes (Kessler & Staudinger, 2007). Although the research demonstrates that intergroup anxiety mediates the effects of intergenerational contact, there is a large knowledge gap of other variables that might explain how intergenerational contact improves attitudes towards older adults.

Intergenerational Friendships

As reported in Chapter 2, cross-group friendships yield the strongest prejudice reduction effects compared to other less intimate types of contact (Davies et al., 2011). Within the intergenerational contact literature friendships with older adults often features as a single item in an overall contact measure, along with other indicators from which an aggregate score is calculated (Hutchison et al., 2010; Knox et al., 1986). In such cases the distinct effects of intergenerational friendships are lost. This section presents findings from the limited number of studies that have analysed the discrete effects of intergenerational friendships. These include national surveys carried out across Britain and Europe (Abrams et al., 2009; Abrams et al., 2011; Tasiopoulou & Abrams, 2008; Vauclair, Abrams, & Bratt, 2010) and one cross-sectional study with a student sample (Van Dussen & Weaver, 2009).

Outcomes: Dependent measures related to intergenerational friendships. Intergenerational friendship is related to reduced ageism, as indicated by established outcome measures such as stereotyping and explicit prejudice (Abrams et al., 2009; Abrams et al., 2011; Tasiopoulou & Abrams, 2008; Vauclair et al., 2010), and more

novel measures such as scales reflecting attitudes towards caring for, and the value of education about older adults (Van Dussen & Weaver, 2009).

Using a sample of 548 Midwestern U.S.undergraduate students, research measured the relationships between intergenerational contact and dependent measures designed to tap perceptions of older adults, opinions related to caring for older adults, and the practical relevance of ageing education (Van Dussen & Weaver, 2009). The independent variable measured contact frequency with various groups of older adults on a scale ranging from 1 (never) to 5 (daily). The individual groups included friends or acquaintances, coworkers, teachers or mentors, clients that respondents served or adults with whom they volunteer. Correlations revealed that having an older friend or acquaintance was related to all outcome variables. No other intergenerational relationships measured achieved such consistent predictive power. The frequency with of contact with older friends or acquaintances was positively related to all favourable outcomes, such as viewing older adults as capable, perceiving care of older adults as uplifting, and rating the study of ageing as relevant for professions both related to ageing (e.g., health professionals) and not related to ageing (e.g., engineers). Conversely, contact frequency with older friends or acquaintances had a negative relationship with less favourable outcomes, including perceptions of older people as demanding and critical of youth, and the perception that caring for older adults as difficult and tedious. This study corroborates the wider cross-group friendship literature (Davies et al., 2011; Pettigrew, 1998), as it demonstrates that compared to the other types of contact, cross-group friendships have the strongest and most consistent positive relationships with desirable outcomes.

However, it should be noted that the 43% of the study population were enrolled on courses within the College of Health and Human Services. Therefore, relationships

could be confounded by a vocational motivation to work with older adults, prior experience of older adults, or outgroup knowledge.

Sampling a potentially less biased population, a series of cross sectional national and European surveys show how the quantity of friendships with adults over 70 years of age is related to ageist attitudes (Tasiopoulou & Abrams, 2006; Vauclair et al., 2010). Taken from the British sample of two waves of the European Social Survey (ESS: 2004, 2006) data analyses reveal that across all ages, those with older friends are less likely to hold the stereotype that incompetence increases with age (Tasiopoulou & Abrams, 2006). However, a later survey (Vauclair et al., 2010) revealed a weaker intergenerational friendship-ageism relationship on a more explicit measure of ageist attitudes. Respondents answered a single bipolar item that asked them to indicate how they felt towards adults over 70 years-of-age on a scale of 1 (extremely negative) to 7 (extremely positive). For respondents aged 50 years and below there was a positive association between intergenerational friendships and attitudes. However, the magnitude of this relationship was small, and it completely disappeared when the population was limited to respondents under 40-years-old or under 30-years-old.

The difference in the strength of the relationship between friendship and ageism in these two sets of analyses (Tasiopoulou & Abrams, 2006; Vauclair et al., 2010) may be due to the more explicit nature of the latter survey item (Vauclair et al., 2010). Individuals may have been less inclined to indicate extreme views (positive or negative) in response to an explicit item, compared to the more indirect stereotype measure (Tasiopoulou & Abrams, 2006). Therefore, it may be the case that more indirect measures capture relationships between intergenerational friendships and ageist attitudes that cannot be detected via a measurement of explicit prejudice.

Overall, having a friendship with an older person is linked to having less stereotypical views of older adults, regardless of respondents' age. However, more

explicit attitudes are related to having older friends, but only for respondents closer to middle age.

Moderators: When do intergenerational friendships reduce ageism?

Quality and frequency of contact. Research that focuses on intergenerational friendship as an independent facet of contact tends to measure this type of interaction in terms of quantity rather than quality. This would seem intuitive, as the nature of friendship is indicative of positive contact via intimacy and the voluntary nature of the interaction. Intergenerational friendship is measured as either the frequency of contact with older friends (Van Dussen & Weaver, 2009) or the number of older friends (Abrams et al., 2009; Abrams et al., 2011; Tasiopoulou & Abrams, 2008; Vauclair et al., 2010). Having at least one older friend is related to less stereotyping (Tasiopoulou & Abrams, 2006), and as the number of friendships rises, explicit ageist attitudes fall (Vauclair et al., 2010). Lastly, students' contact frequency with older friends is related to stereotyping, attitudes towards caring and the value of ageing education (Van Dussen & Weaver, 2009).

Individual and country level predictors of intergenerational friendships. Intergenerational friendships in Britain are rare; analyses of national survey data from 2004 to 2008 showed that only one quarter of young adults aged 16 to 24 years old had a friend aged 70 years old or over (Abrams et al., 2009). Friendships with older adults were more likely for individuals that were themselves older, female, White and property owners (Abrams et al., 2009). Across Europe, different patterns exist (Abrams et al., 2011). Multi-level analyses of data from 28 European countries surveyed in the ESS (2008, 2009) considered both individual and country level predictors relating to ageism, including friendships. To measure the quantity of intergenerational friendships, respondents indicated how many of their friends were aged 70 years old or over. Results showed that on an individual level, the number of friendships was higher when

respondents were older themselves. After accounting for the respondents' age, those who had fewer intergenerational friends were more likely to be female, subjectively poor, in paid employment and living in an urban area. Additional analyses revealed country level predictors (Abrams et al., 2011). In wealthier countries that had a higher proportion of adults over 65-years-old friendships were more likely, whilst they were less likely in countries with a large proportion of individuals living in urbanised areas. These results show that in addition to personal characteristics, social structures of countries also predict levels of friendships with older people.

Collectively, these analyses reveal convergent and divergent patterns of intergenerational friendships across Britain and Europe. In both samples intergenerational friendships are more likely for older people. However, in relation to gender, British women, compared to British men, are more likely to have older friends, whilst European women as a whole are less likely to have intergenerational friendships than European males.

Mediators: How do intergenerational friendships reduce ageism? To date there are no published findings that explain how intergenerational friendships reduce ageism. More complex analysis of the ESS data including meditational variables may reveal what factors account for differences between countries.

Summary. Overall, this literature reveals that intergenerational friendships are uncommon, but when forged they can be beneficial, particularly in relation to reducing negative stereotypes of older adults. Furthermore, young adults with older friends are more likely to have positive views about caring for older adults and appreciate the importance of ageing education. Explicit prejudice towards older adults is related to having older friends, but only for the middle-aged. The number of older friends an individual has varies depending on individual and country level predictors.

Future research. The review of intergenerational friendships has uncovered that very few studies provide information about this type of contact. Considering its powerful nature (Pettigrew, 1998), more research is needed to understand intergenerational friendship's relationships with ageing attitudes and other variables related to ageing. For example, when are friendships with older adults effective on outcomes and how many actual friendships are required? As these friendships are rare, research that uncovers the barriers that prevent the development of such relationships would be fruitful, in addition to studies that uncover facilitating factors required to form such friendships.

Intergenerational Coworker Contact

Intergenerational coworker contact describes occupational contact between younger and older coworkers. This section details how contact in this context is related to attitudes towards older coworkers, other ageing related variables and older adults outside the workplace. Workplace contact with older adults receiving health or social care is not included in this review and forms an independent subsequent section.

Outcomes: Dependent measures related to intergenerational coworker contact. Intergenerational contact between coworkers is related to many outcomes, including attitudes towards older adults, knowledge of ageing, ageing anxiety, and turnover intentions (Allan & Johnson, 2009; Hawkins, 1996; Iweins, Desmette, Yzerbyt, & Stinglhamber, 2013; Tuckman & Lorge, 1958; Van Dussen & Weaver, 2009). Surveys of young Belgian employees at two financial institutions and a hospital revealed that those who experienced good quality coworker contact held more 'positive' stereotypes of older coworkers, were more likely to help out and be cooperative with older coworkers and less likely to resign (Iweins et al., 2013). Those with better coworker contact also held a more 'organisational multi-age perspective', which could be likened to supporting age-diversity in the workplace. As retaining staff is important

to organisations and high turnover is costly and can damage productivity (Glebbeek & Bax, 2004), it appears that encourageing intergenerational coworker contact could be both socially and financially advantageous.

It should be noted that in these surveys older coworkers were defined as adults over the age of 50 years old, whereas most intergenerational research defines older adults as over 65 years old (Bousfield & Hutchison, 2010; Hutchison et al., 2010). Furthermore, the older workers may have occupied a high status via workplace hierarchy. The effects of intergroup contact can vary depending on the groups' relative status (Tropp & Pettigrew, 2005), so comparisons between this evidence and the other research which focused more on contact or attitudes involving people aged over 65 (e.g., between adolescents and retired adults) are not straight forward.

A separate body of research examines coworker contact and attitudes towards older adults outside the workplace. People who had more intergenerational coworker contact held more favourable attitudes and less stereotypic perceptions of older adults, and also held more positive attitudes towards elder care and experienced lower ageing anxiety (Allan & Johnson, 2009; Tuckman & Lorge, 1958; Van Dussen & Weaver, 2009).

Moderators: When does direct contact in the workplace reduce ageism?

Quality and frequency of contact. In addition to the positive effects of good quality coworker contact on stereotypes and workplace behaviours (Iweins et al., 2013), many studies reviewed in this section provide evidence that frequent coworker contact also has a positive impact on attitudes (Allan & Johnson, 2009; Tuckman & Lorge, 1958; Van Dussen & Weaver, 2009). This is not in line with the findings of direct intergenerational contact in everyday life, where contact frequency per se was unrelated to outcomes and contact needed to be of good quality in order to affect attitudes (Bousfield & Hutchison, 2010; Harris & Fielder, 1988; Schwartz & Simmons, 2001).

The benefits of intergenerational coworker contact seem to flow from different features than the benefits of other types of contact and therefore, it is possible that it operates differently. Older coworkers may be younger than older adults encountered in other intergenerational contact. Some may also have higher status roles (e.g., managers) that are inconsistent with negative and benevolent age stereotypes (e.g., incompetence, dependency) (Cuddy, Norton, & Fiske, 2005), although many older employees do not work in senior positions and the prevailing problematic stereotype is of low competence in older workers (for a review see Posthuma & Campion, 2008).

Furthermore, it could be argued that intergenerational coworker contact supports Allport's (1954) ideal conditions; co-operation, working to common goals, institutional support for equal opportunities (which implies equality across age too) and in some cases, equal status. Similarly, working together may provide the opportunity to develop intergenerational friendships or high quality contact that is not available in everyday encounters. Collectively, these factors may account for why mere frequency of coworker contact is sufficient to bring about positive outcomes.

Mediators: How does direct contact in the workplace reduce ageism?

Ageing anxiety. As mentioned above, intergenerational coworker contact reduces ageing anxiety, and analysis reveals that in turn ageing anxiety reduces ageism (Allan & Johnson, 2009).

Summary. Intergenerational coworker contact is linked to positive attitudes towards older coworkers and work itself (Iweins et al., 2013). Young people who experience frequent intergenerational coworker contact have favourable attitudes towards older adults, are more positive about caring for them and less anxious about their own ageing (Allan & Johnson, 2009; Van Dussen & Weaver, 2009). Unlike intergenerational contact with older adults in the general public, the frequency of intergenerational coworker contact alone may be sufficient to improve attitudes. One

reason workplace intergenerational contact reduces ageism is because it reduces ageing anxiety (Allan & Johnson, 2009).

Future research. It may be that more often than in other situations, coworker contact is good quality contact. However, this supposition has yet to be tested and more research is required to compare the effects of coworker contact to general and family contact in order to isolate if, when and how coworker contact is superior.

Health and Social Care Intergenerational Contact

Health and social care settings offer unique opportunities to study intergenerational contact in which an older person (including the 'older old') is dependent upon a younger or middle-aged person for care and support. This section describes evidence from research on contact involving older adults and doctors, nurses, care workers and healthcare students.

Outcomes: Dependent measures related to health and social care intergenerational contact. The range of studies examining intergenerational contact in health and social care settings have yielded positive, inconclusive or negative outcomes.

Positive outcomes. Nurses' and nursing students' intergenerational contact in healthcare settings is related to their positive attitudes towards older adults (Meyer, Hassanein, & Bahr, 1980; Nochajski, Davis, Waldrop, Fabiano, & Goldberg, 2011; Wang et al., 2010). For example, nurses working in geriatric medicine have slightly less negative attitudes towards older adults compared to nurses who work with other age groups (Meyer et al., 1980). Similarly, nursing students with experience of working with older patients report more positive attitudes than nursing students without such experience (Wang et al., 2010). A further study examining dental nurses' intergenerational contact identified that the frequency of intergenerational contact at work predicted positive attitudes towards older adults whilst intergenerational contact outside of work had no effect (Nochajski et al., 2011). Collectively, these studies

suggest that those health workers who have more frequent intergenerational contact at work hold more positive attitudes towards older adults.

Inconclusive outcomes. Contact research in healthcare has also produced inconclusive results. Two studies reported no associations between student nurses' intergenerational healthcare contact and their attitudes towards older adults (Hweidi & Al-Obeisat, 2006; Pan, Edwards, & Chang, 2009).

Negative outcomes. Some research has also revealed negative associations between healthcare contact and attitudes towards older patients (Revenson, 1989). Compared to physicians who experienced low levels of contact with older patients, those with high levels of contact rated 83-year-old patients relative to 53-year-old patients as less independent and in greater need of information and support (Revenson, 1989). This suggests that frequent contact with older patients might result in more benevolent stereotyping (see Cuddy et al., 2005). Also, it indicates that when physicians have caseloads with relatively high proportions of older patients, they may develop these potentially harmful 'benevolent' stereotypes of all older patients. This study shines a light on how the proportion of time spent in contact with older patients impacts upon physicians' attitudes towards patients generally. Additionally, it has implications for understanding how the relationship between contact and stereotyping works within healthcare.

Moderators: When is health and social care intergenerational contact beneficial?

Work experience. The length of healthcare professionals' work experience contributes to how intergenerational contact affects their attitudes towards older adults (Meyer, et al., 1980; Wang et al., 2010). In the studies reviewed in this section work experience is used as an indicator of accumulated time spent in contact with older adults in healthcare settings. Studies of healthcare professionals and students reported that

more work experience was linked to more positive attitudes towards older adults (Meyer, et al., 1980; Wang et al., 2010). However, further studies conducted with just healthcare students, reported no relationship between work experience and attitudes (Hweidi & Al-Obeisat, 2006; Pan et al., 2009). It is possible that as students are likely to have shorter work experience overall, the relationship between contact and positive attitudes is not yet sufficiently strong to be consistent.

Mediators. How is intergenerational contact in health and social care beneficial? To date, no research has examined the processes that mediate between intergenerational contact in health and social care and positive attitudes towards older adults.

Summary and implications. Although the picture is a little mixed, intergenerational contact in health and social care settings is linked to professionals' improved attitudes towards older service users and older adults in general, particularly for professionals with more work experience in the sector. Unfortunately, there is evidence that this type of contact may also reinforce benevolent (patronising) stereotypes, though this is likely to be affected by the quality of the contact.

Health and social care settings may offer the opportunity for regular, personal contact that could be friendly and positive. However positive outcomes may arise because the professionals and students who are motivated to work with older adults already have positive attitudes. Other areas of intergenerational contact research confirm that voluntary contact is strongly related to positive attitudes (Van Dussen & Weaver, 2009).

Future research. This summary presents a wide array of contributing factors, some of which are unique to intergenerational contact in health and social care settings, and the inconsistent outcomes of these studies suggest that more research is necessary to understand the relationships between the quality of contact in these settings and

attitudes. Specifically, consideration should be given to whether health and social care intergenerational contact is experienced as positive or negative, and the implications these have on attitudes. In particular, studies of care workers' attitudes towards older adults are rare, and no research has investigated how care workers contact is related to their attitudes towards older adults in their care or older adults more generally.

Family Intergenerational Contact

A common source of intergenerational contact is within family units. Much of the research in this area measures levels of family intergenerational contact in a bid to understand how these relationships are related to attitudes towards older adults and other dependent measures which have impact on older adults' lives (such as health and well-being). Families provide an opportunity for most individuals to have interpersonal relationships with outgroup members in a way that does not operate with other intergroup divisions (e.g., ethnicity). Family intergenerational contact studies aid understanding of how interpersonal relationships are related to intergroup relationships and attitudes.

The family relationships assessed in this section include grandchild-grandparent contact (Abrams, Eller, & Bryant, 2006; Abrams, Crisp, Marques, Fagg, Bedford, & Provias, 2008; Downs & Walz, 1981; Harwood, Hewstone, Paolini, & Voci 2005; Harwood, Raman, & Hewstone, 2006; Hehman, Corpuz, & Bugental, 2012; Hillman & Stricker, 1996; Ivester & King, 1977; Knox et al., 1986; Mills, Vermette, & Malley-Morrison, 1998; Silverstein & Parrott, 1997; Soliz & Harwood, 2006; Tsai, Montamed, & Rougemount, 2013), older parent-adult child contact (Tsai et al., 2013; Wu & Rudkin, 2000), and relationships with undefined older family members (Allan & Johnson, 2009; Gorelik, Damron-Rodrigues, Funderburk, & Solomon, 2000; Hawkins, 1996; Knox et al., 1986). A few studies compare the association between family contact

and outcomes with the relationships between general intergenerational contact and outcomes (Gorelik et al., 2000; Hehman et al., 2012; Knox et al., 1986). Lastly, some studies use an independent variable that measures cohabitation with older adults (Allan & Johnson, 2006; Drake, 1957; Hawkins, 1996; Tsai et al., 2013; Wu & Rudkin, 2000). As it is likely that such co-residents would be older family members, the results of these studies are included in this section on family relationships.

Outcomes: Dependent measures related to family contact. Family intergenerational contact research features dependent measures relating to a range of outcomes. These include attitudes towards older adults (Downs & Walz, 1981; Harwood et al., 2005; Harwood et al., 2006; Hawkins, 1996; Ivester & King, 1997; Knox et al., 1986; Soliz & Harwood, 2006), attitudes towards, and knowledge about, ageing (Allan & Johnson, 2009; Hillman & Stricker, 1996; Gorelik et al., 2000, Soliz & Harwood, 2006), support for public polices related to older adults (Silverstien & Parrott, 1997), judgements about older adults' behaviour (Mills et al., 1998), behavioural outcomes (Hehman et al., 2012) and outcomes experienced by older adults themselves (Abrams et al., 2006, 2008; Tsai et al., 2013; Wu & Rudkin, 2000).

Explicit attitudes towards older adults. The association between young adults' contact (N = 419, age range 13 – 19 years old) with grandparents and their attitudes towards older adults was examined (Ivester & King, 1977) using attitudes Kogan's Attitudes Towards Old People Scale (OP; Kogan, 1961). This instrument consists of 17 positive to negative matched pairs, which participants rate on a 4-point scale (1 = *strongly agree*, 4 = *strongly disagree).* However, young adults that experienced high and low contact with grandparents did not differ in their attitudes towards older adults. This suggests that contact with grandparents is not related to adolescents' attitudes towards older adults.

Later studies, however, report significant correlations between grandchild-grandparent contact and attitudes towards older adults (Downs & Walz, 1981; Harwood et al., 2005, 2006; Soliz & Harwood, 2006). Harwood and colleagues employed semantic differentials to measure ageist attitudes. The measures vary in length but are all based on the General Evaluation Scale (GES: Wright et al., 1997). Cross-sectional research of a sample of university students suggested that contact with grandparents was related to positive attitudes towards older adults (Harwood et al., 2005, 2006).

Additionally, contact with grandparents also had a positive relationship with perceptions of outgroup variability (Harwood et al., 2005). Outgroup variability is the degree to which the outgroup is perceived as heterogeneous. Previous research demonstrates that perceptions of increased variability can provide a path to prejudice reduction and can be affected by contact (Hewstone & Hamberger, 2000; Paolini et al., 2004; Soliz & Harwood, 2003).

Grandchild-grandparent interactions also form an important link between intergenerational contact with, and attitudes towards, older adults (Tam et al., 2006) and this link could be bi-directional. Young people who had experienced good quality contact with older adults also said they were more likely to express their feelings and disclose personal information to their grandparents. Self-disclosure to grandparents was linked to less anxiety about interacting with their grandparents and increased empathy towards them. This suggests that good quality communication between grandchildren and grandparents are part of the same system of attitudes and behaviour that connects intergenerational contact to attitudes towards older adults in general.

Overall, it appears that although early research did not identify an association between grandchild-grandparent contact and attitudes towards older adults, later research has revealed relationships across a range of explicit attitudinal outcomes. This

difference could be due to the varied nature of contact measurement employed across the studies; contact frequency or contact quality.

Ageing anxiety. Intergenerational relationships also have some potential psychological costs for younger people in terms of views of one's own ageing. The Ageing Anxiety Scale (Lasher & Faulkener, 1993) measures respondents' levels of anxiety about their own ageing. Participants are invited to indicate their agreement with 20 items on a 5-point Likert scale ranging for 1 (*highly agree*) to 5 (*highly disagree*). The scale taps four dimensions of ageing anxiety; a fear of older people, fear of losses, psychological concerns, and physical appearance concerns related to own ageing. Respectively, examples of items are "I enjoy talking to older people" (reversed), 'I fear when I am old all my friends will be gone", I expect to feel good about life when I am old" (reversed) and "I sometimes dread looking old".

Young people living with an older family member report high ageing anxiety, whereas those who work with older coworkers, and who have good quality intergenerational contact in their everyday lives report lower ageing anxiety, which is also related to more ageist attitudes (Allan & Johnson, 2009). Collectively, these findings suggest that living with, versus working with, older adults can have different implications. This may be due to the perceived dependency of the older adults involved in the contact. Living with older adults who are cared for by family members could result in a generalised view that older adults are dependent, leading to negative attitudes towards, or stereotypes of, older adults and anxiety about own ageing. Conversely, working with independent older adults, who may also be less distant in terms of age, could create the impression that older adults are competent, and not trigger ageing anxiety. However, further evidence to support this conclusion is needed, for two reasons. First, the research does not specify whether the workplace contact included health and social care, where the contact would have been with dependent older adults.

Second, a coworker is defined as ‘older’ when over the age of 50 years old (Iweins et al., 2013), whilst most people believe old age starts at 62 years old (Abrams et al., 2009). Therefore, differences in working and living with older adults could be due to a difference in the perceived age of these two groups.

Knowledge about ageing processes. It does not appear to be the case that people who have more contact with older adults in everyday life necessarily have more knowledge about ageing (Allan & Johnson, 2009) but family-based contact does seem relevant. For example, young adults (N = 178, M_{age} = 27) that had grandchild-grandparent contact were more knowledgeable about ageing sexuality, and in turn held less restrictive views about ageing sexuality (Hillman & Stricker, 1996).

A further study explored an interest in gaining knowledge about aspects of ageing and how this was related to both contact with older family members and contact with non-family members (Gorelik et al., 2000). This research showed that an initial interest in learning about ageing (such as taking a course in ageing) was predicted by family but not non-family intergenerational contact. Conversely, a more substantial interest in learning about ageing (operationalised as an interest in pursuing a career in ageing) was predicted by non-family but not family intergenerational contact. Family intergenerational contact items measured the quantity of contact with any older family members. Authors suggest that this contact with older family members may predict an initial interest in studying ageing, but it is likely that contact experienced whilst studying (non-family contact) prompts an interest in following a career path in gerontology. This finding has important implications for healthcare and social care providers, particularly in relation to recruitment. It may prove beneficial to recruiters to understand candidates’ prior intergenerational family relationships.

In summary, knowledge of more intimate processes of ageing (sexuality) is related to grandchild-grandparent contact, and this knowledge is associated with more

liberal attitudes towards elder sexuality (Hillman & Stricker, 1996). On a more general note, whilst living or working with older adults is not related to the wider knowledge of ageing (Allan & Johnson, 2009), an initial desire to learn about ageing is related to contact with older family members (Gorelik et al., 2000).

Attitudes towards elder abuse. Good quality (but not frequent) grandchild-grandparent contact may affect people's understanding about elder abuse within caregiver-older adult parent interactions. Mills and colleagues (1998) asked students (*N* = 105) to judge scenarios representing established forms of elder abuse including physical abuse, forced sedation, psychological abuse and financial abuse. Students who had infrequent and uninvolved contact with their grandparents rated the actions of aggressive caregiver behaviours as more justifiable and less abusive than those who had infrequent but involved contact. This suggests that in relation to judgements of elder abuse, quality but not quantity of grandparental contact is important.

However, the contact measure used in this study lacks sensitivity, as respondents were asked to categorise their relationships by choosing one of the following responses: (1) frequent contact and very involved; (2) frequent contact but not very involved; (3) infrequent contact and not very involved; or (4) infrequent contact but very involved; and no contact. Likert response scales which allow for a wider range of responses would have captured more variance. Yet these results are still of value, particularly as they measure outcomes that are of great concern to the social care industry and important for older adults. It would be of value to explore possible mediators of this relationship, such as increased empathy or knowledge about ageing.

Patronising behaviour. An experimental field study investigating young adults' (*N* = 117) patronising verbal communication with older adult strangers (Hehman et al., 2012) provides further evidence that non family contact is more effective than family contact (Allan & Johnson, 2010). Undergraduates were randomly assigned to

conditions in which they helped either older or young men or women with campus directions. A quality of contact quasi-independent variable measured participants' prior levels of contact frequency with grandparents and non-family older adults. The degree of patronising speech students displayed was assessed by (blind to condition) raters assessing participants' vocal pitch and intensity. Mixed design analyses of variance (ANOVAs) were conducted to test effects of experimental contact partner (old versus young) on patronising speech, using 1) amount of contact with older adults in the community and 2) amount of contact with grandparents as moderator variables. Overall, participants displayed more patronising speech towards older targets than younger targets. Participants spoke in a higher pitch to older women than to younger women, but there was no difference in the pitch used for older and younger men. This target gender effect suggests the presence of both ageism and sexism, and provides evidence of a 'double jeopardy' of prejudice experienced by older women.

None of the patronising behavioural outcomes were affected by grandchild-grandparent contact. Contact frequency with general older adults did, however, moderated outcomes. Contrast revealed that those who helped older adults and had low prior contact displayed more patronising speech behaviour when compared to the average behaviour of other groups, such as those who helped older adults and had high prior contact levels and those that helped younger adults. These findings suggest that infrequent contact with general older adults is a risk factor of patronising speech.

A criticism of this study is that a university campus may be perceived as a counter-stereotypical environment for an older adult and thus affect levels of perceived competency of orientation ability. Furthermore, contact with older adults in the community measured interaction with older adults in respondents' everyday lives, and for students this may be biased towards older adults that are professionally active (e.g., academics, work colleagues). Thus, these proficient older adults would provide

exceptional exemplars that are not typical of the wider outgroup. If these older adults were known through work or academia, this would lend support to the previously proposed hypothesis that mere frequency of work contact is sufficient to improve attitudes, or in this case, guard against patronising behaviour.

Although most research illuminates the positive aspects of intergenerational contact, this study highlights the detrimental effects of low levels of contact with older adults. It is important to note that these analyses do not suggest that high frequency of older adult contact reduces patronising speech. In order to do this, the analysis would need to compare the high prior contact to the low prior contact conditions within the older target group condition.

Supporting older adults' public policies. Silverstein and Parrott (1997) examined young adults' support for public policies that benefit older adults and whether these were moderated by the frequency of grandparental contact during childhood. They analysed data from the 1990 Study of Intergenerational Linkages, which was a U.S. national survey of intergenerational relationships consisting of responses from 1431 randomly chosen adults ranging from 18 to 90 years old. Five age categories were created; 18-24, 25-34, 35-44, 45-64 and 65 years old and above. Principal components analysis was used to create two predictive variables; support for older adults' entitlement to benefits and secondly, support for contributory schemes that fund old-age benefits. Multiple regression analysis revealed that compared to other age groups, the 18 to 24 year olds were the least supportive of entitlements and most concerned about older adults fairly contributing to the cost of their benefits. Whilst the effects of frequency of childhood grandparental contact did not attenuate entitlement attitudes it did significantly moderate concern about contributions, such that at higher frequency of contact, the younger adults' views were more similar to respondents from older age groups. Silverstein and Parrott (1997) suggest that entitlement attitudes were not

affected by grandparental contact because compared to contributory polices, these have more impact on young adults' economic lives in relation to distribution of resources.

Older adults' cognitive performance and well-being. Older adults' performance is affected by grandchild-grandparent contact. This has been demonstrated in experimental studies examining the effects of 'stereotype threat' (Abrams et al., 2006, 2008). Stereotype threat is experienced when an individual worries that they may confirm a negative stereotype about their social group in a situation linked to that stereotype (Steele & Aronson, 1995). This anxiety leads to poor performance on tasks or tests related to the stereotype. Stereotype threat seems likely to have particular relevance in health and occupational testing situations where older adults' may feel under threat from incompetency or dependency stereotypes. For example, being asked one's age before taking a cognitive function task in a health setting may induce stereotype threat and reduce performance. When older people are aware that they will be compared with younger people, their physical strength tested using a hand dynamometer also reduces by as much as half (Swift, Lamont & Abrams, 2012).

Research testing older adults' mathematic and cognitive abilities (recall, comprehension and verbal facility) showed that those experiencing positive contact with grandchildren were less likely to be negatively affected by stereotype threat (Abrams et al., 2006, 2008). These studies demonstrate how grandchild-grandparent contact can benefit older adults' performance. This research suggests that grandchild contact may go some way to minimising this effect.

Research also demonstrates that family contact may contribute positively to older adults' health and well-being (Tsai et al., 2013; Wu & Rudkin, 2000). National Taiwanese surveys carried out between 1993 and 2007 suggest that family intergenerational contact can help protect older adults against mental health problems

(Tsai et al., 2013). In the earlier surveys older adults living with offspring were less likely to suffer from loneliness, and in the later surveys those caring for grandchildren were less likely to suffer from depression. The researchers suggest that mental health protection once provided by living with offspring has changed over time and is now provided by caring for grandchildren. Co-residence, or regular contact with adult children, is also positively linked to older adults' general health status (Wu & Rudkin, 2000). In a Malaysian national survey, older adults who were vulnerable to chronic stress were more likely to assess their health as good when they also had daily visits from, or lived with, their adult children.

In addition to highlighting the relationship between contact and health variables, these two studies (Tsai et al., 2013; Wu & Rudkin, 2000) expose the importance of adult child-parental contact relationships. However, generalisation of these findings to other populations should be applied with caution. Both samples represent collectivist cultures in which the dynamics of family relations may differ from western cultures (McConatha, Hayta, Rieser-Danner, Mconatha, & Polat, 2004; Yun, & Lachman, 2006). Additionally, these two studies do not allow a strong causal inference but the evidence is consistent with other theory and research suggesting that social contact is related to improved health (Holt-Lunstad, Smith, & Layton, 2010; House, Landis, & Umberson, 1988).

In summary, a wide body of research provides evidence linking family intergenerational contact to positive outcomes. These include attitudes towards older adults, perceptions of variability of older adults, less restrictive attitudes towards elder sexuality, sensitivity to elder abuse and an inclination to study gerontology (Harwood et al., 2005, 2006; Hillman & Stricker, 1996; Mills et al., 1998; Gorelik et al., 2000). Family intergenerational contact was less impactful, however, in relation to patronising behaviour and ageing anxiety, when compared to general and work-based contact

respectively (Allan & Johnson, 2009; Hehman et al., 2012). Family intergenerational contact has, however, powerful effects on older adults themselves by reducing stereotype threat in relation to cognitive and communication abilities (Abrams et al., 2006, 2008), and caring for grandchildren is related to less risk of mental health problems (Tsai et al., 2013). For older adults, health is also positively associated with cohabiting with adult offspring (Tsai et al., 2013; Wu & Rukin, 2000), although cohabitation is related to high ageing anxiety for younger family members (Allan & Johnson, 2009).

Crucially, this literature lacks outcomes that measure adult children's contact with their ageing parents and older adults more widely. This is particularly important when one considers that decisions affecting the lives of older adults (such as health and social care decisions) are likely to be made, or directed by middle-aged adults and family members. This leaves older adults particularly vulnerable to potential discrimination from middle-aged adults.

Moderators: When does family intergenerational contact reduce negative outcomes?

Quality and frequency of contact. In order for good quality family contact to positively affect young adults' attitudes towards older adults it also needs to be frequent, age differences should be salient and the age difference should be important (Harwood et al., 2005). On the other hand, good quality contact with older adults in everyday life, even when experienced infrequently, leads to positive attitudes towards all older adults (Schwartz & Simmons 2001). These findings have implications for programmes designed to improve intergenerational relationships. They suggest that, perhaps particularly for young people who do not have high quality family intergenerational contact, interventions promoting even a limited amount of contact with older adults in general could be highly effective. However, it is high quality, even

if infrequent, contact with grandparents that seems to improve sensitivity in relation to judgements such the extent to which elder abuse is ignored, tolerated or tackled (Mills et al., 1998).

Conversation topics. The positive effect of grandchild-grandparent contact on attitudes towards older people can be enhanced when the older person talks about the past (Harwood et al., 2006). This suggests that interventions designed around grandchild-grandparent contact could be improved if conversation topics included story telling about the older adults' life experiences. Indeed, many intergenerational contact programmes include 'history telling' as part of the schedule (Allen, Allen, & Weekly, 1986; Couper, Sheehan & Thomas, 1991; Dorfman, Murty, Ingram, & Evans, 2003).

Family contact versus intergenerational contact in other contexts. It appears that family and non-family intergenerational contact may be beneficial for different outcomes. For example, family intergenerational contact stimulates younger people's interest in working with older adults (Gorelik et al., 2000), whilst those who have contact with older adults in general hold more positive attitudes, and engage in less patronising behaviour (Hehman et al., 2012; Knox et al., 1986).

A small body of research compares the effects of intergenerational cohabitation to intergenerational contact in other contexts. It appears that intergenerational cohabitation can have positive or negative effects depending on the age of the contact partner. Although intergenerational cohabitation is not related to young people's attitudes towards older adults (Drake, 1957; Hawkins, 1996), young people living with an older adult are more anxious about their own ageing compared to those working with older adults (Allan & Johnson, 2009). However, older adults living with family members are less lonely or depressed and in better health (Tsai et al., 2013; Wu & Rudkin, 2000).

Mediators: How does intergenerational family contact reduce prejudice?

Perspective taking, intergroup anxiety, accommodation, self-disclosure, individuation with grandparents and age salience. Harwood et al.'s (2005) research has tested the psychological stepping-stones from good quality grandchild-grandparental contact to lowered stereotyping of older adults. The steps include increased self-disclosure to, and individuation of, grandparents, reduced intergroup anxiety, less accommodating speech and increased perspective taking. Individuation relates to gaining knowledge of unique attributes of the outgroup (Miller, 2002). According to communication accommodation theory (CAT; Harwood & Giles, 2005) communication problems can arise during intergenerational contact when either party over- or under-accommodates. Over accommodation is changing the communication in excess of what is required, and under accommodation is failing to sufficiently adjust communication. For example, based on the assumption that older adults are incompetent, young adults may use patronising "baby talk" (Hummert, Garstka, Ryan, & Bonnsen, 2004). Over-accommodation can occur when, for instance, older adults disclose excessive personal information, such as in relation to their health or loneliness (Bonnessen & Hummert, 2002; Coupland, Coupland, Giles & Henwood, 1998). The route from contact to attitudes was enhanced when young people were more conscious of the age difference between themselves and their grandparents.

Communication, parental encouragement and age salience. Research by Soliz and Harwood (2005) explored the roles of parental encouragement, and shared family identity. Parental encouragement is the support of good relations and communication between children and grandparents (Harwood et al., 2006), which echoes Allport's (1954) "institutional support". Grandchildren who identified more strongly with their family, whose parents encouraged relationships with grandparents, and who shared more personal communication (such as social support and self-disclosure) with their

grandparents also had more favourable perceptions of older adults in general. However, grandchildren that experienced negative communication (e.g., negative accommodation) were more conscious of age differences and had more negative views of their own ageing.

Taken together, these studies reveal various psychological routes through which good quality grandchild-grandparent contact affects attitudes and stereotypes towards older adults and attitudes towards own ageing. When young people are more conscious of age differences during their interactions with older people, positive contact seems to be even more effective in promoting positive attitudes towards older people generally. This age awareness, however, can also amplify the negative effect of poor or patronising intergenerational communication on older people themselves.

Summary. Positive outcomes related to family intergenerational contact involve a more positive orientation to issues such as social care and social policy; elder abuse, older adults' sexuality, older adults' public policies, interest in gerontology, and older people's cognitive or physical performance (Abrams et al., 2006, 2008; Gorelik et al., 2000; Silverstein & Parrott, 1997; Hillman & Stricker, 1996; Mills et al., 1998). Good quality intergenerational family contact helps to reduce younger people's ageism (Harwood et al., 2005; Harwood et al., 2006; Knox et al., 1986; Tam et al., 2006) but intergenerational cohabitation may be a mixed blessing. On the one hand it may be detrimental for young people due to its link with ageing anxiety (Allan & Johnson, 2009 and because ageing anxiety is related to ageism cohabitation has negative implications for older adults. On the other hand, cohabiting with family is beneficial for older adults' loneliness and health (Tsai et al., 2013; Wu & Rudkin, 2000).

