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The science of congregation studies and psychographic segmentation: O come all ye thinking types?



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Previous research employing Jungian psychological type theory has both demonstrated that Church of England inherited congregations have problems engaging thinking types and suggested that fresh expressions of church have failed to address that problem. Three previous studies, however, have reported higher proportions of thinking types attending cathedral carol services. The present study was designed to check that finding on a larger sample. The Francis Psychological Type Scales were completed by 941 participants at the afternoon Carol Services held in Liverpool Cathedral on Christmas Eve 2019, and the data compared with the profile of 3304 participants within 140 inherited congregations. The present study also found a higher proportion of thinking types among the participants at these carol services. These findings suggest that cathedral carol services may be functioning as fresh expressions of church in a significant way. Further research is needed to explore whether other cathedral services may function in similar ways.

Contribution: Situated within the science of congregation studies, rooted in psychological type theory and drawing on data from 941 participants at the afternoon Carol Services held in Liverpool Cathedral on Christmas Eve 2019, this study confirms that cathedral carol services at Christmas are more successful than either inherited church or fresh expressions of church in reaching thinking types.

Keywords: congregation studies; cathedral studies; psychological type theory; fresh expressions; carol services; Christmas.

Introduction

The science of congregation studies as conceptualised by Francis and Lankshear (in press) has much in common with the wider fields of studies in leisure and tourism. Both are concerned with identifying the characteristics of participants, and with establishing the differentiating correlates of these characteristics. Both may also be concerned with exploring constraints on the growth and diversification of their respective markets. Like congregation studies, studies in leisure and tourism are well familiar with the utility of sociological theory and sociological segmentation for understanding patterned individual differences in interests, behaviours and expectations (see Apostolopoulos, Leivadi & Yiannakis 2001; Cohen & Cohen 2019; eds. Kozak & Decrop 2008; Kumar 2018). From sociological perspectives, there are clearly established correlates of sex, age and socio-economic status in choices, behaviours, expectations and consumer patterns within the leisure and tourism industries.

Although much less visible than these sociologically defined variables (sex, age and socio-economic status), psychological theory and psychological segmentation have also been shown to function as significant predictors of patterned individual differences in interests, behaviours and expectations relevant both to the leisure industry and to the tourism industry. Among the psychological variables brought to these fields of study, the big five factor model of personality proposed by Costa and McCrae (1992) and the major three dimensions model of personality proposed by Eysenck and Eysenck (1991) have proved fruitful, alongside other focussed psychological constructs (Abbate & Di Nuovo 2013; Driver & Knopf 1977; Frew & Shaw 1999; Furnham 1990; Kvasova 2015; Lee-Hoxter & Lester 1988; Madrigal 1995; Nolan & Patterson 1990; Plog 2002; Ross 1998; Tan & Tang 2013; Weaver 2012). It was within this context that Gountas and Gountas (2000) introduce psychological type theory to research in leisure and tourism studies, by exploring the psychological type profile of passengers from 12 UK airports to a variety of European and long-haul destinations. Their data indicated that different psychological types prefer different holiday and leisure activities. The connection among psychological type, leisure preferences and tourism behaviours has been further explored and discussed by Gountas and Gountas (2001), Gountas (2003), Gountas, Dolnicar and Gountas (2011) and Laesser and Zehrer

(2012). Building on these foundations, another group of studies has focussed specifically on the psychological type profile of visitors to cathedrals (Francis et al. 2008, 2010, 2012; Francis, Robbins & Annis 2015). Collectively, these studies have found consistent psychological patterns among cathedral visitors that help to illustrate how the visitor experience may be effectively managed to accommodate the interests and predispositions of those most likely to visit.

Psychological type theory

Within the broader field of personality psychology, psychological type theory holds a distinctive position, differing from the big five factor model (Costa & McCrae 1992) and the three major dimensions model (Eysenck & Eysenck 1991) in three key ways. Firstly, while the five factor model and three dimensions model are derived from exploring economical ways of summarising the interconnections among a wide range of human characteristics, psychological type theory originates in a theoretical model of human mental functioning (Jung 1971). Secondly, while the five factor model and three dimensions model conceptualise individual differences as continua, psychological type theory proposes binary typologies. Thirdly, while the five factor model and three dimensions model embrace a range of different psychological indicators that include aspects of character and aspects of pathologies, psychological type theory focusses exclusively on non-evaluative aspects of individual differences (see Lloyd 2015).

While psychological type theory is rooted in the work of Jung (1971), the theory has been developed and modified by a series of psychometric instruments, including the Keirsey Temperament Sorter (Keirsey & Bates 1978), the Myers-Brigg Type Indicator (Myers & McCaulley 1985) and the Francis Psychological Type Scales (Francis 2005; Francis, Laycock & Brewster 2017). Jung's theoretical model of human functioning focusses on distinguishing two different sources of energy and distinguishing two fundamental psychological processes, styled as the perceiving process and the judging process.

