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Exploring connections between prayer preferences and psychological type or temperament:

Introducing the Durham Indices of Prayer Preferences (DIPPs)

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Abstract

Building on earlier research concerned with connections between prayer preferences and psychological type or temperament, the present study focused specifically on prayer preferences associated with the orientations (extraversion and introversion) and the attitudes (judging and perceiving). Drawing on data provided by 207 Anglican and Methodist ministry training candidates this study proposed and tested the Durham Indices of Prayer Preferences (DIPPs), comprising four eight-item scales of extraversion prayer preference, introversion prayer preference, judging prayer preference, and sensing prayer preference. Each scale demonstrated good properties of internal consistency reliability and construct validity tested against the psychological type preferences of the participants as assessed by the Myers-Briggs Type Indicator.

Keywords: psychological type, prayer, spirituality, temperament, psychometrics, clergy

Introduction

Psychological type theory and temperament theory have their shared roots in the pioneering conceptualisation of Jung (1971) as subsequently developed, expanded, and operationalised by a series of measures, 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, Laycock, & Brewster, 2017). Jung's conceptualisation distinguished first between two core cognitive processes defined as perceiving and as judging. The perceiving process is concerned with gathering information, while the judging process is concerned with evaluating information. Second, Jung's conceptualisation distinguished between two contrasting functions through which each process could be expressed. Perceiving is expressed through sensing (S) and through intuition (N). Judging is expressed through thinking (T) and through feeling (F). Psychological type theory maintains that within each process, one function is preferred over the other, and that one process is preferred over the other, leading to a dominant function in one process and to an auxiliary function in the other process. While preference differentiates the relative strength of each function, psychological type theory maintains that individuals have access to and may utilise all four functions.

In terms of the perceiving process, sensing types perceive their environment through their senses and focus on the details of the here and now. They tend to be distrustful of jumping to conclusions and cautious of envisioning future possibilities. Intuitive types perceive their environment by drawing on the imagination and inspiration and by focusing on future possibilities. They tend to be overloaded by too many details and wearied by following well-established pathways.

In terms of the judging process, thinking types reach their judgements by relying on objective analysis and logical enquiry. They strive for truth, fairness, and justice. They tend

to give priority to the system rather than to the people. Feeling types reach their judgements by relying on subjective appreciation of the personal and interpersonal factors and values involved. They strive for harmony, peace, and reconciliation. They tend to give priority to the people rather than to the system.

Within the further development of psychological type theory, the two core cognitive processes (perceiving and judging) are nested within a wider context that differentiates between two psychological orientations and two psychological attitudes. The two orientations are concerned with the direction from which individuals' psychological energy emerges and distinguishes between introversion (I) and extraversion (E). Introverts are energised by their inner world, and may be wearied by too much interaction with others. Extraverts are energised by the outer world, and may be wearied by a lack of interaction with others. The two attitudes are concerned with the direction in which individuals orient their preferred judging function and their preferred perceiving function. Judging types (J) direct their preferred judging function (thinking or feeling) to the outside world where they appear to others to be well organised and prepared. Perceiving types (P) direct their preferred perceiving function (sensing or intuition) to the outside world where they appear to others to be spontaneous and flexible.

Keirsey and Bates (1978) drew on the basic building blocks of psychological type theory to propose their model of temperament theory. Temperament theory prioritised the perceiving process by focusing on sensing and intuition. The two temperaments associated with sensing were shaped by the orientation in which sensing was expressed, distinguishing between introverted sensing (SJ) and extraverted sensing (SP). The two temperaments associated with intuition were shaped by the judging function with which intuition was paired, distinguishing between intuition and feeling (NF) and intuition and thinking (NT).

Keirsey and Bates (1978) ascribed a distinctive name rooted in classic mythology to each of the four temperaments.

The Epimethean temperament characterises the SJ profile, people who long to be dutiful and value being useful to the social units to which they belong. The Dionysian temperament characterises the SP profile, people who want to be engaged, involved, and doing something new. The Promethean temperament characterises the NT profile, people who want to understand, explain, shape, and predict realities, and who aspire to personal competence. The Apollonian temperament characterises the NF profile, people who strive for authenticity and for self-actualisation, who are realistic and who show great capacity for empathetic listening.