Intergenerational family contact quality is likely to have a stronger effect on attitudes than does contact frequency, ideally contact should be both good quality and frequent. The effect of contact is enhanced by increased awareness of age differences,

and when grandparents talk about the past. Benefits are created via the influence family contact has on perspective taking, good quality communication with grandparents, viewing them as individuals and having low anxiety about interacting with them. Parental encouragement and shared family identity are further factors paving the way from family contact to positive outcomes.

Future research. Although this review suggests that more research has been conducted on family intergenerational contact than any other type of intergenerational contact, it would be beneficial to conduct research that separates and compares the effects of general, family and work intergenerational contact to explore if family contact operates similarly to general contact, and whether coworker contact is unique due to the fulfilment of three of Allport's (1954) optimal conditions. Similarly, it would be informative to compare intergenerational family contact in cross-cultural contexts as these are likely to vary depending upon both family relationships and societal attitudes towards the older adults. This literature is a lacking research that focuses specifically on the attitudes of middle-aged adults. Considering the higher status of middle-aged adults (Garstka et al., 2005), their attitudes are of paramount importance to the daily lives of older adults.

Indirect Intergenerational Contact

Extended Intergenerational Contact

Research examining young adults' intergenerational extended contact is lacking from the literature. One study, however, demonstrates that along with other types of direct intergenerational contact, extended intergenerational contact experienced by older people themselves helps to inoculate them against the potentially harmful effects of stereotype threat on their cognitive performance (Abrams et al., 2006).

Future research. Research exploring extended intergenerational contact is urgently needed. In the currently age segregated society (Abrams et al., 2009),

understanding whether young adults' knowledge of friends' intergenerational friendships improves attitudes towards older adults in the absence of personally experienced intergenerational contact is vital. Studies exploring extended intergenerational contact should consider that extended contact operates via different psychological mechanisms from direct contact, and should seek to confirm whether these facilitating processes similarly apply to intergenerational extended contact.

Imagined Intergenerational Contact

This section reviews imagined contact research in which the target groups are categorised by age. As previously discussed, imagined contact is a further indirect method of intergroup contact that occurs via the simulation an intergroup encounter (Crisp & Turner, 2009). In addition to outlining the outcomes, moderators and mediators of imagined intergenerational contact; this section discusses the different experimental designs employed.[2]

Outcomes: Dependent measures affected by imagined intergenerational contact with older adults.

Attitudes towards older adults. Merely imagining a positive interaction with an older person improves university students' attitudes towards older adults in general as measured by the GES (Turner & Crisp, 2010).

Future contact intentions. Imagined intergenerational contact increases young adults' intentions to have social contact with older adults (Crisp & Husnu, 2011, Harwood, Joyce, Chen, Paolini, Xiang, & Rubin, 2015; Husnu & Crisp, 2011) and reduces their bias towards interacting with their own age group (Turner et al., 2007, Study 1). For example, in a laboratory experiment (N = 28, 18 – 24 years olds), when asked if they would prefer to collaborate with a younger or older adult on a subsequent

[2] Because this thesis does not focus on imagined contact the review presented in the main text is a summarised version. See Table A1 for full details of the imagined intergenerational research reviewed.

task, those who had imagined contact with an older adult were less likely to choose a young partner. A second study (N = 24, 19 – 26 year olds) showed that this effect is caused by imagined contact rather than a priming effect prompted by thinking about older adults (Turner et al., 2007, Study 2).

Communication skills. Not only does imagined contact increase young people's willingness to engage in direct intergenerational contact (Crisp & Husnu, 2011; Harwood et al., 2015; Husnu & Crisp, 2011; Turner et al., 2007) it also improves intergenerational communication (Birtel & Crisp, 2012). In a laboratory experiment young people (N = 38, M_{age} = 21.39 years old) were ask to record a video message introducing themselves to an older adult stranger. For young people anxious about their performance, an independent quality rating of the video messages identified that their communication skills were better when they had imagined intergenerational contact before the recording than when they had not.

Benefits for older adults. Imagining a positive encounter with a young person also protects older adults against stereotype threat (Abrams et al., 2008, Study 2), mimicking the effects of direct grandchild-grandparent contact and extended contact (Abrams et al., 2006, 2008 Study 1). Compared to those who imagined an outdoor scene, older adults who imagined intergenerational contact performed better on a subsequent mathematics test.

Moderators: When is imagined intergenerational contact beneficial? Variations on the standard imagined contact instructions described above can further improve the outcomes. For example, 'elaborated' contact, which involves additionally asking people to imagine when and where the contact might occur, led young people to estimate they would have a higher number of acquaintances with older adults in the future (Husnu & Crisp, 2011, Study 12). The effects of elaborated contact also last longer than standard imagined contact. Additionally, closing one's eyes during the task

can also strengthen the effect (Husnu & Crisp, 2011, Study 2). Another useful variation is to change the perspective from which the contact is imagined (Crisp & Husnu, 2011). Participants are asked to view the contact from a third party's perspective …. " see the event from the visual perspective of an observer…. See yourself in the scene from an external viewpoint". This variation increased young people's intentions to have contact with older adults more than did the usual first-person perspective.

Recent research exploring simulated communication during imagined intergenerational contact experiences manipulated the task valence and highlights the importance of the degree to which the imagined older person represents the outgroup (Harwood et al., 2015). When participants imagined a positive exchange, and the older adult was perceived as typical of the wider outgroup, participants reported greater intentions to interact with older adults in the future compared to those who imagined a negative exchange. However, the opposite effect occurred when older adult was perceived as atypical; participants were less likely to have future contact intentions when the exchange was positive compared to negative.

Mediators: How is imagined intergenerational contact beneficial? Imagining contact from a third-person perspective reinforces people's sense that they have positive attitudes towards members of the other social group, which in turn increases their intentions to have contact with that group (Crisp & Husnu, 2011). This means that when young people picture themselves interacting with an older adult it makes them feel more positive towards and comfortable about interacting with older adults (Crisp & Husnu, 2011).

Summary of imagined intergenerational contact. Imagined intergenerational contact is an effective intervention with a range of positive outcomes, particularly promoting young people's intentions to have direct contact. After imagined contact, young people expect to know more older adults in the future, are more willing to

interact with them and are more efficient in their contact communication skills (Birtel & Crisp, 2012; Husnu & Crisp, 2011; Turner et al., 2007). Simulating more elaborate encounters, more positive encounters with typical older adults, closing eyes, or imagining interactions from a third-person perspective can enhance the impact of imagined intergenerational contact (Crisp & Husnu, 2011; Harwood et al., 2015; Husnu & Crisp, 2011).

Future research. Imagined contact has a great potential to augment success outcomes of intergenerational programmes, by increasing young adults' intentions to have intergenerational contact. Research should examine if imagined intergenerational contact before a intergenerational programme enhances outcomes, and whether those benefits are facilitated by decreased intergroup anxiety and increased self-efficacy in future contact.

Table 2. *Summary intergenerational contact research.*

Type of intergenerational contact	Outcomes	When it works best and under which conditions	How it works	Value for intergenerational contact programmes	Policy value
Social contact with non-family older adults in general in everyday life	More positive explicit and implicit attitudes about older adults. More positive stereotyping of older adults. More intentions to donate to older adults' charities, help and spend time with older adults. More positive expectations about future contact. More intentions to volunteer in general.Reduces patronising speech towards older adults. Improves older adults' cognitive performance.	Good quality contact (regardless of frequency). Frequent contact alone not sufficient.	Reduced intergroup anxiety. Reduced ageing anxiety. Reduced intergroup anxiety Increased self-disclosure. Increased empathy	If contact cannot be regular, ensuring that it is high quality contact can help improve outcomes.	Reducing ageism, and wider prosocial effects such as increased charity donations and volunteering. Prevents stereotype threat, therefore preserves older people's cognitive and physical performance under test conditions.
Friendships	More positive explicit attitudes towards older adults. More positive stereotyping of older adults. Less benevolent stereotyping of older adults. More positive perceptions of providing elder care and studying ageing.	More likely for British women than men. More likely for European men than women. More likely in wealthy countries with high proportion of older adults. Less likely in urban areas.	No evidence	Most powerful type of direct intergenerational contact. Likelihood varies depending on personal and societal characteristics.	Most powerful type of direct intergenerational contact, yet under-researched. Intergenerational friendships are relatively unusual. Important influence on positive perceptions of health and care for older people and studying ageing.

Table 2 ..*continued*

Coworker contact	More positive explicit attitudes towards older adults. More positive stereotyping of older coworkers and older adults. Less benevolent stereotyping of older coworkers and older adults. More intentions to help and cooperate with coworkers. More support of age-diversity.More positive attitudes towards elder care. Less ageing anxiety. Less turnover intentions.	Frequency of contact (independently). Good quality of contact.	Reduced ageing anxiety.	More frequent contact at work is beneficial. NB: Older adults involved likely to be closer to middle age and higher status (professional) or more qualified when compared to older adults in general	Demonstrates value of age-diversity in the workplace. Positive outcomes for organisations.
Health and social care (H&SC) contact	More positive explicit attitudes towards older adults in general. More benevolent stereotyping of older patients	More work experience.			Understanding of contact in H&SC contact is needed as it has positive and negative outcomes. More research required on older adults' experiences in H&SC. Important to retain H&SC workers with experience

Table 2 ..*continued*

Family contact	More positive explicit attitudes towards older adults. Increases young people's ageing anxiety. More knowledge about ageing. Less tolerance of elder abuse. More support for older adults' public policies. Improves older adults' cognitive performance, mental and general health. Reduces older adults' loneliness and depression. More positive attitudes towards older adults' sexuality. More interest in studying ageing. Protects against stereotype threat.	Contact needs to be both good quality and frequent. Greater parental encouragement.	Increased awareness of age differences. When older adults tell stories about the past.Increased perspective taking. Improved communication. Encouraged viewing grandparents as individuals. Reduced anxiety about interaction with grandparents. More shared family identity.		Intergenerational cohabitation has positive effects for older adults but negative effects for younger adults (increases ageing anxiety). Working with older adults (age-diversity) has a larger impact on positive attitudes towards older adults and than does family contact.
Imagined contact	Improves explicit and implicit attitudes towards older adults. Increases intentions to have future intergenerational contact. Improves intergenerational communication skills. Improves older adults' cognitive performance. Protects older adults against stereotype threat.	Imagine the encounter in detail (elaborated contact). Imagine contact with eyes closed. Imagine contact from a third-person perspective. Imagine a positive encounter with a typical older adult.		Using imagined contact before intergenerational contact programmes could reduce anxiety and form a valuable 'first-step' to contact. It is cost effective and easy to run.	Imagined contact can protect against stereotype threat - useful in healthcare situations, so preserves older people's cognitive and physical performance.

Note: This is an overview of the literature.

General Discussion

Theoretical Conclusions and Future Research

Types of direct intergenerational contact. From a theoretical perspective, the research reviewed in this chapter suggests that the positive outcomes of intergenerational contact can be successfully evaluated using the intergroup contact framework. In line with the wider intergroup contact literature, intergenerational friendships are the most successful at reducing ageism, followed by contact quality and contact frequency respectively. Additionally, direct intergenerational contact reduces ageism via a reduction in intergroup anxiety, which is similarly the most powerful mediator of intergroup contact effects across a range of target groups (Pettigrew & Tropp, 2008). Intergenerational research examining direct contact between younger and older adults, however, has not been consistent in the type of contact measured. More research is required to identify the specific qualities of the different direct contact modes; contact frequency, contact quality and intergenerational friendships, how they affect attitudes and related mediating and moderating variables.

Direct intergenerational contact across contexts. The review demonstrates that intergenerational contact has a positive effect across a number of contexts including; familial, occupational and within heath and social care. Despite this, research across these contexts is disproportionate. For example, a wide range of research reports the varied effects of intergenerational family contact and the mechanisms through which this works. Whilst the greater number of studies in this area may reflect the prevalence of family intergenerational relationships, knowledge of intergenerational contact occurring in health and social care is sparse and inconsistent.

Indirect intergenerational contact. Imagined intergenerational contact represents a widely researched form of indirect contact that provides a substitute when direct contact is not possible. Across many studies, positive outcomes can be achieved

by simply imagining a positive social encounter with an older adult. This type of contact is particularly effective at encourageing intentions to have more intergenerational contact in the future. However, although many studies over the last decade have examined when and how imagined intergenerational contact has beneficial effects, no research has tested whether extended contact can successfully be applied to target groups based on age. Considering the prevalence and increased age segregation in modern society (Abrams et al., 2009; Winker, 2013) exploration of potential benefits and mechanisms of indirect forms of intergenerational contact are paramount.

Explicit and implicit attitudes. The review also provides evidence that intergenerational contact improves both explicit and implicit attitudes towards older adults. This corroborates findings from the wider intergroup contact literature, but whilst the groups most commonly examined (interracial, interethnic) tend to elicit intergroup threat, older adults are more likely to attract patronising, benevolent or dehumanising attitudes. For this reason, research is required to explore how intergenerational contact affects subtle and insidious attitudes that are less hostile but nevertheless harmful. Although research has identified that intergenerational contact positively effects some age stereotypes, more research examining how age stereotypes interact with and mediate between contact and age prejudice is required to provide a more nuanced understanding of contact and attitudes towards this benevolently perceived outgroup.

Unique aspects of intergenerational contact and ageism. In addition to understanding how benevolent and patronising assumptions of older adults combine with intergenerational contact, psychological processes unique to ageing warrant further examination. In particular, more understanding of the role of ageing anxiety within the intergenerational contact-reduced ageism relationship is required. The studies reviewed in this chapter present an unreliable picture of the meditational properties of ageing

anxiety, and further suggest the positive influence of intergenerational contact on ageing anxiety may be context dependent.

In fact, more research comparing intergenerational contact across contexts is required. Categorising contexts by the degree to which they confirm or challenge age stereotypes may help uncover psychological mechanisms underlying areas where prior intergenerational contact research is divergent. For example, intergenerational contact with older adults confirming dependency or incompetence stereotypes are likely to vary in their effects when compared to contact that occurs in neutral settings or settings that highlight positive age stereotypes. The review uncovered only one such study that experimentally manipulated age stereotypes within a direct intergenerational contact encounter (Kessler & Staudinger, 2007), and whilst contact in a positively old age stereotyped context lead to positive outcomes, subsequent attitudes towards, or stereotypes of, older adults were not measured.

A further aspect unique to intergenerational contact is the flexibility of, and migration between, group boundaries. A handful of studies reviewed reveal that intergenerational contact between middle-aged adults and older adults leads to more positive attitudes towards, and stereotyping of older adults, but more research is required. Research beyond the paradigm of ‘young versus old’ is needed to understand how attitudes towards older adults and related variables (age stereotypes, ageing anxiety) vary when intergenerational contact is experienced across the lifespan.

Applied Contributions and Future Research

Employment. In addition to pulling together theoretical knowledge, the findings of this review provide understanding of how intergenerational contact impacts important applied issues. For example, the evidence demonstrates that coworker contact reduces ageism and theory suggests it this is likely to occur as it is supported by some of Allport’s (1954) facilitating conditions. Intergenerational contact in the work

place should encourage age diversity and help reduce age discrimination experienced by older adults when applying for employment, promotion or training. Additionally, these positive outcomes create benefits for the wider economy as it becomes more reliant on older workers as age demographics shift (ONS, 2016).

Health and social care. The research reviewed also highlights how intergenerational contact within health and social care contexts influences attitudes towards older adults and related outcomes. Studies show that contact improves young adults' attitudes towards caring for older adults and studying gerontology and geriatrics, but its positive effects upon health and social care professionals' attitudes towards older adults are less reliable. As longevity and living with co-morbid diseases increases, more older adults require social care and the need to understand how intergenerational relationships in these often challenging contexts affect attitudes towards older adults becomes more urgent. Research should examine the degree to which this type of contact is experienced as positive or negative, and the subsequent impact on attitudes towards older adults in care and the older population more widely. In particular, it is important to understand how contact within these negative stereotype confirming contexts affect more subtle prejudices such as steoteypes and dehumanisation. Although research has examined nurses' and physicians' attitudes towards older adults resulting from their contact experiences, no research has yet explored care workers. As the size of the social care sector increases, understanding how these workplace relationships impact attitudes towards recipients of care and the wider group of older adults becomes more important.

Chapter Summary

The review presented in this chapter suggests that the intergroup contact framework is an appropriate psychological perspective via which to examine intergenerational contact and attitudes towards older adults. Whilst research shows that

direct contact in various forms and across multiple contexts can have a positive impact on young adults' attitudes towards older adults more research is required for a fuller understanding. In particular, extended intergenerational contact deserves examination and the psychological mechanisms through which intergenerational contact reduces ageism. Such research has the potential to provide important contributions to theoretical understanding of this distinctive type of contact and create valuable impact for societal problems related to the ageing population. Chapter 3 commences this programme of research by testing relationships between direct intergenerational contact and key variables.

CHAPTER 4: EMPIRICAL EXAMINATION OF INTERGENERATIONAL CONTACT AND AGEISM

Abstract

The aim of the first study of this thesis was to examine relationships between direct intergenerational contact, explicit ageism and variables related to successful intergroup contact plus provide validation of appropriate scales to measure those variables. Contact quality emerged as the strongest predictor of reduced ageism, followed by contact frequency. Contra to hypotheses, intergenerational friendships were not related to ageism. Intergroup anxiety and ingroup norms were reliably related to the various forms of direct contact, suggesting they may mediate the intergenerational contact – reduced ageism relationship. Reasons for the weak relationships between intergenerational friendships and ageism are discussed.

Study 1. How Does Direct Intergenerational Contact Relate to Ageism?

An important finding from Pettigrew and Tropp's (2006) meta analysis is that across different outgroups the effects sizes of the relationship between intergroup contact and reduced prejudice range from medium (r = -.27) to small (r = .18), with the reduction of ageism being the smallest effect. This difference in effect sizes suggests that intergroup contact works in varying ways depending on the target outgroup. Consequently, it is important to understand how intergenerational contact reduces ageism in order to encourage maximum impact. As outlined in Chapter 1, intergroup relations based on age present some unique aspects. Collectively, these points justify research designed to replicate existing intergenerational contact findings and further explore how intergenerational relations are related to attitudes towards older adults.

Intergenerational Contact Frequency, Quality and Friendships

Sixty years of intergroup contact literature demonstrates that while contact frequency predicts positive intergroup attitudes (Hewstone, Rubin, & Wills, 2002;

Pettigrew & Tropp, 2006), good quality contact is a stronger and more reliable predictor (Islam & Hewstone, 1993; Prestwich, Kenworthy, Wilson, & Kwan-Tat, 2008; Tawagi & Mak, 2015). Additional research examining cross-group friendships suggests they are a further powerful mode of contact and perhaps the strongest predictor of reduced prejudice (Davies et al., 2011). The prejudice reduction effects of contact frequency, quality and cross-group friendships are echoed within the intergenerational contact literature. Both good quality and frequent intergenerational contact reduce ageism, but good quality contact is a better predictor than frequent contact (Bousfield & Hutchison, 2010; Knox et al., 1986; Schwartz & Simmons, 2001). In line with the cross-group friendship literature (Davies et al., 2013; Pettigrew, 1998), survey research examining intergenerational friendships suggests they are the most powerful type of intergenerational contact (Van Dussen & Weaver, 2009).

In summary, intergenerational contact research and study findings from across the intergroup contact literature concur that although frequent contact with older adults can predict positive intergroup attitudes, alone it may always not be sufficient. Ageism is more reliably reduced by good quality intergenerational contact or intergenerational friendships.

Explicit Attitudes towards Older Adults

As discussed in Chapter 1, research demonstrates that intergenerational contact is related to reduced explicit ageism as measured by a range of scales including Tuckman and Lorge's (1953) Attitudes towards Old People Scale and Kogan's Negative Attitudes towards Old People Scale (KOPS; Kogan, 1961), the Ageing Semantic Differential (ASD; Rosencranz & McNevin, 1969) and the three-factor Fabroni Scale of Ageism (FSA; Fabroni et al., 1990). Although it is encourageing that research reports negative associations between intergenerational contact and ageism as measured by these constructs (Gekoski et al., 1984; Harris & Fielder, 1988; Knox et al.,

1986; Luo et al., 2013), the variation of measurement tools used in studies hampers generalisation across findings and restricts the construction of a wider picture of the psychological processes through which intergenerational contact reduces ageism.

Intergroup contact research with other target groups commonly uses the more generic General Evaluation Scale (GES; Wright et al., 1997) to measure prejudice. The universal employment of this measure facilitates reliable comparisons of the effects of intergroup contact across contexts and target groups, and therefore offers advantages not provided by scales designed to measure specific types of prejudice (e.g., racism, sexism or ageism). Positive outcomes of intergenerational contact have been reported using the GES but more research is required (Bousfield & Hutchison, 2010).

Variables related to Intergroup Contact and Outgroup Attitudes

Intergroup anxiety. Although a wide body of research demonstrates that intergroup contact reliably reduces intergroup anxiety (for a review see Pettigrew & Tropp, 2008), these studies focus on interracial contact. It could be argued that due to a higher degree of threat arising from contact with racial versus old age outgroups, a reduction in intergroup anxiety may not be a consequence of intergenerational contact. However, a recent study demonstrates that intergroup anxiety is reduced by intergenerational contact quality (Bousfield & Hutchison, 2010). Survey responses from university students (N = 55) suggested that good quality intergenerational contact was positively related to low levels of intergroup anxiety about interacting with older adults. These findings are encouraging, and demonstrate that intergenerational contact works similarly to intergroup contact with other outgroups, but replication with a larger sample size is required to provide confidence in this effect.

Ageing anxiety. Intergenerational contact is negatively related to ageing anxiety (Allan & Johnson, 2009; Allan, Johnson, & Emerson, 2014). When young adults experience frequent contact with older adults, they report fewer concerns about their

own ageing. However, this finding is not robust. Intergenerational contact has a negative relationship with ageing anxiety when it is experienced at work, but not at home (Allan & Johnson, 2009). Furthermore, research including measures of contact frequency and quality was unable to replicate the association between intergenerational contact and ageing anxiety (Bousfield & Hutchison, 2010), thus further research is required.

Ingroup norms. Positive ingroup norms about intergroup contact are related to more cross-group friendships (Davies et al., 2013). For example, longitudinal research examining cross-group friendships between German and Turkish school children (*N* = 149) revealed that the number of cross-group friendships German children had with Turkish children predicted subsequent positive attitudes towards Turkish children, and this effect was mediated by a positive change in ingroup norms (Feddes, Noack, & Rutland, 2009). Therefore, it is likely that positive intergenerational contact will improve young adults' perceptions of their ingroup's norms about contact with older adults.

Design and Hypotheses

The present study is an analysis of survey data collected from young adults. It uses correlation analysis to examine relationships between intergenerational contact measures and intergroup anxiety, ageing anxiety and ingroup norms. Four hypotheses are tested in the present study. 1) Based on previous research (Allan & Johnson, 2009; Bousfield & Hutchison, 2010; Harris & Fielders, 1988; Knox et al., 1986; Lou et al., 2013; Schwartz & Simmons, 2001) the quality and frequency of intergenerational contact will be positively related to positive attitudes towards older adults. 2) In line with cross-group friendship theory (Davies et al., 2011; Pettigrew, 1997) and previous intergenerational research (Abrams et al., 2009; Tasiopoulou & Abrams, 2008; Vauclair et al., 2010; Van Dussen & Weaver, 2009) intergenerational friendships will be

positively related to positive attitudes towards older adults. 3) Based on studies examining the association between anxieties and intergenerational contact (Allan & Johnson, 2009; Bousfield & Hutchison, 2010), intergroup anxiety and ageing anxiety will be negatively related to intergenerational contact variables. 4) In line with previous intergroup contact research (Davies et al., 2013; Feddes et al., 2009), ingroup norms will be positively related to intergenerational contact.

Methods

Participants

Two hundred and ninety-nine undergraduate students from University of Kent took part in exchange for course work credits or the opportunity to be entered into a prize draw. Sixty-six respondents' data were removed as they did not complete the questionnaire. There were no consistent patterns concerning at which stage they stopped completing the questionnaire. This left a total of 231 participants. Based on a priori power analysis and aiming for power of between 80% and 90%, a sample size of between 187 and 258 would be required to detect the intergenerational contact effect size of r = .18 as identified by Pettigrew and Tropp (2006). Therefore, a sample of 231 participants fell within these parameters.[3] Sixty-four participants were male and 167 were female, with a mean age of 21.11 years old (SD = 4.08), ranging from 18 to 55 years old.

Procedure

Participants were directed to an online questionnaire informing them that the study concerned contact with older adults (aged over 65 years) and friendships. The questionnaire included variables related to older adults that measured contact frequency, contact quality, intergenerational friendships, attitudes, intergroup anxiety, ageing anxiety and ingroup norms.

[3] Power analyses for all other studies in the thesis are reported in Appendix C

Measures

Contact with older adults was defined as an interaction with older adults either at work, home or socially.

Contact frequency. To measure direct contact frequency participants were asked "How often do you have contact with elderly people?" (*very rarely* = 1, *very often* = 7).

Contact quality. The quality of participants' prior intergenerational contact was measured using three 7-point scales with endpoints labelled "very unpleasant-very pleasant", "voluntary-involuntary" (R), and "good quality-bad quality" (R). Negatively phrased items were reversed and all three items were averaged to form an index of contact quality (α = .67). Higher scores indicate higher quality of contact.

Intergenerational friendships. The measure of intergenerational friendships was adapted from a prior measure of intergroup friendships (Gomez, Tropp, & Fernandez, 2011). First participants indicated the amount of intergenerational friends they have, then, to increase the likelihood that the estimated amount of friends was correct, participants were asked to enter the initial of the first name of each intergenerational friend.

Attitudes towards older adults. In order to allow for comparison of the findings of this study with the wider intergroup contact literature, ageist attitudes were measured via the General Evaluation Scale (Wright et al., 1997). Participants indicated their attitudes towards older adults using six bipolar items including 7-point scales with endpoints labelled: warm-cold, negative-positive, friendly-hostile, suspicious-trusting, respect-contempt, and admiration-disgust. Negative items were recoded so that higher scores indicated more positive attitudes. The means of items formed an index of attitudes towards older adults (α = .88).

Intergroup anxiety. Intergroup anxiety was measured by asking "How would you feel interacting with a typical elderly person" using three pairs of bipolar adjectives separated by a 7-point scale with endpoints labelled; tense-relaxed, calm-nervous, and stressed-unstressed (Bousfield & Hutchison, 2010). Negatively valenced items were recoded and items averaged to create a score of intergroup anxiety; higher scores indicate more intergroup anxiety ($\alpha = .85$).

Ageing anxiety. Ageing anxiety was measured by four items adapted from measures used in previous research (e.g., Lasher & Faulkender, 1993). Participants were asked how they felt about personally ageing: 'I am worried that I will lose my independence when I am old', 'I am relaxed about getting old', 'I am concerned that my mental abilities will suffer when I am old', and 'I do not want to get old because it means I am closer to dying' on a 7-point scale (1= *strongly disagree*, 7 = *strongly agree*). Responses were averaged to create a score of ageing anxiety; higher scores indicate more ageing anxiety ($\alpha = .69$).

Ingroup norms about intergenerational contact. Ingroup norms about intergenerational contact were measured using five items adapted from an existing scale of ingroup norms (Gomez et al., 2011). Participants were asked how much they agreed with the following 5 statements "My best friends [friends in general/family/teachers/ larger society] would consider it something positive to have elderly people as friends" Responses were given on a 7-point scale ranging from 1 (*totally disagree*) to 7 (*totally agree*) ($\alpha = .89$). Higher scores indicated more positive ingroup norms about intergenerational contact.

Results

Participants reported positive attitudes towards older adults, the average response ($M = 5.41$, $SD = 0.97$) was significantly higher than the mid-way point (3.5) on the response scale $t\ (230) = 30.03$, $p < .001$. Levels of intergenerational contact

reported varied across the types of contact measured. On average, respondents reported high levels of good quality contact with older adults (*M* = 5.00, *SD* = 1.16), which was significantly higher than mid-way on the response scale *t* (230) = 19.66, *p* < .001. The average frequency of intergenerational contact (*M* = 3.70, *SD* = 1.75) was only marginally higher than the scale mid-point, *t* (230) = 1.71, *p* = .089. The total number of older friends ranged from 0 to 20, (*M* = 2.11, *SD* = 2.75) but this data was highly skewed = 2.73. Therefore, using a method commonly adopted in

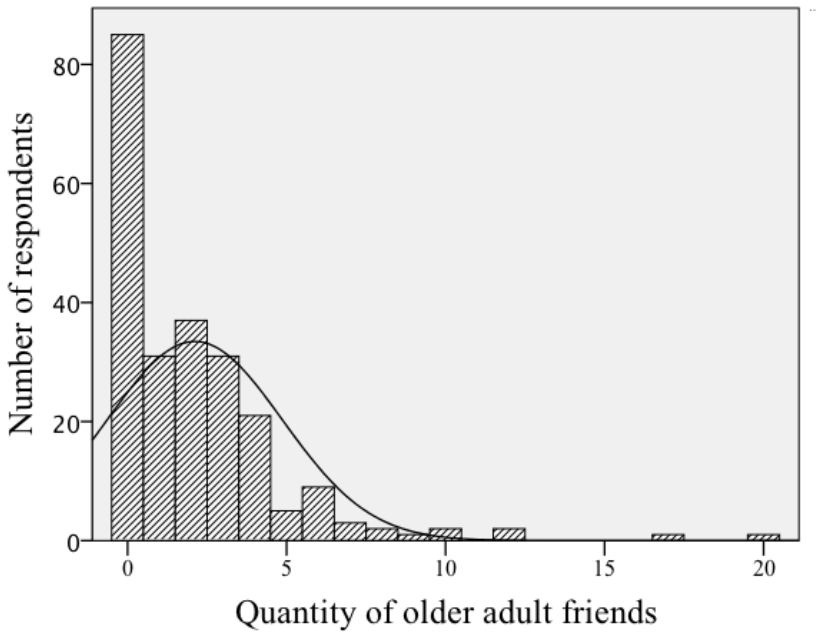


Figure 1. Number of respondents with older adults friends.

intergenerational research (Abrams et al., 2009) responses were recoded into a dichotomous variable (0 = no friends, 1 = at least one friend). Eighty-five participants (37%) had no outgroup friends, 146 (63%) had at least one outgroup friend.

On average, respondents reported high levels of positive ingroup norms about intergenerational contact (*M* = 4.73, *SD* = 1.21), which was significantly higher than the mid-point (3.5), *t* (230) = 15.39, *p* < .001. They also reported high levels of anxiety about ageing (*M* = 4.58, *SD* = 1.33) which were higher than the mid-point *t* (230) = 12.34, *p* <.001, but low levels of intergroup anxiety (*M* = 2.94, *SD* = 0.97) which was

lower than the mid-piont (3.5), t (230) = -8.71, p <.001. A paired-samples t test revealed that participants were more anxious about their own ageing (M = 4.58, SD = 1.33) than contact with older adults (M = 2.94, SD = 0.97) t (230), p <.001.

Correlations

Table 3 reports the intercorrelations between all variables, including age and gender. As hypothesised, all contact variables were positively correlated with attitudes towards older adults. Therefore, more frequent contact, good quality contact and having more older friends were all positively associated with positive attitudes towards older adults. Further in line with the hypotheses, all contact variables were negatively correlated to intergroup anxiety and positively related to ingroup norms (although the correlation between contact frequency and norms was marginal). Thus the more frequency contact, good quality contact and intergenerational friendships the young participants experienced the more likely they were to have low levels of anxiety about interacting with older adults and perceive their ingroup's norms about interacting with older adults as positive. The relationships between contact and ageing anxiety were less consistent. Whilst all correlations were in the predicted direction (negative), only intergenerational friendships were significantly correlated with lower levels of ageing anxiety. In summary, contact frequency, contact quality and intergenerational friendships were all correlated with attitudes, intergroup anxiety and ingroup norms in the expected directions, but only intergenerational friendships were correlated with ageing anxiety.

In addition to the relationships with contact, attitudes were related to the other variables examined. Attitudes were negatively related to intergroup anxiety and positively related to ingroup norms, but not related to ageing anxiety. Gender was positively associated with all contact variables, such that females were more likely to experience more frequent and better quality intergenerational contact and have more

Table 3. *Means, standard deviations and correlations between variables Study 1.*

Measures	1	2	3	4	5	6	7	8	9
1. Contact frequency	-	.31***	.30***	.29***	-.27***	-.03	.12†	.01	.14*
2. Contact quality		-	.28***	.43***	-.37***	-.02	.16*	-.11†	.18**
3. Intergenerational friendships			-	.20**	-.18**	-.13*	.31***	.08	.11†
4. Attitudes				-	-.36***	-.06	.19**	.06	.23**
5. Intergroup anxiety					-	.20**	-.17*	-.05	-.02
6. Ageing anxiety						-	-.004	.02	.12†
7. Ingroup norms							-	.08	.19**
8. Age								-	-.01
9. Gender									-
M	3.70	5.00	0.63	5.41	2.94	4.58	4.73	21.11	1.72
SD	1.76	1.15	0.48	0.97	0.97	1.33	1.21	4.08	0.45

Note. $N = 231$. † $p<.01$, * $p < .05$, ** $p < .01$, *** $p < .001$. Scores on all measures range from 1-7, except Friendships 0 = none, 1 = at least one. Gender; 1 = male, 2 = female.

intergenerational friendships. Women were also more likely to report positive attitudes towards older adults and more positive ingroup norms. Intergroup anxiety was not related to gender, but women were more likely to report higher levels of ageing anxiety. Age was marginally negatively related to contact quality, such that younger respondents reported more good quality contact.

Regression Analyses

In order to examine the degree to which each contact variable uniquely predicted attitudes, and thus examine the hypothesis that contact quality would have a larger effect on attitudes than contact frequency, and that intergenerational friendships would have a larger effect than contact quality, a multiple regression analysis was run. Results are shown in Table 4 (as gender also predicted attitudes this was included as a covariate). As predicted contact frequency $\beta = .15$, $p = .017$ and contact quality $\beta = .35$, $p < .001$ were significantly positively related to positive attitudes towards older adults.

Intergenerational friendships

Table 4. *Summary of multiple regression analyses examining the effects of contact variables on attitudes and future contact intentions Study 1.*

	Positive attitudes			
Independent variable	*B*	*SE*	β	t
Contact frequency	0.08	0.04	.15	2.40*
Contact quality	0.29	0.05	.35	5.50***
Intergenerational friendships	0.08	0.13	.04	0.64
Gender	0.30	0.13	.14	2.36*
R	.48			
R^2	.23			

Note. *N* = 231. *** *p* < .001, ***p* <.01, * *p* < .05. Intergenerational friendships; 0 = none, 1 = more than one. Gender; male = 1, female = 2

however, were not related to attitudes β .04, *p* =.526. A t test between the two beta coefficients for contact frequency and contact quality confirmed that contact quality was related to attitudes to a higher degree than contact frequency, *t* (228) = 2.38, *p* = .018.

Discussion

In line with hypotheses, the frequency and quality of direct intergenerational contact were positively related to positive attitudes towards older adults. In other words, young adults were more likely to have positive attitudes towards older adults when they interacted with them frequently and when the interactions were positive. As anticipated, the results showed that the relationship between contact quality and attitudes was greater than the relationship between contact frequency and attitudes. Unexpectedly, however, there was no independent significant relationship between intergenerational friendship and attitudes. Young adults who experienced more frequent or good quality contact with older adults were also more likely to report low

levels of intergroup anxiety and positive ingroup norms about other young adults' attitudes towards intergenerational contact. The only contact variable related to ageing anxiety was intergenerational friendships. In addition, intergroup anxiety and social norms were related to attitudes towards older adults.

Frequency and Quality of Intergenerational Contact

Finding that frequent intergenerational contact predicts positive attitudes towards older adults supports prior intergenerational contact research (Allan & Johnson, 2009; Harris & Fielders, 1988; Lou et al., 2013) and intergroup contact studies examining other target groups (Hewstone et al., 2002; Pettigrew & Tropp, 2006). In parallel, the positive relationship between good quality contact and favourable attitudes towards older adults supports prior intergenerational contact studies (Bousfield & Hutchison, 2010; Knox et al., 1986; Schwartz & Simmons, 2001) and research with other outgroups (Pettigrew & Tropp 2006). Furthermore, finding that good quality intergenerational contact was more predictive of positive attitudes than frequent intergenerational contact, likewise supported intergenerational research (Bousfield & Hutchison, 2010; Knox et al., 1986; Schwartz & Simmons, 2001) and intergroup contact research (Islam & Hewstone, 1993; Prestwich et al., 2008; Tawagi & Mak, 2015). In conclusion, whilst the frequency of intergenerational contact is not irrelevant, good quality intergenerational contact has a higher impact on attitudes towards older adults and a wide body of intergenerational and intergroup contact literature supports this effect.

Intergenerational Friendships

The findings for intergenerational friendships, however, do not support the hypotheses or previous literature (Abrams et al., 2009; Davies et al., 2013; Pettigrew, 1997; Tasiopoulou & Abrams, 2008; Vauclair et al., 2010; Van Dussen & Weaver, 2009). Not only were the relationships between intergenerational friendships and

attitudes not larger than those of contact frequency and quality as predicted, but when analysis controlled for frequency and quality the association between intergenerational friendships and attitudes disappeared altogether. One reason for this could be the abnormal distribution of the data. Descriptive statistics showed that participants' responses were positively skewed, such that most respondents either had no, or very few older friends. Whilst a lack of intergenerational friendships is consistent with the literature (Abrams et al., 2009; Pew Research Centre, 2009), the biased distribution may mean that larger sample sizes are required to capture relationships between intergenerational friendships and ageism. Indeed, the bulk of research reporting significant relationships between intergenerational friendships and attitudes consists of larger populations (*Ns* > 546; Abrams et al., 2009; Tasiopoulou & Abrams, 2008; Vauclair et al., 2010; Van Dussen & Weaver, 2009).