In psychological type theory, the two sources of psychological energy, the orientations, distinguish between extraversion and introversion. Extraverts (E) are orientated towards the outer world; they are energised by the events and the people around them. They enjoy communicating and thrive in stimulating environments. Their focus is on what is going on around them. Introverts (I) are orientated towards their inner world; they are energised by their inner ideas and concepts. They enjoy solitude, silence and contemplation. Their focus is on what is happening in their inner life.

In psychological type theory, the perceiving process is concerned with gathering information and not with evaluating that information. It is for this reason that Jung styles perceiving as the irrational process. For Jung, the perceiving process distinguishes between two opposing functions, styled as sensing and as intuition. Sensing types (S)

focus on the realities of a situation as perceived by the senses. They focus on specific details, rather than on the overall picture. Intuitive types (N) focus on the possibilities of a situation, perceiving meaning and connections. They focus on the overall picture, rather than on specific facts and data.

In psychological type theory, the judging process is concerned with the evaluation of information. It is for this reason that Jung styled judging as the rational process. For Jung, the judging process distinguishes between two opposing functions, styled as thinking and feeling. Thinking types (T) make decisions and judgements based on objective, impersonal logic. They are known for their truthfulness and for their desire for fairness. They value integrity and justice. For them, the mind is more important than the heart. Feeling types (F) make decisions and judgements based on subjective, personal values and interpersonal concerns. They are known for their tactfulness and for their desire for peace. They value compassion and mercy. For them, the heart is more important than the mind.

In psychological type theory, the four functions can each be expressed in the inner world or in the outer world. Individuals who extravert their preferred judging function (either thinking or feeling) are styled judging types (J), and individuals who extravert their preferred perceiving function (either sensing or intuition) are styled perceiving types (P). Judging types seek to order, rationalise and structure this outer world, as they actively judge external stimuli. They prefer to make decisions quickly and to stick to their decisions once made. They enjoy routine and established patterns. Perceiving types do not seek to impose order on the outer world, but are more open and reflective, as they perceive external stimuli. They enjoy change and spontaneity. They have a flexible open-ended approach to life.

The four components of psychological type theory can be employed in a variety of ways, focussing on the four dichotomies individually (the two orientations, I and E; the two perceiving functions, S and N; the two judging functions, T and F; the two attitudes to the outer world, J and P), combining the four dichotomies into 16 complete types (e.g. ISTJ or ENFP), identifying the strongest or dominant type preferences for individuals (dominant sensing, dominant intuition, dominant thinking or dominant feeling) and drawing on the work of Keirsey and Bates (1978) to consider the four temperaments (SJ, SP, NT, NF).

Congregation studies

Psychological type theory was introduced into congregation studies in North America by Gerhardt (1983), Delis-Bulhoes (1990), Ross (1993, 1995), Rehak (1998), Bramer and Ross (2012) and Royle, Norton and Larkin (2020), in England and Wales by Craig et al. (2003), Francis et al. (2004), Francis et al. (2007b), Francis, Robbins and Craig (2011), Francis and Robbins (2012), Village, Baker and Howat (2012), Lewis, Varvatsoulas and Williams (2012), Francis (2013), Lankshear and Francis (2015), Francis, Wright and Robbins (2016) and Lewis, Francis and

Geary (2020) and in Australia by Robbins and Francis (2011, 2012) and Robbins, Francis and Powell (2012).

The psychographic segmentation of church congregations allows the question to be addressed as to whether churches attract a wide range of people who represent the distribution of psychological type within the population, or whether churches tend to gather together a more homogeneous group of people. Reflecting on their initial pilot study of Anglican churchgoers, a sample comprising of 185 adults attending small congregations in rural Wales, Francis et al. (2007b) note the high concentration of two of the 16 complete types (ISFJ and ESFJ) and compared this concentration with the population norms published for the United Kingdom by Kendall (1998). Among women, ISFJ accounted for 32% of churchgoers, compared with 18% of the general population and ESFJ accounted for 28% of churchgoers, compared with 19% of the general population. Among men, ISFJ accounted for 19% of churchgoers, compared with 7% of the general population and ESFJ accounted for 27% of churchgoers, compared with 6% of the general population. The over-representation of these two types inevitably led to under-representation of other types. The two main weaknesses with the study, concentration on small congregations in rural Wales and a small sample, lessened confidence in the stark findings.

In a much more substantial replication of this initial study, Francis et al. (2011) draw together data from 2133 women and 1169 men surveyed in the context of 140 Anglican church services from a range of locations in England. The findings from this larger study were remarkably similar to the findings from the smaller study (especially among women). Among women, ISFJ accounted for 25% of churchgoers, compared with 18% of the general population and ESFJ accounted for 25% of churchgoers, compared with 19% of the general population. Among men, ISFJ accounted for 17% of churchgoers, compared with 7% of the general population and ESFJ accounted for 11% of churchgoers, compared with 6% of the population.

Reviewing the findings from these two studies, Francis and Robbins (2012) advance the hypothesis that if introverts, sensing types, feeling types and judging types (ISFJs) constitute the majority of Anglican churchgoers, extraverts, intuitive types, thinking types and perceiving types (ENTPs) are the least likely to feel at home in the churches they attend. Francis and Robbins (2012) test this hypothesis among a sample of 1867 churchgoers who completed a measure of psychological type, together with a measure of frequency of attendance and an index of congregational satisfaction. These data confirmed that congregations were weighted towards preferences for introversion, sensing, feeling and judging (ISFJ), and the individuals displaying the opposite preferences (extraversion, intuition, thinking and perceiving) recorded lower levels of congregational satisfaction. On the basis of these findings, Francis and Robbins (2012) take the view that, not only were extraverts, intuitive types, thinking types and perceiving types less in evidence in church congregations,

but those who were there were expressing lower levels of congregational satisfaction and thus more likely to join the growing community of church leavers (see Francis & Richter 2007; Richter & Francis 1998).

The two main weaknesses with the congregation profile reported by Francis et al. (2011) that caution against wider generalisation of the findings concern the geographical and denominational restrictions to England and to Anglican churches. However, in a further replication of their original study among 881 women and 593 men surveyed in the context of Catholic Church services from a range of locations in Australia, Robbins and Francis (2012) again find similar outcomes. Among female Australian Catholic churchgoers, 25% reported ISFJ and 22% reported ESFJ. Among male Australian Catholic churchgoers, 16% reported ISFJ and 14% reported ESFJ.

Looking for thinking types

The absence of thinking types from Anglican church congregations may give rise to concern in light of the uneven distribution of thinking preferences between men and women. According to the UK population norms published by Kendall (1998), while 65% of men prefer thinking, the proportion falls to 30% among women. In other words, the thinking function characterises a male way of evaluating situations, and the feeling function characterises a female way of evaluating situations. This observation needs to be considered alongside two other routine findings.

Firstly, in Anglican congregations, there are roughly two women for every one man. For example, in their recent survey of 31521 churchgoers throughout the Anglican Diocese of Southwark, Francis and Lankshear (in press) report that 35% were male and 65% were female. The feminisation of church congregations is reflected not only in the predominance of women, but also in the predominance of the judging preference for feeling. Secondly, psychological type research conducted among Anglican clergymen demonstrates that they are much more likely to prefer feeling than men in general. According to Francis et al. (2007a), 54% of Church of England clergymen prefer feeling, compared with 35% of men within the population as a whole.

Recognising the potentially restricted reach of existing inherited congregations, in the report *Mission-shaped Church*, the Church of England (2004) urged the church to be creative in exploring a variety of ways through which people are engaged in changing social contexts. The subtitle to this influential report identified two mechanisms by which such engagement should be achieved: church planting and fresh expressions of church. In association with the Church Army Research Unit, the Church of England has stimulated research into assessing the success of fresh expressions in reaching constituencies less well accessed by inherited church (Church Army's Research Unit 2013; Dalpra & Vivian 2016; Lings 2016). Exploring access to psychological types less well accessed by inherited church has not featured within

this research programme. A few other studies have, however, explored whether fresh expressions of church were reaching those psychological types inherited church find hard to reach. Francis, Clymo and Robbins (2014) draw data from 74 women and 49 men attending fresh expressions of church and compared the profiles of those participants with the profiles generated by Francis et al. (2011) of 2133 women and 1169 men attending inherited congregations. They found that fresh expressions were attracting higher proportions of intuitive types among women and men, a higher proportion of extraverts among women and a higher proportion of perceiving types among men. However, these fresh expressions of church were not attracting more thinking types.

In a second study, Village (2015) draws on data generated by the 2013 *Church Times* survey to compare the psychological type profiles within the same survey of those who reported attending fresh expressions and those who reported not attending fresh expressions. The results for this study were quite close to the findings reported by Francis et al. (2014). Village (2015) reports that both men and women who attended fresh expressions showed stronger preferences for intuition and for extraversion; and that women who attended fresh expressions showed a stronger preference for perceiving. Neither men nor women who attended fresh expressions showed a stronger preference for thinking.

In a third study, Francis et al. (2016) undertake a case study of one church that hosted three Sunday congregations, two in the form of inherited church and one in the form of a fresh expression of church. While no significant differences were found between the two inherited church congregations ($n = 43$ and 110) and the profiles reported by Francis et al. (2011), the fresh expression of church congregation ($n = 43$) was found to contain a significantly higher proportion of intuitive types. Once again, however, the fresh expression of church congregation was failing to attract a higher proportion of thinking types.

In a fourth study, Aspland (2019) compared the psychological type profiles of 34 male and 154 female participants across 41 Messy Churches as a distinctive fresh expression (see Moore 2006; ed. Paul 2017). These data found no significant differences across any of the four constructs proposed by psychological type theory.

The consistent negative conclusion across all four studies exploring the psychological type profile of participants engaged with fresh expressions of church is that these fresh expressions have so far failed to engage more with thinking types than is the case for inherited church. The difference between the thinking preference and the feeling preference is a profound difference and one that it may be particularly difficult for the inherited church (i.e. giving rise to fresh expressions) to grasp. This profound difference concerns the ways in which thinking types and feeling types engage with the domain of religion. Thinking types engage first with their

heads and are concerned with examining the logical coherence of religious teaching and religious beliefs. Feeling types engage first with their hearts and are concerned with experiencing and with participating in the community of interpersonal relationships and values that characterise the religious community. Fresh expressions may be better at modelling the relational approach to faith than modelling the critical approach.