Intergroup Anxiety

Intergroup anxiety was consistently, negatively related to all three types of contact. This finding corroborates and improves confidence in previous research (Bousfield & Hutchison, 2010), which employed a smaller sample (N = 55). Additionally, the result supports the wider contact literature demonstrating a negative relationship between contact and intergroup anxiety (Pettigrew & Tropp, 2008). Therefore, the relationship between intergenerational contact and reduced anxiety about interacting with older adults is a robust finding.

Ageing Anxiety

Hypotheses predicting a negative correlation between ageing anxiety and intergenerational contact was not supported across all types of contact, although this is not surprising as previous findings have been mixed (Allan & Johnson, 2009; Bousfield & Hutchison, 2010). In the present study ageing anxiety was not related to contact frequency or quality but it was negatively related to intergenerational friendships.

Although previous research identified that frequent intergenerational contact is related to lower ageing anxiety (Allan & Johnson, 2009), this reflected intergenerational contact between coworkers. As coworkers are likely to be capable older adults, it follows that they would have a greater capacity to dispel worries about ageing. The current results suggest that for contact taking place in everyday contexts, where older adults are viewed as incapable (Cuddy et al., 2005), more meaningful and intimate interactions may be required to reduce ageing anxieties. As ageing anxieties involve worries about the self, friendships that represent interpersonal closeness and long-term intergenerational relationships, may be better placed than other types of intergenerational contact to calm worries about personal ageing. Future research should examine the associations between different types of contact and ageing anxiety. For example, the current study would predict that intergenerational friendships are most beneficial, whilst previous research suggests workplace contact would have most impact (Allan & Johnson, 2009).

Ingroup norms

Perceptions of positive ingroup norms about intergenerational contact were positively related to all types of contact. The largest relationship was with intergenerational friendships, which supports the wider cross-group contact literature (Davies et al., 2013). This suggests that young adults with older adult friends are more likely to perceive that other young adults encourage intergenerational contact. This result could be because the young contact partners do not experience criticism or ostracism from other young adults because of their intergenerational friendships, or because they derive their ingroup norms from their own behaviour (Davies et al., 2013). Future research should examine if these suggestions explain why intergenerational friendships have a larger impact on ingroup norms than is found for other types of intergenerational contact.

Potential mediators

Based on the current findings, both intergroup anxiety and ingroup norms have the potential to explain why intergenerational contact is related to improved attitudes towards older adults. As they are related to all types of intergenerational contact and attitudes, they are candidates as mediators of the contact-attitudes relationship. Variables that are related to both contact and attitudes have the potential to form an indirect path from contact to attitudes and explain why contact has a positive relationship with attitudes. Prior research suggests that intergroup anxiety mediates the relationship between intergenerational contact and attitudes (Bousfield & Hutchison, 2010) and the wider contact literature supports the notion that ingroup norms would form an effective mediator (Davies et al., 2013). Future studies should seek to replicate and extend research identifying the mediators of intergenerational contact and attitudes towards older adults.[4]

Limitations

The present study has some limitations. The ingroup norms scale (Gomez et al., 2011) might be inappropriate for measuring norms about intergenerational contact. The original scale was designed to measure national majority members' ingroup norms about contact with immigrant minorities, and items asked about the opinions of the participants' ingroup, such as their friends, family, teachers and larger society. Whilst these groups may represent ingroup members based on nationality, in the context of the present study, family and teachers in particular could refer to outgroup members (e.g., older adults) and therefore confound the measure. Future research should employ a scale that measures only the ingroup norms of other young adults.

[4] Post hoc exploratory analysis was conduct to examine mediation models (see Appendix D).

Summary

The first study of this thesis has established that good quality and frequent intergenerational are related to positive attitudes towards older adults. On the whole, contact quality appears to be the superior mode of intergenerational contact and there seems some doubt over whether studies without large populations can accurately capture relationships between intergenerational friendships and attitudes. As they were associated with both contact and attitudes, findings suggested that intergroup anxiety and ingroup norms mediate between the two variables. Chapter 5 aims to replicate the findings of Study 1, test whether intergroup anxiety and ingroup norms are successful mediators, and additionally explore the potential of extended intergenerational contact.

CHAPTER 5. DIRECT AND EXTENDED INTERGENERATIONAL CONTACT

Abstract

Chapter 5 presents three studies that sought to replicate and build on the findings from Study 1 by further exploring whether extended contact reduces ageism and the psychological mechanisms through which direct and extended contact reduce ageism. In Study 2 extended contact was associated with more positive attitudes towards older adults even when controlling for direct intergenerational contact (contact frequency and contact quality). In Study 3 the positive effects of direct and extended contact on young people's age-related attitudes were mediated by reductions in intergroup anxiety and ageing anxiety. The mediational effects of intergroup anxiety were replicated in Study 4 and ingroup norms additionally emerged as a mediator of the positive effects of extended contact on young people's attitudes towards older adults. Discussion focuses on the implications for strategies aimed at tackling ageism. Elements of this chapter appear in the publication: Drury, Hutchison, and Abrams (2016). Direct and extended intergenerational contact and young people's attitudes towards older adults. *British Journal of Social Psychology. 55,* 522-543.

Study 2. Does Extended Intergenerational Contact Predict Attitudes towards Older Adults over and above Direct Contact?

Prior research (Bousfield & Hutchison, 2010; Knox et al., 1986; Schwartz & Simmons, 2001) and results of Study 1 suggest that intergenerational contact can reduce ageism in young people, yet today's age-segregated society may not provide ample opportunities for positive and meaningful contact between younger and older individuals to occur on a regular basis (Hagestad & Uhlenberg, 2005). Despite there being more older adults today than at any point in history, changes in moral and political values along with family breakdowns and advances in social media technology

mean that people interact primarily with same-age peers from an early age (Peacock & Talley, 1984). Likewise, social norms discouraging intergenerational relationships may reduce the willingness of both young and older individuals to interact with members of different age groups (Nelson, 2005).

A unique aspect of ageism that adds further complexity to prejudice reduction is that, unlike other outgroups, young people will themselves become members of the older generation. This pending group transition presents unique challenges as young adults may harbour anxieties about their own ageing (Lasher & Faulkener, 1993) and more generally about coming into contact with older adults (Bousfield & Hutchison, 2010; Hutchison et al., 2010). This may go some way towards explaining why contact's reduction of ageism is typically smaller in magnitude than its reduction of other types of prejudice (Pettigrew & Tropp, 2006). With these issues in mind, this study investigated whether the positive attitudinal outcomes associated with direct intergenerational contact might also arise from extended contact (Wright et al., 1997).

Extended Contact

Chapter 3 identified that research has yet to examine the success of intergenerational extended contact. The lack of research in this area is surprising in light of research suggesting that the generation gap in many developed countries is as wide as it has been since the 1960s (Pew Research Center, 2009) and opportunities for the formation of positive relationships between young and older adults are becoming increasingly limited (Abrams et al., 2009). Extended contact may be especially useful in the current social climate as it implies that direct intergenerational relationships may not be essential for the positive outcomes associated with contact to be realized.

Another advantage of extended contact is that it allows individuals to experience intergroup relationships while avoiding the anxieties often associated with direct intergroup encounters (Stephan & Stephan, 1985). It can also be useful in preparing

members of opposing groups for future direct contact (Eller, Abrams, & Gomez, 2012). Thus, it seems both worthwhile and timely to explore whether extended contact might have similar positive outcomes in the context of young people's attitudes towards older adults.

Design and Hypotheses

The present study is an analysis of a student survey, it uses correlation and multiple regression analysis to examine relationships between direct and extended intergenerational contact and attitudes towards older adults. Two hypotheses are tested. 1) Based on findings from Study 1, it is hypothesised that the frequency and quality of direct intergenerational contact will predict positive attitudes towards older adults. 2) Additionally, in line with extended intergroup contact research (Eller et al., 2012) it is hypothesised that extended intergenerational contact will independently predict attitudes.

Method

Participants

Seventy students at a London university participated in the study.[5] Thirty-eight were female and 32 were male. Ages ranged from 17 to 25, with a mean age of 21.16 years (*SD* = 2.12).

Materials and Procedure

Students were approached on a university campus and invited to take part in a study on 'elderly people in modern society'. Those who agreed were handed a questionnaire containing all instructions and measures, which were presented in the same order as described below. It was explained to participants that the term 'elderly'

[5] Data was collected by Dr Paul Hutchison at London Metropolitan University; data analysis and interpretation was conducted by the author of this thesis, Lisbeth Drury.

referred to people aged 65 years or over, while ‘contact’ was defined as ‘interactions with elderly individuals – e.g., at work, socially, in the neighbourhood’.

Contact measures. Contact frequency and quality (α = .73) were assessed as in Study 1 but using a 5-point scale rather than 7-point scales. Extended contact was assessed by asking participants to indicate how many of their close friends have positive relationships with older adults on a scale ranging from 1 (*none at all*) to 5 (*very many*). Items were scored such that higher scores indicate more contact frequency, better quality contact and more extended intergenerational relationships, respectively.

Attitude measure. Attitudes were measured as in Study 1, but again using 5-point scales instead of 7-point scales (α = .89).

Results

Table 5 displays the means and standard deviations for the measures as well as their intercorrelations. As shown in that table, both contact quality and extended contact were positively correlated with young people’s attitudes towards older adults, whereas contact frequency and attitudes were not correlated. Although not indicated in Table 5, gender or age of the participants were not correlated with any other variables, all *rs* < -.19, all *ps* > .12. Next, a multiple linear regression analysis was conducted to assess the extent to which the three contact variables predict attitudes (see Table 6). Gender and age were included as control variables. The regression equation was significant, F (5, 64) = 5.18, $p < .001$, $R^2 = .29$. Replicating the correlation results, both contact quality, $B = .39$, $SE = .11$, $t = 3.67$, $p < .001$, and extended contact, $B = .38$, $SE = .11$, $t = 3.59$, $p = .001$, were positively associated with attitudes, whereas contact frequency was not significantly associated with attitudes, $B = .14$, $SE = .11$, $t = 1.25$, $p = .22$.

Discussion

Study 2 investigated the relationships between different types of intergenerational contact and young people’s attitudes towards older adults. The results suggest that

having frequent contact with older adults may not be sufficient to reduce ageism. Instead, the data suggest that it is the perceived quality of intergenerational contact that has the potential to reduce ageism. Although not in line with Study 1, finding that contact quality is associated with less ageism but contact frequency is not is consistent with previous studies (Bousfield & Hutchison, 2010; Hutchison et al., 2010; Schwarz & Simmons, 2001). Extending previous research, the present results additionally suggest that direct contact may not even be necessary to reduce ageism: simply knowing that their same-age peers have positive intergenerational relationships may be sufficient to improve young people's attitudes towards older adults.

Study 3 aims to test the robustness of these effects and to additionally examine intergroup anxiety and ageing anxiety as potential mediators of the positive associations between both direct and extended intergenerational contact and young people's attitudes towards older adults.

Study 3. Intergroup Anxiety and Ageing Anxiety as Mediators of Direct and Extended Intergenerational Contact

Having confirmed that direct and extended contact can reduce prejudice, Study 3 additionally explores intergroup anxiety and ageing anxiety as mediators this these effects. Study 3. Several studies have shown that good quality intergroup contact can reduce intergroup anxiety and indirectly reduce different types of prejudice (for a review, see Pettigrew & Tropp, 2008) including ageism (Bousfield & Hutchison, 2010; Hutchison et al., 2010). For example, Bousfield and Hutchison (2010) found that good quality contact with older adults reduced young people's concerns about impending intergenerational encounters, which in turn improved their attitudes towards older adults as a whole (see also Hutchison et al., 2010). Research also demonstrates that intergroup anxiety is a key mediator in the extended contact – prejudice reduction relationship

(Turner et al., 2008). However, the links between extended contact, intergroup anxiety, and the age-related attitudes of young people have not yet been explored.

Ageing anxiety is positively correlated with ageism (Allan & Johnson, 2009; Allan et al., 2014; Boswell, 2012; Harris & Dollinger, 2001) and although Study 1 revealed no relationships between intergenerational contact and ageing anxiety, prior research has shown that intergenerational contact can reduce ageing anxiety and indirectly reduce ageism. Allan and colleagues (Allan & Johnson, 2009; Allan et al., 2014) found that frequent intergenerational contact was associated with less ageism in young people and this reduction in ageism was mediated by a decrease in ageing anxiety: the more contact young people have with older adults, the less anxious they are about their own ageing, and the less ageist they are. However, attempts to replicate these effects have not always been successful (Bousfield & Hutchison, 2010; Hutchison et al., 2010). For example, Bousfield and Hutchison (2010) found that reduced intergroup anxiety mediated the positive effect of good quality intergenerational contact on young people's age-related attitudes but ageing anxiety did not. Thus further tests of the potential of intergenerational contact to reduce ageing anxiety and ageism are required.

As well as providing such a test Study 3 additionally examined the relationship between extended contact and ageing anxiety for the first time. It is conceivable that, like direct intergenerational contact, extended contact might help to reduce some of the concerns that young people often have about their own ageing (e.g., Eshbaugh, Gross, & Satrom, 2010) and therefore indirectly reduce ageism.

Design and Hypotheses

Study 3 is an analysis of a further student survey and uses correlational, multiple regression and mediation analyses to test two hypotheses. 1) In line with prior research (Allan & Johnson, 2009; Bousfield & Hutchison, 2010), it is hypothesised that the

association between contact quality and attitudes towards older adults will be independently mediated by intergroup anxiety and ageing anxiety. 2) Based on prior extended contact research (Turner et al., 2008) and extrapolating from prior direct intergenerational contact research (Allan & Johnson, 2009) it is further hypothesised that the relationship between extended intergenerational contact and attitudes will be independently mediated by intergroup and ageing anxiety.

Method

Participants

Participants were 110 psychology students at a London university.[6] Sixty-eight were female, 41 were male, and one participant did not indicate their gender. Ages ranged from 18 to 25 with a mean age of 21.21 years (SD = 2.12). None had participated in Study 2.

Materials and Procedure

The study was conducted in a lecture hall as part of a scheduled teaching session. All instructions and measures were presented in a questionnaire in the same order as described below. As in Study 2, it was explained to participants that the term ‘elderly’ referred to people aged 65 years or over and ‘contact’ referred to ‘time spent interacting with elderly people’.

Contact measures. Contact frequency and quality (α = .71) were measured as in Study 1. Extended contact was also measured as in Study 1 but used a 7-point rather than 5-point scale.

Anxiety measures. Intergroup anxiety (α = .78) and ageing anxiety (α = .91) were measured as in Study 1.

Attitude measure. Attitudes were measured as in Study 1 (α = .81).

[6] Data was collected by Dr Paul Hutchison at London Metropolitan University, data analysis and interpretation was conducted by the author of this thesis, Lisbeth Drury.

Results

Table 5 displays the means and standard deviations for the measures along with their intercorrelations. As in Study 1, both contact quality and extended contact were positively correlated with young people's attitudes towards older adults, whereas contact frequency and attitudes were not significantly correlated. Likewise, both contact quality and extended contact were negatively correlated with intergroup anxiety but contact frequency was not. All three contact variables were negatively correlated with ageing anxiety, and both intergroup anxiety and ageing anxiety were negatively correlated with attitudes. Although not indicated in Table 5, gender or age were not correlated with any of the other variables, all *rs* < .18, *ps* >.11.

As in Study 2, multiple regression analysis (see Table 6) was used to assess the extent to which the three contact variables predict attitudes (controlling for gender and age). The regression equation was significant F (5,102) = 6.26, $p < .001$. Replicating the results from Study 2, contact quality, $B = .35$, $SE = .01$, $t = 3.83$, $p < .001$, and extended contact, $B = .31$, $SE = .01$, $t = 3.27$, $p = .001$, were positively associated with attitudes, whereas contact frequency was not associated with attitudes, $B = -.04$, $SE = .10$, $t = -0.44$, $p = .66$.

Mediation Analyses

Procedures outlined by Preacher and Hayes (2008) were followed to assess whether intergroup anxiety and/or ageing anxiety mediated the positive association between intergenerational contact (contact quality and extended contact) and young people's age-related attitudes. To this end, the Indirect Macro for SPSS (Preacher & Hayes 2008), which uses bootstrapping techniques to estimate the total and direct effects of a predictor variable on an outcome variable as well as the indirect effects through one or more mediator variables was used. These analyses have the advantage of greater statistical power without assuming multivariate normality in the sampling distribution and are more appropriate than

alternative techniques (e.g., structural equation modelling) when the sample size is relatively small (Hayes, 2013).

Mediation of the contact quality – attitudes relationship. In this analysis intergroup anxiety and ageing anxiety were investigated as mediators of the association between contact quality and attitudes. As well as gender and age, contact frequency and extended contact were included in the model as covariates. The total effect of contact quality on attitudes was significant, $B = .35$, $SE = .09$, $t = 3.82$, $p < .001$, as was the direct effect, $B = .23$, $SE = .09$, $t = 2.46$, $p = .02$. The total indirect effect through intergroup anxiety and ageing anxiety was significant, .12, $SE = .06$, 95% *CI* [.026, .263], as were the specific indirect effects through intergroup anxiety, .06, $SE = .04$, 95% *CI* [.007, .179], and ageing anxiety, .06, $SE = .04$, 95% *CI* [.004, .175]. This confirms that intergroup anxiety and ageing anxiety both mediate between contact quality and young people's attitudes towards older adults.

Mediation of the extended contact – attitudes relationship. In this analysis intergroup anxiety and ageing anxiety were investigated as mediators of the association between extended contact and attitudes. Contact frequency, contact quality, age and gender were included as covariates. The total effect of extended contact was significant, $B = .31$, $SE = .09$, $t = 3.27$, $p = .002$, but the direct effect was not, $B = .16$, $SE = .09$, $t = 1.64$, $p = .10$. The total indirect effect through the two anxiety variables was significant, .15, $SE = .07$, 95% *CI* [.039, .326], as were the specific indirect effects through intergroup anxiety, .07, $SE = .04$, 95% *CI* [.014, .192], and ageing anxiety, .07, $SE = .05$, 95% *CI* [.002, .204]. This confirms that intergroup anxiety and ageing anxiety also mediate between extended contact and young people's age-related attitudes.

Discussion

Study 3 investigated the relationships between different types of intergenerational contact and young people's age-related attitudes and additionally examined intergroup

anxiety and ageing anxiety as potential mediators of contact's reduction of ageism. Finding that contact quality and extended contact were associated with more positive attitudes towards older people whereas contact frequency was not is consistent with the results from Study 2 and several previous studies (Bousfield & Hutchison; Hutchison et al., 2010; Schwarz and Simmons, 2001). Extending previous research, the results from Study 3 additionally show that the positive effects of both contact quality and extended contact on young people's age-related attitudes are mediated by reduced intergroup anxiety and ageing anxiety. This suggests that the effects of experiencing indirect intergenerational relationships may be similar to those associated with experiencing good quality direct contact with older individuals. More specifically, the results suggests that when young people experience good quality personal contact with older adults or when they experience positive indirect intergenerational relationships within their close social environment, they feel less anxious about possible future intergenerational encounters and their own ageing, and thus are less ageist.

A limitation with Studies 2 and 3 concerns the samples used. Both studies were conducted with student samples and it is possible that students may have different experiences of contact with older adults as compared to non-students, especially since students are more likely to come into contact with competent older individuals on a regular basis (e.g., professors, mature students). Thus, it is possible that students and non-students may differ in terms of the quality of contact they experience with older adults as well as the number and nature of indirect relationships they may be aware of. For this reason, a further study was conducted with a more diverse sample.

Study 4. Ingroup Norms and Self-Disclosure as Mediators of Direct and Extended Intergenerational Contact

In addition to using a more diverse sample to replicate findings from Study 3, further potential mediators were examined in Study 4; ingroup norms and self-

disclosure. Study 1 had established that direct contact was associated with ingroup norms and prior research has shown that these variables mediate the positive effects of direct and extended contact on outgroup attitudes (Cameron et al., 2011; Davies et al., 2013; Turner et al., 2007, 2008).

Research focused on direct and indirect friendships revealed that extended contact between White British students and South Asians in the UK was associated with more positive outgroup attitudes and this relationship was mediated by increased norms of positive intercultural relationships (Turner et al., 2008). Similarly, Cameron et al. (2011) found that ingroup norms mediated the positive influence of extended contact on older (aged 8 to 11 year olds) rather than younger (aged 6 to 8 year olds) British children's attitudes towards Asians. These examples suggest that ingroup norms are important for young people (see also Schofield & Eurich-Fulcer, 2001) and therefore may influence their inhibitions about, and ultimately their attitudes towards, older adults. However, no research to date has assessed the mediating role of ingroup norms in direct or extended intergenerational contact situations.

Self-disclosure is important for the development of positive intergroup relationships and the reduction of prejudice (e.g., Dovidio, Gaertner, Validzic, Matoka, Johnson, & Frazier, 1997; Ensari & Miller, 2002; Turner et al., 2007). For example, Ensari and Miller (2002) found that self-disclosure by a typical outgroup member during a cooperative intergroup activity not only improved liking of the discloser, but also improved attitudes towards the outgroup as a whole. Similarly, Turner et al. (2007) found that the more interethnic friendships that White British schoolchildren had, the less prejudiced they were, and this association was mediated by an increased willingness to self-disclose to an outgroup member. In the same study, the positive relationship between extended contact and outgroup attitudes was also explained by increased willingness to self-disclose to an outgroup member. These findings confirm

that self-disclosure is important for the development of positive intergroup relationships in young people and prejudice reduction (Dovidio et al., 1997). However, the roles of self-disclosure in direct or extended intergenerational contact situations have yet to be empirically established (but see Harwood et al., 2005).

Design and Hypotheses

Study 4 analyses survey data collected from an online platform and tests two hypothesis. 1) Based on previous intergroup contact research demonstrating the mediating properties of ingroup norms and self-disclosure (Cameron et al., 2011; Davies et al., 2013; Turner et al., 2007, 2008), it is hypothesised that the association between contact quality and attitudes towards older adults, and extended contact and attitudes will both be independently mediated by ingroup norms and self disclosure. 2) In line with the results of Study 3, it is further hypothesised that the mediating effects of intergroup anxiety and ageing anxiety will be replicated.

Method

Participants

The sample consisted of 95 participants, 61 males and 34 females. Ages ranged from 18 to 30 years (M = 24.52, SD = 3.29). Participants were asked to indicate their current primary occupation: 82% were in either full-time or part-time employment and 18% were students.

Materials and Procedure

Participants were recruited via Amazon's Mechanical Turk online tool and received $0.40 for completing a survey on 'friendships'. The terms 'elderly' and 'contact' were defined as in Studies 1 and 2.

Contact measures. Contact frequency and quality (α = .65) were measured as in Study 1. Study 4 replaced the single item extended contact measure used in Studies 2 and 3 with a multi-item measure used in previous contact studies (Turner et al., 2008).

The alternative extended contact scale was used to ensure measurement of same age ingroup peers' intergenerational friendships. Four items asked: 'How many of your friends in your age group have friends who are elderly?', 'How many of your very best friends in your age group have friends that are elderly?', 'How many of your family members in your age group have friends who are elderly?' (1 = *none*, 5 = *over ten*) and 'How many people in your age group do you know who have friends who are elderly' (1 = *none*, 5 = *most*). The items were combined to form a single extended contact score (α = .82). Higher scores indicate more extended contact.

Anxiety measures. Intergroup anxiety (α = .86) and ageing anxiety (α = .80) were assessed using the same measures as in Study 1.

Ingroup norms. As mentioned, because the measure of ingroup norms employed in Study 1 featured items relating to family, teachers and society, it did not accurately measure the attitudes of young adults' ingroup friends. Therefore, this scale was replaced with a measure that referred specifically to attitudes of young adults' young friends. Four items were adapted from previous research (Turner et al., 2008): 'Most of your friends (in your age group) would consider it something positive to have elderly people as friends', 'Most of your friends (in your age group) would choose to have a friend who is elderly', 'People in your age group like elderly people' (1 = *totally disagree*, 7 = *totally agree*), and 'Do you think your friends in your age group would be happy to socialize with someone who is elderly?' (1 = *not at all happy*, 7 = *very happy*). The items were combined to form a single ingroup norms score (α = .85). A higher score indicates more positive ingroup norms about friendships with older adults.

Self-disclosure. Self-disclosure was assessed using four items that were also adapted from previous research (Turner et al., 2007). Participants indicated how willing they would be to disclose the following information to an elderly person on a scale ranging from 1 (*definitely not*) to 7 (*definitely*): 'a self-relevant problem', 'an exciting

secret', 'their feelings', and 'personal information'. The items were averaged to create single self-disclosure score (α = .89), with higher scores indicating more willingness to self-disclose.

Attitude measure. Attitudes were measured as in Study 1 (α = .88).

Results

Table 5 displays the means and standard deviations for the measures along with their intercorrelations. As in Studies 2 and 3, contact quality and extended contact were positively correlated with young people's attitudes towards older people whereas contact frequency was not. In addition, all three contact variables were negatively correlated with intergroup anxiety but only contact quality and extended contact were negatively associated with ageing anxiety. Similarly, contact quality and extended contact were positively associated with ingroup norms about intergenerational relationships but contact frequency was not, and all three contact variables were positively correlated with willingness to self-disclose to an older adult. As expected, intergroup anxiety and ageing anxiety were associated with more negative attitudes towards older adults, whereas ingroup norms and self-disclosure were associated with more positive age-related attitudes. Finally, although not included in Table 5, the demographic variables were not associated with any of the other variables except age, which was positively correlated with contact quality, $r = .23$, $p = .026$, and self-disclosure, $r = .21$, $p = .039$, all other $rs < .18$, all $ps > .09$.

As in Studies 2 and 3 multiple regression analysis (see Table 6) was used to assess the extent to which the different types of contact predict young people's age-related attitudes (controlling for the demographic variables). The regression equation was significant, F (6, 88) = 4.08, $p = .001$, $R^2 = .22$. Contact quality was positively associated with attitudes towards older adults, $B = .39$, $SE = .11$, $t = 3.78$, $p < .001$,

whereas extended contact, *B* = .14, *SE* = .12, *t* = 1.26, *p* < .211, and contact frequency were not associated with attitudes, *B* = .02, *SE* = .11, *t* = 0.20, *p* = .843.

Mediation Analyses

Following the procedures outlined in Study 3, analysis examined whether intergroup anxiety, ageing anxiety, ingroup norms, and self-disclosure mediate between both contact quality and extended contact and young people's attitudes towards older adults.

Mediation of the contact quality – attitudes relationship. In this analysis intergroup anxiety, ageing anxiety, ingroup norms, and self-disclosure were investigated as mediators of the positive association between contact quality and young people's attitudes towards older adults. Contact frequency, extended contact, and the demographic variables were included as covariates. The total effect of contact quality on attitudes was significant, *B* =. 39, *SE* = .10, *t* = 3.78, *p* <.001, whereas the direct effect was not, *B* = .15, *SE* = .11, *t* = 1.34, *p* =.185. The total indirect through all four mediator variables was also significant, .24, *SE* = .08, 95% *CI* [.100, .412], as was the specific indirect effect through intergroup anxiety, .17, *SE* = .08, 95% *CI* [.052, .353]. However, the specific indirect effects through ageing anxiety, .002, *SE* = .02, 95% *CI* [-.043, .056], ingroup norms, .05, *SE* = .04, 95% *CI* [-.004, .149], and self-disclosure, .02, *SE* = .05, 95% *CI* [-.050, .136] were not significant. This confirms that intergroup anxiety mediates between contact quality and young people's attitudes towards older adults.

Mediation of the extended contact – attitudes relationship. In this analysis intergroup anxiety, ageing anxiety, ingroup norms, and self-disclosure were investigated as mediators of the positive association between extended contact and young people's age-related attitudes. Contact frequency, contact quality, and the demographic variables were included as covariates. The total effect of extended contact on attitudes was significant, *B* =. 24, *SE* = .10, *t* = 2.32, *p* = .023, whereas the direct effect was not, *B* =

.02, *SE* = .11, *t* = 0.19, *p* = .847. The total indirect effect was also significant, .22, *SE* = .07, 95% *CI* [.101, .381] as were the specific indirect effect through intergroup anxiety, .11, *SE* = .05, 95% *CI* [.031, .263], and ingroup norms, .09, *SE* = .05, 95% *CI* [.006, .213]. However, the specific indirect effects through ageing anxiety, -.0002, *SE* = .02, 95% *CI* [-.042, .049], and self-disclosure, .01, *SE* = .05, 95% *CI* [-.065, .145], were not significant. This confirms that intergroup anxiety and ingroup norms mediate between extended contact and young people's age-related attitudes.

Discussion

Study 4 investigated the relationships between different types of intergenerational contact and young people's age-related attitudes and additionally examined the potential mediating roles of intergroup anxiety, ageing anxiety, ingroup norms, and self-disclosure. Like those from Studies 2 and 3, the present results suggest that frequent intergenerational contact alone may not be sufficient to reduce ageism; it is the perceived quality of intergenerational contact and the knowledge that other young people have positive relationships with older adults that has the potential to improve young people's attitudes towards older adults. Moreover, as in Study 3, intergroup anxiety mediated the positive effects of both contact quality and extended contact on young people's age-related attitudes. However, unlike Study 3, ageing anxiety did not emerge as a significant mediator in Study 4 and neither did self-disclosure but ingroup norms mediated the effect of extended contact on attitudes. Together these results suggest that experiencing good quality direct contact with older adults reduces the concerns many young people have about intergenerational encounters, which in turn improves their attitudes towards older adults as a whole. Likewise, knowing that other young people in their close social network have positive relationships with older adults can similarly reduce intergroup anxiety and make such relationships seem more widespread and acceptable, thus indirectly reducing ageism.

General Discussion

The three studies in this chapter examined the relationships between different types of intergenerational contact and young people's attitudes towards older adults. Although no significant relationships emerged between the frequency of intergenerational contact and young people's age-related attitudes, contact quality and extended contact were associated with more positive attitudes towards older people in all three studies. Finding that good quality contact is associated with less ageism but contact frequency is not is consistent with several previous intergenerational contact studies (Bousfield & Hutchison, 2010; Hutchison et al., 2010; Schwartz & Simmons, 2001). Likewise, although there is some evidence in the contact literature of a link between contact frequency and prejudice (see Pettigrew & Tropp, 2006), good quality contact typically emerges as the stronger and more reliable predictor of reduced prejudice (e.g., Islam & Hewstone, 1993; Prestwich et al., 2008; Tawagi & Mak, 2015). Thus the present results concur with those in the wider contact literature and suggest that frequent contact with older individuals may not be sufficient to reduce ageism; it is the perceived quality of intergenerational contact that has the greater potential to improve young people's attitudes towards older adults and therefore reduce ageism. The present results are therefore consistent with Allport's (1954) emphasis on the nature of intergroup contact rather than on contact per se (see also Amir, 1969).

Extended Intergenerational Contact

Although extended contact was associated with less ageism in all three studies, when the unique effects of each type of contact (direct frequency, direct quality, and extended contact) were tested using regression analyses results revealed that in Studies 1 and 2 both contact quality and extended contact accounted for variance in attitudes over and above the variance accounted for by direct forms of contact, whereas in Study 4 only contact quality emerged as a unique predictor of attitudes. Nevertheless, when

meta-analytically summarized over the three studies, extended contact was associated with less ageism even when controlling for the effects of direct contact.[7] Therefore, the current research shows that in addition to direct contact between young and older adults, extended intergenerational contact can influence young people's attitudes towards older adults and therefore reduce ageism. This suggests that direct contact with older adults may not even be necessary for the positive attitudinal outcomes of contact to be realized – simply knowing that other young people have positive relationships with older adults may be sufficient to reduce ageism.

One reason why extended contact independently predicted ageism in Studies 2 and Study 3 but not in Study 4 may be due to the samples used. Studies 2 and 3 used student samples, whereas Study 4 used a less homogeneous sample consisting primarily of non-students. Contact occurring within a university context may provide the contact participants with an additional shared identity (e.g., as students) making the contact appear more normative, whereas contact in other contexts may appear less normative and hence explain the weaker effects of extended contact in Study 4's more diverse sample. This is consistent with Fox and Giles's (1993) proposed model of intergenerational contact, which suggests that contact contexts and/or locations can alter the perceived status of the groups in the contact situation and affect attitudes resulting from contact.

An interesting finding in all three studies is that contact quality and extended contact were associated with the other variables in similar ways while being uncorrelated with each other. In contrast, in intercultural contact studies contact quality and extended contact are typically positively correlated (e.g., Gómez et al., 2011;

[7] In order to obtain a clearer picture of the unique effects of extended contact across the three studies a meta-analysis was conducted to examine the aggregated effect of extended contact on attitudes. This confirmed that extended contact was significantly associated with attitudes even when controlling for direct contact (contact frequency and contact quality) and demographic variables: Z (weighted by sample size, N = 273) = 5.02, mean R^2 = .31, mean Fisher's Z = .32, p = 2.67 E-7. The failsafe number (p = .05) was 25.2.

Hutchison & Rosenthal, 2011) as are direct and indirect friendships (De Tezanos-Pinto et al., 2010; Turner et al., 2007; Turner, Tam, Hewstone, Kenworthy, & Cairns, 2013). This suggests that the effects of direct and indirect intergenerational contact may be unique, as they appear to occur independently but have similar attitudinal outcomes. A possible explanation for this finding is that, due to social norms discouraging intergenerational relationships (Nelson, 2005), young adults with intergenerational friends are less likely to tell other young adults about such friendships and similarly they may be less likely to receive information from their peers about their friendships with older adults. In contrast, a young adult with an interethnic friend may be more likely to disclose and even promote this relationship to his or her peers as intercultural friendships are supported by wider societal norms as a progressive way to reduce prejudice towards ethnic minorities (Aboud, Mendleson & Purdy, 2003). This may explain why contact quality and extended contact are correlated in the wider contact literature but not in intergenerational contact situations.

Mediators of Direct and Extended Contact

Studies 3 and 4 additionally examined mediating variables. In both studies the positive effects of good quality direct and extended contact were explained by reduced intergroup anxiety: the better the quality of contact that young people have with older adults and the more intergenerational relationships they are aware of, the less anxious they are about impending intergenerational encounters, and the less ageist they are. Finding that intergroup anxiety mediates the effects of direct contact is consistent with previous intergenerational contact studies (Bousfield & Hutchison, 2010; Hutchison et al., 2010) and the wider contact literature (for a review, see Pettigrew & Tropp, 2008). However, the present studies are the first to demonstrate that intergroup anxiety also mediates the effects of extended intergenerational contact. These findings suggest that

like other types of prejudice ageism can be appropriately conceptualised as an intergroup process (Fox & Giles, 1993).

In Study 3 the relationships between both contact quality and extended contact and reduced ageism were also mediated by reduced ageing anxiety. This suggests that positive direct or indirect experiences with older adults have the potential to reduce the concerns that young people may have about their own ageing, and therefore to improve their attitudes towards older people as a whole. While previous research has showed that direct intergenerational contact can reduce ageism indirectly by reducing ageing anxiety (Allan & Johnson, 2009; Allan et al., 2014), the present studies are the first to show that extended contact can also reduce ageing anxiety and therefore indirectly reduce ageism.

In Study 4 contact quality and extended contact were similarly associated with less ageing anxiety, and ageing anxiety was associated with less ageism, but the indirect path from contact quality and extended contact to reduced ageism via ageing anxiety was not significant. Finding that ageing anxiety mediated both direct and extended contact's relationships with attitudes in Study 3 but not in Study 4 may again be attributable to differences in the samples used. In particular, university students, who formed a higher proportion of the sample in Study 3 than Study 4, are likely to have more direct and extended contact with competent older adults (e.g., professors, mature students), which may help explain the stronger correlations between both types of contact and ageing anxiety in Study 3 than in Study 4, and hence the lack of mediation effects in Study 4. Future research should measure the competency and/or dependency levels of older adults involved in intergenerational contact and examine their relationships with ageing anxiety (see also Allan & Johnson, 2009).

At face value, finding that intergenerational contact reduces ageing anxiety and indirectly reduces ageism may appear to contradict the idea that older adults present a threat to young people by reminding them of their own ageing (Greenberg, Schimel, &

Martens, 2002). However, rather than being contradictory, it seems reasonable to assume that positive direct or indirect experiences with older adults may go some way towards disconfirming the negative expectations young people may have about older adults and the ageing process more generally, therefore reducing their concerns about their own ageing and improving their attitudes towards older people as a whole. Along these lines, Hutchison et al. (2010) found that good quality contact with older adults was associated with more positive expectations among young people about the possible outcomes of intergenerational encounters, which in turn predicted less ageism (see also Plant & Devine, 2003). Future research should investigate the role of young people's expectations about the consequences of ageing in the relationship between intergenerational contact, ageing anxiety, and ageism.

Study 4 also examined ingroup norms and self-disclosure as potential mediating variables, finding that ingroup norms mediated extended contact's reduction of ageism. This is consistent with the idea that experiencing indirect cross-group friendships increases their acceptability by making them appear more widespread and familiar, thus creating an indirect pathway to more positive attitudes (Wright et al., 1997). Although good quality direct contact was associated with more positive ingroup norms about intergenerational relationships, and ingroup norms was associated with less ageism, there was no indirect pathway from contact quality to attitudes via ingroup norms. Finding that ingroup norms mediate the effects of extended contact but not direct contact is consistent with previous contact studies (e.g., De Tezanos-Pinto et al., 2010) and supports the idea that knowing that their same-aged peers have older friends makes intergenerational friendships seem more widespread and acceptable, thus reducing ageism. On the other hand, having direct intergenerational friendships does not provide information about the frequency of other young adults' intergenerational friendships or the acceptability of such friendships. This may explain why ingroup norms mediated the

relationship between extended contact and reduced ageism but not the relationship between contact quality and reduced ageism.

Although self-disclosure did not emerge as a significant mediating variable in Study 4 it was positively correlated with direct and extended contact and with more positive attitudes towards older people. This suggests that, as with other types of intergroup contact (Turner et al., 2007), self-disclosure has the potential to reduce prejudice but in the context of intergenerational contact the effects are not sufficiently strong to explain the relationship between contact and more positive attitudes towards older people. One reason for this may be due to problems in young people's communication with unfamiliar older adults. For example, young people are more likely to communicate with and therefore self-disclosure to other young people especially via social media, which is less commonly used by older adults (Duggan & Brenner, 2013; Walther, 1996). Additionally, young adults often feel patronised (Giles & Williams, 1994) and experience anxiety when experiencing excessive self-disclosure by older adults (Coupland, Coupland, & Giles, 1991). Thus it may be that intergenerational anxiety needs to be reduced before self-disclosure can mediate between intergenerational contact and ageism. Along these lines, Pettigrew and Tropp (2008) proposed a causal sequence whereby initial anxieties must first be reduced through intergroup contact before other variables can affectively contribute to prejudice reduction. Future research should test this sequence in the context of relations between young and older adults. It may be that self-disclosure plays a more important role in reducing ageism once intergenerational anxieties are reduced.

Applied Implications

Taken together, the findings suggest that designs for successful ageism reduction interventions could utilise either direct or extended contact (see Cameron et al., 2011; Jarrott & Smith, 2011) or a combination of both. For example, Eller et al. (2012)

showed that extended contact paved the way for future direct contact, which in turn predicted more positive outgroup attitudes. Therefore, employing an extended contact task before a direct intergenerational programme could potentially enhance the outcomes. Alternatively, direct intergenerational programmes could be followed up by young adults' peer-to-peer dissemination of their positive programme experiences, thus creating an extended contact effect with other young adults not involved in the original direct programme (see also Atkinson & Bray, 2013).

Furthermore, these findings shed light on some of the psychological mechanisms through with direct and extended contact can reduce ageism. In particular, the results suggest that important variables to consider when devising strategies or interventions aimed at reducing ageism are those that assist in the reduction of young people's anxieties about intergenerational encounters and their own ageing. It is similarly important to foster the formation of positive ingroup norms about intergenerational relationships and to encourage voluntary sharing of personal information. The present research suggests that good quality direct and extended intergenerational contact may go some way towards achieving these aims, and strategies aimed at reducing ageism should aim to capitalise on the findings.

Limitations

Although the results from all three studies are broadly in line with predictions there are limitations with the present research. As with most contact studies, our findings are based on cross-sectional survey data which makes it difficult to draw firm conclusions about causal relationships. With this in mind, future research should be conducted longitudinally and experimentally to allow for stronger inferences about the relationships between the variables examined in the present studies (e.g., Eller et al., 2011).

It should also be noted that negative attitudes towards older people are often internalized in older adults themselves (Levy & Banaji, 2002). This is not entirely surprising given that young people with ageist attitudes will in time become members of the older generation. Such attitudes may reinforce the marginalisation and disempowerment of older adults (Bousfield & Hutchison, 2010). Thus future research and ageism reduction interventions should seek to identify factors influencing older adults' ageism towards their own generation as well as the ageism of young people towards older adults.

Summary

In conclusion, study results of this chapter suggest that direct contact with older adults may not be necessary to reduce ageism in young people: simply knowing that other young people have positive relationships with older individuals may be sufficient to achieve this aim. The results also shed light on the psychological mechanisms through which direct and extended contact can reduce ageism. These findings may be important when devising strategies aimed at reducing ageism, especially in the current social climate where the gap between young people and older adults is widening and opportunities for direct intergenerational contact are becoming increasingly limited. The following Chapter aims to extend the range of outcome variables explored in the thesis by additionally examining the effects of direct and extended contact on age stereotypes. It will also test whether stereotypes form further mediating paths to reduce ageism.

Table 5. *Means, standard deviations and correlations between the variables for Studies 2, 3 and 4.*

Measures	*M*	*SD*	2	3	4	5	6	7	8
Study 2									
1.Contact frequency	2.41	1.23	-.09	.03	.08				
2. Contact quality	2.92	1.12		-.08	.38**				
3. Extended contact	3.36	1.14			.34**				
4. Attitudes	3.46	0.78							
Study 3									
1.Contact frequency	4.52	1.86	.28**	.32**	.15	-.14	-.21*		
2. Contact quality	5.20	1.11		.15	.39***	-.29***	-.33***		
3. Extended contact	3.67	1.60			.35***	-.34***	-.37***		
4. Attitudes	5.64	0.89				-.42***	-.41***		
5.Intergroup anxiety	2.86	1.33					.28**		
6. Ageing anxiety	3.47	1.17							

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Scores on all measures range from 1-5 in Study 2 and 1-7 in Study 3. In Study 4 scores on all measures range from 1-7 except the extended contact scores which range from 1-5.

Table 5 ..*continued*

Measures	*M*	*SD*	2	3	4	5	6	7	8
Study 4									
1.Contact frequency	4.20	2.43	.18	.48***	.16	-.34**	-.19	.18	.27**
2. Contact quality	4.75	1.01		.19	.43***	-.51**	-.23*	.33**	.41***
3. Extended contact	1.96	0.79			.22*	-.24*	-.21*	.39***	.35**
4. Attitudes	5.10	1.07				-.51**	-.22*	.35**	.36**
5.Intergroup anxiety	3.17	1.12					.32**	-.24*	-.40***
6. Ageing anxiety	4.91	1.34						-.25*	-.16
7. Ingroup norms	3.97	1.11							.48***
8. Self-disclosure	4.27	1.37							-

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Scores on all measures range from 1-5 in Study 2 and 1-7 in Study 3. In Study 4 scores on all measures range from 1-7 except the extended contact scores which range from 1-5.

Table 6. *Summary of multiple regression analyses examining the effects of contact variables on attitudes towards older adults in Study 2, 3 and 4*

	Study 2			Study 3			Study 4		
Independent variable	*B*	*SE*	*t*	*B*	*SE*	*t*	*B*	*SE*	*t*
Contact frequency	0.14	0.11	1.25	-0.04	0.10	-0.44	0.02	0.11	0.20
Contact quality	0.39	0.11	3.67***	0.35	0.09	3.83***	0.39	0.10	3.78***
Extended contact	0.39	0.11	3.59***	0.31	0.09	3.27**	0.14	0.12	1.26
Control variables									
Gender	.11	.22	0.53	0.04	0.19	0.21	-0.16	0.20	-0.81
Age	.12	.11	1.12	-0.02	0.09	-0.16	0.10	0.11	0.92
Employment status							0.06	0.28	0.20
R	.54			.49			.47		
R2	.29			.24			.22		

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Gender 1 = Male, 2 = Female. Employment status 1 = Employed, 2 = Student.

CHAPTER 6: INTERGENERATIONAL CONTACT AND STEREOTYPES

Abstract

Chapter 6 presents two studies that explore relationships between intergenerational contact, stereotypes and attitudes towards older adults. The aim of Chapter 6 is to extend understanding of intergenerational contact by examining its relationship with age stereotypes and whether they play a role in attitude change. Based on cross-group friendship theory, Study 5 analysed national survey data (age range 16 – 95 years old) to examine how friendships with older adults and own age interact to influence stereotypes about older adults' competence. In line with the cross-group friendship hypothesis, friendships with older adults attenuated negative stereotyping by younger and middle-aged adults. Study 6 explored whether stereotyping of older adults resulting from direct and extended intergenerational contact predicted attitudes towards older adults. Structural equation modelling revealed that both good quality direct contact and extended contact positively predicted warmth and competence stereotypes, which in turn both improved attitudes towards older adults. Theoretical implications and practical applications of the findings are discussed.

Study 5. Testing the Interaction of Friendships with Older Adults and Own Age on Stereotyping of Older Adults.

In addition to improving attitudes towards older adults, intergenerational contact also improves stereotyping of older adults including stereotypes about competence (Schwartz & Simmons, 2001; Hale, 1998; Hawkins, 1996; Iwiens et al., 2013). A limitation of the intergenerational contact literature is that it chiefly examines contact between younger and older adults, ignoring relationships between middle-aged and older adults. As middle-aged adults are considered higher status than both younger and older adults (Garstka et al., 2005) and are more likely to control valuable resources (Cuddy & Fiske, 2002), it is important to understand their attitudes towards older adults

and whether they can be influenced by intergenerational contact. Benevolent attitudes towards older people can detrimentally affect their dignity and well-being, as they may become self-fulfilling and result in social exclusion (Cuddy et al., 2007; Draper, 2006; Levy, 2009). The present study, therefore, sought to examine whether the ubiquitous stereotype that competence declines with age (Fiske, Cuddy, Glick & Xu, 2002; Kite, Stockdale, Whitley, & Johnson, 2005) can be attenuated by intergenerational contact.

The Competence Stereotype

The assumption that competence declines in later life is a common age stereotype held about older adults (Fiske et al., 2002), and is applied to various domains including older people's physical prowess, intelligence, memory, hearing and communication (Erber, Etheart, & Szuchman, 1992; Erber, Szuchman, & Etheart, 1993; Erber, Szuchman, & Rothberg,1990; Matyi & Drevenstedt, 1989; Ryan, Jin, Anas, Lui, 2004). A meta analysis of 43 studies examining attitudes towards older adults and age stereotypes (Kite & Johnson, 1988) revealed that the largest difference in views of younger and older adults was recorded on a measure of competence; older adults were viewed as less competent than younger adults. Perceptions of incompetence can lead to social exclusion of older adults (Cuddy et al., 2007), which precludes opportunities for intergenerational contact to occur (Cuddy et al., 2005). Furthermore, negative age stereotyping has the potential to become self-fulfilling and can damage the health of older adults (Levy, Slade, Kunkel, & Kasl, 2002). In summary, it is widely established that older adults are perceived as less competent compared to younger adults, which negatively affects older adults.

Competence Stereotypes held by Different Age Groups

As previously outlined, the assumption that competence decreases with age is widely held in society (Fiske et al., 2002; Kite & Johnson, 1998). A survey of attitudes

towards age in Britain from 2004 to 2008 examined whether this stereotype varied by respondents' age (Abrams et al., 2009). Results showed that across all age groups, competence ratings of adults aged over 70 years old increased as respondents' own age increased. Therefore, as adults age they are less likely to endorse the assumption that competence declines with age. Furthermore, the difference in competence stereotyping of younger (under 30 years old) and older (over 70 years old) targets, decreased linearly with respondent age; older respondents were less likely to perceive a disparity between younger and older adults' competence. These findings are in line with SIT (Tajfel, 1979); younger adults are motivated to perceive older adults as incompetent in order to create distinctiveness between their ingroup and the older adult outgroup, whilst older adults favourably evaluate ingroup members in order to increase self-esteem and ingroup status. This finding is corroborated by multi-level analysis of similar European survey data that identifies own age as a positive linear predictor of competence ratings of adults over 70 year olds (Abrams et al., 2011). These studies suggest a positive linear relationship between own age and competence stereotyping of older adults.

Cross-group Friendships

Friendships between younger and older adults are not common in Britain, even in the workplace (Tasiopoulou & Abrams, 2006). Despite this, research suggests that having older adults as friends positively influences the degree to which adults of all ages apply the stereotype that competence declines with age (Tasiopoulou & Abrams, 2006). Within most age groups across the lifespan, those with an older friend (aged 70 years old and above) rated older adults as more competent than those without an older friend, although it is not clear if this effect applies to middle-aged adults. Furthermore, the finding that having an older friend increases perceived competence of older adults by older adults, does not correspond with intergroup contact theory. Whilst friendships with older adults represent a cross-group friendship for younger adults, and middle-aged

adults, for older adults they represent an ingroup friendship. This is because as respondents age, friends over 70 years old become ingroup, rather than outgroup, members. Therefore, according to cross-group friendship theory, the positive influence of having older friends on competence stereotyping of older adults should be effective for younger and middle-aged adults, but not older adults.

Middle-aged Adults

Intergenerational contact is largely examined in binary terms. It focuses on just younger and older adults, overlooking middle-aged adults' contact experiences and attitudes. However, as middle-aged adults often inhabit positions of power and high status within society (Cuddy et al., 2005; Garstka et al., 2005), their attitudes towards older adults could be considered as equally, if not more, important than those of younger adults. Although a few studies reviewed here have considered attitudes and contact of middle-aged adults (Abrams et al., 2009) more research is required to gain a clearer picture of the effects of friendships with older adults on middle-aged adults' age stereotypes.

Design and Hypotheses

The present study was an analysis of a cross sectional survey of over 2000 respondents conducted by Age UK, which included items based on the author and supervisory team's previous Age UK research. The analysis used correlational and moderated multiple regression analysis to test hypotheses regarding cross-group friendships and competence stereotypes.

Three hypotheses are tested in the present study. 1) Based on previous research (Abrams et al., 2009), it is predicted that friendships with older adults will be positively associated with own age; as individuals become older they will have more older friends. 2) Similarly, in line with Abrams and colleagues' previous research (2009) it is predicted that own age will be positively related to competence ratings of older adults.

3) Based on cross-group friendship theory (Davies et al., 2011), it is hypothesised that there will be an interaction between having an older friend and own age on competence stereotyping. Specifically, when friendships with an older adult represent a cross-group friendship (for younger and middle-aged adults) there will be an increase in competence stereotyping, but when friendships represent an ingroup friendship (for older adults) there will be no effect.

Methods

Participants and Procedure

Data analysis employed an omnibus survey conducted by TNS Global Market Research, on behalf of Age UK. The data were collected in 2013 using computer-aided personal interviews. In addition to the variables included in the present study other questions were asked during the interviews. These included questions about older adults' threat to the economy, enjoyment of ageing, agreement with ageing polices, dignified treatment of older adults, loneliness, access to amenities, tenure, ethnicity, television access, internet access, chief earner, principal shopper, marital status, working status, number of adults living in the household and weight.

The original sample totalled 2567, of which 514 were removed as they had not completed one or more of the main variables under investigation. A sample of 2053 remained. Respondents were from a nationally representative random stratified sample; 4.2% were from the North East, 11.2% from North West, 7.3% from Yorkshire and Humber, 7.3% from East Midlands, 9.7% from West Midlands, 9.3% from East of England, 12.9% from London, 13.9% from South East, 7.4% from South West, 4.9% from Wales, 8.6% from Scotland and 3.4% from Northern Ireland. The majority of respondents (79.3%) were White British. Eighteen percent were in social classes A and B, 45.6% from classes C1 and C2, and 364% from classes D and E. The average age

was 48.87 years old, SD_{age}= 19.85 with a range of 16 to 95 years old, 48.8% were male, 48.8% were male.

Measures

Friendships with older adults. Participants responded to the question "How many people aged 70 or older would you consider as close friends", whereby responses were given on a 5-point scale (1 = *none*, 2 = *1-3 friends*, 3 = *4-10 friends*, 4 = *more than 10 friends*, 5 = *don't know*, 6 = *not stated*). "Don't know" and "not stated" were coded as missing data, so that higher scores indicated more friends.

Competence stereotyping. Respondents were asked how much they agreed with the statement "As you get older, you get less competent" on a 6-point scale (1 = *strongly agree*, 2 = *slightly agree*, 3 = *neither agree nor disagree*, 4 = *slightly disagree*, 5 = *strongly disagree*, 6 = *don't know*). "Don't know" responses were coded as missing date, so that higher scores indicated higher rating of older adults' competence.

Age. Participants indicated their exact age in years.

Class. Participants were categorised based their class; 1 = A, 2 = B, 3 = C1, 4 = C2, 5 = D, 6 = E.

Children living in household. Participants were asked to indicate how many children were living in the household and responses were coded so that 1 = any children, 2 = no children.

Results

Results indicate that not all respondents agreed that competence declines with age. However, the most popular response (30%) was slight agreement that competence decreased with age, 11% strongly agreed, followed by 19%, 20% and 20% who neither agreed nor disagreed, slightly disagreed and strongly disagreed respectively. Means and standard deviations of variables, and intercorrelations between variables are presented in Table 7. Means indicated that when considering respondents of all ages, there were

low levels of friendships with older adults, with the majority (46.1%) reporting having no older friends at all, 26.7% had 1-3 friends, 19.4% had 4-10 friends and only 7.1% had over 10 older friends. Correlations revealed that participant's own age was positively related to friendships (r = .48, p <.0001), and there was a small negative relationship between age and competence stereotyping (r = - .08, p = .001). There was no relationship between friendships and competence stereotyping (r = .01, p = .758). This suggests that older adults are more likely to have older friends, but that as participants aged they were more likely to agree that competence decreased with age.

Table 7. *Means, standard deviations and correlations between variables Study 5.*

Measures	*M*	*SD*	1	2	3	4	5	6
1. Friendships	2.02	1.02	-	.01	.48***	.01	-.03	.21***
2. Competence	3.08	1.32		-	-.08**	.03	-.08*	-.05*
3. Participant age	48.87	19.85			-	.01	.04	.41***
4. Participant gender	1.51	0.50				-	.05*	-.11**
5. Class	3.93	1.42					-	.02
6. Child in the household	1.71	0.46						-

Note. N = 2053. *** p < .001, **p <.01. Friendships with older adults = quantity of friends over 70 years old (1 = *none*, 2 = *1-3 friends*, 3 = *4-10 friends*, 4 = *more than 10 friends*). Competence stereotyping; competence declines with age; 1 = *strongly agree*, 5 = *strongly disagree*. Participant age = actual age in years. Gender; male = 1, female = 2. Class; 1 = A, 2 = B, 3 = C1, 4 = C2, 5 = D, 6 = E. Child in the household; 1 = any, 2 = none.

Moderated Regression

In order to test the hypothesised interaction between age and friendships on competency stereotyping, a moderated regression was run using Hayes' (2013) PROCESS macro model 1. Friendships was entered as the independent variable, age as the moderating variable, and competence stereotyping as the dependent variable. Gender, class and child in the household were entered as covariates. It was necessary to

include the number of children living in the household as a covariate as this represents a further form of intergenerational contact. The model summary (r = .13, R^2 = .02, p < .001) showed that whilst friendships predicted competence stereotyping .25, (*SE* =.09), p =.004, 95% *CIs* [.08, .42], age did not .001, (*SE* =.004), p =.704, 95% *Cis* [-.01, .01], but the interaction between the two variables was significant -.004, (*SE* = 002), p = .014, 95% *Cis* [-.01, -.001], $R^{2change}$ =.003, p = .022. Simple slopes analysis revealed that for young respondents (average age 29 years old) friendships had a positive effect .15, (*SE*=.05), p = .002, 95% *CIs* [.06, .25] such that the competence stereotyping was higher when young adults had more older friends (*M* = 3.38) compared to when they had fewer older friends (*M* = 3.07), a similar positive effect of friendships occurred for middle-aged participants (average age 49 years old) .08, (*SE* = 03), p = .015, 95% *CIs* [.02, .15], again competence stereotyping was high at high levels friendships (*M* = 3.19) than low levels of friendships (*M* = 3.03). For older adults (average age 69 years old), there was no effect of friendships .01, (*SE* = .04), p = .756, 95% *CIs* [-.07, .09], older adults with many older friends reported similar competence stereotyping (*M* = 3.00) to older adults with many older friends (*M* = 2.99) (see Figure 2).

Simple slopes analysis also revealed that whilst age did not affect competence ratings of participants with low levels of friendships -.003, (*SE* = .002), p = .379, 95% *CIs* [-.01, .003], it was effective at mean levels -.01, (*SE* = .002), p = .001, 95% *CIs* [-.01, -.002] and high levels, -.01, (*SE* = .002), p <.0001, 95% *CIs* [-.01, -.005]. In real terms, the low level (1 SD below the mean), mean level and high level (1 SD above the mean) reported in the analysis equate to ‘none’, ‘1-3’ and ‘4-10’ friendships with adults over 70 years old, respectively. This suggests that own age has a negative effect on competence stereotyping for adults who have at least one older friend. Therefore,

younger and middle-aged adults reported higher competence stereotyping of older adults when they had at least one older friend.

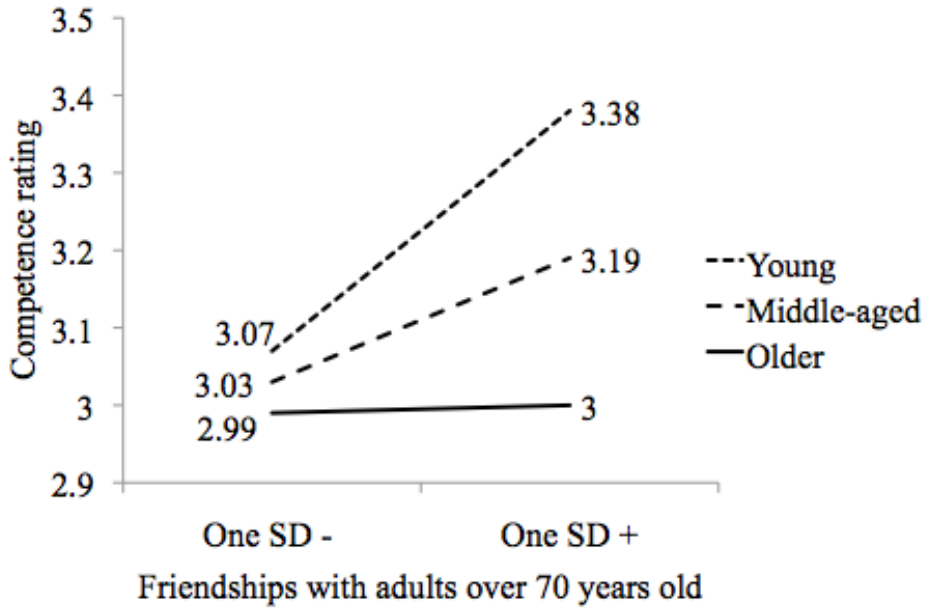


Figure 2. Simple slopes analyses of the interaction between age and friendships with older adults on competency stereotyping of older adults.

In summary, the analyses suggest having older adult friends is positively related to ascribing greater competence to older adults. Friendships with older adults increase competence stereotyping for younger and middle-aged respondents only, but not for older adults, and the effect of intergroup friendship occurs when respondents have as little as one older friend.

Discussion

This study investigated the interaction between friendships with older adults and own age, and how these factors predict competence stereotypes held about older adults. Overall, the number of friendships with older adults was low, with almost half of respondents reporting having no older friends, but in line with the first hypothesis, there was a positive relationship between respondent age and friendships. Own age did not predict the degree to which competence was assigned to older adults, but friendships

with older adults was positively related to perceived competence in later life. The interaction hypothesis was also supported; younger and middle-aged adults' competence stereotyping were increased when they had older friends, but friendships were not effective on older adults' competence stereotyping. Furthermore, the analysis suggests that having just one older friend is sufficient for the effect of friendships to increase competence stereotyping of younger and middle-aged respondents.

Relationship Between Own Age and Stereotypes

Correlation analysis demonstrated a slightly negative relationship between own age and the assumption that competence declines with age. This suggests that as adults age, they perceive older adults as less competent. However, when all variables and covariates were considered in the moderated regression analysis the relationship between age and competence stereotyping disappeared. This finding does not support the second hypothesis or prior research (Abrams et al., 2009), which demonstrated a positive relationship between competence stereotypes and own age. Abrams and colleagues' (2009) findings analysed data collected between 2004 and 2008, whereas the current analysis is of data collected during 2013. This suggests that the degree to which older adults perceive that competence declines with age is increasing over time.

Friendships with Older Adults

The present study corroborates evidence that Britain is an age-segregated society (Abrams et al., 2009) as almost half of respondents reported having no friendships with older adults. Despite this, the positive main effect of friendships on competence suggests that having older friends reduces the degree to which individuals of all ages assign incompetence stereotypes to older adults. Results are also in line with research suggesting that having just one older friend can be sufficient to improve younger adults' perceptions of older adults' competence (Tasiopoulou & Abrams, 2006). This finding supports Pettigrew's (1998) theory in the domain of intergenerational friendships and

age stereotypes. Specifically, Pettigrew (1998) hypothesised that contact generates its effects in three ways. One of which is from contact with an individual outgroup member to the entire outgroup. The results of the present study suggest that for younger and middle-aged adults, having an intergenerational friendship with a single older adult affected age stereotypes about competence of the entire older adult outgroup.

Interaction Between Age and Friendships with Older Adults

The significant interaction between age and friendships demonstrates that for younger and middle-aged adults, having older friends reduces negative age stereotypes, but these friendships are not effective for older adults themselves. This supports cross-group friendship theory (Davies et al., 2011; Pettigrew, 1998), because for younger and middle-aged adults an older friend represents a cross-group friendship, but for older adults it represents an ingroup friendship.

Reducing negative age stereotypes about competency is likely to benefit older adults by reducing paternalising and benevolent attitudes and behaviour towards them. A further benefit of intergenerational friendships is that they have the potential to obstruct the negative feedback loop between stereotyping and social exclusion. Perceptions of incompetence can lead to social exclusion of older adults (Cuddy et al., 2007), which preclude opportunities for intergenerational contact to occur (Cuddy et al., 2005). This negative cycle can contribute to the social isolation of older adults, which has a detrimental impact on health (Cornwell & Waite, 2009). The current research suggests that just one intergenerational friendship has the capacity to break this negative cycle. This finding has an important application for policy makers involved in designing befriending services for older adults.

Benefits for Younger Aged and Middle Adults

Whilst reducing age stereotypes via intergenerational friendships benefits older adults, it also has value for younger and middle-aged adults. Drawing on stereotype

embodiment theory (Levy, 2009), reducing the degree to which younger and middle-aged adults hold negative age stereotypes may reduce the 162patronising162ion of these views that can have a negative impact on their own ageing. Research has shown that high levels of intergenerational contact are related to reduced ambivalence about own ageing (Jarrott & Savla, 2016) and Crisp and Abrams' (2008) integrated contact model suggests that intergroup contact is negatively related to self-stereotyping. These findings, along with the current study suggest that the negative effects of stereotype embodiment could be obstructed by as little as one intergenerational friendship.

Although research suggests that intergenerational friendships are positively related to middle-aged adults' explicit attitudes towards older adults (Vauclair et al., 2010), these findings are the first to show that intergenerational friendships influence middle-aged adults' stereotypes of older adults. Whilst a linear trend between own age and competence stereotyping previously suggested that middle-aged adults ascribed higher competence to older adults than younger adults (Abrams et al., 2009), the present study provides targeted evidence that for middle-aged adults, having older friends reduces negative stereotypes about competence in later life. Decreasing negative stereotypes about the lower status group that middle-aged adults are about to join may aid transition and reduce damage incurred by identity loss. When the loss of an important group membership is anticipated, individuals experience change to their self-concept, a lack of clarity about themselves, and decreased self-esteem (Slotter, Winger, & Soto, 2015). Coping with the loss of an existing social identity can prove difficult for individuals, particularly when the group has been important to their self-definition (Ellemers, 2003). Furthermore, it is difficult to create new social identities if old identities are not relinquished and represented in the new context (Ellemers, 2003; Haslam, Eggins, & Reynolds, 2003).

In summary, increasing friendships with older adults may form a barrier to stereotype embodiment, prevent damaged health in later life and ease middle-aged adults' expectations about, and transition into, later life by dispelling negative stereotypes.

Limitations

Future research examining intergenerational friendships should specify whether these exclude or include grandparents and family members. This clarification was absent in this study, and therefore some respondents may have included relations who they viewed as friends. As most young adults are likely to experience intergenerational contact via their families, it would be important for future research to distinguish between family-intergenerational friendships and non-family-intergenerational friendships. It is possible that these two types of intergenerational crossgroup friendships operate via different psychological processes because family-intergenerational friends additionally share a common family identity.

An additional limitation of the current study is that it did not examine older adults' cross-group friendships. Good quality intergenerational relationships with grandchildren can protect older adults from confirming negative age stereotypes about their performance on negatively stereotyped tasks (Abrams et al., 2008) and it is likely that intergenerational friendships have a similar effect. However, grandparent-grandchild relationships are limited by family size and dynamics, intergenerational friendships on the other hand, provide alternative access to good quality intergenerational relationships. Future research should explore whether intergenerational friendships reduce older adults' stereotypes about old age, protect them from confirming negative stereotypes and internalising negative stereotypes. A further drawback of this study is that the overall effect size was small, thus findings

should be interpreted with caution. However, detecting a significant effect using only single item measures suggests this line of research is worthy of more investigation.

Future research

Findings of this study suggest that investigating the degree to which intergenerational contact affects age attitudes and stereotypes across the life span could illuminate benefits for individuals of any age. For younger adults it reduces anxiety about ageing and interacting with older adults (Drury et al., 2016), for middle-aged adults it reduces negative age stereotypes that may hamper transition into later life and for older adults it protects against confirming negative stereotypes (Abrams et al., 2008) and may reduce the internalisation of age stereotypes. Future research should longitudinally test middle age adults' transitions to later life and examine whether intergenerational contact reduces known negative outcomes of social group transition (e.g., anxiety, depression and dissatisfaction, Ethier & Deaux,1994; Hopkins & Reicher, 1997; Jetten, Haslam, Iyer, & Haslam, 2009; Jetten, O'Brien, & Trindall, 2002). Additionally, research should test whether contact with younger generations attenuates the degree to which older adults internalise negative stereotypes.

Future research should employ longitudinal analysis to test the hypothesis that there has been an increase over time in the degree to which older adults consider competence declines with age. Results of the current study suggest that compared to five to nine years earlier (Abrams et al., 2009) older adults are less positive about competence in later life. This effect may be driven by the growth in the older population (WHO, 2014), thereby making infirm older adults appear more widespread and prototypical of that age group. Such research has wide reaching applied implications as internalising negative age stereotypes has a detrimental effect on older adults' health (Levy et al., 2002).

Applied value

The current findings provide valuable knowledge for the design of intergenerational friendship programmes. Although few young adults have older adult friends, the literature indicates that promoting intergenerational friendship programmes via either direct or virtual contact can improve young adults' attitudes towards older adults (Chase, 2010; Darrow, Johnson, & Ollenberger, 1994; Dorfman et al., 2003). Findings from the present study suggest that such programmes also have the potential to reduce negative age stereotypes and can be successful when as little as one friendship is facilitated. Moreover, intergenerational programmes should be organized for not only the youngest and oldest of adults, but also adults from all generations.

Summary

This study demonstrated that intergenerational friendships in younger years and midlife reduced stereotyping of older adults and were effective at the level of just one friendship. The findings suggest that intergenerational friendships provide benefit for all ages, they have the potential to prevent the early onset of negative age stereotype internalisation that can be damaging in later life, they can ease transition from mid to later life and they reduce the degree to which older adults are the subjects of benevolent and patronising attitudes.

Study 6. Age Stereotypes as Pathways from Intergenerational Contact to Improved Attitudes towards Older Adults

In Study 6 the aims were twofold; first to broaden the stereotypes explored in Study 5 by examining competence and warmth using the SCM; and second to investigate whether stereotype change forms an indirect pathway from intergenerational contact to improved attitudes towards older adults. A further aim was to examine whether direct and extended intergenerational contact are both associated with reduced stereotyping and prejudice.

Intergenerational Contact and Age Stereotypes

The positive influence of intergenerational contact on the stereotyping of older people is not consistent in the literature, particularly in the case of intergenerational programmes (Anguillo et al., 1996; Couper, Sheehan & Thomas, 1991; Powers, Gray, & Garver, 2013; Wilhite & Johnson, 1976; for a review see Drury et al., 2017). One issue may be the methods used to measure stereotyping. Most studies employ unidimensional measures that aggregate across stereotypes or deduct ratings of negative from positive stereotypes. Although one study used a measure featuring four dimensions of stereotypes (physical; interpersonal; cognitive and affective) to test the effect of an intergenerational contact programme, results were mixed (Shoemake & Rowland, 1993). Not all stereotypes changed from pre to post intervention, only those on the physical dimension. This suggests that intergenerational contact is more successful at altering superficial physical stereotypes rather than deep rooted interpersonal, cognitive and affective stereotypes. However, it is possible that the stereotype dimensions did not accurately capture changes in a meaningful or interpretable manner. Employing the two dimensional model of warmth and competence as outlined in the stereotype content model (SCM; Fiske et al., 2002) may offer increased parsimony in research exploring the relationship between intergenerational contact and stereotypes.

Few studies have examined the relationship between intergroup contact and the SCM. One experimental study, however, tested whether imagined intergroup contact reduced the stereotyping of immigrant groups as lacking warmth and competence (Bramilla, Ravenna, & Hewstone, 2012). Perceptions of warmth and competence were increased by contact, but only when the target group was rated as low in that dimension in the control group. For example, for groups that were rated high in both warmth and competence, contact did not change stereotypes, but for groups rated low on both

dimensions contact increased warmth and competence. For paternalised groups (rated low in competence and high in warmth) contact improved competence but not warmth. This suggests that contact increases positive stereotyping of groups on the dimensions of warmth and competence when the group starts off as negatively rated on that stereotype dimension. Therefore, intergenerational contact would increase perceived competence of older adults but not warmth.

This notion is supported by findings from Study 5 and other research which demonstrates that intergenerational friendships are positively related to the perceived competence of older adults (Tasiopoulou & Abrams, 2006). A further study revealed an association between intergenerational coworker contact and SCM stereotypes but interpretation of effects is difficult (Iweins et al., 2013). Although measured separately, a stereotype score was created by multiplying the two dimensions; thus obstructing examination of the unique effects of contact on each warmth and competence. For example high warmth, low competence scores would be indistinguishable from low warmth, high competence scores. However, the older adults involved were likely to be higher status than the younger adults (e.g., managers, CEOs etc.). A different pattern of results might be found for intergenerational contact with older adults in everyday life, particularly as adults are considered to be ‘old’ at a younger age in the workplace (50 years old) than in everyday life (63 years old; Abrams et al., 2009)

In summary, evidence suggests that imagined intergroup contact decreases stereotyping on negatively rated dimensions of stereotypes, intergenerational friendships improves competence stereotyping and intergenerational coworker contact improves both warmth and competence stereotyping. However, research has not considered other modes of intergenerational contact or the independent effects of direct and extended contact on stereotypes.

Stereotypes as Indirect Pathways from Intergroup Contact to Prejudice

It is important to examine the role of stereotypes as a potential mediator because although research (Bousfield & Hutchison, 2010; Study 3; Study 4) demonstrates that the relationship between direct intergenerational contact and attitudes is mediated by affective mediators (intergroup anxiety, ageing anxiety), no known research has identified any cognitive mediators.

Assuming that contact predicts stereotype change, it is possible that this influence may have an indirect effect on attitude change. In order for intergenerational contact to have an indirect effect on attitudes via stereotype change, it will be necessary for stereotypes to predict attitudes. Many theories of prejudice and intergroup relations postulate a link between stereotypes and prejudice. Allport (1954) reasoned that individuals employ stereotypes to justify liking or disliking of outgroup members, Tajfel (1981) rationalised that the function of stereotypes is to justify "actions, committed or planned, against an outgroup" (p.156) and according to the Integrated Threat Theory of Prejudice (Stephan, Ybarra, Martnez, Schwarzwald, & Tar-Kaspa1998), low warmth and high competence stereotypes of threatening groups lead to prejudice. In summary, there is wide theoretical support for the hypothesis that stereotypes predict attitudes.

A study examining attitudes towards a low warmth/high competence group (Asian Americans) identified a link between the SCM and prejudice (Lin et al., 2005). Negative scoring on the warmth stereotype was more predictive of outgroup rejection than positive rating on the competence stereotype. Lin et al. (2005) postulate that envy and discomfort elicited by the combination of low warmth and high competence formed the basis of prejudice towards this group. However, there could be two alternative explanations; 1) the warmth dimension is more predictive of prejudice than the competence dimension; 2) negative ratings on a dimension are more predictive of

attitudes than positive ratings on a dimension. The former explanation supports Fiske, Cuddy, and Glick's (2007) primacy of warmth hypothesis, which theorises that warmth judgments carry more weight in reactions to social groups. The latter explanation, however, is supported by the negativity bias (Rozin & Royman, 2001), which suggests that negative entities carry greater weight. Therefore, there is evidence to suggest that ageism could be predicted by positive scoring on the warmth dimension or negative scoring on the competence dimension.

Stereotypes as an Indirect Pathway from Intergenerational Contact to Ageism

When considering the hypothesis that stereotypes form an indirect pathway from intergenerational contact to ageist attitudes it is important to evaluate each step of the possible route. As reviewed in the preceeding section, there are hypotheses supporting pathways from both positive and negative stereotypes to attitudes (Fiske et al., 2006; Lin et al., 2005; Rozin & Royman, 2001). Consequently, both increased warmth and competence could lead to reduced ageism. However, with the exception of Iweins et al.'s (2013) ambiguous findings, the only research supporting the pathway from intergenerational contact to stereotypes suggests that it is related to reduced competence (Tasiopoulou & Abrams, 2006; Study 5). Therefore, in concert, there is stronger supporting evidence for the hypothesis that indirect effects from intergenerational contact to attitudes occur via improved competence. This proposal is further corroborated by evidence that imagined contact improves attitudes of negatively but not positively rates stereotypes (Brambilla et al., 2012).

Extended Contact and Stereotypes

In addition to direct intergenerational contact, it is also important to consider whether stereotypes mediate the relationship between extended intergenerational contact and attitudes. Extended contact operates via cognitive processes, such as knowledge of intergroup friendships and inclusion of other in the self (Wright et al.,

1997), which suggests that it may be successfully facilitated by further cognitive processes (e.g., stereotypes). In fact, a review of extended contact and vicarious contact reveals that twice as many (10:5) established mediators are cognitive rather than affective (Vezzali, Hewstone, Capozza, Giovannini, & Wölfer, 2014).

Extended (and vicarious) contact predicts stereotypes, although this has not been investigated using the SCM and the majority of this research employs child samples (Cameron & Rutland, 2006; Munniksma, Stark, Verkuyten, Flache, & Veenstra, 2013; Vezzali, Hewstone, Capozza, Trifiletti, & Di Bernardo, 2017; Vezzali, Hewstone, Giovannini, Capozza, & Trifiletti, 2014). For example, a longitudinal study of 12-13 year olds at multi-ethnic middle schools revealed that they were more likely to endorse positive stereotypes (honest, friendly, helpful and smart) about their immigrant peers when they experienced high levels of extended contact, but only if they had also indicated initial unfavourable attitudes towards the outgroup (Munniksma et al., 2013). This suggests some level of relationship between extended contact and stereotypes.