O come all ye thinking types

It is against this background of the failure both of inherited church and of fresh expressions of church to engage with thinking types that the findings of Walker's (2012) study among 164 men and 239 women who attended two Christmas Carol Services in Worcester Cathedral in 2009 are so intriguing. Walker's data found that 69% of the men attending his cathedral carol services preferred thinking, compared with 58% in ordinary Anglican congregations (Francis et al. 2011) and 65% in the UK population (Kendall 1998). Walker's data found that 39% of the women attending his cathedral carol services preferred thinking, compared with 30% in ordinary Anglican congregations (Francis et al. 2011) and 30% in the UK population (Kendall 1998).

Speculating about why cathedral carol services may attract a higher proportion of thinking types compared with ordinary Anglican congregations, Walker argued that there may be an objectivity about the structure of carol services that set them apart from the usual pattern of Anglican church services. Drawing on data about the tendency for Anglican clergymen to display a much higher preference for feeling than men in the general population (Francis et al. 2007a), Walker (2012) suggests that:

[T]he likelihood that Anglican church services are largely planned and led by feeling types that will have a predisposition to assume that the idiom that works for them is one that will work for everybody. (p. 994)

The structure of the now classic Festival of Nine Lessons and Carols, however, provides little opportunity for the psychological preferences of the officiating ministers to permeate the presentation.

In the spirit of scientific replication studies, Francis, Edwards and ap Siôn (2020a) reapply Walker's survey among 193 participants attending carol services at Bangor Cathedral in 2013, 56 men and 137 women. In light of the smaller numbers, they did not analyse the data for men and women separately, but compared the combined profile with the combined profile for men and women calculated from the survey of Anglican churchgoers reported by Francis et al. (2011). The data from Bangor Cathedral also reported a significantly higher proportion of thinking types attending the carol service: 52% compared with 40% in ordinary Anglican congregations and 46% in the UK population for men and women combined.

In a second replication of Walker's study, Francis, Jones and McKenna (2020b) report on the psychological type profile of 441 participants attending the Holly Bough Service in Liverpool Cathedral on the Fourth Sunday of Advent 2019. The Holly Bough Service is unique to Liverpool Cathedral, designed by Frederick William Dwelly, the first Dean (Kennerley 2015). In some ways, this service stands in the tradition of the Festival of Nine Lessons and Carols, but differs from that service in two important ways. Designed for the Fourth Sunday of Advent, it reflects a mood of sombre preparation as the Holly Bough is processed from the life-size crib at the west end of the cathedral to the reredos at the east end displaying the crucifixion. Designed for the unique uninterrupted space offered by the architecture of Liverpool Cathedral (Thomas 2018), the Holly Bough Service is crafted as a vehicle for liturgical drama and powerful symbolism as well as for the high quality choral tradition. Following the model established by Francis et al. (2020a), Francis et al. (2020b) reported on the congregation profile of men and women considered together. The data from the Holly Bough Service also reported a significantly higher proportion of thinking types attending the service compared with the profile reported by Francis et al. (2011): 48% compared with 40% in ordinary Anglican congregations and 46% in the UK population for men and women combined.

Research question

Against the background of the studies reported by Walker (2012), Francis et al. (2020a) and Francis et al. (2020b), the aim of the present study is to explore the psychological type profile of participants attending the two traditional Carol Services held in Liverpool Cathedral on the afternoon of Christmas Eve 2019: the first service was held at 14.00 and the second at 16.00.

Method

Procedure

When people came into the cathedral for the Christmas Eve Carol Services, the welcomers gave them a copy of the service and a white envelope containing the questionnaire and a pen. The welcomers invited participants to complete the first part of the questionnaire while they were waiting for the service to start. This invitation was reinforced by the video screens organised around the cathedral to relay the service. At the close of the service, 1234 questionnaires were returned with full demographic data.

Instrument

Psychological type was assessed by the Francis Psychological Type Scales (FPTS: Francis 2005; Francis et al. 2017). This is a 40-item instrument comprising four sets of 10 forced-choice items related to each of the four components of psychological type: orientation (extraversion or introversion), perceiving process (sensing or intuition), judging process (thinking or feeling) and attitude towards the outer world (judging or perceiving). Recent studies have demonstrated that this

instrument functions well in church-related contexts. For example, Francis, Craig and Hall (2008) report alpha coefficients of .83 for the EI scale, .76 for the SN scale, .73 for the TF scale and .79 for the JP scale. Participants were asked for each pair of characteristics to check the

[b]ox next to that characteristic which is closer to the real you, even if you feel both characteristics apply to you. Tick the characteristics that reflect the real you, even if other people see you differently.