Vicarious contact occurs when ingroup members witness positive intergroup contact involving an ingroup member (Dovidio, Eller, & Hewstone, 2011), and therefore, it is likely to operate through similar psychological processes to extended contact (knowledge of positive intergroup contact between an ingroup friend and an outgroup member). Cameron and Rutland (2006) increased school children's (aged 5 – 10 year olds) positive stereotypes of disabled children via a 6-week story telling vicarious contact intervention. Although extrapolation from this study is hampered by participant age (developmental theories of prejudice [Aboud, 1988], suggest that children's outgroup attitudes differ between adolescents or young adults) this finding demonstrates that vicarious contact increases positive stereotypes towards an outgroup rated similarly to older adults by the SCM; low competence and high warmth.

Collectively, these studies suggest that intergenerational extended contact will predict stereotypes of older adults.

A further vicarious contact study provides support for the mediating role of stereotypes (Gómez & Huici, 2008). Young adults who watched a video depicting positive intergroup contact (sports with ingroup and outgroup members on the same team) reported improved outgroup evaluations and this effect was partially mediated by changes in positive and negative meta-stereotypes. Although not based on the SCM or extended contact, these findings provide support that stereotypes are a likely mediator of the relationship between extended contact and attitudes. This hypothesis is further strengthened by the research discussed, which demonstrates a link between extended contact and stereotypes.

Design and Hypotheses

The present study is an analysis of an online survey examining young adults' intergenerational contact, ageist attitudes and stereotypes of older adults. It tests two hypotheses. 1) In line with the research reviewed (Bramilla et al., 2012; Tasiopoulou & Abrams, 2006; Study 5) it is proposed that young adults who experience intergenerational contact will be less likely to endorse stereotypes of older people as incompetent, and according to the negativity bias hypothesis and evidence demonstrating that negative stereotypes predict prejudice (Lin et al., 2005; Rozin & Royman, 2001), reduced incompetence stereotyping of older adults will in turn increase positive attitudes towards older adults. 2) Additionally, the expectation is to find these relationships for extended contact (Gómez & Huici, 2008), and based on findings from Chapter 4 and Chapter 5 for intergenerational friendships and direct contact quality, but not frequency.

Method

Participants

The sample consisted of 201 British 18 to 30 year olds (M_{age} =23.21, SD_{age}= 3.29), 103 were female. Fifty-nine per cent were current or recent undergraduate students, 24% were educated to secondary school level, 5% had completed apprenticeships, 12% were educated to A-level/college level.

Procedure and Materials

Respondents participated in an online questionnaire via Prolific Academic in exchange for £1. The study was advertised as a survey about 'Views of People in Society'. The terms 'older adults/elderly people' were defined as adults over 65 years old, and 'contact' as any type of social encounter or interaction.

Measures.

Direct intergenerational contact frequency. Participants indicated the frequency of their intergenerational contact using the same item as Study 1.

Direct intergenerational contact quality. Participants rated the quality of their prior intergenerational contact using the same three items as in Study 1 (α = .71).

Intergenerational friendships. Participants indicated their intergenerational friendships using the same measure as in Study 1. Again, the variable was recoded (0 = no friends, 1 = at least one friend).

Extended intergenerational contact. Extended contact was assessed using the same four items as Study 4 (Turner et al., 2008) (α = .80).

Age stereotypes. The degree to which respondents perceived older adults along the two dimensions of the SCM (Cuddy et al., 2005) were measured by two items in response to the questions "Please indicate how much you view people over 65 as friendly [competent]". Participants responded on 7-point scales (1=*not at all that way*,

7=*very much that way*). The first item formed a measure of warmth, whilst the second measured competence.

Attitudes towards older adults. As in Study 1, the GES (Wright et al., 1997) was used to measure attitudes, but without the 'friendly' item in order to avoid sematic overlap with the stereotype warmth variable ($\alpha = .89$). Whilst the SCM forecasts that ageist stereotypes elicit paternalistic prejudice based on pity and a lack of respect, prejudice towards older adults was measured using the GES for two reasons. First, use of a consistent dependent measure across studies of this thesis allows conclusions to be made about the effects of different independent and mediating variables. Second, the GES includes items associated with all potential prejudices resulting from the different categories of SCM, including admiration, disgust, trusting, respect and contempt. Thus, use of the GES allows evaluation of how stereotype change resulting from contact with any group can influence global interpretations of prejudice and provides a means to compare the effects of intergenerational contact with contact with other groups whose effects are similarly measured.

Results

The majority of respondents reported no intergenerational friendships (69%), leaving only 31% with at least one older friend. A paired-samples *t* test was conducted to compare ratings of warmth and competence stereotypes, and in line with the SCM (Cuddy et al., 2005), higher levels of warmth ($M = 3.92$, $SD = 0.82$) were reported than competence ($M = 3.45$, $SD = 0.89$), t (200), $p < .001$, $d = .55$. All other means are reported in Table 9.

Correlations

Intercorrelations between variables are also reported in Table 9. Contact frequency, contact quality and extended contact were all positively related to attitudes, warmth stereotypes and competence stereotypes. Warmth and competence stereotypes

were positively related to each other and both were positively related to attitudes. Participant age was related to contact frequency, such that older respondents experienced more frequency of contact with older adults. Contact quality and extended contact were uncorrelated.

To examine the relationship between friendships and stereotypes a repeated measure ANOVA was run; 2 intergenerational friendships (no friends vs. at least one friend) x 2 stereotypes (competence vs. warmth), including age and gender as covariates. Results showed there was a main effect of intergenerational friendship F (1,197) = 4.78, p = .030, η^2 = .024, participants with at least one friend reported more stereotypes (M = 3.84, SE = .09) than those without intergenerational friendships (M = 3.61, SE = .06) and a main effect of stereotypes F (1,197) = 4.79, p = .030, η^2 = .024, more warmth stereotypes were assigned (M = 3.97, SE = .06) than competence stereotypes (M = 3.49, SE = .07). There was no interaction between intergenerational friendships and stereotypes F (1,197) = 0.14, p = .707, η^2 = .001 (see Table 8 for marginal means). This suggests that when compared with those lacking intergenerational friendships, young adults with intergenerational friendships assign more age stereotypes overall, but not more or less warmth compared to competence stereotypes.

Table 8.

Marginal means for friendship by stereotypes interaction

	Stereotypes	
	Warmth	Competence
Intergenerational friendships		
No friends	3.84 (.07)	3.39 (.08)
At least one friend	4.10 (.10)	3.59 (.11)

Regressions

Three multiple linear regressions were run to examine the extent to which direct and extended contact were independently related to age stereotypes and attitudes towards older adults when all other contact variables, participant age and gender were included in the model as covariates. Both contact quality, $\beta = .38$ $t = 5.86$, $p < .0001$ and extended contact, $\beta = .17$, $t = 2.28$, $p = .024$ uniquely predicted positive attitudes towards older adults. Only contact quality was positively related to warmth stereotypes, $\beta = .23$, $t = 3.24$, $p = .001$ and both contact quality, $\beta = .21$, $t = 3.02$, $p = .003$ and extended contact, $\beta = .30$, $t = 3.86$, $p < .0001$ were positively associated with competency stereotypes. In line with the hypothesis, frequency of direct contact was no longer significantly associated with attitudes or stereotypes when other contact variables were entered as covariates and neither were intergenerational friendships (see Table 10 for regressions).

Table 9. *Means, standard deviations and correlations between variables Study 6.*

Measures	*M*	*SD*	2	3	4	5	6	7	8	9
1. Contact Frequency	3.86	1.77	.25***	.35***	.31***	.18**	.19**	.30***	-.08	.16*
2. Contact Quality	4.91	1.19		.06	.11	.26***	.27***	.44***	.12	.10
3. Friendships	0.31	0.47			.50***	.16*	.11	.22**	.10	-.05
4. Extended Contact	1.84	0.76				.20**	.29***	.28***	-.004	-.09
5. Warmth stereotype	3.92	0.82					.31***	.64***	.08	-.10
6. Competency stereotype	3.45	0.89						.40***	.10	.13
7. Positive attitudes	5.48	0.97							.06	.09
8. Participant age	23.21	3.29								.09
9. Participant gender	1.51	0.50								

Note. †p<.10, *** p < .001, **p <.01, * p < .05. Contact frequency, contact quality, stereotypes and attitudes used 7-point scales, extended contact used 5-point scale. Friendships = quantity of intergenerational friendships, coded 0 = none, 1 = at least one. Gender male = 1, female = 2.

Table 10. *Summary of multiple regression analyses examining the effects of contact variables on attitudes and stereotypes Study 6.*

	Positive attitudes				Warmth stereotypes				Competency stereotypes			
Independent variable	*B*	*SE*	*β*	*t*	*B*	*SE*	*β*	*t*	*B*	*SE*	*β*	*t*
Contact frequency	0.07	0.04	.13	1.78†	0.05	0.04	.10	1.30	0.03	0.04	.06	0.78
Contact quality	0.31	0.05	.38	5.86***	0.16	0.05	.23	3.24**	0.16	0.05	.21	3.02**
Friendships	0.16	0.16	.08	1.01	0.08	0.14	.04	0.53	-0.15	0.15	-.08	-1.01
Extended contact	0.21	0.09	.17	2.28*	0.12	0.09	.11	1.36	0.35	0.09	.30	3.86***
Control variables												
Gender	.10	.12	.05	0.82	-0.21	0.11	-.13	-1.83†	0.21	0.12	.12	1.77†
Age	.003	.02	.01	0.16	0.02	0.02	.07	0.90	0.02	0.02	.08	1.17
R	.52				.35				.41			
R^2	.27				.12				.17			

Note. †p<.10, *** p < .001, **p <.01, * p < .05. Contact frequency, contact quality, stereotypes and attitudes used 7-point scales, extended contact used 5-point scale. Friendships = quantity of intergenerational friendships, coded 0 = none, 1 = at least one. Gender male = 1, female = 2.

Structural Equation Model

To examine indirect relationships between contact and attitudes via stereotypes a structural equation model (SEM) was estimated using AMOS. Structural equation modelling was used as it can estimate relationships between multiple variables simultaneously and it estimates model measurement error. Furthermore, SEM can model indirect paths between variables and compare the strength of these paths.

To investigate the hypotheses that direct and extended intergenerational contact is related to positive attitudes towards older adults indirectly via stereotypes a model was estimated in which contact quality and extended contact were directly related to positive attitudes and stereotypes, and stereotypes were directly related to attitudes. Then, using bootstrap analyses, the indirect paths from each contact variable to attitudes via each stereotype variable were estimated. The residuals of the contact variables were allowed to covary, as were the residuals of the stereotype variables. Contact frequency, intergenerational friendships, participant age and gender were included as covariates. Modification fit indices indicated a better fitting model by allowing some residuals within the attitudes variable and within the contact quality variable to covary. Thus, the residual of the attitude bipolar item “admiration-disgust” was allowed to covary with the residuals of the attitude bipolar items “respectful-disrespectful” and “negative-positive”, and the residuals of the contact quality bipolar items “voluntary-involuntary” and “good quality-bad quality” were allowed to covary. However, it should be noted that the results described below are not altered if the covariates are not added to the model, or if the model is not modified on the basis of the modification indices.

Goodness-of-fit was assessed using a chi-square test, comparative fit index (CFI) and root-mean-square error of approximation (RMSEA). A satisfactory fit is indicated by a chi-square statistic lower than double the degrees of freedom, a CFI

greater than .95 and an RMSEA lower than .06 (Hu & Bentler, 1999). The model fit the data well (see Figure 3), $\chi^2(101) = 124.35$, $p = .057$, CFI = .983, RMSEA = .034.

Direct paths. There was a positive relationship between contact quality and attitudes, $\beta = .40$, $SE = .10$, $p < .001$, but no relationship between extended contact and attitudes, $\beta = .09$, $SE = .10$, $p = .403$. Contact quality was positively related to competence, $\beta = .35$, $SE = .11$, $p < .001$ and warmth, $\beta = .47$, $SE = .11$, $p < .001$. The association between extended contact and competence was significant, $\beta = .51$, $SE = .15$, $p < .001$, but only marginal with warmth, $\beta = .23$, $SE = .12$, $p = .055$. Both warmth $\beta = .48$, $SE = .07$, $p < .001$ and competence $\beta = .12$, $SE = .06$, $p = .028$ were associated with attitudes. Comparisons of the regression paths revealed there was no difference in the size of contact quality's relationship with warmth or competence $\beta = .12$, $SE = .06$, $p = .471$, 95% *CI* [-.12, .41], but that extended contact's relationships with competence was greater than its relationship with warmth $\beta = .27$, $SE = .15$, $p = .084$, 95% *CI* [.01, .50]. Finally, warmth had a stronger relationship with attitudes than competence had with attitudes $\beta = .36$, $SE = .11$, $p = .002$, 95% *CI* [.18, .55].

Indirect paths. There was a positive indirect relationship between contact quality and attitudes via competence $\beta = .04$, $SE = .03$, $p = .021$, 95% *CI* [.01, .11]. Unexpectedly, the indirect path via warmth $\beta = .23$, $SE = .07$, $p < .001$, 95% *CI* [.14, .39] was also significant. In fact, the indirect path via warmth was larger than via competence $\beta = .19$, $SE = .001$, $p < .001$, 95% *CI* [.10, .33]. Similarly, there was a positive indirect relationship between extended contact and attitudes via competence $\beta = .04$, $SE = .03$, $p = .042$, 95% *CI* [.01, .14], and warmth $\beta = .11$, $SE = .07$, $p < .026$, 95% *CI* [.03, .25], but these two paths were similar in size $\beta = .07$, $SE = .001$, $p < .397$, 95% *CI* [-.05, .19]. Therefore, the findings support our hypotheses; both contact quality and extended contact have indirect relationships with attitudes via increased

competence stereotypes. Unexpectedly, warmth stereotypes also form an indirect path from contact quality and extended to attitudes.

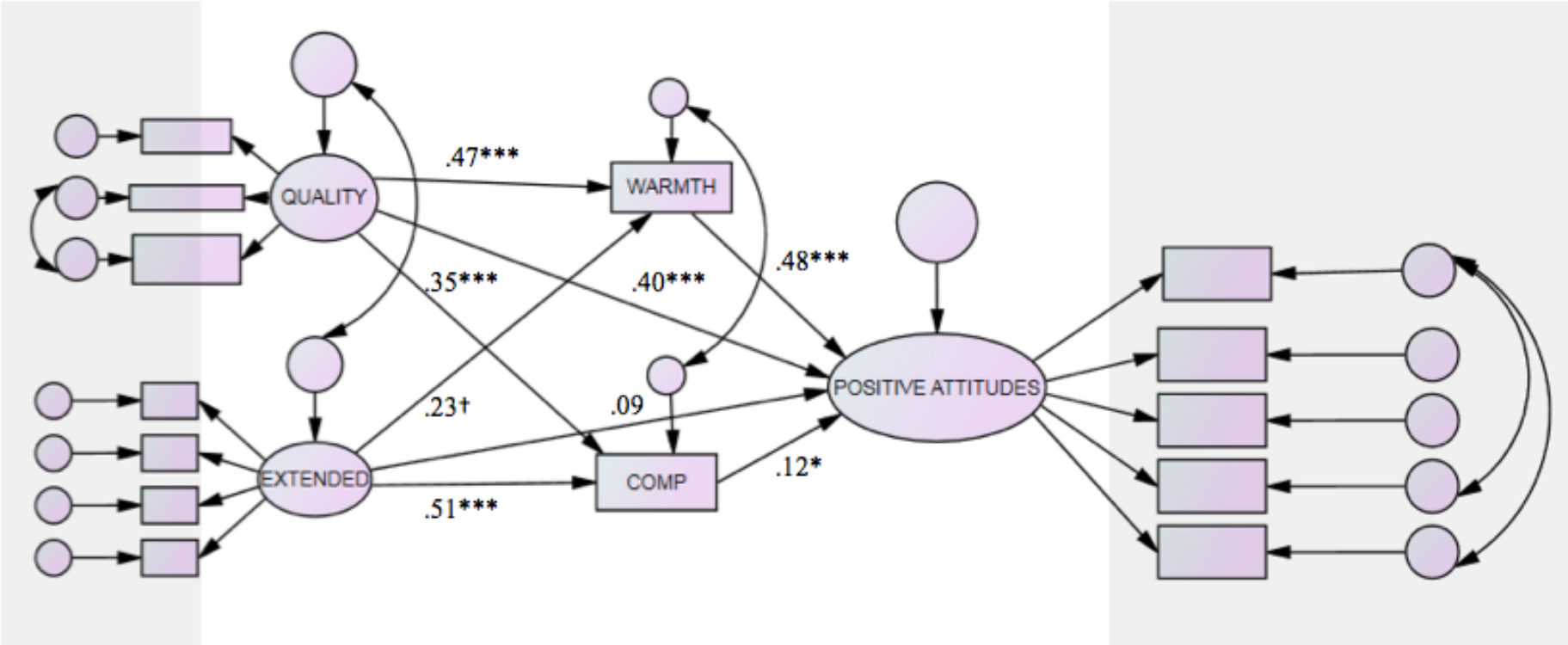


Figure 3.

SEM model of relationships between contact and attitudes via stereotypes in Study 6

Discussion

The present study examined how different modes of intergenerational contact predicted warmth and competence stereotypes and whether these formed independent pathways from contact to positive attitudes towards older adults. The hypotheses; that direct and extended intergenerational contact would predict attitudes via competence but not warmth stereotypes was only partially supported. Controlling for age, gender and all other contact variables, contact quality and extended contact predicted higher competence ratings, which formed indirect paths to attitudes. However, both contact quality and extended contact also positively predicted warmth (albeit marginally for extended contact), which formed indirect paths to attitudes. Intergenerational friendships predicted neither attitudes nor stereotypes. In summary, contact quality and extended contact predicted positive attitudes via increased competence and warmth.

Intergenerational Contact and Stereotype Content Model

Finding that contact quality and extended intergenerational contact positively predict competence stereotypes builds on previous research showing that intergenerational friendships are positively related to competence (Tasiopoulou & Abrams, 2006; Study 5). Although positively associated with attitudes and warmth, intergenerational friendships and competence were not correlated in the present study. This finding is not inline with the hypotheses, or findings from Study 5. It is likely that the low level of intergenerational friendships reported in this sample hampered meaningful statistical analysis, and any variance explained by friendships may have been reduced due to its large correlations with extended contact (*r* .50) and contact frequency (*r* .35). However, these results develop previous research of extended contact and stereotypes (Cameron & Rutland, 2006; Munniksma et al., 2013, Vezzali et al.,

2017; Vezzali, Hewstone, Giovannini et al., 2014), by highlighting for the first time, how extended contact predicts stereotypes defined by the SCM.

Finding that intergenerational contact quality and extended contact predict both competence and warmth provides novel evidence that direct and extended *intergroup* contact are associated with SCM (Fiske et al., 2002) stereotype dimensions. However, it was not anticipated that contact quality and extended contact would predict warmth. One reason for this divergent finding may be that the hypotheses were based on imagined contact research (Brambilla et al., 2012) rather than direct or extended contact. Although there are common psychological mechanisms shared by imagined, extended and direct contact, each mode has unique aspects (Crisp & Turner, 2010). Therefore, processes associated with one type of contact might not operate within other types of contact.

The dual ability of direct contact to improve both warmth and competence dimensions helps to clarify ambiguous findings from previous research of intergenerational contact in the workplace (Iweins et al., 2013). The prior study had not tested how contact was independently related to each of the stereotype dimensions, instead using a combined score of warmth and competence. The findings of the current study demonstrate that direct contact is independently predictive of warmth and competence, suggesting this is also the case with coworker contact. Future intergenerational research could compare contact quality in everyday life to coworker contact, as the (potentially) higher status and younger age of older coworkers suggest that workplace contact is likely to increase competence stereotypes more than everyday contact. However, in line with research relating to successful career women who disconfirm low competence stereotypes, older workers viewed as more competent may also be viewed as less warm (Cuddy, Fiske, & Glick, 2004).

The regression paths of the SEM model echo the multiple regression analyses, except that in the SEM model the relationship between extended contact and warmth is marginal rather than non significant. Comparison of the strength of the paths from contact to stereotypes revealed that relationships between contact quality and each of warmth and competence were similar in size, whilst extended contact had a greater association with competence than warmth. One reason why extended contact has a stronger relationship with competence than warmth may be because extended contact is more dependent on the psychological process of 'inclusion of others in the self '(IOS; Wright et al., 1997). As older adults are viewed as lacking in competence (but not warmth; Cuddy et al., 2005), in order for their inclusion in the self-concept not to have a damaging effect on self-regard, negative perceptions of older adults would first need to be addressed. Reducing the degree to which older adults are perceived as incompetent, allows younger adults to include older adults in their self-concept without incurring any loss of self esteem. Therefore, reduced incompetence stereotyping of older adults becomes a functional process involved in extended contact.

Overall, these findings are the first to demonstrate that direct and extended intergenerational contact (and intergroup contact more widely) influence warmth and competence stereotypes towards older people. They augment and clarify previous divergent research on the relationship between direct intergenerational contact and stereotypes by using a universal, theoretically based stereotype measure backed up by a wide body of research (Fiske et al., 2007).

Indirect Pathways

Finding that both warmth and competence form indirect pathways from direct and extended contact to attitudes supports theories suggesting that stereotypes serve as a justification for prejudice (Allport, 1954; Stephan et al., 1998; Tajfel, 1981). It also extends evidence linking stereotypes to prejudice (Lin et al., 2005), by showing that in

addition to prejudice being predicted by warmth, it is predicted by competence. Furthermore, the link between stereotypes and attitudes supports the primacy of warmth hypothesis (Fiske et al., 2007). Within the structural equation model competence had a smaller relationship with attitudes than warmth. This difference in relationship size supports the notion that warmth has more influence than competence. Furthermore, the large relationship between warmth and positive attitudes is likely to account for the significant indirect relationship between extended contact and attitudes via warmth, despite the weak relationship between extended contact and warmth. Therefore, this research provides valuable evidence improving understanding of mechanisms of prejudice.

Additionally, the current findings add to the literature by identifying the first cognitive mediators of the direct intergenerational contact and attitudes relationship. To date, only affective mediators had been identified (Bousfield & Hutchison, 2010; Study 3; Study 4). Overall, this research offers valuable knowledge to extend understanding of intergenerational contact theory and the SCM. Whilst corroborating the 'Doddering by dear' older stereotype, is also demonstrates that warmth and competence can be altered by contact and that both dimensions predict prejudice.

Limitations

One limitation of this study is the single item measures used to gauge stereotypes, future research should replicate findings with multi-item warmth and competence measures. Additionally, causal relationships between variables cannot be fully evidenced by the correlation analyses employed in this study. However, theory-based hypotheses and a wide body of previous literature corroborating the predicted direction of effects provide confidence in the interpretation of the findings. To support the directional interpretation future research should examine whether stereotypes

mediate the effects of contact on attitudes resulting from experimental or longitudinal designs.

Future Research

This study suggests that in addition to a lack of warmth predicting prejudice (Lin et al., 2005), ratings of competence are also predictive, although these effects depend on the target group. As the current study focused on low competence/high warmth targets, it would be important to replicate these findings with groups characterised by different combinations of stereotypes. In addition to testing relationships between all four SCM target groups and prejudice, research should extended Brambilla et al.'s (2012) study to examine whether imagined contact predicts stereotypes, which in turn reduce prejudice.

Lastly, research should examine whether attitudes are improved to a greater degree when negative stereotypes are dispelled. Interventions that include tasks to challenge stereotypes are likely to have a greater positive influence on prejudice than those that do not. However, research should also examine how interventions that inadvertently highlight negative stereotypes about participants affect outcomes. This is particularly pertinent to intergenerational contact interventions when the context (care homes) or the tasks (technological assistance) emphasise negative competence stereotypes. It may be possible that contact in these situations has a negative effect on attitudes towards older adults because of a negative effect on stereotypes.

Summary

In summary, the results of this study demonstrate for the first time how direct and extended contacts are related to stereotype dimensions of the SCM. It highlights how direct and extended intergenerational contacts influence warmth and competence and how the stereotypes independently mediate the effects of contact on attitudes in similar ways. In addition to expanding knowledge of relationships between

intergenerational contact, stereotypes and attitudes, this study provides important foundation knowledge from which studies examining other targets of prejudice can be designed. A fuller understanding of the links between stereotypes and prejudice stand to benefit many marginalised groups in addition to older adults.

Chapter Summary

The studies in this chapter provide understanding of how intergenerational friendships and a person's own age interact to affect stereotypes, and the divergent ways in which stereotypes form indirect paths from direct and extended intergenerational contact to improved attitudes. The interactions between age and intergenerational friendships in Study 5 demonstrate how negative stereotypes about ageing can be improved, and suggest that this process has positive implications for adults across the lifespan. Study 6 offers theoretical understanding of how both stereotype dimensions of the SCM are affected by direct and extended intergenerational contact and offer novel evidence from which wider research can examine links between contact, stereotypes and prejudice towards other marginalised groups. Chapter 7 takes the examination of intergenerational contact into applied settings and focuses on the outcomes of contact in stereotype-confirming contexts.

CHAPTER 7: APPLIED INTERGENERATIONAL CONTACT SURVEYS AND INTERVENTIONS

Abstract

To explore intergenerational contact in applied settings Chapter 7 presents two field studies. Study 7 extends findings from Study 6 by examining intergenerational contact in a negative stereotype-confirming context. Evaluation of an intergenerational pedagogic programme in which technology students had conversations with older adults about their technology needs, reveals that the experimental group rated older adults higher on warmth, but lower on competence stereotypes compared to control participants. However, in a mediation analysis only warmth and not competence stereotypes subsequently predicted attitudes towards older adults. Implications for service learning programmes with dependent older adults are discussed. Study 8 sought to examine how negative and positive intergenerational contact experienced with dependent older adults influenced attitudes towards older adults. In line with hypotheses, care workers' attitudes towards older adults were predicted via the indirect effect of negative (but not positive) contact on attitudes towards care home residents. This effect occurred on subtle and not blatant ageism measures. The limitations and applied value of findings are discussed. Study 8 appears as a published manuscript: Drury, Abrams, Swift, Lamont, and Gerocova (2017). Can caring create prejudice? An investigation of positive and negative intergenerational contact in care settings and the generalisation of blatant and subtle age prejudice to other older people. *Journal of Community and Applied Social Psychology*, *27*, 65-82. doi: 10.1002/casp

Study 7. How does Stereotype-Confirming Intergenerational Contact Influence Young Adults' Attitudes towards Older Adults?

As population ageing increases, it is important that more young adults are trained and employed to provide care and services for older people. However, due to an

increasingly age-segregated society (Abrams et al., 2009; Pew Research Center 2009; Winker, 2013) many young adults do not gain experience of older adults in the course of their everyday lives. To address this lacuna, many gerontology-related educational courses employ intergenerational teaching strategies to provide knowledge and positive intergenerational contact experiences that are evaluated as having a positive affect on attitudes towards older adults (Levy, 2016). However, intergenerational contact in such contexts may reinforce negative age stereotypes.

Stereotype Confirming Intergenerational Contact

Although a wide body of research provides evidence that good quality intergenerational contact is positively associated with favourable attitudes and positive stereotypes of older adults these studies do not discriminate between or contact in different contexts (e.g., stereotyped or non-stereotyped).

As older adults are living longer and with more co-morbid diseases (House of Lords, 2013) the frequency of intergenerational contact with incapacitated or dependent older adults is set to increase. Therefore, it is important to examine intergenerational contact in these negatively stereotyped contexts as for young adults with low prior experience of older adults these may be their first intergenerational contact experiences and have the potential to shape their stereotypes of, and attitudes towards, older adults and their own ageing. Furthermore, contact between independent (young adults) and dependent (incapacitated older adults) has the potential to create unequal group status that, according to Allport's (1954) hypothesis, may hinder successful intergroup contact. Qualitative research examining intergenerational experiences of 11-12 year olds reports that equal status was one of the two most important conditions for changing stereotypes and attitudes towards older adults (Teater, 2016).

Service learning programmes are pedagogies providing opportunities for learning through delivering service in the community (Roodin, Brown, & Shedlock,

2013), and a recent review suggests that intergenerational contact in these contexts, such as between older patients and care providers, has the potential to create a power imbalance, whereby the care providers have a higher status (Levy, 2016). Therefore, contact (e.g., via learning, training or working) in contexts which implicitly convey negative stereotypes about older adults, and feature unequal status of the contact partners, run the risk of increasing benevolent, patronising or paternalistic stereotypes of older adults and even increasing negative ageist attitudes. For these reasons, it is important to fully understand how intergroup contact in contexts where older adults are negatively stereotyped affects stereotypes and attitudes towards older adults.

Intergenerational contact in health and social care. Health and social care contexts offer opportunities to examine the effects of intergenerational contact in stereotyped domains, but findings are mixed. Some studies report positive outcomes (Gomez, Otto, Blattstein, & Gomez, 1985; Nochajski et al., 2011; Wilhite & Johnson, 1976). For example, evaluations of service learning programmes report improved attitudes towards older adults despite being conducted in nursing homes, where stereotypes of dependency may be more salient (Gomez et al., 1985; Wilhite & Johnson, 1976). Gomez and colleagues (1985) evaluated a 3-week service-learning programme in which undergraduate nursing students cared for the same older person for 8 hours per day in a nursing home. The students' attitudes towards older adults improved from pre to post intervention. Collectively, these studies suggest intergenerational contact can positively impact attitudes and stereotypes regardless of the extent to which the environment highlights negative age stereotypes.

However, other studies of intergenerational contact in health and social care contexts have been inconclusive (Angiullo et al., 1996; Chapman & Neal, 1990; Dorfman, Murty, Ingram, Evans & Power, 2004; Eddy, 1986; Gordon & Hallauer, 1976). Research examining associations between student nurses' intergenerational

contact and attitudes towards older adults reports no associations (Hweidi & Al-Obeisat, 2006; Pan et al., 2009), and service learning programmes set in nursing homes or senior citizens' centres report neutral or even negative outcomes (Angiullo et al., 1996, Reinsch & Tobis, 1991; Shoemake & Rowland, 1993). Despite the neutral outcomes, qualitative analysis from two studies suggest contact in a nursing home reinforced negative stereotypes (Anguillo et al., 1996; Reinsch & Tobis, 1991). After delivering an 11-month weekly exercise and health class to older adults, intervention participants rated older adults similarly to a control group, but they perceived older adults to be more accident prone than the control group. Together, these findings suggest that subtle negative stereotypes may have obstructed positive attitudinal outcomes arising from the two programmes.

Lastly, healthcare professionals experiencing high levels of intergenerational contact report more negative stereotypes of older adults (Revenson, 1989). In an experimental design, 63 rheumatologists experiencing varying levels of workplace intergenerational contact (indicated by their caseload of older patients) rated hypothetical patients aged 53 or 83 years old. Compared to rheumatologists with low caseloads, rheumatologists with high caseloads rated 83-year-old patients less independent and in greater need of information and support than 53-year-old patients. Although not an established measure of stereotypes, this study suggests that high levels of intergenerational contact in negatively stereotyped domains may prompt benevolent or patronising stereotypes.

Overall, this body of research presents a mixed picture of the success of intergenerational contact in negative age stereotype-confirming contexts. One issue that hampers the interpretation of these collective findings is the varied way in which stereotypes are conceptualised and operationalised. As highlighted in Study 6, previous intergenerational contact studies have used uni-dimensional scales to measure

stereotypes (Anguillo et al., 1996; Powers et al., 2013; Wilhite & Johnson, 1976). Building on findings from Study 6 this study employs the SCM to examine how intergenerational contact affects age stereotypes of older adults in a negatively age stereotype-confirming domain.

Stereotype Content Model

Findings from Study 6 highlighted that good quality direct intergenerational contact in everyday life increases both warmth and competence stereotypes of older adults, which in turn independently both increase positive attitudes towards older adults. However, intergenerational contact in negatively stereotyped domains, where older adults potentially confirm negative stereotypes, may have a different effect on competence stereotypes and attitudes.

Although no known research has compared outcomes of intergenerational contact in stereotype-consistent and –inconsistent contexts, experimental research has examined warmth and competence evaluations of hypothetical older adults that varied in levels of competence (Cuddy et al., 2005). In a laboratory study 55 young adults were presented with written vignettes of older targets. All participants read about a typical older male target named George; this condition formed the control group. Two thirds of participants were then randomly assigned to one of two experimental groups. In the stereotype-consistent group participants read how George had developed memory loss, whilst in the stereotype-inconsistent group they read about George's pride in this perfect memory. Analyses revealed no differences in the competence ratings across the three conditions, yet the stereotype-consistent target was rated with higher warmth than the other two targets. This suggests that when older adults confirm the their group's negative stereotype, rather than altering perception on that dimension, it increases ratings on the positive dimension; warmth. This supports Fiske et al.'s (2006) primacy of warmth hypothesis, whereby warmth is the more predictive of the two dimensions.

Therefore, intergenerational contact in negatively stereotyped domains should have a positive impact on warmth, but not competence, stereotypes.

However, these findings contradict the intergenerational contact literature that suggests that direct social interaction with stereotype-consistent older adults negatively impacts competence perceptions (Anguillo et al., 1996; Reinsch & Tobis, 1991, Revenson, 1989). As written vignettes about hypothetical targets lack ecological validity, it is possible that direct contact with stereotype-consistent older adults would generate different responses to merely reading about them. Therefore, hypotheses based on intergenerational programmes, rather than the laboratory SCM research appear to be more reliable.

Stereotypes as Mediator of Stereotype-Confirming Contact

In order to fully evaluate whether stereotype change affects attitudinal outcomes of contact interventions or service learning programmes, it would be necessary to assess whether stereotypes form an indirect path from contact to attitudes. In order to do this, stereotypes should predict attitudes.

Study 6 demonstrated that contact in everyday life was associated with warmth and competence stereotypes, which in turn was associated with attitudes towards older adults. However, literature reviewed in the preceding text suggests that contact in negatively stereotyped contexts may decrease competence stereotypes (Anguillo et al., 1996; Reinsch & Tobis, 1991; Revenson, 1989). In this situation, what effect might negative competence have on the outcome of interventions? As research suggests that negatively rated stereotypes are more predictive of attitudes than positively rated stereotypes (Lin et al., 2005) it is possible that contact in negatively stereotyped contexts may have a detrimental effect on competence stereotypes that reduce positive attitudes towards older adults. However, the primacy of warmth hypothesis (Fiske et al., 2006) and results from Study 6, in which the indirect effects via warmth were

significantly larger than the indirect effects via competence, suggest that whilst contact may decrease competence attitudes will still be improved, as warmth will have a larger effect on outcomes of the intervention.

Technology as a Stereotyped Context

In addition to health and social care, another area in which older adults are negatively stereotyped is their ability to interact with new technology (Abrams, Swift, & Drury, 2016). Experimental research (Abrams et al., 2016) invited participants (aged 18 to 72 years old) to rate the skills and abilities perceived as typical of either adults in their 20s or their 60s. Stereotypes rated as typical of younger, but not older adults included learning new skills, using new computer technology (e.g., Smartphones), and using social media (e.g., Facebook). Furthermore, in a survey of young U.S. students (N = 552, median age 21 years old) 84% disagreed with the statement "most older people are as technologically capable as young adults" (Van Dussen & Weaver, 2009). Therefore, such extant negative age stereotypes are likely to hinder the development of technology designed to meet the needs of older adults.

There are social, economic and moral reasons for ensuring technology is appropriately designed for older adults (Eisma et al., 2004). Firstly, it is important that technology is usable by, and accessible to, older adults. Technology is an important tool to support older adults' independence, allowing them to live in their own homes for longer, therefore postponing or avoiding a need for residential social care. Secondly, increasing numbers of active older adults have more free time, therefore offering industry lucrative opportunities to develop new products aimed at the older market. Lastly, moral obligation and legislation (UK Disability Discrimination Act, 1995) requires that systems are accessible by people with disabilities, who are in many cases older adults. Although technology design often adopts a 'user-centered' approach it is argued that young researchers may find it easier to design technology for a user more

similar to themselves and experience difficulties understanding the potential impact of technology on the day to day lives of older adults (Keates & Clarkson, 2002) and this gap in understanding can lead to the design of technology based on designers' sometimes patronising interpretation of older adults needs (Eisma et al., 2004).

Interviews are viewed as effective means of information gathering to aid technology designers to develop systems for older adults (Eisma et al., 2004), but the potential impact of the intergenerational encounter on designers' attitudes and stereotypes of older adults should be considered. Intergroup contact theory suggests that direct contact should increase positive attitudes (Pettigrew & Tropp, 2006), but there is less certainty about effects on stereotypes (Anguillo et al., 1996; Reinsch & Tobis, 1991, Revenson, 1989), especially when older adults may confirm a negative stereotype of incompetence. Unlike research in health and social care, very little research examines stereotypes of older adults in relation to technology or contact in these contexts. One study, however, examined age stereotypes of older adults working in software development (Schloegel, Stegmann, Maedche, & Van Dick, 2016). It reported that a contact-based age diversity intervention promoting cooperation between coworkers of different age groups had a positive impact on expectancies of older coworkers. Whilst this is encouraging, the study outcomes are focused on attitudes towards older coworkers only and do not address attitudes towards older adults in the wider community, and older adults past retirement age. Therefore, greater understanding about the impact of intergenerational contact with older adults in negatively stereotyped technology contexts is required.

Study Aims

This study evaluates a learning programme run for technology students consisting of two intergenerational contact conversation sessions. The aim is to test whether the intervention changes stereotypes of older adults, and if any stereotype

change affects attitudes towards older adults. Of particular concern is whether the intervention will lead to a reduction in competence perceptions, and if so, what impact that has on attitudes.