Participants

Of the 1234 participants who returned questionnaires with full demographic data, 941 had thoroughly completed the Francis Psychological Type Scales. Of these 941 participants, 342 were male, 574 were female and 25 did not identify; 55 were under the age of 20; 116 in their twenties, 131 in their thirties; 156 in their forties; 212 in their fifties; 183 in their sixties; 72 in their seventies; 14 were aged 80 and over and 2 did not identify. The majority described their present or most recent work as professional or semi-professional (79%). Just over three-fifths described themselves as attending church fewer than six times a year (62%), compared with just under one-fifth (18%) who described themselves as attending church nearly every week.

Analysis

The research literature concerning the empirical investigation of psychological type has developed a highly distinctive method for analysing, handling and displaying statistical data in the form of 'type tables'. This convention has been adopted in the following presentation in order to integrate these new data within the established literature and to provide all the detail necessary for secondary analysis and further interpretation within the rich theoretical framework afforded by psychological type. Type tables have been designed to provide information about the 16 discrete psychological types, about the four dichotomous preferences, about the six sets of pairs and temperaments, about the dominant types and about the introverted and extraverted Jungian types. Commentary on these tables will, however, be restricted to those aspects of the data strictly relevant to the research question. In the context of type tables, the statistical significance of the difference between two groups is established by means of the selection ratio index (I), an extension of chi-square (McCaulley 1985).

Results

The Francis Psychological Type Scales reported the following alpha coefficients on the 941 participants: .75 for the EI scales, .65 for the SN scale, .67 for the TF scale and .74 for the JP scale.

The psychological type profile for 574 female participants attending the Christmas Eve Carol Services in Liverpool Cathedral is presented (Figure 1). In terms of the four dichotomous preferences, these data display strong preference for judging (87%) over perceiving (13%), strong preference for sensing (73%) over intuition (27%), clear

preference for feeling (57%) over thinking (43%) and slight preference for introversion (52%) over extraversion (48%). In terms of the 16 complete types, the most prevalent types are ISFJ (19%), ESFJ (19%) and ISTJ (18%). In terms of dominant type preferences, the data indicate the following prioritisation: dominant sensing (40%), dominant feeling (28%), dominant thinking (18%) and dominant intuition (14%).

Figure 1 also tests for significant differences between this group of 574 female participants attending the Christmas Eve Carol Services in Liverpool Cathedral and the 2133 female Church of England churchgoers reported by Francis et al. (2011). These data show no significant differences between the two groups in preferences within the orientations (at the Carol Service, 52% preferred introversion and among churchgoers, 49% preferred introversion) and in preferences within the attitudes towards the outer world (at the Carol Services, 87% preferred judging and among churchgoers, 85% preferred judging). These data show significant differences between the two groups in preferences within the perceiving process (at the Carol Services, 27% preferred intuition, compared with 19% among the churchgoers) and in preferences within the judging process (at the Carol Services, 43% preferred thinking, compared with 30% among the churchgoers).

The psychological type profile for 342 male participants attending the Christmas Eve Carol Services in Liverpool Cathedral is presented (Figure 2). In terms of the four dichotomous preferences, these data display strong preference for judging (89%) over perceiving (11%), strong preference for sensing (77%) over intuition (23%), clear preference for thinking (64%) over feeling (36%) and slight preference for introversion (52%) over extraversion (48%). In terms of the 16 complete types, the most prevalent types are ISTJ (29%) and ESTJ (19%). In terms of dominant type preferences, the data indicate the following prioritisation: dominant sensing (43%), dominant thinking (27%), dominant feeling (18%) and dominant intuition (11%).

Figure 2 also tests for significant difference between this group of 342 male participants attending the Christmas Eve Carol Services in Liverpool Cathedral and the 1169 male Church of England churchgoers reported by Francis et al. (2011). These data show no significant differences between the two groups in preferences within the attitudes towards the outer world (at the Carol Services, 89% preferred judging and among churchgoers, 86% preferred judging), and in preferences within the perceiving process (at the Carol Services, 23% preferred intuition and among churchgoers, 22% preferred intuition). These data show significant differences between the two groups in preferences within the orientations (at the Carol Services, 48% preferred extraversion, compared with 38% among the churchgoers) and in preferences within the judging process (at the Carol Services, 64% preferred thinking, compared with 58% among the churchgoers).

Discussion and conclusion

Drawing on psychographic segmentation theories employed within the wider fields of studies in leisure and tourism, the

present study has illustrated and assessed the contribution that this approach can make to the science of congregation studies. Drawing specifically on psychological type theory as proposed by Jung (1971) and developed and modified by a series of psychometric instruments, including the Keirsey Temperament Sorter (Keirsey & Bates 1978), the Myers-Briggs Type Indicator (Myers & McCaulley 1985) and the Francis Psychological Type Scales (Francis 2005; Francis et al. 2017), the study has identified how psychographic segmentation of congregations points to one particular difficulty experienced equally by the Church of England in England and by the Catholic Church in Australia. The difficulty concerns engaging thinking types with church congregations.

This difficulty of engaging thinking types with church congregations is consistent with the way in which the preference for thinking is much more common among men than among women, with the over-representation of women within church congregations, and with the tendency for a much higher proportion of ordained men to prefer feeling than is the case among men in the general population. The feminisation of the Church of England is not an issue that can be thoroughly understood in terms of external highly visible characteristics (churches attracting more women than men) but needs to be nuanced also by an understanding of less visible internal characteristics (churches attracting more feeling types).

Bishop David Walker's (2012) study of the psychological type profile of 403 participants at two Carol Services in Worcester Cathedral in 2009 produced the surprising evidence that cathedral carol services could reach where fresh expressions of church were not yet reaching, in order to embrace a higher proportion of thinking types among both men and women. Within scientific communities, findings from a single study carry little weight. As within other scientific fields, the science of congregation studies relies on careful replication and extension of research to test and possibly to modify conclusions based on accumulated evidence. Following Walker's pioneering study, three replications have now been reported in the developing literature. Francis et al. (2020a) report on 193 participants attending carol services in Bangor Cathedral in 2013. Francis et al. (2020b) report on 441 participants attending the Holly Bough Service in Liverpool Cathedral on the evening of the Fourth Sunday of Advent 2019. Now the present study has reported on 941 participants attending the two afternoon Carol Services held in Liverpool Cathedral on Christmas Eve 2019. All three replication studies come to the same conclusion, namely that Walker was correct in the emphasis placed in the title of his paper (*O come all ye thinking types*). Cathedral Carol Services do indeed achieve something special by the way in which they engage thinking types within the Church of England.

Walker's study was also helpful in the way in which he began to theorise about the reason for the distinctive reach of

The Sixteen Complete Types				Dichotomous Preferences							
ISTJ <i>n</i> = 104 (18.1%) <i>I</i> = 1.47*** +++++	ISFJ <i>n</i> = 109 (19.0%) <i>I</i> = 0.77** +++++	INFJ <i>n</i> = 33 (5.7%) <i>I</i> = 1.66* +++++	INTJ <i>n</i> = 21 (3.7%) <i>I</i> = 1.45 +++++	E <i>n</i> = 276 (48.1%) <i>I</i> = 0.95	I <i>n</i> = 298 (51.9%) <i>I</i> = 1.05						
				S <i>n</i> = 418 (72.8%) <i>I</i> = 0.90***	N <i>n</i> = 156 (27.2%) <i>I</i> = 1.45***						
				T <i>n</i> = 245 (42.7%) <i>I</i> = 1.42***	F <i>n</i> = 329 (57.3%) <i>I</i> = 0.82***						
				J <i>n</i> = 500 (87.1%) <i>I</i> = 1.02	P <i>n</i> = 74 (12.9%) <i>I</i> = 0.89						
				Pairs and Temperaments							
ISTP <i>n</i> = 2 (0.3%) <i>I</i> = 0.44	ISFP <i>n</i> = 10 (1.7%) <i>I</i> = 0.56 ++	INFP <i>n</i> = 10 (1.6%) <i>I</i> = 0.95 ++	INTP <i>n</i> = 9 (1.6%) <i>I</i> = 2.39* ++	IJ <i>n</i> = 267 (46.5%) <i>I</i> = 1.08	IP <i>n</i> = 31 (5.4%) <i>I</i> = 0.85	EP <i>n</i> = 43 (7.5%) <i>I</i> = 0.92					
				EJ <i>n</i> = 233 (40.6%) <i>I</i> = 0.96							
				ST <i>n</i> = 182 (31.7%) <i>I</i> = 1.31***	SF <i>n</i> = 236 (41.7%) <i>I</i> = 0.72***	NF <i>n</i> = 93 (16.2%) <i>I</i> = 1.27*					
				NT <i>n</i> = 63 (11.0%) <i>I</i> = 1.84***							
ESTP <i>n</i> = 9 (1.6%) <i>I</i> = 5.57** ++	ESFP <i>n</i> = 8 (1.4%) <i>I</i> = 0.32*** +	ENFP <i>n</i> = 20 (3.5%) <i>I</i> = 1.20 ++++	ENTP <i>n</i> = 6 (1.0%) <i>I</i> = 1.59 +	SJ <i>n</i> = 389 (67.8%) <i>I</i> = 0.93*	SP <i>n</i> = 29 (5.1%) <i>I</i> = 0.60**	NP <i>n</i> = 45 (7.8%) <i>I</i> = 1.30					
				NJ <i>n</i> = 111 (19.3%) <i>I</i> = 1.52***							
				TJ <i>n</i> = 219 (38.2%) <i>I</i> = 1.38***	TP <i>n</i> = 25 (4.5%) <i>I</i> = 1.89**	FP <i>n</i> = 48 (8.4%) <i>I</i> = 0.69**					
				FJ <i>n</i> = 281 (49.0%) <i>I</i> = 0.85***							
ESTJ <i>n</i> = 67 (11.7%) <i>I</i> = 1.09 +++++	ESFJ <i>n</i> = 109 (19.0%) <i>I</i> = 0.76** +++++	ENFJ <i>n</i> = 30 (5.2%) <i>I</i> = 1.14 +++++	ENTJ <i>n</i> = 27 (4.7%) <i>I</i> = 2.23** +++++	IN <i>n</i> = 73 (12.7%) <i>I</i> = 1.50**	EN <i>n</i> = 83 (14.5%) <i>I</i> = 1.41**	IS <i>n</i> = 225 (39.2%) <i>I</i> = 0.96					
				ES <i>n</i> = 193 (33.6%) <i>I</i> = 0.83**							
				ET <i>n</i> = 109 (19.0%) <i>I</i> = 1.38**	EF <i>n</i> = 167 (29.1%) <i>I</i> = 0.79***	IF <i>n</i> = 162 (28.2%) <i>I</i> = 0.85*					
				IT <i>n</i> = 136 (23.7%) <i>I</i> = 1.45***							
Jungian Types (E)			Jungian Types (I)			Dominant Types					
<i>n</i>	%	<i>Index</i>	<i>n</i>	%	<i>Index</i>	<i>n</i>	%	<i>Index</i>			
E-TJ	94	16.4	1.27*	I-TP	11	1.9	1.32	Dt.T	105	18.3	1.28*
E-FJ	139	24.2	0.82**	I-FP	20	3.5	0.71	Dt.F	159	27.7	0.80**
ES-P	17	3.0	0.64	IS-J	213	37.1	1.00	Dt.S	230	40.1	0.96
EN-P	26	4.5	1.27	IN-J	54	9.4	1.57**	Dt.N	80	13.9	1.46**