Hypotheses

Using an experimental design three hypotheses are tested. 1) In line with research supporting the negative effect of stereotype-consistent intergenerational contact on competence perceptions (Anguillo et al., 1996; Reinsch & Tobis, 1991, Revenson, 1989) it is hypothesised that following the intergenerational technology conversations, the experimental group will report lower competence than the control group. 2) In line with findings from Study 6, it is proposed that the experimental group will report higher warmth perceptions than the control group. 3) Lastly, it is anticipated that the programme will improve attitudes towards older adults via positive indirect effects of increased warmth stereotypes, but that reduced competence stereotypes arising from the intervention will not form an indirect path to influence attitudes.

Method

Participants

Participants were 84 Engineering and Digital Arts students at a University in South East England.[8] The average age of the students was M_{age} 20.42 (SD=2.87), 39 were males, 30 females and 15 did not indicate their gender. All participants voluntarily completed paper questionnaires during class time. Fifty-one participants had conducted an intergenerational conversation as part of their coursework and 33 participants who had not taken that coursework module formed the control group. The data were collected from two waves of a module that was repeated over two consecutive

[8] Data was collected in conjunction with Dr Lindsey Cameron and Dr Ania Bobrowicz and undergraduate students Elizabeth Hunt and Georgina Parker. All data analysis and interpretation was conducted by the author of this thesis, Lisbeth Drury

academic years. The final sample consisted of 29 participants from the 1st year (2015) and 55 participants from the 2nd year (2016).

Design

Participants in the experimental group were instructed to conduct two independent guided conversations with an older adult, either face-to-face or via SKYPE. The aim of the conversation was to build rapport with the older adults and explore their use of technology, and identify related barriers and frustrations (for guided conversation instructions please see Appendix B). The students recorded and transcribed the conversations, then conducted analysis as instructed by the coursework outline. Both the guidelines for the conversation and subsequent analysis focused on variables previously identified as moderators or mediators of successful intergenerational and intergroup contact. These variables included: common goals, cooperation, institutional support, equal status, good quality contact, self disclosure, story telling, shared humour, avoiding incompetency stereotypes, challenging stereotypes, empathy, perspective taking and common ingroup identities. See Appendix Table B1 for identification of the variables.

All participants completed a questionnaire about their prior contact with older adults. The experimental group conducted the conversations and submitted their coursework, after which all participants responded to attitude and stereotype measures. The participants were informed that participation was voluntary, anonymous and did not form part of their coursework.

Measures

Prior contact with older adults. One item measured contact frequency with older adults on a 7-point scale (1= *none*, 7 = *a lot*), “In everyday life, how much contact do you have with older adults?” and one item measured contact quality “When you meet older adults do you think the contact is mainly…” (1= *unpleasant*, 7 = *pleasant*).

Older adults were defined as older people over 65 years old but not family members and contact was defined as social contact/encounters/interactions with a person, or group of people (not physical contact). Frequency scores were multiplied by quality scores to create an index of prior contact with older adults (possible range 1-49).

Age stereotypes. To increase the reliability and validity of our age stereotype measures we employed multiple item scales. In order to indirectly tap respondents' personal agreement with stereotypes participants were asked "What does society in general think of older adults? As viewed by society……" followed by seven items "How competent/confident/independent/competitive/warm/good natured/sincere are older adults?" on a 7-point scale (1 = *not at all*, 7 = *very much*).

Table 11. *Varimax rotated factor matrix for stereotype warmth and competence factors.*

Items	Factor	
	Warmth	Competence
Competent		.89
Confident		.58
Independent		.50
Competitive		.41
Good natured	.82	
Warm	.74	
Sincere	.74	
Cronbach's alpha	.81	.67

Maximum likelihood confirmatory factor analysis was conducted in SPSS to explore the warmth and competence components of the age stereotype measure. This resulted in two factors with an eigenvalue above 1. Together the factors accounted for

60.6% of the variance and a varimax orthogonal rotation showed all items loaded onto one of two factors accounting to 31.2% (warmth) and 29.5% (competency) respectively. A chi-square goodness of fit test was non-significant X^2 (8) 5.82, p = .668, indicating the factors are independent of each other. A rotated matrix showing the factor loadings of the items are displayed in Table 11. Items were averaged to create two indices of warmth stereotypes and competence stereotypes.

Attitudes towards older adults. Attitudes were measured using the same scale as Study 1, but due to semantic overlap with the warmth stereotype variable the item friendly-unfriendly was dropped (α = .88).

Results

To examine attitudinal differences between the experimental and control conditions a MANOVA conducted. The experimental group reported more positive attitudes towards older adults (M = 5.56, SD = 1.19) than the control group (M = 4.78, SD = 1.33), F (1,83), 7.77, p = .007, η^2 = .09, higher ratings of warmth stereotypes (M = 5.18, SD = 1.01) than the control group (M = 4.64, SD = 0.80), F (1,83) 6.83, p = .011, η^2 =.01 and lower ratings of competence stereotypes (M = 3.69, SD = 0.94) than the control group (M = 4.16, SD = 1.01), F (1,83) 4.85, p = .031, η^2 =.06. In line with hypotheses, the experimental group reported more positive attitudes, more warmth stereotypes and less competence stereotypes compared to the control group.

Correlations

In order to examine the correlations between contact and the other variables a contact variable was created (control group = 0, contact intervention group =1). Table 12 shows the correlations between variables. Positive attitudes were significantly related to warmth stereotypes but not associated with competence stereotypes, prior contact, participant age or gender. All other variables were not related, except gender

and prior contact; females were more likely to have experienced more prior contact with older adults than males.

Table 12. *Means, standard deviations and correlations between variables*

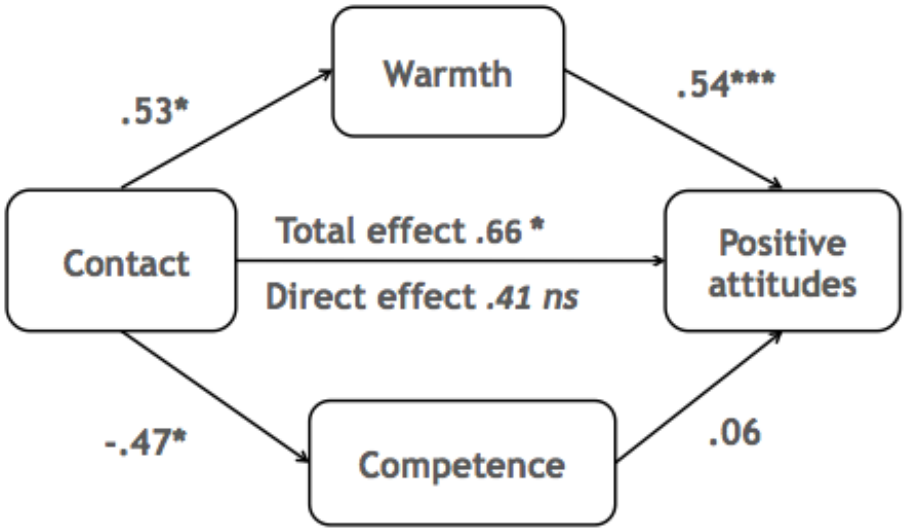
Measures	*M*	*SD*	2	3	4	5	6	7
1.Contact versus control	1.39	0.49	.29**	.28*	-.24*	.08	-.22	.12
2.Positive attitudes	5.25	1.30		.46***	.02	.16	-.08	.15
3. Warmth stereotype	4.97	0.96			.02	.07	-.09	.06
4. Competency stereotype	3.88	0.99				.03	-.07	-.14
5. Prior contact	26.36	21.98					-.18	.28*
6. Participant gender	1.64	0.85						-.06
7. Participant age	20.42	2.87						

Note. Control = 1, control = 0. Gender male = 1, female = 2, *** $p < .001$, * $p < .05$.

Mediation Analysis

Multiple mediation analysis was conducted to examine any indirect effects of the contact intervention on attitudes via increased warmth stereotypes and decreased competency stereotypes. Using Hayes' (2013) PROCESS model 4 with 5,000 bootstraps, a contact variable (control group = 0, contact intervention group =1) was entered as the independent variable, warmth and competence stereotypes were entered as mediators and positive attitudes towards older adults as the dependent variable (see Figure 4). Prior contact and participant age were entered as covariates (gender was not controlled for as it was not related to any of the key variables). There was a significant positive total effect of contact on positive attitudes .66, *SE* = 0.30, 95% *CI* [0.11, 1.22]. When warmth and competence stereotypes were added to the model the direct effect of contact on attitudes became non-significant .41 *SE* = 0.28, 95% *CI* [-0.14, 0.96] but there was a significant positive indirect effect via stereotypes .26, *SE* = 0.15, 95% *CI*

[0.007, 0.61]. Examining the independent indirect effects of stereotypes there was a significant positive indirect effect of contact via increased warmth stereotypes .28, *SE* = 0.13, 95% *CI* [0.09, 0.59], but the negative effect via decreased competency stereotypes was non-significant -.03, *SE* = 0.07, 95% *CI* [-0.24, 0.08]. Therefore, although the contact intervention increased warmth stereotypes and reduced competence stereotypes, only warmth stereotypes predicted attitudes towards older adults.



Note. * $p < .05$, *** $p < .001$. Contact variable 0 = control condition, 1 = contact condition.

Figure 4. Indirect effects of contact on positive attitudes towards older adults via stereotypes.

Discussion

As anticipated, students who took part in the intervention reported higher warmth stereotypes and lower competence stereotypes than the control group. This suggests that intergenerational contact in a negatively stereotyped context has a negative impact on the perceived competence of older adults, but positive effects on perceived warmth. Mediation analysis revealed that whilst warmth stereotypes in turn increased positive attitudes towards older adults, decreased competence stereotypes had no effect. Together, the results suggest that although contact in negatively stereotyped contexts

improves attitudes and warmth stereotypes, it also has the potential to damage perceptions of older adults' competence. However, the detrimental effects on competence do not obstruct the overall positive effect of the intervention on attitudes.

Theoretical Value

The results of this study support findings from Study 6, which demonstrated that direct intergenerational contact predicts warmth stereotypes, which in turn improve attitudes. Collectively, these two studies demonstrate this effect in relation to both retrospective reports of intergenerational contact and experimentally manipulated contact. Therefore, together, they provide reliable evidence that warmth stereotypes are influenced by direct contact and play an important role in the relationship between intergenerational contact and attitudes towards older adults. The findings further extend understanding of intergroup contact as they are the first to show that positive intergroup contact can have both a positive and negative effect on stereotypes. Coupled with findings from Study 6, the results suggest the outcomes are dependent on the degree to which the context is stereotype consistent. To enhance the robustness of this evidence, future research should seek to replicate these findings and additionally compare a control group and intervention group in a stereotype-consistent context to an experimental group in a stereotyped-inconsistent context. This would allow researchers to identify whether the difference in context is responsible for the reduction in competence perceptions.

The results also lend support to Allport's (1954) theory that equal status between group members is needed to reap the maximum benefits of intergroup contact on attitudes. Based on the assumption that there was a higher degree of group status inequality in this intervention compared to the everyday contact tested in Study 6, group status equality may be accountable for reduced beneficial outcomes in relation to competence perceptions. Future research should measure perceived equality of group

status during the intergenerational encounter and test whether this is responsible for the differences in perceived competence.

The results offer mixed support for SCM (Fiske et al., 2002). Finding that the intervention simultaneously reduced competence and increased warmth, but that only warmth predicted attitudes, supports the primacy of warmth hypothesis (Fiske et al. 2006) that warmth is the stronger predictor of the two dimensions. Additionally, the combination of the current findings and those from Study 6 suggests that regardless of whether the effect of contact on competence is positive or negative, warmth still has the greater effect on attitudes both directly and as an indirect pathway. However, the results do not support findings from SCM studies (Cuddy et al., 2005), which suggest that reading about negatively stereotyped older adults increases perceptions of warmth without affecting perceptions of competence. However, it is likely that experiencing direct contact with an older adult is more impactful on judgments and perceptions than merely reading about them, as in Cuddy et al.'s (2005) laboratory vignette study.

Applied Value

Importantly, this research provides valuable insight about the psychological processes and potential side effects of stereotype-confirming contact interventions. Fortunately, this study suggests that whilst competence stereotypes may be reduced, they do not obstruct the overall successful influence of interventions on attitudes towards older adults. Therefore, service learning, or pedagogical contact programmes in social care or technology fields can still aid students' learning without having a detrimental effect on attitudes. However, the potential negative impact on competence should not be overlooked. Although reduced competence did not affect global attitudes (ageism), it should not be ignored as it can lead to pity, which in turn leads to passive harm (Fiske et al., 2006).

These findings help to clarify the inconsistencies in previous research where studies have reported positive, neutral and even detrimental outcomes of interventions in stereotype-confirming situations (e.g., Nochajski et al., 2011; Gomez et al., 1985; Angiullo et al., 1996; Revenson, 1989). It may be the case that measures used to assess stereotypes or attitudes were weighted too heavily on the warmth or competence dimensions. The adoption of the SCM as a universal measure of stereotypes across service learning and pedagogical contact programmes would help psychologists understand which contexts may have greater detrimental effects on competence stereotypes. Knowledge of situations that adversely affect competence stereotypes could inform the design of programmes and development of methods to control negative effects.

A potential method to avoid the negative effect of contact on competency stereotypes would be for older adults to demonstrate a skill at which they are more proficient than their younger contact partner, in order to dispel negative stereotypes about their competency. For example, a laboratory experiment (Kessler & Straudinger, 2007) instructed same-aged or intergenerational dyads to complete tasks at which older adults or younger adults were typically expert (life problem versus media problem). The results showed that compared to same-age dyads or those working on the media task, the young adults paired with older adults working on the life task were more prosocial in their attitudes and intentions to volunteer after the study. Although these outcomes are not focused on attitudes towards older adults, the researchers argue that the contact reduced agentic, self-focused behaviour typical of younger adults and it is possible that these egalitarian attitudes would extend to improved outgroup attitudes, especially those towards older adults. Particularly, it is likely that the intergenerational experience would not decrease their competence perceptions of older adults.

Limitations and Future Research

The present study is not without limitations; some characteristics of the instruments may inhibit conclusions that can be derived from the current findings. 'Warmth' as a measured item appeared in both the positive attitudes scale and the warmth stereotypes scale. However, as both constructs achieved high reliability scores and items for each construct were based on prior research, one can have confidence in the validity of our findings. To overcome this issue, future research should include other attitude measures such as a 'feeling thermometer' or a test of implicit attitudes. Additionally, the number of competence-related items and warmth-related items was unbalanced, which could have prompted biasing effects. However, because a mean score was used in all analyses, such a biasing effect is unlikely.

This research has some practical implications for designers of technology for older adults. The results highlight that it is important to be aware that user-centered design strategies involving intergenerational contact (e.g., interviews) run the potential to increase incompetence perceptions of older adults. In turn, this may hamper designers' ability to create technology to fully meets the needs of older adults, by encouraging patronising assumptions of older adults' interaction with, and needs for, technology (Eisma et al., 2004). As mentioned previously, the inclusion of a task designed to highlight older adults' competencies could counterbalance these potentially negative outcomes.

More research is required to gain a better understanding of the effects of repeated intergenerational contact for individuals who regularly come into contact with dependent older adults, for example, health and social care professional. Research suggests that chronic contact increases benevolent attitudes (Revenson, 1989), but no studies have examined the effects of negative contact in these contexts. Caring for older adults, particularly those with dementia, is a challenging profession that may not always

allow for positive intergenerational contact exchanges. As negative contact is reported to work via different psychological mechanisms than positive contact (Pettigrew & Tropp, 2011) and affect attitudes to a different degree (Barlow et al., 2012; Graf et al., 2014) this would for a valuable line of future research.

Summary

In summary, this study provides clear evidence that intergenerational contact in negative age stereotype-confirming context can adversely affect young adults' stereotypes of older adults. Although it increases warmth perceptions, it simultaneously reduces competence perceptions. This is an important finding for designers of service learning, or pedagogical programmes involving intergenerational contact in which older adults are more dependent or incapable than usual. Caring for older adults and designing technology to assist their independence is of great social and economical value, thus future research should develop methods to counteract negative effects on perceptions of older adults' competence. However, reassuringly, the results of the present study suggest that although intergenerational contact in a negative age stereotype-confirming context has negative effects on competence perceptions, this does not obstruct the overall positive influence of such programmes on ageist attitudes.

Study 8. Can Caring Create Prejudice? Positive and Negative Intergenerational Contact in Care Settings and the Generalisation of Blatant and Subtle Ageism to other Older People.

Despite legal protection against age discrimination in health and social care (Age Discrimination Act, 1975; Equality Act, 2010), many older people feel they do not receive the treatment they deserve because of their age. Older people often report being treated with a lack of dignity and respect (Age UK, 2013). Further, government reviews of five areas of health and social care in the UK also support the conclusion that ageism continues within these settings (e.g., Centre for Policy on Ageing, 2009a; 2009b).

Whilst problems of institutional discrimination can arise from structural factors (e.g., limited resources leading to age-based rationing and difficulty with access to services), they can also occur 'bottom up', from the prejudices of individuals within an organisation (cf. Abrams, Swift, Lamont, & Drury, 2015; Swift, Abrams, Drury, & Lamont, 2016). Tackling institutional age discrimination therefore requires a better understanding of the experiences of those that work in these organisations and the contact they have with older people. The present research focuses on the institutional care of older people, an arena in which there are known problems of elder abuse and neglect.

Research reveals that care workers' (CWs) positive relationships with care home residents (CHRs) are associated with better CHR health (Leedahl, Chapin, & Little, 2015), whilst CWs' ageist attitudes are associated with psychological abuse of CHRs (Bonnie & Wallace, 2003; Weir, 2004). Prior research, however, has not explored the antecedents of CWs' attitudes to CHRs or older people more broadly, or how CWs' interaction experiences shape these attitudes. Using the social psychological theory of intergroup contact as a framework (Allport, 1954; Pettigrew & Tropp, 2006), the current study therefore explores how CWs' prior interactions with CHRs, both positive and negative, relate to their attitudes towards CHRs and whether these attitudes might generalise to older people more widely. Given the increasing number of older adults in social care, it is particularly important to understand how CWs' interactions with CHRs may predict their attitudes towards older adults in general.

Intergroup Contact and Ageism

As reviewed in Chapter 3, young adults' ageist attitudes can be reduced by contact with older people in everyday encounters (Bousfield & Hutchison, 2010; Knox et al., 1986; Schwartz & Simmons, 2001) and workplace intergenerational contact has also been linked to reduced ageism (Allan & Johnson, 2009). However, there is a lack

of evidence to suggest that these findings are generalisable to health and social care contexts where older adults are more likely to be dependent upon their younger counterparts.

Health and social care settings offer unique opportunities to study intergenerational contact in a context in which dependency varies. Moreover, it is possible for this contact to be both positive and negative and to either confirm or disconfirm stereotypes and ageist attitudes (Caspi, 1984). For instance, medical students running a health promotion programme at older adults' centres reported more negative attitudes towards older adults after the programme than before (Reinsch & Tobis, 1991). Yet, findings in health and social care settings are mixed, some research reports a reduction in negative attitudes (Meyer et al., 1980; Gomez et al., 1985), whilst other research suggests no change (Eddy, 1986; Reyna, Goodwin, & Ferrari, 2007).

In sum, health and social care contact research does not consistently support the wider literature in which workplace contact reduces ageist attitudes (Allan & Johnson, 2009; Nochajski et al., 2011; Van Dussen & Weaver, 2009). Additionally, little is known about the specific nature of CWs' ageist attitudes (Eymard & Douglas, 2012).

Positive and Negative Intergroup Contact

Most intergroup contact research focuses on positive contact (Pettigrew & Tropp, 2011), such as agreeable interactions with a member of a different social group. Conversely, negative contact is associated with threat to oneself or one's social group, can occur when contact is involuntary, and is frequently reported by those who experience repeated contact, often in the workplace (Pettigrew & Tropp, 2011). For example, Dhont et al.'s (2010) study of police officers' workplace contact with illegal immigrants revealed that positive and negative contact were independently related to their prejudice towards immigrants as an outgroup.

A small body of research compares the effects of positive and negative contact. Analysis of a national probability sample of 1383 German citizens revealed that positive contact with foreigners (mainly Turkish Muslims) was more predictive of prejudice towards Muslims than negative contact (Pettigrew, 2008). Yet, alternative research suggests that negative contact may increase overt prejudice more than positive contact reduces it (Barlow et al., 2012). For example, Graf et al. (2014) examined Europeans' contact with individuals from neighbouring countries. Despite being a third as likely to occur, negative contact had a greater influence than positive contact on attitudes towards other national groups. These divergent findings mean it is important to investigate both positive and negative contact when considering how contact may predict CWs' attitudes.

The present study measures CWs' positive and negative contact experiences with CHRs, and examines how these may predict attitudes towards CHRs. Extrapolating from prior research, it is hypothesised that CWs will experience positive contact more than negative contact and both types of contact should predict attitudes towards CHRs.

Generalisation of Contact

The second question is whether attitudes towards CHRs, resulting from positive and negative contact, generalise to older people more widely. Pettigrew and Tropp's (2006) meta-analysis of 515 intergroup contact studies supports the theory (Pettigrew, 1998) that positive contact generalises in three ways; (1) from an outgroup member to other outgroup members in different prejudice situations; (2) from an individual outgroup member to the entire outgroup; and (3) from a primary contact group to an independent secondary group. The current study will extend the second type of generalisation, by examining whether contact with an individual can be generalised to attitudes towards known outgroup members and in turn to the larger outgroup category.

As mentioned, Pettigrew and Tropp's (2006) meta-analysis provides evidence that following positive contact, attitudes towards an immediate contact partner become more favourable and reliably extend to the contact partner's wider social group. Yet, alternative research suggests that negative contact may generalise more readily than positive contact due to a greater influence on social category salience (Paolini et al., 2010). High category salience facilitates the generalisation of attitudes from an individual to the wider outgroup (Brown & Hewstone, 2005), and across two experiments Paolini et al. (2010) found that category salience was greater after negative compared to positive contact. Indeed, a field study identified that negative contact with immigrant survivors of a natural disaster generalised to prejudice towards the wider immigrant outgroup via prejudice towards immigrant survivors (Vezzali, Andrighetto, Di Bernardo, Nadi, & Bergamini, 2016).

Therefore, the literature presents mixed findings regarding the potential of positive and negative contact to extend to wider outgroups. As existing studies testing the generalisation of contact to outgroup attitudes have examined either only positive contact or negative contact individually (Pettigrew & Tropp, 2006; Vezzali et al., 2016), the present study adopted a novel approach including both types of contact in the same study. It was predicted that CWs' attitudes relating to their positive and negative contact with CHRs would generalise and shape their attitudes towards older adults, but that generalisation effects would occur more readily for negative, rather than positive contact.

Intergenerational Contact, Blatant and Subtle Attitudes

Ageist attitudes can be looked at in a number of ways. Blatant attitudes are those of which respondents are aware and can articulate, whereas subtle attitudes refer to less obvious prejudice, such as expressing benevolent but patronising stereotypes that can be expressed without conscious desire to malign. Research using stereotype trait

attribution measures shows that subtle ageism can be reduced by intergenerational contact (Schwartz & Simmons, 2001). Further analyses of national surveys revealed that across all ages, those with older friends are less likely to support the stereotype that incompetence increases with age (Tasiopoulou & Abrams, 2006). Yet, analysis of similar data revealed a weaker relationship between intergenerational friendships and blatant expressions of ageism (Vauclair et al., 2010). These divergent findings suggest that respondents may be disinclined to express ageism blatantly, in which case subtle measures may be more sensitive and less susceptible to socially desirable responding. The present research therefore includes both blatant and subtle measures of ageism and sought to test whether both types of attitudes generalise from positive and negative intergenerational contact.

A type of subtle prejudice pertinent to older people is dehumanisation, which is defined as "the denial of full humanness to others" (Haslam, 2006, p.252). Dehumanisation is commonly mentioned in gerontology literature; the eldercare setting is seen as dehumanising (Berdes, 1987), and healthcare professionals are accused of using dehumanising language with older people (Cayton, 2006). Yet, although qualitative research reports CHRs' experience of dehumanisation (Fiveash, 1998), there appears to be no quantitative evidence of dehumanisation of CHRs. Dehumanisation is reduced by intergroup contact (Capozza, Falvo, Di Bernardo, Vezzali, & Visintin, 2014), but research has yet to examine whether contact-related dehumanisation generalises from one group to another.

Design and Hypotheses

The present study analyses survey data collected from care workers, and examines their positive and negative intergenerational contact experiences with older care home residents. Correlational, regression and mediation analyses are used to test three hypotheses. 1) In line with previous research (Graf et al., 2014) it is predicted that

CWs will experience more positive than negative contact with CHRs. 2) Both types of contact will predict blatant and subtle attitudes towards CHRs (Pettigrew, 2008; Vezzali et al., 2016). 3) Furthermore, it is predicted that CWs' attitudes relating to negative contact with CHRs will generalise to their attitudes towards older adults more readily than attitudes associated with positive contact (Paolini et al., 2010).

Method

Participants

Questionnaires were distributed by hand and online to CWs at 22 residential eldercare homes across South East England. The homes provided care for older adults with varied levels of physical and psychological dependency. Participation was anonymous and confidential, and respondents were entered into a cash prize draw. Sixty-two responses were received (response rate 7.2%), three were removed as they exceeded 60 years old (an age when an individual may be considered as becoming an older adult, e.g., Abrams et al., 2009) and three were removed due to excessive missing data. A sample of 56 respondents remained (42 paper, 14 online) and were aged 19 to 60 years old ($M = 40.41$, $SD = 12.25$), including 50 women and six men. To ensure scales measured intergroup attitudes and participants viewed older adults as an outgroup, participants were asked, "in your view, at what age do women [men] start being described as elderly?" All responded with an age older than their own.

Measures

Positive and negative contact. Positive and negative contact scales were adapted (Dhont et al., 2010; Heitmeyer, 2002) and further items added to reflect contact within the care context.

Positive contact with CHRs. Three items measured the quality of positive contact ($\alpha = .86$) by asking how much contact could be described as "pleasant", "friendly" and "co-operative" (1 = *none*, 7 = *all*). The frequency of positive contact

with CHRs (α = .88) was measured by asking, "during the contact you have with service users, how often do you" in relation to five items; "have interesting conversations", "share a joke", "have positive experiences", "learn something new from service users" and "feel like you are sharing time with a good friend" (1 = *never*, 7 = *very often*). The means of both scales were multiplied to create an overall index of positive contact with CHRs (possible range 1-49).

Negative contact with CHRs. Three items measured the quality of negative contact (α = .80) by asking how much CWs' contact with CHRs could be described as "unpleasant", "unfriendly" and "uncooperative" (1 = *none*, 7 = all*).* The frequency of negative contact with CHRs (α = .79) was measured by asking, "during the contact you have with service users, how often do you have" in relation to three items; "conflicts", "negative experiences", and "arguments" (1 = *never*, 7 = very *often*). As with positive contact, the means of both scales were multiplied to create an overall index of negative contact with CHRs (possible range 1-49).

Ageism. Blatant and subtle ageism (measured as the denial of humanness) towards CHRs and older adults were measured.

Blatant ageism towards CHRs and older adults. Ageism towards CHRs (α = .91) and older adults (α = .89) was measured as in Study 1.

Subtle ageism towards CHRs and older adults. According to dehumanisation theory, outgroups may be denied humanness along two trait-attribution dimensions (Haslam, 2006). Uniquely human traits distinguish humans from animals (e.g., broadminded) and human nature traits differentiate humans from inanimate objects (e.g., fun-loving). Scales measuring the attribution of traits include both desirable and undesirable traits (Haslam, 2006). However, the measure included only desirable traits (see Haslam & Bain, 2007) as previous research examining young adults' attitudes

revealed they deny humanness to older coworkers by attributing low levels of desirable but not undesirable traits (Wiener et al., 2014).

Denial of uniquely human traits. Using a 7-point scale (1= *not at all*, 7 = *very much*), participants indicated how much CHRs possessed the following characteristics: broadminded, conscientious, humble and polite. Reversed averaged items formed an index (α = .77). Higher scores indicated greater denial of uniquely human traits to CHRs.

Denial of human nature traits. Using a 7-point scale (1= *not at all*, 7 = *very much*)[9] participants indicated how much CHRs possessed the following characteristics; active, curious, friendly, helpful, and fun-loving. Reversed averaged items formed a reliable index (α = .81). Higher scores indicated greater denial of human nature traits.

The denial of humanness scales were repeated using older adults as the target group. Again, reversed averaged items formed two indices of subtle ageism, denial of uniquely human traits to older adults (α = .79), and denial of human nature traits to older adults (α =.83), with higher scores indicating more ageism.

Prior contact with older adults. Two items measured contact frequency (α = .76), with older adults outside of work on a 7-point scale (1= *none*, 7 = *a lot*) "In everyday life, how much contact do you have with elderly people?" and "How many elderly people do you know?" One item measured contact quality "When you meet elderly people do you think the contact is mainly…" (1= *negative*, 7 = *positive*). Frequency responses were averaged and multiplied by quality scores (possible range 1-49).

Results

Attitude variables were standardised. To establish that the online subsample (*n* = 42) and paper subsample (*n* = 14) were equivalent, means and variances on all measures

[9] Due to administrative oversight, subtle ageism measures in the online questionnaire featured 5-point scales.

that used the same response scales were compared. These comparisons confirmed there were no differences between the two samples. T tests compared paper and online populations (for *Ms* and *SDs* see Table 13) on the following variables; participant age t (54) = -0.38, p = .705; positive contact t (54) = -0.17, p = .862; negative contact t (53) = -0.03, p = .974; prior contact t (54) = -1.18, p = .240. A chi-square test compared participant gender of the two populations X^2 = (1,56) = 0.25, p = .618. Therefore, the within-sample standardised data were combined across the two subsamples.

Amount and Strength of Contact Experienced

In line with the first hypothesis, CWs experienced both positive and negative contact. Moreover, positive contact experienced with CHRs (M= 30.71, SD= 10.31) was significantly higher than negative contact (M = 7.27, SD = 6.39), t (54) = 11.73, p < .001, Cohen's d = 1.58. Consistent with intergroup contact theory, positive contact was negatively correlated with blatant ageism towards CHRs and older adults. Additionally, it was negatively related to the denial of uniquely human traits to CHRs and the denial of human nature traits to older adults. Negative contact was positively correlated with all types of ageism towards CHRs and the denial of uniquely human traits to older adults (see Table 13).

Multiple regression analyses tested relationships between contact with CHRs and ageism. All variables were standardized and in addition to positive and negative contact with CHRs, participant age, gender and prior contact with older adults were entered into the model as predictors. In line with convention, bootstrapping was used to protect against the violation of normality, which is more likely with small sample sizes (Hayes & Scharkow, 2013). Consistent with intergroup contact theory, positive contact marginally predicted lower blatant ageism towards CHRs, B = -.31 (SE = .18), p = .092, 95% *CIs* [-.68, .03] and lower denial of human nature traits to older adults, B = -.26 (SE = .15), p = .082, 95% *CIs* [-.53, .04], but did not predict other ageism towards CHRs or

older adults (see Table 14 for all regressions). Negative contact significantly predicted higher denial of uniquely human traits to CHRs, *B* = .30 (*SE* = .14, *p* = .039, 95% *CIs* [.01, .57], denial of human nature traits to CHRs, *B* = .33, (*SE* = .16), *p* = .033, 95% *CIs* [.02, .63], and denial of uniquely human traits to older adults, *B* = .28, (SE = .14), *p* = .033, 95% *CIs* [.01, .55] but did not predict other ageism towards CHRs or older adults. In summary, in contrast to prior research (Barlow et al., 2012) positive contact was more, rather than less, strongly related to blatant ageism towards CHRs than was negative contact. However, negative contact was more strongly and consistently related to subtle ageism.

Generalisation Effects via Attitudes towards CHRs

To test the generalisation hypotheses, the analysis employed PROCESS model 4 (Hayes, 2013) with 5,000 bootstraps to test indirect effects of contact with CHRs on ageism towards older adults via ageism towards CHRs. Again, for participant age, prior contact, gender and the other contact valence were entered as covariates. This analytical method was chosen to specifically examine attitudes that generalised from contact with CHRs to attitudes towards older adults, via their effect on attitudes towards CHRs.

Blatant ageism. First, the indirect effects of positive and negative contact on blatant ageism towards older adults via blatant ageism towards CHRs were tested. There was neither a significant indirect effect of positive contact -.18 (SE = .12), 95% CIs [-.49, .01], nor of negative contact .07 (SE = .12), 95% CIs [-.15, .32].

Subtle ageism. Next the hypotheses that contact with CHRs would generalise the denial of uniquely human and human nature traits to older adults was tested.

Denial of uniquely human traits. The indirect effect of positive contact on the denial of uniquely human traits to older adults through the denial of uniquely human traits to CHRs was non-significant -.05 (SE = .16), 95% CIs [-.41, .21]. There was,

Table 13. *Means, Standard Deviations and Correlations Among Contact Attitudinal and Demographic Variables Study 8*

	1	2	3	4	5	6	7	8	9	10
1. Positive Contact										
2. Negative Contact	-.55***									
3. Blatant ageism CHRs	-.46***	.31*								
4.Uniquely human CHRs	-.27*	.36**	-.06							
5. Human nature CHRs	-.25†	.36**	.07	.70***						
6. Blatant ageism OAs	-.33*	.13	.64***	.05	.06					
7. Uniquely human OAs	-.26†	.34*	-.03	.59***	.34***	.004				
8. Human nature OAs	-.29*	.24†	.03	.47***	.56***	-.07	.62***			
9. Prior contact OAs	.28*	.05	-.28*	-.04	-.07	-.23	.04	-.04		
10. Participant age	-.03	.07	-.004	.16	.09	.06	.14	.13	.09	
11. Gender	-.09	.02	.002	.19	.17	.10	.10	-.02	.10	.36**
M		7.27	$2.11_a/2.29_b$	$3.80_a/3.46_b$	$3.19_a/3.73_b$	$2.58_a/2.38_b$	$3.24_a/3.66_b$	$2.81_a/3.90_b$	30.59	40.41
SD	10.38	6.39	$1.48_a/1.59_b$	$1.11_a/0.66_b$	$1.03_a/0.62_b$	$1.60_a/2.00_b$	$1.14_a/0.82_b$	$0.87_a/0.79_b$	13.10	12.25

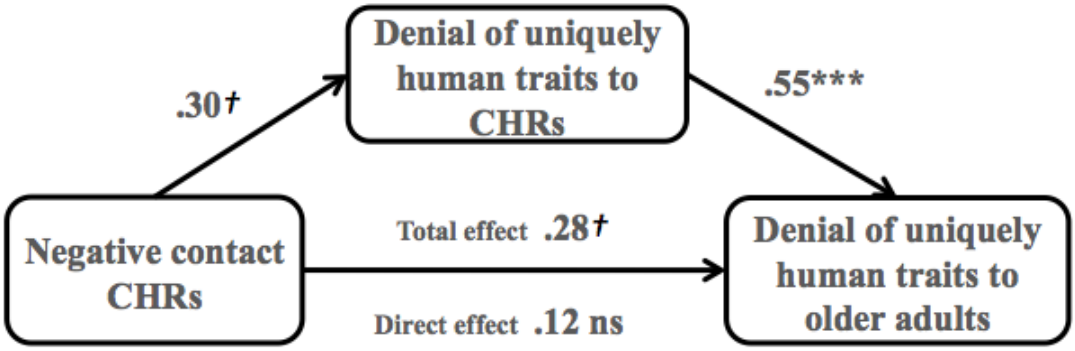
Notes: *N*=56. CHRs = Care home residents, OAs = Older adults. Correlations are significant to: † p<.10, **p*<.05,** p <.01,***p<.001. Gender: Male = 1, female = 2. a = *M* and *SD* for responses to paper questionnaire (*n*=42) blatant and subtle ageism both measured on 7-point scales. b = *M* and *SD* for online *questionnaire* (*n* = 14), blatant ageism recorded on 9-point scales and subtle ageism recorded using 5-point scales. *M* and *SD* for positive contact vary from the statistics reported in the *t* test, due to one case deleted listwise as one participant did not complete the negative contact measure.

Table 14. *Bootstrapped Regressions of Positive and Negative Contact and Covariates on Attitudes towards CHRs and Older Adults Study 8..*

	Blatant ageism				Denial of uniquely human traits				Denial of human nature traits			
	B	*SE*	*p*	*95% CIs*	*B*	*SE*	*p*	*95% CIs*	*B*	*SE*	*p*	*95% CIs*
Attitudes towards CHRS												
Positive contact	-.31	.18	.092	-.68, .03	-.10	.24	.699	-.54, .36	-.05	.23	.821	-.50, .41
Negative contact	.15	.19	.431	-.22, .54	.30	.14	.039	.01, .57	.33	.16	.033	.02, .63
Age	.01	.13	.922	-.27, .25	.09	.14	.567	-.19, .37	.01	.16	.939	-.31, .32
Gender	-.02	.13	.900	-.27, .25	.14	.11	.199	-.06, .40	.15	.09	.102	-.02, .35
Prior contact	-.20	.14	.181	-.48, .08	-.05	.16	.776	-.36, .26	-.09	.17	.626	-.43, .24
Attitudes towards older adults												
Positive contact	-.27	.19	.166	-.71, .07	-.09	.15	.535	-.37, .22	-.26	.15	.082	-.53, .04
Negative contact	-.01	.16	.919	-.34, .29	.28	.14	.033	.01, .55	.09	.13	.476	-.17, .33
Age	.04	.14	.798	-.27, .30	.10	.13	.449	-.17, .36	.15	.15	.321	-.14, .42
Gender	.08	.10	.415	-.12, .29	.05	.17	.651	-.19, .32	-.10	.14	.437	-.37, .17
Prior contact	-.16	.17	.355	-.48, .19	.04	.13	.769	-.23, .29	.03	.15	.852	-.27, .31

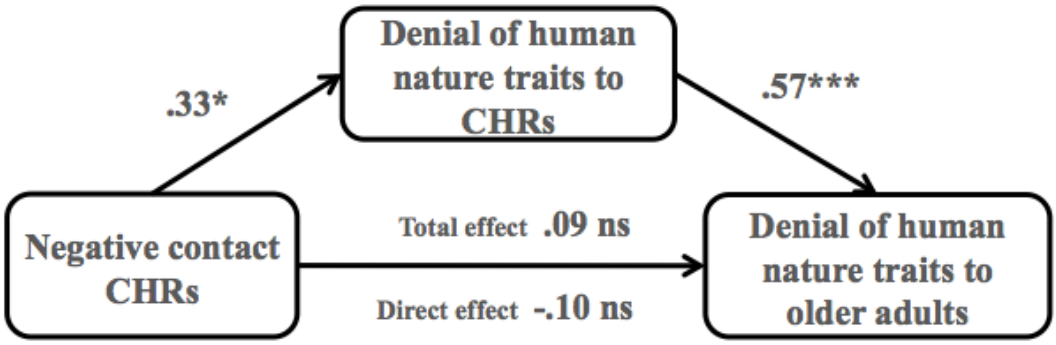
Note: CI = confidence intervals. Gender; male = 1, female = 2. CHRs = care home residents.

however, a significant indirect effect of negative contact on the denial of uniquely human traits to older adults through of the denial of uniquely human traits to CHRs .16 (*SE* = .08), 95% *CIs* [.01, .35] (Figure 5) in which the total effect of negative contact on the denial of uniquely human traits to older adults was fully explained by the effect of negative contact on the denial of uniquely human traits to CHRs. More negative contact was associated with more subtle ageism towards CHRs, which in turn predicted subtle ageism towards older adults.