Note: *N* = 574 (NB: + = 1% of *N*).

*, *p* < .05; **, *p* < .01; ***, *p* < .001.

FIGURE 1: Type distribution for female participants at carol services compared with female Anglican churchgoers.

cathedral carol services to embrace thinking types. Walker argues that thinking types may engage more easily on their own terms with the culture and atmosphere afforded by cathedral carol services than with other forms of Christmas services generally provided in Anglican parish churches that comprise predominantly of Christingle Services, Nativity Services and Family Services. Compared with the structure of Cathedral Carol Services, each of these other provisions may be seen to have a more strongly relational atmosphere that

may speak more strongly to the heart of feeling types and may be less accessible to, less appealing to and less nurturing for thinking types. Walker recognises that Cathedral Carol Services are not designed explicitly to engage the interests of thinking types by specific appeal to objective analysis and dispassionate logic. Their benefit is rather that they stand back from the predominant influence of relational engagement favoured by worship leaders who themselves view the world through the lenses of preference for feeling. For Walker (2012),

The Sixteen Complete Types				Dichotomous Preferences		
ISTJ <i>n</i> = 99 (28.9%) <i>I</i> = 1.01 +++++	ISFJ <i>n</i> = 38 (11.1%) <i>I</i> = 0.64 +++++	INFJ <i>n</i> = 6 (1.8%) <i>I</i> = 0.60 ++	INTJ <i>n</i> = 20 (5.8%) <i>I</i> = 0.92 +++++	E <i>n</i> = 164 (48.0%) <i>I</i> = 1.25***	I <i>n</i> = 178 (52.0%) <i>I</i> = 0.84***	
				S <i>n</i> = 262 (76.6%) <i>I</i> = 0.99	N <i>n</i> = 80 (23.4%) <i>I</i> = 1.05	
				T <i>n</i> = 220 (64.3%) <i>I</i> = 1.11*	F <i>n</i> = 122 (35.7%) <i>I</i> = 0.85*	
				J <i>n</i> = 303 (88.6%) <i>I</i> = 1.03	P <i>n</i> = 39 (11.4%) <i>I</i> = 0.82	
				Pairs and Temperaments		
ISTP <i>n</i> = 3 (0.9%) <i>I</i> = 0.54 +	ISFP <i>n</i> = 5 (1.5%) <i>I</i> = 0.78 ++	INFP <i>n</i> = 4 (1.2%) <i>I</i> = 0.62 +	INTP <i>n</i> = 3 (0.9%) <i>I</i> = 0.79 +	IJ <i>n</i> = 163 (47.7%) <i>I</i> = 0.86*	IP <i>n</i> = 15 (4.4%) <i>I</i> = 0.67	EP <i>n</i> = 24 (7.0%) <i>I</i> = 0.95
				EJ <i>n</i> = 140 (40.9%) <i>I</i> = 1.32***		
				ST <i>n</i> = 171 (50.0%) <i>I</i> = 1.10	SF <i>n</i> = 91 (26.6%) <i>I</i> = 0.83*	NF <i>n</i> = 31 (9.1%) <i>I</i> = 0.92
				NT <i>n</i> = 49 (14.3%) <i>I</i> = 1.15		
ESTP <i>n</i> = 5 (1.5%) <i>I</i> = 1.07 ++	ESFP <i>n</i> = 6 (1.8%) <i>I</i> = 0.85 ++	ENFP <i>n</i> = 9 (2.6%) <i>I</i> = 1.14 +++	ENTP <i>n</i> = 4 (1.2%) <i>I</i> = 0.72 +	SJ <i>n</i> = 243 (71.1%) <i>I</i> = 1.00	SP <i>n</i> = 19 (5.6%) <i>I</i> = 0.80	NP <i>n</i> = 20 (5.8%) <i>I</i> = 0.84
				NJ <i>n</i> = 60 (17.5%) <i>I</i> = 1.14		
				TJ <i>n</i> = 205 (59.9%) <i>I</i> = 1.15**	TP <i>n</i> = 15 (4.4%) <i>I</i> = 0.77	FP <i>n</i> = 24 (7.0%) <i>I</i> = 0.86
				FJ <i>n</i> = 98 (28.7%) <i>I</i> = 0.84		
ESTJ <i>n</i> = 64 (18.7%) <i>I</i> = 1.36*	ESFJ <i>n</i> = 42 (12.3%) <i>I</i> = 1.11 +++++	ENFJ <i>n</i> = 12 (3.5%) <i>I</i> = 1.28 ++++	ENTJ <i>n</i> = 22 (6.4%) <i>I</i> = 1.88*	IN <i>n</i> = 33 (9.6%) <i>I</i> = 0.79	EN <i>n</i> = 47 (13.7%) <i>I</i> = 1.36	IS <i>n</i> = 145 (42.4%) <i>I</i> = 0.86*
				ES <i>n</i> = 117 (34.2%) <i>I</i> = 1.21		
				ET <i>n</i> = 95 (27.8%) <i>I</i> = 1.38**	EF <i>n</i> = 69 (20.2%) <i>I</i> = 1.11	IF <i>n</i> = 53 (15.5%) <i>I</i> = 0.65***
				IT <i>n</i> = 125 (36.5%) <i>I</i> = 0.97		

Jungian Types (E)			Jungian Types (I)			Dominant Types					
	<i>n</i>	%	<i>Index</i>	<i>n</i>	%	<i>Index</i>	<i>n</i>	%	<i>Index</i>		
E-TJ	36	25.1	1.46***	I-TP	6	1.8	0.64	Dt.T	92	26.9	1.35**
E-FJ	54	15.8	1.15	I-FP	9	2.6	0.70	Dt.F	63	18.4	1.05
ES-P	11	3.2	0.94	IS-J	137	40.1	0.87	Dt.S	148	43.3	0.88*
EN-P	13	3.8	0.97	IN-J	26	7.6	0.82	Dt.N	39	11.4	0.87

Note: *N* = 342 (NB: + = 1% of *N*).
 *, *p* < .05; **, *p* < .01; ***, *p* < .001.

FIGURE 2: Type distribution for male participants at carol services compared with male Anglican churchgoers.

The carol service provides a distinctive opportunity which, while it makes no direct appeal to logic or analysis, is not couched in a context of emotional and relational engagement and ... a service that is not cast in a 'feeling' idiom will attract the thinking type even without the need to cater explicitly for this preferred judging process. (pp. 993–994)

The science of congregation studies, in this case drawing on psychographic segmentation theory, builds a knowledge base slowly and critically, relying on painstaking replication.

The knowledge so far constructed has focussed on Cathedral Carol Services and has done so because the foundation study was located in that domain by Walker (2012). Because the data have been generated by concentrating precisely on that specific genre of service provision, the findings cannot be extrapolated beyond that specific genre. Walker's theorising about the appeal of Cathedral Carol Services, nonetheless, opens for investigating the view that other services more routinely provided by cathedrals could equally offer a greater distance from 'a context of emotional and relational

engagement'. The disciplined structure of the Cathedral Choral Eucharist and of the Cathedral Choral Evensong may share many of the characteristics of the Cathedral Carol Service. Moreover, both of these forms of service provide opportunity for intelligent preaching that could engage the mind of thinking types. If this were the case, then cathedrals may already be making a distinctive provision for thinking types that fall into Walker's (2017) category of activity-belongers (by attending weekly or monthly to recurring activities) as well as for thinking types that fall into Walker's category of event-belongers (by attending those one-off events throughout the year).

The way through which the science of congregation studies could address this speculation is by inviting congregations attending Cathedral Choral Eucharists and Cathedral Choral Evensongs to participate in an appropriate survey. So far, one cathedral has already done so. Lankshear and Francis (2015) report on the psychological type profiles of 120 men and 161 women attending Sunday services in Southwark Cathedral. Comparing these findings with the profiles of 1169 men and 2133 women attending Anglican parish churches provided by Francis et al. (2011), Lankshear and Francis found in the cathedral a significantly higher proportion of thinking types among women (52% compared with 30%), but no significant difference in the proportions of thinking types among men in the cathedral (58%) and in the parish churches (58%). The next priority for the science of congregation studies could be to build on this study conducted in Southwark Cathedral by conducting similar studies in other cathedrals to establish whether or not cathedrals offer a significant bridge to those thinking types left unreached both by inherited church and by fresh expression of church.

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Authors' contributions

L.J.F. took responsibility for overall conceptualisation of the article. S.H.J. oversaw the involvement of the cathedral in the project and the design of the survey instrument. U.M. curated the data and gave oversight to the data analysis. All authors contributed to the writing and agreed to the final text.

Ethical considerations

This study received approval from the St Mary's Centre Ethics Committee. SMC19EC0011.

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Data availability

Data are available from the corresponding author, L.J.F., upon reasonable request.

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