Note: *ns* = non-significant, †*p*<.10, ***p<.001.

Figure 5. Indirect effect of negative contact on the denial of uniquely human traits to older adults.



Note: *ns* = non-significant, **p*<.05, ****p*<.001.

Figure 6. Indirect effect of negative contact on the denial of human nature traits to older adults.

Denial of human nature traits. The indirect effect of positive contact on the denial of human nature traits to older adults through the denial of human nature traits to CHRs was non-significant -.03 (*SE* = .15), 95% *CIs* [-.34, .24]. There was, however, a significant indirect effect of negative contact on the denial of human nature traits to older adults through the denial of human nature traits to CHRs .19 (*SE* = .11), 95% *CIs* [.001, .42] (Figure 6). The pattern was the same as that found for the denial of uniquely human traits.

In summary, the results provide evidence that negative contact plays a significant role in the generalisation of both types of subtle ageism.

Discussion

The present research presents a novel test of whether positive and negative contact with an outgroup member independently predicts not only attitudes towards that group, but attitudes towards others considered to be part of the wider outgroup. This was tested in the context of intergenerational contact between CWs and CHRs in an eldercare setting. It was predicted that contact between CWs and CHRs would be experienced by CWs more often as positive than negative contact, that each type of contact would predict CWs' blatant and subtle prejudice to CHRs, but that those attitudes would generalise to older adults as an outgroup more readily as a result of negative contact than positive contact.

As predicted, CWs experienced more positive than negative contact with CHRs. When controlling for the effects of prior contact, age, gender and the opposite contact valence, greater positive contact marginally predicted reduced blatant ageism towards CHRs, whilst greater negative contact significantly predicted the denial of uniquely human traits and human nature traits to CHRs. Therefore, the denial of humanness to CHRs was predicted by negative (but not positive) contact experiences. Positive contact directly generalised to predict a marginal decrease in the denial of human nature

traits to older adults, and negative contact directly generalised to predict a significant increase in the denial of uniquely human traits to older adults. In the final analysis, only negative (not positive) contact indirectly predicted ageism towards older adults via attitudes towards CHRs, and this was evident on just subtle, and not blatant measures of ageism.

The Effects of Positive Contact and Negative Contact on Ageism.

This study increases understanding of positive and negative contact experienced in a previously unexplored context, residential social care for older adults. In line with prior research, individuals experienced both types of contact in their workplace (cf. Dhont et al., 2010). Moreover, consistent with the caring role, positive contact was experienced more than negative contact (cf. Graf et al., 2014).

The present research is the first to show that negative contact predicts the denial of humanness to contact partners and illuminates how blatant and subtle forms of prejudice might be differently associated with contact. However, the denial of humanness reported was less than apparent for other outgroups (see Loughnan & Haslam, 2007). This may be due, in part, to CWs' internal values and positive motivation to interact with CHRs. Despite this, the denial of humanness reported in this study reflected more consistent and stronger levels of ageism than outcomes on blatant measures. A reason for the weaker effect of contact on blatant attitudes may be that it is a less sensitive measure of ageism in the social care context. Given the sensitive nature of older adult care, CWs' blatant ageism may partly reflect socially desirable responding.

Findings also provide understanding of how positive and negative contact are associated with blatant and subtle prejudice. Only positive contact predicted lower blatant ageism towards CHRs (marginally), whilst negative contact significantly predicted subtle ageism via the denial of both uniquely human and human nature traits

to CHRs[10]. A lack of equal status between CWs and CHRs may explain the weaker effects of positive contact in this context. This notion supports Allport's (1954) condition that equal group status is required for positive contact to successfully reduce prejudice. The findings suggest that even if experiences of positive contact may be associated with more favourable attitudes, experiences of negative contact are associated with higher levels of subtle prejudice. More concretely, following positive contact, CWs may feel friendly or warm towards CHRs, but following negative contact CWs attribute less humanness to CHRs. This different pattern of associations between prejudice and positive and negative contact could illuminate the divergent findings in previous research comparing the effects of positive to negative contact (Barlow et al., 2012, Graf et al., 2014, Pettigrew, 2008). It suggests that positive and negative contact may have more nuanced variations in their relationships with prejudice, depending upon the way in which prejudice is measured and manifested.

Prior research has mainly addressed racial or ethnic rather than age prejudice, so it is also possible that some aspects of age prejudice and age contact are distinct from those affecting other intergroup relationships (cf. Drury et al., 2016). Contact with CHRs seems less likely to involve aspects of intergroup threat and anxiety that can arise from interracial contact. Furthermore, research suggests that groups evaluated as warm but incompetent, such as older adults, are more likely to be passively harmed, whilst groups perceived as competent or competitive are more likely to be actively harmed (Cuddy et al., 2007). Both forms of harm can be serious. The potential for passive harm may not be reflected in blatant measures of prejudice such as the General Evaluation Scale (Wright et al., 1997), but may be signalled more clearly by subtle measures, as reflected in the relationship between negative contact and the denial of humanness.

[10] Although the relationship between negative contact and blatant attitudes was non-significant, post hoc power analysis indicates that this may be due to low power (See Appendix C).

Generalisation of Negative and Positive Contact

Previous research demonstrates that positive and negative contact extends from contact partner to general outgroup (Pettigrew, 2008; Vezzali et al., 2016) and that because of its effect on group membership salience, negative contact may have stronger potential to generalise attitudes (Paolini et al., 2010). The present research is the first to test the potential generalisation of attitudes from both positive and negative contact within the same study. Therefore, this analysis presents a clearer picture of the unique portion of variance in attitudes explained by contact of either positive or negative valence. The results do not replicate the generalisation of positive contact (Pettigrew, 2008), but do provide support for the generalisation of negative contact (Vezzali et al., 2016). Therefore, the current findings are consistent with Paolini et al.'s (2010) conclusion that negative contact is more enduring than positive contact.

The present research additionally supports the contention that contact with a subgroup can generalise to predict prejudice to a superordinate group via prejudice towards the subgroup. Arguably, CHRs constitute a subgroup of an older adult superordinate group. In professional-public contact situations such as those between CWs and CHRs, or between the police and the public, it would be reasonable for professionals to assume the contact partner is a special case. Professionals could perceive these individuals either as sub-types of the larger category (e.g., older people with dementia, illegal immigrants) or as completely separate categories (people with dementia versus people without dementia, criminals versus the general public). In further support of this hypothesis, Vezzali et al. (2016) demonstrated an indirect effect of negative contact with immigrant survivors of a natural disaster to the wider group of immigrants (superordinate group) via attitudes towards the immigrant survivors (subgroup). Future research should test if contact with individuals explicitly

categorised as belonging to a subgroup predicts attitudes towards the superordinate group via attitudes towards the subgroup.

Generalisation of Blatant and Subtle Prejudice

Although no support for generalisation from positive and negative contact to blatant prejudice was found, the present evidence yielded the novel findings that negative contact may generalise in terms of subtle prejudice in the form of the denial of humanness. This finding is consistent with the idea that generalisation of contact effects may depend upon the type of prejudice under consideration, specifically that negative contact, albeit less frequent, may have a deeper impact on certain forms of prejudice (Barlow et al., 2012; Graf et al., 2014). Furthermore it suggests that an additional reason for the durability of negative contact (Paolini et al. 2010) could be its impact on subtle forms of prejudice.

Applied Implications

The generalisation of negative attitudes arising from negative contact with older people is particularly important in the social care context. Care workers are a group of adults who have higher than average levels of contact with older people and may well be a conduit through which other young adults learn about older adults (CWs provide indirect or ‘extended’ contact experiences for other young adults). Moreover, when CWs have negative contact there is clearly a risk that it will generalise to elevate their subtle prejudice towards other older adults in general.

Although the hypothesis that positive contact experiences would be associated with lower prejudice was not supported, the small sample size may have been insufficient to detect such relationships. More research is needed to improve confidence in conclusions about the effects of positive contact in this context. At present, however, the evidence only permits the conclusion that the benefits of positive contact with CHRs

may not spread to older people in general, whereas the disadvantages of negative contact appear to do so.

This is the first empirical research to measure CWs' denial of humanness to CHRs and older adults, and provides some explanation of why CWs may dehumanise to different degrees. The findings reinforce qualitative evidence that CHRs may be vulnerable to dehumanising behaviour (Berdes, 1987; Cayton, 2006; Fiveash, 1998). It has been suggested that dehumanisation facilitates medical decisions and reduces staff stress (Lammers & Stapel, 2011) and is therefore functional (Vaes & Muratore, 2013), but the present study suggests, for the first time, some wider damaging effects of dehumanisation. The findings show that when negative contact stimulates the denial of humanness to CHRs, this subtle negative attitude can also generalise to other older adults. This suggests that although dehumanisation may aid medical staff by facilitating disengagement when making difficult decisions relating to end of life care of older patients, it may permeate to affect their attitudes towards older adults in the wider community that are in good health. Perhaps the relationship between contact and dehumanisation observed by Vaes and Muratore (2013) did not reflect a functional reaction but rather that much of the contact is negative. Thus, rather than accepting dehumanisation as an inevitable functional reaction to contact in health and social care contexts, efforts could be made to reduce the negative aspects of the contact and other sources of stress arising from the contact.

The findings also suggest that CWs' ageism towards CHRs (Bonnie & Wallace, 2003) is related to negative relationships experienced between CWs and CHRs within care homes. Future research should investigate the specific features of contact that make the experience negative in these contexts. This would facilitate the design of interventions to reduce ageism by targeting the particular types of encounter that are most likely to be negative within CWs' daily work schedules. This research also offers

insight into how far reaching the effects of care work could be for ageism in society. It is important that detrimental effects produced by negative relationships within health and social care settings are fully understood and addressed in order to attenuate their effects on attitudes towards older adults more generally.

Limitations and Future Research

Like the majority of studies of intergroup contact, the ability to make strong causal inferences from the present data is restricted because the data are correlational. However, the research is grounded in well-developed theory that is supported (in other domains of contact) by plenty of experimental and longitudinal evidence (Pettigrew & Tropp, 2011). Due to the low pay and long working hours of CWs, and perhaps the sensitive nature of the research topic, acquiring access to large samples is challenging in this area and the final sample size of 56 is a limitation of this study. Despite these obsticles, confidence in the meaningfulness of the present evidence is bolstered by the fact that the measures are internally reliable, and that relationships among variables are consistent with those observed in the wider intergroup contact literature. However, the relationships among variables revealed in this study merit further investigation with larger samples, longitudinal designs and across varied health and social care contexts. Future research should also explore boundary conditions for the generalisation of contact effects on ageism towards older people more widely. For example, the degree to which CWs perceive a status imbalance between themselves and CHRs should be examined. The effects of positive contact are attenuated by unequal group status (Allport, 1954; Gonzalez & Brown, 2003; Pettigrew & Tropp, 2006), but research is yet to examine how group status interacts with the generalisation of negative contact.

A limitation of this study was that it measured the denial of desirable, but not undesirable, human traits (Haslam & Bain, 2007). Research measuring both trait types would facilitate consistency and comparison with the wider dehumanisation literature

(for a review see Haslam & Loughnan, 2014). For the wider literature on intergroup contact, it would be useful to test other instances of generalisation of subgroup contact to superordinate attitudes with other outgroups, for example in the case of ethnicity, sexuality, and other stigmatised groups. In particular it would be interesting to know whether generalisation depends on particular links or similarities between groups (e.g., across dependent or paternalised groups but not between dependent and competitive/non-paternalised groups [cf. Abrams, Houston, Van de Vyver, & Vasiljevic, 2015]) and whether generalisation is moderated by the amount of threat or anxiety aroused by different groups. This is particularly important when the subgroup confirms negative aspects of the superordinate stereotype to a greater degree than the wider outgroup (e.g., immigrant prisoners versus immigrants in general). Additionally, the degree to which the subgroups are sub-typed or treated as a distinct category from the superordinate group may affect outcomes. Arguably, generalisation may occur more readily if the contact partner is sub-typed than if treated as a completely independent category.

Summary

For the first time, this research provides evidence for the generalisation of the denial of humanness stemming from negative contact. Generalisation was not apparent in relation to positive contact and when measuring blatant attitudes as the outcome, showing not only the independent and distinct nature of negative and positive contact, but also the disparity between explicit and more subtle expressions of prejudice. Beyond these theoretical contributions, care workers' attitudes may affect institutional ageism due to the widespread use of health and social care and a lack of meaningful intergenerational contact. More widely, this research highlights the potential for negative contact in occupational settings to generalise to wider outgroups in the form of subtle dehumanising attitudes.

Chapter Summary

The two field studies in this chapter provide a rich picture of how intergenerational contact experienced in real life situations where older adults are dependent or stereotyped as incompetent, affect attitudes and stereotypes. Results of Study 7 suggest that whilst negative stereotypes about older adults' competence are increased, these do not affect overall attitudes towards older adults. However, Study 8 provides a more detailed picture of the influence of both positively and negatively experienced intergenerational contact in such contexts, and how these differentially impact explicit and subtle attitudes towards contact partners and older adults more widely.

The nuanced findings of Study 8 suggest that whilst the detrimental effects of contact on competence stereotypes in Study 7 did not influence explicit attitudes towards older adults, they may have affected more subtle attitudes such as dehumanisation. Collectively, these two studies suggest that future evaluations of intergenerational programmes, service learning programmes or research studies examining intergenerational contact in which older adults confirm negative age stereotypes should widen variables measured beyond just contact and attitudes. Research methodologies should be designed to; measure the degree to which contact in these contexts exacerbates negative stereotypes; test whether the contact is experienced positively or negatively; capture attitudes on more subtle measures; and track how attitudes towards contact partners generalise to less dependent older adults in society. Such methodologies will provide the field with a more detailed understanding of intergenerational contact.

CHAPTER 8: GENERAL DISCUSSION

Abstract

This final chapter summarises the research presented in this thesis. (See Table 15 for an overview of each study's design, sample, variables under investigation and findings). The first section presents a brief overview of the main empirical findings and discusses theoretical contributions to intergenerational contact and wider intergroup contact literature. Applied implications for policy and practice are considered, potential limitations are suggested and a programme for future research.

Summary of Main Findings

This thesis had three aims. The initial aim was to review, integrate and critically evaluate current understanding of the psychological processes inherent in the relationship between intergenerational contact and ageism reduction through the lens of intergroup contact theory (Allport, 1954, Pettigrew & Tropp, 2006). Chapter 3's review identified that good quality and frequent direct intergenerational contact is positively related to favourable attitudes towards older adults. It is effective when experienced within friendships, family relationships and the workplace, but is less reliable when occurring in health and social care contexts. Although experimental studies demonstrate that imagined intergenerational contact reduces ageism, there is a lack of research examining extended intergenerational contact. Finally, whilst intergenerational contact is related to positive age stereotypes, theoretical approaches used are disparate, hampering interpretation of psychological processes across studies.

The second aim of the thesis was to extend theoretical knowledge about the relationship between intergenerational contact and ageism. With this in mind, six studies were designed. Study 1 (Chapter 4) examined associations between modes of

Table 15. *Summary of empirical studies.*

Study	Design	Sample	Independent variables	Dependent Variables/ Mediators/Moderators	Findings
				CHAPTER 4	
1	Survey	231 u/grads *Mage* 21.11	IV1: Contact frequency IV2: Contact quality IV3: Intergenerational friendships	DV1: GES attitudes DV2: Intergroup anxiety DV3: Ageing anxiety DV4: Ingroup norms	Regressions: Contact quality and frequency predict attitudes. Contact quality effect greater than frequency. Correlations: Contact quality and frequency correlate negatively with intergroup anxiety, positively with ingroup norms. Intergroup anxiety negatively correlated with attitudes. Ingroup norms positively correlated with attitudes. Only friendships negatively correlated with ageing anxiety.
				CHAPTER 5	
2	Survey	70 u/grads *Mage* 21.16	IV1: Contact frequency IV2: Contact quality IV3: Extended contact	DV1: GES attitudes	Regressions: Contact quality and extended contact predict attitudes.
3	Survey	110 u/grads *Mage* 21.21	IV1: Contact frequency IV2: Contact quality IV3: Extended contact	DV1: GES attitudes MV1: Intergroup anxiety MV2: Ageing anxiety	Regressions: Contact quality and extended contact predict attitudes. Mediations: Contact quality-attitudes and extended contact-attitudes mediated by intergroup anxiety and ageing anxiety.
4	Survey	95 MTurkers (82% workers, 18% students) *Mage* 24.52	IV1: Contact frequency IV2: Contact quality IV3: Extended contact	DV1: GES attitudes MV1: Intergroup anxiety MV2: Ageing anxiety MV3: Ingroup norms MV4: Self disclosure	Regressions: Contact quality predicts attitudes. In a Meta analysis Studies 2 3 4: Extended contact predicts attitudes. Mediations: Contact quality–attitudes mediated by intergroup anxiety. Extended contact-attitudes mediated by intergroup anxiety and ingroup norms.

			CHAPTER 6		
5	National Survey	2053 general public M_{age} 48.87, range 16–95 years old	IV1: Intergenerational friendships	DV1: SCM Competence MV1: Own age	Moderation: Younger and middle-aged adults stereotyped less when they had intergenerational friendships. Only one friendship necessary to moderate the effect.
6	Survey	201 Prolific Academic respondents M_{age} 23.21	IV1: Contact frequency IV2: Contact quality IV3: Intergenerational friendships IV4: Extended contact	DV1: GES attitudes MV1: SCM warmth MV2: SCM competence	Regressions: Contact quality and extended contact predict attitudes and competence. Contact quality predicted warmth. SEM: Contact quality-attitudes mediated by warmth and competence. Extended contact-attitudes mediated by warmth and competence.
			CHAPTER 7		
7	Experiment	84 u/grads M_{age} 20.42	Direct contact conversation versus control	DV1: GES attitudes MV1: SCM warmth MV2: SCM competence	T tests: experimental group reported more positive attitudes, warmth stereotypes and incompetence stereotypes. Mediations: Contact-attitudes positive relationship mediated by increased warmth stereotypes, but not increased incompetence.
8	Field Survey	56 careworkers M_{age} 40.41	IV1: Positive contact with CHRs IV2: Negative contact with CHRs	DV1: GES CHRs DV2 Dehumanisation CHRs DV3: GES OAs DV4: Dehumanisation OAs	T test: More positive than negative contact experienced. Regressions: Negative contact predicted uniquely human and human nature traits of CHRs, and uniquely human traits of OAs. Indirect effects: Effect of negative contact on dehumanisation dimensions generalised from CHRs to OAs.

direct intergenerational contact (contact quality, frequency and intergenerational friendships),ageism and other key variables; intergroup anxiety, ageing anxiety and ingroup norms (Allan & Johnson, 2010; Lasher & Faulkender, 1993; Pettigrew & Tropp, 2006, 2008). In line with intergroup contact theory, both frequent and good quality intergenerational contact predicted reduced ageism. Although intergenerational friendships were negatively related to ageism, the effect was not independent from contact quality and frequency. All modes of contact were negatively related to intergroup anxiety, but ageing anxiety was only related to intergenerational friendships.

A series of three surveys (Chapter 5) were designed to build upon the findings of Study 1 by examining whether reduced anxieties explain the relationship between intergenerational contact and ageism. Additionally, to address the research gap identified in Chapter 3, the studies tested the novel hypothesis that extended intergenerational contact was related to positive attitudes towards older adults. Across all three studies, frequent intergenerational contact did not predict attitudes towards older adults. In line with previous research, good quality intergenerational contact predicted positive attitudes in all studies, therefore representing a more robust ageism reduction method than frequent contact. Extended intergenerational contact was also a significant predictor of reduced ageism. Intergroup anxiety reliably mediated both contact quality and extended intergenerational contact, whilst ageing anxiety mediated the effects of both contact modes in Study 3 but not Study 4. Social ingroup norms, however, uniquely mediated the relationship between extended intergenerational contact and ageism.

Two studies in Chapter 6 sought to explore the relationship between intergenerational contact, age stereotypes and ageism. In Study 5 national survey data (N = 2053, age range 16 to 95 years old) was analysed to examine how friendships with

older adults were related to age stereotypes and own age. The degree to which individuals held negative stereotypes was attenuated by friendships with older adults, and only one friendship was necessary to achieve this positive effect. However, the benefit of friendships was only effective when it represented an intergenerational friendship. Therefore, friendships with older adults reduced the degree to which negative stereotypes were held by younger and middle-aged adults, but not by older adults themselves.

Study 6 examined if stereotype reduction played a role within the intergenerational contact-ageism reduction relationship. It was hypothesised that the positive effects of direct and extended contact would be mediated by reduced incompetence but not increased warmth stereotypes. In the case of extended contact, the hypothesis was supported. The positive effect of good quality direct contact on attitudes however, was mediated by both competence and warmth stereotypes. Although intergenerational friendships were related to warmth stereotypes and attitudes, again (inline with Chapter 1) these associations were not independent.

The final thesis aim was to explore intergenerational relationships in applied contexts. Chapter 7 examined intergenerational contact in two field studies. Evaluation of a service learning intervention (Study 7) in which young adults had conversations with older adults in a negatively age stereotyped context, identified that whilst contact improved warmth stereotypes, it reduced competence stereotypes. Fortunately, only the positive effect of warmth stereotypes subsequently influenced attitudes and not the negative effect of competence stereotypes. The final study in the thesis (Study 8) examined differently valenced contact within a social care context. Although the majority of care workers' contact experienced with care home residents was positive, negative (but not positive) contact was related to poorer attitudes towards care home residents and furthermore generalised to influence attitudes towards older adults in

general. This relationship, however, was only effective on measures of subtle but not blatant ageism.

In summary, this thesis has produced both corroborative evidence and novel findings to augment understanding of the social psychological processes involved in the relationship between intergenerational contact and reduced ageism. Corroborating existing research, the thesis identified that good quality intergenerational contact is a more reliable predictor of young adults' positive attitudes towards older adults than frequent contact. Additionally, the relationship between good quality direct intergenerational contact and young adults' positive attitudes towards older adults occurs via reduced intergroup and ageing anxieties.

The novel findings of this thesis include demonstrating that extended intergenerational contact reduces young adults' ageism, which occurs via reduced intergroup anxiety, ageing anxiety and incompetence stereotypes, and via increased ingroup social norms. Young and middle-aged adults who have at least one intergenerational friendship are less likely to stereotype older adults as incompetent. Good quality intergenerational contact is mediated by improved warmth and competence stereotypes, yet experiencing intergenerational contact within a negatively stereotype-confirming context leads to increased warmth but decreased competence stereotypes. In this case, the effect of reduced competence does not interfere with the positive effects of direct intergenerational contact on young adults' attitudes towards older adults. Finally, negative but not positive intergenerational contact prompts care workers' dehumanisation of care home residents. This relationship then generalises to detrimentally influence care workers' subtle ageist attitudes towards older adults more widely.

Discussion of Theoretical Contributions

This section presents the corroborative and novel theoretical contributions of the thesis in line with the literature review conducted in Chapter 3.

Direct Intergenerational Contact

Direct intergenerational contact in everyday life.

Outcomes: Dependent measures related to direct intergenerational contact in everyday life. In line with previous research (Bousfield & Hutchison, 2010; Hutchison et al., 2010), young adults' intergenerational contact in everyday life was positively related to favourable attitudes towards older adults across five studies, thus confirming the robustness of this relationship. Thus, young adults who have more social contact with older adults are more likely to have positive attitudes towards them.

Although prior research suggests that direct intergenerational contact is associated with positive age stereotypes (Hale, 1998; Schwartz & Simmons, 2001), Study 6 furthers understanding of this link by identifying for the first time that intergenerational contact in everyday life is independently related to the two SCM dimensions of warmth and competence (Fiske & Cuddy, 2002). It also corroborates previous findings that intergenerational friendships are associated to competence stereotypes (Tasiopoulou & Abrams, 2006). Therefore, young adults who enjoy positive interactions with older adults also perceive them as friendly and competent. Identifying a relationship between intergenerational contact and SCM clarifies prior intergenerational contact research that employed disparate stereotypes measures (Hale, 1998; Schwartz & Simmons, 2001) and allows comparison with wider social psychology research using the SCM.

Moderators: When does direct intergenerational contact in everyday life reduce ageism?

Quality and frequency of contact. The relationship between both quality and frequency of intergenerational contact and young adults' attitudes towards older adults were examined in Study 1, 2, 3, 4 and 6. Controlling for other variables, good quality intergenerational contact predicted young adults' positive attitudes towards older adults across all studies. Frequent intergenerational contact predicted positive attitudes in Study 1, but its effect was smaller than contact quality. Thus, when young adults experience good quality intergenerational contact their attitudes towards older adults are likely to be positive, but merely experiencing older adults frequently in their everyday lives is not guaranteed to have the same association. This finding corroborates prior intergenerational contact research (Bousfield & Hutchison, 2010; Hale, 1998; Knox et al., 1986; Schwartz & Simmons, 2001) and intergroup contact literature (Islam & Hewstone, 1993; Prestwich, Kenworthy, Wilson, & Kwan-tat, 2008; Tawagi & Mak, 2015) which established that whilst contact quality and frequency are both positively related to intergroup attitudes, good quality contact is a stronger predictor.

A similar pattern of results occurred when age stereotypes were the outcome variables. Although contact quality and frequency were correlated with increased warmth and competence stereotypes in Study 6, when analysis controlled for all modes of contact, frequency was no longer associated with stereotypes. Therefore, when young adults experience good quality, but not merely frequent, intergenerational contact they are more likely to perceive older adults as friendly and competent.

In concert, findings across five studies corroborate prior intergenerational and wider intergroup contact literature; the quality of direct intergenerational contact is a stronger predictor of positive intergroup attitudes than frequent intergenerational

contact. Additionally, for the first time, the findings suggest that a similar pattern of results is applicable when intergenerational contact is associated with age stereotypes.

Mediators: How does direct intergenerational contact in everyday life reduce ageism?

Intergroup anxiety. Study 3 and 4 provide corroborative evidence that intergroup anxiety mediates the relationship between intergenerational contact and positive attitudes towards older adults (Bousfield & Hutchison, 2010; Hutchison et al., 2010). In other words, when young adults experience good quality contact with older adults they feel less anxious about interacting with older adults and in turn this improves their attitudes towards older adults. Furthermore, this finding supports the meta-analytic evidence suggesting that intergroup anxiety the most robust mediator of intergroup contact's relationship with prejudice (Pettigrew & Tropp, 2008).

Ageing anxiety. Study 3 revealed that reduced ageing anxiety mediates the relationship between intergenerational contact quality in everyday life and ageist attitudes. Therefore, when young adults experience good quality contact with older adults, they are less worried about their own ageing and thus less ageist. This corroborates previous research demonstrating that ageing anxiety mediates between intergenerational contact and ageism (Allan & Johnson, 2010; Allan et al., 2014). However, relationships between intergenerational contact and ageing anxiety were not consistent across studies of this thesis. In parallel with previous research (Bousfield & Hutchison, 2010), contact quality was not related to ageing anxiety in Study 1. There was, however, an association between the two variables in Study 4, but the mediating effect of ageing anxiety between contact and attitudes did not reach significance. An explanation for these divergent findings may be boundary conditions of the relationship between contact and ageing anxiety. Allan et al. (2014) identify that individual differences are related to ageing anxiety and attitudes towards older adults, and research

from the wider intergroup contact literature reveals that personality traits predict contact (Turner, Dhont, Hewstone, Prestwich, & Vonofakou, 2014). Therefore, future research should examine whether individual differences moderate the relationship between intergenerational contact and attitudes.

Ingroup norms. Although ingroup norms were positively related to good quality direct intergenerational contact and attitudes towards older adults in Study 1 and 4, they did not mediate the contact-attitudes relationship. This is perhaps not surprising as the supporting evidence for these relationships (Davies et al., 2013; Feddes et al., 2009) is less substantial than for other classic mediators of direct contact (for a meta analysis see Pettigrew & Tropp, 2008). Research has identified ingroup norms to be more effective within the relationships between intergroup friendships or extended contact and prejudice (Davies et al., 2013; Turner et al., 2008). These findings mean that young adults who interact more with older adults perceive that their young friends accept these interactions and when young adults believe that their friends approve of interacting with older adults they also have positive attitudes. However, the results suggest that believing that friends condone intergenerational relationships does not explain the relationship between intergenerational contact and young people's attitudes towards older adults.

Self-disclosure. In Study 4, self-disclosure was positively associated with both intergenerational contact and attitudes towards older adults. Although this suggests self-disclosure has the potential to mediate the contact quality-attitudes relationships, the indirect effect was not significant. One reason for this could be young adults' inhibition or intergroup anxiety about communicating with older adults, mitigating the likelihood of sharing personal information. Research shows that young adults often feel patronised by older adults (Giles & Williams, 1994) and that they are more accustomed to interacting with own-age peers (Peacock & Talley, 1984).

Therefore, it may be the case that in order for self-disclosure to mediate the contact quality-attitudes relationship, intergroup anxieties about communications first need to be reduced. This idea is in line with Pettigrew & Tropp's (2008) proposed causal sequence of contact, wherein intergroup anxiety is first reduced in order to allow other mediating variables to lead to prejudice reduction.

Stereotypes. For the first time, Study 6 identified that the relationship between good quality intergenerational contact in everyday life and positive attitudes towards older adults is mediated by improved warmth and competence stereotypes of older adults. Thus, when young adults experience good quality interactions with older adults, they perceive them as friendly and capable, which in turn decreases ageism. These results clarify the independent indirect effects of warmth and incompetence stereotype reduction within the intergenerational contact-attitudes relationship, where prior research had only examined the dimensions collectively (Iweins et al., 2013). Additionally, for the first time, these results identify cognitive mediators of the intergenerational contact-attitudes relationship.

Finding that stereotypes mediate the relationship between contact and prejudice also supports the notion that stereotypes form a justification for intergroup attitudes (Allport, 1954; Stephan et al., 1998; Tajfel, 1981). Future research should seek to corroborate this finding with other target groups.

Intergenerational friendships.

Outcomes: Dependent measures related to intergenerational friendships. Previous research on intergenerational friendships and cross-group friendships more widely predicts that friendships are the most powerful mode of intergroup contact (Davies et al., 2011; Pettigrew, 1998; Van Dussen & Weaver, 2009), but findings from the present research (Study 1, 5 and 6) are divergent. In Study 1 and Study 6, when controlling for other modes of contact, there were no independent relationships between

intergenerational friendships and attitudes towards, or stereotypes about older adults. In Study 5, however, intergenerational friendships were related to less incompetency stereotypes.

One reason for the difference in findings may be that Study 1 (*N* = 231) and 6 (*N* = 201) used smaller populations than Study 5 (*N* = 2053). This sample size difference, coupled with the low prevalence of intergenerational friendships reported, suggests that in order to capture relationships between intergenerational friendships and contact variables large samples are required. Indeed, all prior research examining intergenerational friendships consists of larger samples than Study 1 and 6 (*Ns* > 546; Abrams et al., 2009; Tasiopoulou & Abrams, 2008; Van Dussen & Weaver, 2009; Vauclair et al., 2010).

Moderators: When do intergenerational friendships reduce ageism?

When younger and middle-aged adults have friendships with older adults they ascribe incompetence stereotypes to older adults less than when they have no older friends. Additionally, for older adults, the attenuating effect of having older friends is not effective. These findings support the theory that cross-group friendships reduce prejudice (Davies et al., 2011; Pettigrew, 1998) because having friends from the older adult outgroup reflects cross-group friendships for both younger and middle age adults. For older adults, however, having friendships with other older adults represent an intragroup rather than cross-group friendship.

Improving outcomes across the lifespan. Improving stereotypes about older adults is likely to reduce the degree to which older adults experience negative and patronising attitudes and treatment. It may further attenuate the cycle whereby negative age stereotypes lead to social exclusion of older adults (Cuddy et al., 2007), which in turn reduces opportunities for intergenerational contact (Cuddy et al., 2005). Therefore,

the positive effect of intergenerational friendships on stereotypes can have a broad impact on the lives of older adults.

Additionally, findings from the current research suggest there may be benefits for younger and middle-aged adults. Reducing the degree to which young adults hold negative stereotypes about later life, and therefore the prevalence of such assumptions in society, should reduce stereotype embodiment, and protect young adults from detrimental impacts of negative age stereotypes on their health (Levy & Leifheit-Limson, 2009; Levy, Zoderman, Slade, & Ferrucci, 2009). In addition, reducing the degree to which middle-aged adults hold negative stereotypes about old age should ease their transition into later life. Research shows that changing group memberships can damage self-esteem (Slotter et al., 2015), therefore it would be important for middle-aged to have a less negative view of older adults.

In summary, these findings demonstrate that the positive effects of intergenerational friendships on negative age stereotypes not only influence young adults but also impacts middle aged adults' negative assumptions of later life. The findings also provide interesting lines of future research by suggesting that intergenerational friendships may provide an important means by which to reduce the negative effects of stereotype embodiment (Levy, 2009).

Extended Intergenerational Contact

Outcomes: Dependent measures related to extended intergenerational contact.

Although previous research had examined indirect intergenerational contact in the form of imagined contact, results of Study 2, 3 (Chapter 5) and 6 (Chapter 6) are the first to provide evidence of a relationship between extended intergenerational contact and positive attitudes towards older adults. In other words, merely knowing that friends in their own age group had friendships with older adults was enough to improve young

adults' attitudes towards older adults. This finding furthers understanding of extended contact theory (Wright et al., 1997) by demonstrating that it is effective for age groups.

Even though extended contact effects were not significant in Study 4, a meta-analysis of the three studies in Chapter 5 confirmed that extended contact reduces ageism. One reason for this divergence could be the samples used. Studies 2, 3 and 6 used either student samples or a sample with a majority of recent or current undergraduates, whilst Study 4's sample was mainly non-students. It is possible that when young students know other young students that have older friends, this additional shared identity (being a student) may contribute to the outgroup friendships appearing more normative.

Study 6 additionally examined the relationship between extended contact and stereotypes. Extended contact was positively directly related to competence but not warmth stereotypes. Therefore, when young adults are aware of same-age group friends who have friendships with older adults, they perceive older adults in general to be competent, but this knowledge does not directly influence their perception of older adults as friendly (there is however an indirect effect of extended contact on attitudes via warmth stereotypes, see page Study 6). Although prior research has linked extended contact to stereotypes (Cameron & Rutland, 2006; Munniksma et al., 2013; Vezzali, Hewstone, Capozza et al., 2014) this is the first evidence to demonstrate that extended contact is related to stereotypes as defined by the SCM (Fiske et al., 2002).

Mediators: How does extended intergenerational contact reduce ageism?

Intergroup anxiety. In addition to being a reliable mediator of the effects of direct intergenerational contact on ageist attitudes (Bousfield & Hutchison, 2010; This thesis, Study 3, 4) intergroup anxiety also mediated the effects of extended intergenerational contact on attitudes towards older adults across two studies (Study 3

and 4). When young adults are aware that friends in their age group have positive relationships with older adults, they are less likely to be anxious about having intergenerational contact themselves and in turn are less ageist. This novel finding suggests that extended intergenerational contact works similarly to good quality direct intergenerational contact, and is consistent with wider extended contact literature (for a review see Vezzali, Hewstone, Capozza et al., 2014).

Ageing anxiety. Mirroring results for contact quality, extended contact's influence on attitudes was mediated by reduced ageing anxiety (Study 2). In other words, when young adults are aware that their friends have friendships with older adults, they are less concern about their own ageing and in turn less ageist. This finding adds to the ageing anxiety literature by demonstrating that in addition to creating an indirect path from direct contact to ageism (Allan & Johnson, 2009, Allan et al., 2014), it is also effective in the relationship between extended contact and ageism. Similarly, the finding adds to the extended contact literature (Vezzali, Hewstone, Capozza et al., 2014; Wright et al., 1997) by identifying a further psychological mechanism through which it works, albeit unique to intergenerational contact.

Ageing anxiety's mediating effects, however, were not replicated in Study 4, echoing results across Study 3 and 4 in which the association between extended contact and attitudes was inconsistent. Again, the sample of Study 4 may present a boundary condition to the effects of intergenerational contact on ageing anxiety. Students, compared to non-students, may be more likely to have friends who have friendships with older adults that are more capable (e.g., mature students, professors). Future research should test whether the meditating effects of ageing anxiety within both the extended contact-attitudes and direct contact-attitudes relationships are moderated by the degree to which the older contact partner, or contact context, confirms negative age stereotypes.

Self-disclosure. Although extended intergenerational contact was positively related to self-disclosure and in turn, self-disclosure was positively related to attitudes towards older adults, the indirect effect from extended contact to attitudes via self-disclosure was not significant. Therefore, although young adults who know of same-age friends that have friendships with older adults are more likely to share personal information older adults, and those who share personal information with older adults have more positive attitudes towards older adults, the degree of communication does not explain why extended intergenerational contact reduces ageism. As previously mentioned, it may be necessary for extended contact to first reduce intergroup anxiety about interacting with older adults before mediating variables, such as intergenerational self-disclosure can influence attitudes (Pettigrew & Tropp, 2008).

Ingroup norms. Consistent with wider research on extended intergroup contact (Turner et al., 2008; Vezzali, Hewstone, Capozza et al., 2014), Study 4 confirmed that extended intergenerational contact is mediated by ingroup norms. In other words, when young adults are aware of their young friends' friendships with older adults they perceive that intergenerational friendships are more widespread and accepted by other young adults, which in turn reduces ageism. Finding that extended but not direct intergenerational contact is mediated by ingroup norms supports the original theory citing norms as an integral component of the extended contact effect (Wright et al., 1997). Knowing about other ingroup members' friendships (extended contact) provides information about the ingroups' behaviour and attitudes (ingroup norms). Direct contact, on the other hand, is only informative about the attitudes and behaviours of the individual and the outgroup. This novel finding provides further information about the psychological mechanisms through which extended intergenerational contact reduces ageism, and extends understanding of how extended contact (Wright et al., 1997) reduces prejudice towards older adults.

Stereotypes. Study 6 identified that reduced incompetence and increased warmth stereotypes mediate the relationship between extended intergenerational contact and attitudes towards older adults. Therefore, knowing young friends with older friends reduces the perception of older adults as incompetent, increases the perception of their warmth and in turn reduces ageism. These results extend Study 6's finding that warmth and competence stereotypes mediate the contact quality-prejudice relationship, by demonstrating their effectiveness within the extended contact-prejudice relationship. However, it is worth noting that whilst the indirect paths from contact quality to attitudes via competence and warmth stereotypes are similar in size, competence forms a larger indirect path from extended contact to attitudes than warmth. It could be argued that extended contact works via competence more than warmth as it is a less affective and more cognitive type of contact, when compared to contact quality. Future research should compare the strength of cognitive versus affect mediators for both direct and extended contact.

Health and Social Care Contact

Outcomes: Dependent measures related to health and social care intergenerational contact. Chapter 3 identified that research addressing relationships between intergenerational contact in health and social care contexts and ageism is divergent. To explore this disparity, Study 8 (Chapter 7) examined both positive and negative intergenerational contact experienced by care workers with old age care home residents. In addition to explicit attitudes, a measure of dehumanisation was included to capture and compare a more subtle form of ageism. The survey measured care workers' (N = 56) attitudes towards care home residents and older adults more generally.

In line with prior research examining positive and negative intergroup contact, both types of contact were experienced (Dhont et al., 2010) and positive contact was experienced more than negative contact (Graf et al., 2014). However, negative contact

predicted attitudes towards care home residents, whilst positive contact did not. Importantly, the effect of negative contact was detected by measures of subtle but not explicit ageism. Therefore, when care home workers experience high levels of negative contact with care home residents they are more likely to attribute less humanness to them. This finding presents a number of theoretical contributions. It is the first to demonstrate that negative intergroup contact predicts the denial of humanness, and it suggests a variation in the effects of positive and negative contact depending on the degree to which measures are explicit. For example, positive contact was marginally associated with lower blatant ageism, whilst negative contact was associated is increased subtle ageism. This suggests that whilst positive contact might be associated with explicit attitudes, negative contact has a more powerful effect on subtle prejudice. The nuanced effects of contact on subtle and blatant prejudice depending on valence, may explain why previous literature comparing positive and negative contact is divergent (Barlow et al., 2012; Graf et al., 2014; Pettigrew, 2008).

An important point to consider is that this study focused on individuals who are perceived as warm yet incompetent (Cuddy et al., 2005) and are more likely to experience passive than hostile harm (Cuddy et al., 2007). Future research should examine whether target groups who elicit threat or are perceived as competent and cold, might experience more blatant than subtle prejudice.

Study 8 was the first study to simultaneously test the generalisation of positive and negative contact effects. The findings do not support previous research tracking the generalisation of positive contact (Pettigrew, 2008) but do corroborate the generalisation of negative contact effects (Paolini et al., 2010; Vezzali et al., 2016). Furthermore, the generalisation of negative contact was only apparent on measures of subtle ageism, which supports research suggesting that negative contact is the more durable of the two contact forms (Paolini et al., 2010).

Finally, the findings contribute theoretical understanding about ageism within health and social care contexts. Knowledge is provided about intergenerational relationships between professionals and patients within the social care system, which was previously lacking in the literature. For the first time, the results provide quantitative evidence of dehumanising attitudes in this setting and the subsequent negative consequences. Findings also build on the first study which highlighted dehumanising attitudes towards older adults as colleagues (Wiener et al., 2014), by demonstrating that older adults as recipients of care are also dehumanised.

Negative Outcomes of Intergenerational Contact

Findings from Study 6 demonstrate that intergenerational contact set in neutral, everyday conditions reduces subtle negative stereotypes about older adults' competence, but results of the applied studies in Chapter 8 also highlight the risk of contact in negatively stereotyped contexts, and particularly when contact is negative. Subtle age stereotypes and the attribution of human traits to older adults can be detrimentally affected by contact in these contexts. The results of these applied studies demonstrate that intergenerational contact in negatively stereotyped domains does not reliably improve attitudes towards older adults. Whilst the intimate contact in the intergenerational conversations in Study 7 improved attitudes towards older adults and warmth stereotypes, it also reduced competence stereotypes. Further, care workers' positive contact with older care home residents in Study 8 failed to improve positive attitudes towards older adults or care home residents, either explicitly or subtlety. These two studies represent the only negative relationships between intergenerational contact and outcomes across the thesis and thus highlight the need for further research examining intergenerational contact in applied settings, particularly when negative stereotypes of older adults are salient.

Future intergroup contact research more widely should examine outcomes of contact in which outgroup members confirm or refute their groups' stereotypes. Previous research (Bramillia et al., 2013) and findings from Chapter 6 suggest that the direct effects of contact on stereotypes depend on the content of the groups' stereotype (e.g., high/low warmth/competence) and whether the contact experienced is direct or extended.

Intergenerational Programmes

Outcomes: Dependent measures relating to intergenerational programmes. Study 7 (Chapter 8) evaluated a direct contact learning intervention in which undergraduate students had conversations with older adults about their difficulties with technology. In an experimental design, their post contact attitudes were compared to a control group that had not taken part in the intervention. The intervention students reported more positive attitudes, higher warmth stereotypes but lower competence stereotypes than the control group. The high level of warmth stereotypes corroborates results from Study 6, providing further evidence that direct intergenerational contact improves the degree to which young adults hold warmth stereotypes about older adults. However, the results for competence stereotypes in Study 7 contradict Study 6's finings, whereby direct intergenerational contact improved the perception of older adults' competence. This is the first study to demonstrate that positive intergroup contact can have both a positive and negative effect on SCM stereotype dimensions. The likely reason for this difference is that discussing difficulties using technology highlight older adults' incompetence in that area. This suggests that the degree to which the contact context or task confirms negative age stereotypes alters the effects of intergenerational contact on subsequently rated stereotypes.

Mediators: How do intergenerational programmes contact reduce ageism? In Study 7, further analysis examined whether the stereotypes resulting from the contact

intervention affected the participants' overall attitudes towards older adults. In parallel with Study 6, contact indirectly improved attitudes towards older adults via increased warmth stereotypes. This result replicates Study 6's finding and adds weight to the wider hypothesis that intergroup contact's effects are mediated by warmth stereotypes.

There was no indirect effect of contact on attitudes via increased incompetence stereotypes. In other words, students that had interacted with the older adults discussing technology competencies held more negative stereotypes about older adults competence than those in the control group, but these negative assumptions about older adults did not influence overall attitudes towards older adults. Building on the notion that effects of intergenerational contact on competence stereotypes may depend on the degree to which the contact confirms negative age stereotypes; this finding reassuringly suggests that this negative outcome does not generalise to increase ageist attitudes.

Additional Theoretical Insights

An interesting, unhypothesised finding in the thesis is that across all three studies that measured contact quality and extended contact, these variables were not correlated with each other. In intercultural contact studies (Gomez et al., 2011; Hutchison & Rosenthal, 2011) however, it is typical for contact quality and extended contact to be positively correlated. This finding suggests that although intergenerational contact is similar to intercultural contact in its relationships with other variables (e.g., prejudice, intergroup anxiety), some processes are unique. Differences in social norms that support contact may explain the disparity. As social norms discourage intergenerational relationships (Nelson, 2005), it is unlikely that young adults discuss positive intergenerational contact with other young adults. This would explain why experiencing direct intergenerational contact is not related to knowing about other young adults who experience direct intergenerational contact. On the other

hand, interracial contact is actively promoted as a vehicle to reduce prejudice towards ethnic minorities (Aboud et al., 2003), thus making discussion of this intergroup contact more socially acceptable and perhaps more common. Furthermore, unlike intercultural contact, intergenerational contact is unlikely to occur in contexts shared with other young adults (e.g., at school, in social or recreational situations), which would increase shared knowledge of the contact. Future research should further examine this phenomenon to explore *how* young adults' extended contact is acquired. This may provide unique insights that explain the disconnect between direct and extended intergenerational contact.

Implications for Policy and Practice

The literature review of intergenerational contact research (Chapter 3) identified a range of policy values displayed in Table 1. In addition to reducing ageism, this included increasing prosocial attitudes and volunteering, improving attitudes towards studying and working in older adults health and social care sectors, increased support for age diversity in the workplace, positive work related outcomes for organisations and the potential positive and negative outcomes of intergenerational cohabitation. Therefore, it would appear that better intergenerational relationships also underpin policy objectives such as wellbeing, dignity and respect for older people, protection for human rights, and equal opportunities in the workplace.

Intergenerational Contact Programmes

Perhaps the largest application of findings from the empirical chapters of the thesis is to the design of intergenerational contact programmes. The results suggest that direct intergenerational contact (such as that experienced within a programme) can reduce ageism, especially when the opportunity for good quality contact is provided. Positive outcomes are facilitated by reducing anxiety about intergenerational contact and young adults' fears about their own ageing, and by promoting older adults as

friendly and competent. Tasks designed to enhance all or any of these routes to reduced ageism should increase the positive outcomes of direct intergenerational contact programmes.

Findings across the thesis also suggest that the degree to which older adults confirm negative stereotypes within the contact experience affects outcomes. For example, Study 7 demonstrated that when the contact task highlights negative age stereotypes direct intergenerational contact decreases the perception of older adults' competence, whilst more generally experienced direct intergenerational contact in everyday life does not (Study 6). These results suggest that it is important that practitioners attempt to dispel negative stereotypes about older adults capabilities, particularly in relation to the context or tasks involved in the programme. One manner of avoiding confirmation of incompetence stereotypes is to design contact tasks that are equally suited to younger and older adults, or counterbalance tasks at which one or other contact partner is proficient. Additionally, practitioners should be aware of the degree to which the contact context confirms negative stereotypes. For example, contact within a care setting may highlight older adults' dependencies, thus programme designers should seek to offset this negative implication.

Identification that extended contact reduces ageism is a valuable finding for intergenerational programme designers. Extended contact could be translated into an independent programme, or augment direct contact programmes. The results of this thesis suggest that extended intergenerational contact programmes that promote knowledge sharing about young adults' positive intergenerational relationships should lead to reduced ageism, fewer anxieties about contact with older adults, reduced concerns about own ageing and perceptions of older adults incompetence, and increased perception of the acceptability of intergenerational contact and the warmth of older adults. Such programmes, in which direct contact with older adults is not even

necessary, offer a cost effective solution to improving intergenerational attitudes with many beneficial outcomes.

Extended intergenerational contact programmes also offer potential to increase positive outcomes of direct contact programmes. Learning about other young adults' positive intergenerational contact before direct contact programmes should help to reduce anxieties about the upcoming programme (intergroup and ageing anxieties) and the social acceptability of taking part in the programme (ingroup norms), thus increasing the positive outcomes of the programme. In addition, post-programme promotion of young adults' positive intergenerational contact experienced during direct contact programmes should increase the breadth of effects to a wider audience of young adults.

The potential of extended intergenerational contact to promote positive attitudes towards older adults, intergenerational contact and ageing processes offer important findings in the current social climate, in which age segregation and concerns about ageing appear to be increasing and opportunities for meaningful intergenerational contact is decreasing. Therefore, policies designed to increase society's perception of positive intergenerational relationships have the potential to improve a wide range of outcomes.

Results of Study 6 demonstrate that extended intergenerational contact works via increased competence stereotypes, which is an important finding in light of research showing that ageism is most commonly experienced as disrespect and patronising attitudes (Abrams et al., 2009) which are likely to be linked to incompetence stereotypes. However, comparison of the studies in Chapter 5 suggest that extended contact is more successful at reducing ageism and ageing anxiety when friends' contact experiences are with competent older adults. This suggests that when designing

extended contact interventions, experiences shared should avoid highlighting negative stereotypes about older adults' competence.

Insights from this thesis and an additional review of intergenerational programmes can be found in a report published by Age UK (Drury et al., 2017). The review uses the intergroup contact framework to analyse the success of intergenerational programmes. Findings reveal that most programmes are not based intergroup contact theory but many meet the conditions for successful contact. These include good quality contact, regular contact, institutional support, working towards shared goals and cooperation. Additionally, many tasks involved reflect psychological processes involved in successful contact, including story-telling tasks, learning about the other group and sharing personal information. Unequal group status, however, was a common feature of many unsuccessful intergenerational contact programmes, and requires careful planning to achieve.

Breaking the Cycle of Social Exclusion and a Lack of Contact

Loneliness and social isolation is a prevalent and damaging reality endured by many older Britons (Age UK, 2014). Negative attitudes towards, and stereotypes about, older adults can create a cycle whereby opportunities for intergenerational contact are reduced, thus increasing the social exclusion of older adults (Cuddy et al., 2007). Direct and extended intergenerational contact programmes provide a means of breaking this cycle. Although the benefit of positive intergenerational contact for older adults' lives is clear, it also has the potential to impact the economy as social isolation is positively related poor health (Cornwell & Waite, 2009).

Health and Social Care

Study 8 provides evidence that the quality of social relationships between health and social care professionals and older patients can influence attitudes towards patients. Specifically, social care settings in which care workers experience negative

intergenerational contact with care home residents prompts care workers to attribute less humanness to the residents and older adults more widely. In light of these findings, care home managers and policy makers influencing social care should aim to foster positive relationships between generations. Future research should examine the degree to which the working conditions of care workers might contribute to providing contexts that yield negative contact experiences (e.g., under-supported staff, long shifts, high workload).

Designing Technology for Older Adults

Study 7 highlighted how research strategies employed by technology designers could hamper the development of age appropriate technology. Intergenerational conversations discussing older adults' technology use produced both positive and negative outcomes. In particular, this research method increased designers' incompetence stereotypes of older adults. It is possible that in turn, this would restrict subsequent designs by encouraging an underestimation of older adults' technological capabilities and misunderstanding of their needs (Eisma et al., 2004). A likely result would be inappropriate designs that do not accurately meet the needs of older adults. Technology designers should seek to incorporate discussions or tasks in their intergenerational research methods that highlight older adults' capabilities, in order to counterbalance any negative impact of the discussion around technological needs.

Research Limitations and Future Research

Causal relationships. The survey design of studies in the thesis impeded conclusive evidence of causal directions of the effects of intergenerational contact. Younger adults with more positive attitudes may be likely to experience more positive intergenerational contact. However, a wide body of literature supporting the positive effect of intergroup contact on prejudice reduction (Pettigrew & Tropp, 2006) provides confidence in the direction of relationships inferred in this thesis. This is further

enhanced by the experimental design used in Study 7 allowing for positive attitudes to be attributed to the intergenerational programme. However, future research should incorporate more experimental designs and longitudinal designs tracking intergenerational contact and attitudes overtime. Longitudinal designs would be particularly fruitful for examining attitudes as individuals transfer from one age group to another (i.e. progressing to older age).

Intergenerational friendships. Findings in relation to intergenerational friendships were unfruitful for two of the three studies investigating this type of contact. As previously mentioned, it is likely that the two unsuccessful studies were hampered by small sample sizes. As intergenerational friendships are so rare (Abrams et al., 2009), it would appear that research needs to employ larger sample sizes in order to capture meaningful, informative statistical relationships. This would be an important endeavour for future research as cross-group friendships, when they occur, have the potential to influence outcomes to a greater degree than other types of contact (Davies et al., 2011), and this has been previously demonstrated in the case of intergenerational friendships (Van Dussen & Weaver, 2009).

Intergenerational contact in health and social care. Albeit that existing, reliable scales were used to measure contact experiences across the thesis, it could be argued that the measures of negative and positive contact within health and social care could be improved. The quality of intergenerational contact occurring with ill and infirm older adults may vary from intergenerational contact in other contexts (e.g., coworker contact) and intergroup contact more widely. For example, due to the stresses of providing end of life care, negative contact with older patients may be characterized by less hostile negative emotions such as hopelessness, sadness, frustration and grieving. Qualitative research with health and social care workers should explore and identify indicators of negative contact in these contexts.

As mentioned, findings from Study 7 highlight that the degree to which care workers experience social relationships with care home residents as positive or negative affects their attitudes. However, the sample size employed in Study 7 was small (N =56) and future research should replicate findings with larger samples. Moreover, larger samples would allow for analytical testing of further variables that may be operative within the negative/positive contact-attitudes relationships. For example, the addition of a group salience measure could be used to test Paolini et al.'s (2010) hypothesis that because negative contact increases age group salience, it generalises more readily than positive contact. An additional variable that warrants exploration within this context is empathy. Empathy and compassion are traits often mentioned in the recruitment of health and social care workers (Sumner, 2013). As empathy mediates intergenerational contact (Tam et al., 2006), future research should examine whether positive intergenerational contact within social and health care can increase state empathy, which should in turn improve attitudes towards older patients and older adults more widely.

Behavioural outcomes. Whilst the thesis presents robust evidence that intergenerational contact improves attitudes towards older adults it is also valuable to understand to what degree intergenerational contact decreases age discrimination. Future research should test whether intergenerational contact decreases age discrimination, or whether ageism resulting from intergenerational contact creates an indirect pathway to reduced discrimination. The literature review identified that imagined intergenerational contact was particularly effective at increasing intentions to have more contact in the future (Crisp & Husnu, 2011; Harwood et al., 2015; Husnu & Crisp, 2011), which could be considered as a behavioural outcome, but more investigation of concrete behavioural outcomes would be beneficial. For example, research designs testing whether increased intergenerational contact within the

workplace increase the degree to which older adults might be hired, trained or promoted. Or designs which examine relationships between older adults' experiences of age discrimination within particular settings (e.g., care homes) and the quality of intergenerational relationships experienced by both the younger and older contact partners.

Neglect of middle-aged adults. The aim of this thesis was to examine young adults' attitudes towards older adults. Study 5, however, suggests that intergenerational friendships, even those bridging middle to later life, reduce ageism. As life expectancy increases it is important to be aware that the potential span of intergenerational contact is growing and becoming more complex. Due to their higher status (Gartska et al., 2005), responsibilities for older family members often fall to already over burdened middle-aged children juggling work and other family responsibilities. Thus understanding more about how intergenerational contact affects the attitudes of middle-aged adults has important implications for the future care of older adults.

Contribution of Thesis

Using a mixture of survey and experimental methods this thesis presents corroborative and novel evidence extended understanding of social relationships between younger and older adults. It demonstrates that in addition to good quality intergenerational contact, extended intergenerational contact is effective at reducing ageism. Good quality contact works via reduced intergroup anxiety and ageing anxiety, and increased warmth and competence stereotypes. Extended intergenerational contact reduces ageism via reduced intergroup anxiety and ageing anxiety and increased ingroup norms, warmth stereotypes and competence stereotypes. Intergenerational friendships reduce the degree to which young and middle-aged adults apply incompetence stereotypes to older adults, and are effective even at the level of just one friendship. Intergenerational contact in negatively stereotyped contexts have a positive

effect on warmth stereotypes but a negative effect on competence stereotypes, and if experienced as negative contact detrimentally affect attributions of humanness to contact partners and older adults more widely.

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Appendix A

Full Review of Imagined Intergenerational Contact

Table A1. *Summary of imagined intergenerational contact experiments.*

Study	Experimental design	Task instructions:	Variables measured	Sample	Findings
Turner, Crisp & Lambert, 2007 Study 1	Imagined contact with an older adult vs. control group	IC: imagine conversation, appearance and multiple categorisation task Control: Imagine an outdoor scene	Intergroup bias (preference for younger or older future contact partner)	*N* = 28 18-20 year old students	Control group: Preferred younger to older partner. IC group: No preference for younger or older partner. Conclusion: Ingroup bias in control group but not experimental group.
Turner, Crisp & Lambert, 2007 Study 2	Imagined contact with older adults vs. control group	IC: as Study 1 Control: Think about older adults	Intergroup bias (as above)	*N* = 24 19-26 year old students	Results as above. Conclusion: Provides evidence that results of Study 1 not driven priming in the experimental condition.
Turner & Crisp, 2010	Imagined contact with an older adult vs. control group	IC: Imagine interesting and unexpected things (standard imagined contact task) Control: Outdoor scene	Explicit attitudes (GES) Implicit attitudes (IAT)	*N* = 25 18 – 23 year old students	Compared to control, experimental groups reported less explicit and implicit prejudiced attitudes towards older adults. Conclusion: Imagined contact reduces explicit and implicit ageism.

Husnu & Crisp, 2011 Study 1	Imagined contact with an older adult vs. elaborated imagined contact with an older adult	IC: Standard imagined contact as Turner & Crisp, 2010 Elaborated IC: Imagine when (e.g., next Thursday) and where (e.g., bus stop)	Frequency of expected future contact	*N* =75 students (M_{age} = 20.7)	Higher contact expectations after elaborated imagined contact compared to standard imagined contact. Conclusion: Imagined contact also increases intensions to have contact in the future, which can be enhanced by imagining more elaborated encounter.
Husnu & Crisp 2010 Study 3	Imagine contact with an older adult vs. elaborated imagined contact with an older adult.	As per Husnu & Crisp (2011, Study 1) Return next day, recall imagination task, complete DVs	Script availability – measured by ease and confidence of recall the next day.	*N* = 60 19 – 41 year old students	Greater script availability in the elaborated contact condition. Conclusion: Elaborated contact superior as it provides easier and quicker recall of imagined scenarios.
Crisp & Husnu, 2011	2 (Imagined contact vs. control group) x 2 (Visual perspective: 1st vs. 3rd)	IC: Standard imagined contact Control: Outdoor scene Perspectives: Imagine taking the 1st (3rd) person perspective	Future contact intentions Self attributions of positive outgroup attitudes	*N* = 60 students (M_{age} = 21.44)	IC groups reported more future contact intentions than controls. This effect was mediated by self attribution of positive attitudes IC 3rd person perspective group reported more future contact compared to control groups. There were no differences between IC 1st person perspective group and control group on future contact intentions. Conclusion: IC increases attribution of positive intergroup attitudes which under lies the effect, this differentiates imagined from extended contact.

Birtel & Crisp, 2012	Imagined contact with an older adult vs. control group	IC: Imagine making a video message for older person (things in common). Control: Outdoor scene	Performance anxiety Communication quality Stroop test	*N* = 38 students (M_{age} = 21.39)	IC, high anxiety participants demonstrated good communication quality, compared to control, high anxiety participants. IC, high anxiety participants experienced more Stroop interference than control, high anxiety participants Conclusion: The detrimental effect of anxiety on contact communications can be counterbalanced by IC, but it requires high levels of cognitive resources
Abrams et al., 2008 Study 2	Stereotype threat (ST) with imagined contact with a younger adult vs. ST + IC control vs. control (no ST threat)	IC: Imagine contact (as Turner et al., 2007, Study 1). Control: Outdoor scene	Maths test performance Prior contact with Grand children Test anxiety	*N* = 84 older adults (M_{age} = 72.22)	Maths performance worse in ST + Outdoor scene group performance compared to all other groups. No difference on Maths performance of ST + IC group compared to no ST threat group. This effect mediated by reduced test anxiety. Conclusion: Imagined contact with a younger person mitigates age-based stereotype threat for older adults by reducing anxiety.

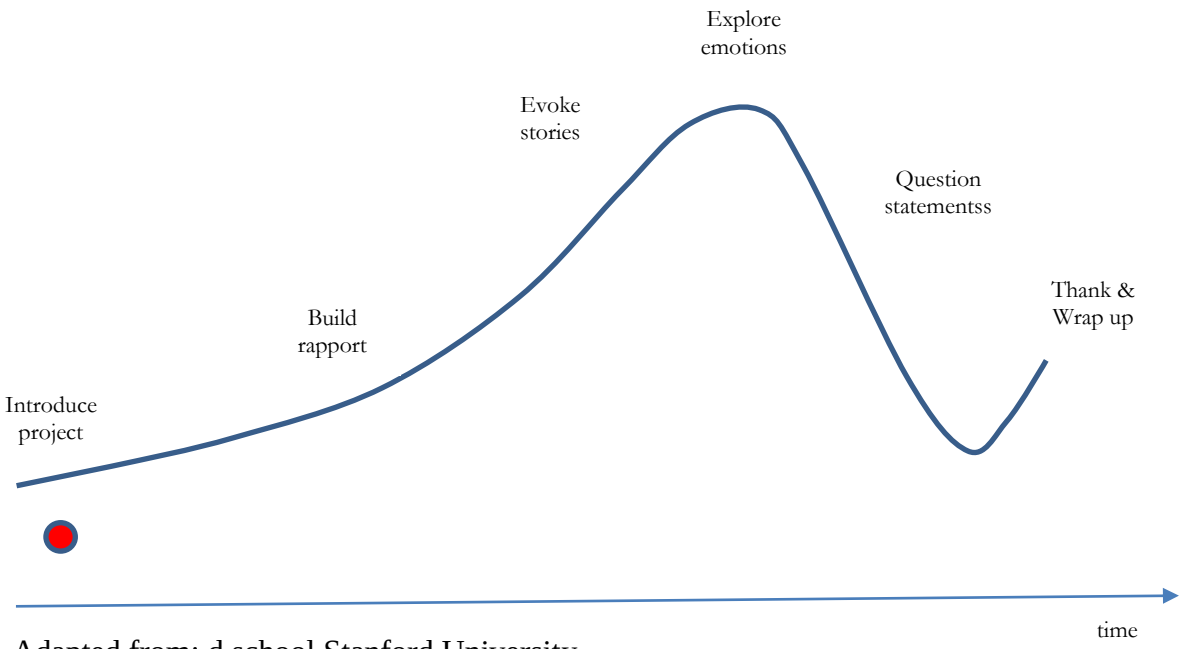
Harwood et al., 2015	Imagined positive contact vs. imagined negative contact with older adult	IC: Imagine positive or negative communication	Group typicality Future contact intentions	*N* = 288 students (M_{age} = 72.22)	Positive contact group perceived imagined older adult more typical of older adults outgroup. When contact partner typical, positive contact participants reported higher future contact intentions than the negative contact participants. But when contact partner atypical, positive contact participants reported less future contact intentions than negative contact participants. Conclusion: The effects of negative and positive communication during imagined contact can have varied effects depending upon the typicality of the imagined contact partner.

Appendix B

Study 7: Student Intergenerational Conversation Instructions

Your aim is to carry out two empathic conversations with older adults (preferably male and female) over 60 years of age. These could be your grandparents, your older relatives, older acquaintances or older people you now fairly well. The conversation should be carried out in person, or, in exceptional circumstances, via Skype. Telephone conversations do not count. Each conversation is to be conducted separately. The idea behind this task is for you to observe people's reactions, body language, facial expressions, in order to empathise with their stories, i.e. put yourself in their shoes.

Format of the empathic conversation



Adapted from: d.school Stanford University

Introduce project

In the beginning, explain that you will be carrying out a conversation ('I would like to have a little chat with you'), and recording it on your phone. Tell them how long it will take (between 30-40 minutes), and explain why you are doing it (it is part of your university degree; you are involved in research which investigates how digital technology designers can better understand the needs of wide variety of users; views of older people, in particular, are very valuable). The empathic conversation which shows

the greatest level of engagement and partnership will be awarded £20 in Amazon vouchers.

How to begin the conversation

Start by telling them a little bit about yourself; your interests and hobbies, your studies. In return, encourage them to tell you about their interests and hobbies to get the conversation underway. This will help you establish a rapport with your conversation partner.

Share with them your hopes and fears for the future. Encourage them to share theirs with you. There should be an equal amount of turn-taking between the conversation partners. Once the rapport is established, start by asking them to tell stories based on the questions overleaf. Bear in mind that the conversation should not turn into a quick firing question at the participant. This is not the point of the exercise; you should aim to establish a rapport by contributing equally.

The following questions should guide your conversation, however feel free to ask additional questions to clarify things:

1. What was it like growing up in your days? You can ask about the following:
   - their hobbies
   - music they listened to
   - games they played
   - how youngsters behaved
   - their education
   - boys' and girls' roles in the family
   - their relationship with their parents and sibling relationship
   - their experience of getting a job
   - experience of working

To keep the conversation going you should volunteer information about yourself to make sure that your conversation partner can understand your experience as well.

2. What is the most memorable event from your childhood?

3. Tell me about the technology you used when you were my age?
   You should check half way through the conversation that the participant is happy to carry on. You should also remind them that they are free not to answer any questions if they don't feel like it.

4. What technology do you use now? What do you use it for? Tell me about the time when you were helped by technology.

5. Tell me about the time when you were frustrated/let down by technology.

6. Thinking about public spaces such as high street, public libraries, supermarkets, public transport, do you use technology in these places? (e.g., ATM machines, ticket machines, self-service tills, touch-screen information kiosks, etc.)? If yes, how do you find the interaction with these devices? If no, what is stopping you from using them? What would you change and how?

Thank your conversation partner and wrap-up.

During the conversation

- Watch and listen actively – what is the other person saying, what is their body language, what does it tell you about them? Make mental notes.
- Encourage stories – whether or not they are true, they reveal how people think about the world; ask questions to get people to tell stories.
- Ask why – even when you think you know the answer, ask people why they do or say things. The answers may surprise you.
- Use humour – humour helps move the conversation forward and puts people at ease
- Imagine – 'put yourself in another person's shoes', how would you feel in this situation?
- Don't be afraid of silence – if you allow for silence, a person can reflect on what they have just said and may reveal something deeper
- Don't ask binary (yes/no) questions – conversations are built on stories, not yes/no answers
- Show you care – let them know that you care through your words and actions

Difference between a conversation and an interview

Be mindful that your conversation does not become an interview where you simply fire away questions at your conversation partner. Questions are simply there to guide you and give you structure. In an interview situation the relationship between the two people is not equal: the interviewer is in a position of power, whereas the interviewee answers questions and may not feel an equal partner. Your aim is to engage in an equal conversation as far as possible.

What you should submit:

1. Tow conversation transcripts; each transcripts should include age, gender, nationality of the participants as well as duration of the conversation and the mode (face-to-face, Skype)

2. Analysis of the transcripts and personal reflection (500-800 words)
    a. Analyse the transcribed conversations in some detail, in particular:
        i. What are the similarities and differences between the two conversations? Consider participants contribution to the conversation in terms of content, their willingness to engage and share information; their body language.
        ii. Analyse their use of technology. What barriers and challenges do they face?
        iii. Were there any difference between genders, if any? If yes, in what respect?
        iv. Were there any difference between ages, if different? Yes, in what respect?
        v. Any other observations you have made in addition to the above?
    b. Reflect on the experience as a participant:
        i. How does your life experience differ from that of the two conversation partners? Are there any similarities? Try to reflect on these experience in some detail. Don't' just reproduce text from the conversations.

ii. What is your impression of older adults and their life experience? Has the conversation made you think of older people differently, or have your views not changed?

iii. What interesting new things have your learnt about older people as well as yourself from the experience of carrying out these conversations?

iv. Any other reflections you have made in addition the above?

Table B1: *Ideal conditions and psychological processes of positive intergenerational contact demonstrated in the intergenerational conversation instructions for Study 7.*

Ideal conditions and psychological processes of intergenerational contact	Examples from intergenerational conversation instructions
Institutional support	Explain why you are doing it…..it is part of your university degree
Equal status	"views of older people, in particular, are very valuable" To keep the conversation going you should volunteer information about yourself to make sure that your conversation partner can understand your experience as well. you should aim to establish a rapport by contributing equally. Be mindful that your conversation does not become an interview where you simply fire away questions at your conversation partner. Questions are simply there to guide you and give you structure. In an interview situation the relationship between the two people is not equal: the interviewer is in a position of power, whereas the interviewee answers questions and may not feel an equal partner. Your aim is to engage in an equal conversation as far as possible.
Good quality contact	Start by telling them a little bit about yourself; your interests and hobbies, your studies. In return, encourage them to tell you about their interests and hobbies to get the conversation underway. This will help you establish a rapport with your conversation partner. Show you care – let them know that you care through your words and actions

Table B1 …*continued*

Ideal conditions and psychological processes of intergenerational contact	Examples from intergenerational conversation instructions
Self-disclosure	Share with them your hopes and fears for the future. Encourage them to share theirs with you. There should be an equal amount of turn-taking between the conversation partners. What was it like growing up in your days? Encourage stories – whether or not they are true, they reveal how people think about the world; ask questions to get people to tell stories. To keep the conversation going you should volunteer information about yourself to make sure that your conversation partner can understand your experience as well.
Story telling	Start by asking them to tell stories based on the questions overleaf What was it like growing up in your days? Encourage stories – whether or not they are true, they reveal how people think about the world; ask questions to get people to tell stories.
Shared humour	Use humour – humour helps move the conversation forward and puts people at ease
Perspective taking and empathy	Imagine – ‘put yourself in another person’s shoes’, how would you feel in this situation? What is your impression of older adults and their life experience?
Common ingroup identities	How does your life experience differ from that of the two conversation partners? Are there any similarities?
Positive contact	What interesting new things have your learnt about older people

Appendix C

Power Analyses

Table C1 presents details of post hoc power analyses for the correlations and t tests was conducted for key variables examined in the thesis: intergenerational contact quality and explicit positive attitudes towards older adults.

Table C1. *Power achieved for the relationships between direct contact quality and explicit positive attitudes towards older adults.*

Study	Design	Independent variable	N	Effect size	Power achieved
1	Correlation	Contact Quality	231	r = .43	1
2	Correlation	Contact Quality	70	r = .38	.91
3	Correlation	Contact Quality	110	r = .39	.99
4	Correlation	Contact Quality	95	r = .43	.99
5	Correlation	Quality not measured	-	-	-
6	Correlation	Contact Quality	201	r = .45	.99
7	T test	Contact versus control	84	d = .60	.85
8	Correlation	Positive Contact	56	r = .33	.81
		Negative Contact		r = -.13	.25

Note: All studies used alpha = .05. For Studies 1-4, 6 and 8 analyses were conducted using G*Power set to: Test family: Exact. Statistical test: Correlation Bivariate Normal Model. Type of Power Analysis: Post Hoc: Compute achieved power – given alpha, sample size and effect size. For Study 7: Family test: t tests, statistical test: Means: Difference between two independent means (two groups), Type of power analysis: as for Studies 1-4. Power analysis was not conducted for Study 5 as this was focused on different variables.

Discussion of power analyses

A review of power attained indicates that good power of over .80 (Cohen, 1988) was achieved for Study 1 to 4, 6 and 7. Therefore, the sample sizes were sufficiently large to detect significant relationships between the quality of intergenerational contact and ageist attitudes towards older adults, thus avoiding a Type II error. In Study 8, although there was sufficient power to detect an association between positive contact and explicit ageist attitudes, the study was underpowered in relation to negative contact (.25). Therefore, it is possible that a relationship between negative contact and explicit attitudes towards older adults exists but the sample size not large enough to capture such an effect.

Appendix D

Post Hoc Analysis Study 1

Post hoc exploratory analysis was requested to examine whether intergroup anxiety and ageing anxiety mediated the relationship between contact quality and positive attitudes towards older adults.

Using PROCESS model 4 (Hayes, 2013), contact quality was entered as the independent variable, positive attitudes towards older adults as the dependent variable with intergroup anxiety and ageing anxiety as mediators. Additionally, contact frequency, intergenerational friendships, age and gender were added to the model as covariates. The total effect of contact quality on attitudes was significant, .30, *SE* = .05, *t* = 5.70, *p* < .001, 95% *CI* [.20, .41], in addition to direct effect .25, *SE* = .06, *t* = 4.52, *p* < .001, 95% *CI* [.14, .36]. The total indirect effect through both mediators was significant .06, *SE* = .03, 95% *CI* [.02, .12], as was the independent indirect effect via intergroup anxiety .06, *SE* = .03, 95% *CI* [.02, .12]. The indirect effect via ageing anxiety was non significant -.0001, *SE* = .01, 95% *CI* [-.01, .01]. These findings suggest that the quality of young adults intergenerational contact with older adults is related to their positive attitudes towards older adults via a reduction in intergroup anxiety but not ageing anxiety.

Discussion of results.

Finding that intergroup anxiety mediated the relationship between contact quality and positive attitudes towards older adults supports the findings of Study 3 and Study 4. Therefore, the overall results of this thesis present robust evidence that the degree to which young adults enjoy good quality contact with older adults reduces their anxieties about interacting with older adults, which in turn improves their attitudes towards older adults. This finding is in line with previous intergenerational contact

research (Bousfield & Hutchison, 2010; Hutchison et al., 2010) and wider contact literature reporting contact with other outgroups (Pettigrew & Tropp, 2008).

The non significant mediation via ageing anxiety supported findings of Study 4 but not Study 3. These inconsistent findings across the thesis mirror inconsistent findings in the wider intergenerational contact literature (Allan & Johnson, 2010; Allan et al., 2014; Bousfield & Hutchison, 2010), lending further weight to the need to explore boundary conditions of this effect (for a fuller discussion see page 234 of this thesis).

In summary, this additional analysis supports other outcomes of the research reported in this thesis. Intergroup contact emerges as a robust mediator of relationship between contact quality and positive attitudes towards older adults, whilst more research is needed to explore possible conditional effects that vary the reliability of contact quality's indirect effect on attitudes via reduced anxiety.