Theoretical perspectives

Psychological type theory and temperament theory have provided a fertile resource for speculation concerning the connections between personality and the practice of prayer, as illustrated by the titles of five well-established books: *Prayer temperament: Different prayer forms for different personality types* (Michael & Norrisey, 1984), *Who we are is how we pray: Matching personality and spirituality* (Keating, 1987), *Pray your way: Your personality and God* (Duncan, 1993), *Personality and prayer: Finding and extending the prayer style that suits your personality* (Fowke, 1997), and *Prayer life: How your personality affects the way you pray* (Martínez, 2001). The theme has also been pursued in chapter titles of more general works on psychological type and religion, faith, and spirituality, as illustrated by chapters on ‘Jungian types and forms of prayer’ by Clarke (1988), on ‘personalities in prayer’ by Osborn and Osborn (1991), on ‘type and spirituality and prayer’ by Goldsmith and Wharton (1993), and on ‘prayer and bible study’ by Baab (1998).

Different commentators have interpreted the implications of psychological type theory and temperament theory for the practice of prayer in different ways. Duncan (1993)

focused his analysis on the different implications for prayer arising from the two Jungian processes (perceiving and judging). Perceiving is the irrational process concerned with the ways in which information is absorbed. Duncan regards the prayer preferences associated with the perceiving function (sensing and intuition) as ‘passive prayer’, the human way of experiencing God. Passive prayer is knowing God, rather than thinking about God. In passive prayer we open ourselves to conscious awareness of God. Here are receptive and contemplative ways of prayer, for sensing types concrete and focused on internal and external realities, and for intuitive types abstract and explorative. Duncan identifies passive prayer for sensing types as embracing: finding God in all things, cataphatic prayer, incarnational prayer, restful and grateful prayer, sensible prayer, and prayer with childlike trust. Duncan identifies passive prayer for intuitive types as embracing: musing with God, freewheeling prayer, butterfly prayer, apophatic contemplation, and holy restlessness. Judging is the rational process concerned with evaluating information. Duncan regards the prayer preferences associated with the judging functions (thinking and feeling) as ‘active prayer’, the human way of responding to God by acts of will. Active prayer engages in cooperation with God by decisions and by actions. Here are ways of praying by which we shape our personal lives and transform our world to the reign of Christ. Duncan identifies active prayer for thinking types as embracing: polemical prayer, confrontational prayer. Duncan identifies active prayer for feeling types as embracing: God our mother, compassionate prayer, prayer for forgiveness, and prayer of the heart.

Martínez (2001) focused his analysis on the four functions. On his account, for sensing types, prayer is a spontaneous response to their appreciation of God’s world, a sunset, a landscape, an aesthetically beautiful scene. He argues that sensing types are direct and rather naïve in their approach to God, with the soul of a child. Sensing types have the capacity to be in touch with real situations and like detail and specifics when prayer requests

are given. For intuitive types prayer is a natural expression of their innate sensitivity to spiritual things. He argues that intuitive types find it easy to enter the presence of God in prayer, since the threshold between their own inner world and the divine is relatively low. Their prayers came close to the mystic idea of prayer. For feeling types prayer is a matter of the heart, with a concern for a warm personal relationship with God. He argues that feeling types may long for intimacy with God and to feel the presence of the Lord as lover and closest companion. Feeling types are alert to the needs and to the pains of others and express that awareness in prayer and action. For thinking types prayer is a mental activity, performed more with the head than with the heart, more with a concern for a rush of new spiritual ideas than for feeling God's presence. He argues that thinking types may find it difficult to settle down to praying, because prayer implies relationship. When they do so spiritual self-analysis will become an essential feature of their relationship with God. A similar approach was taken by Osborn and Osborn (1991) and by Clark (1998) reflecting on the four functions.

Baab (1998) focused her analysis on the eight function-orientations, an approach that differentiates between the introverted and the extraverted expressions of the four functions. According to her model, extraverted sensing prayer (ES) is rooted in sensory experience of the world. Introverted sensing prayer (IS) is a quiet reflective response to God. Extraverted intuitive prayer (EN) involves the application of vision, inspiration, and ingenuity for the purpose of furthering God's kingdom in the world. Introverted intuitive prayer (IN) involves meditating in God's presence and allowing the mind to flit from one thought to the next. Extraverted thinking prayer (ET) is a process of analysis and decision-making based on logic, with application in the outer world. Introverted thinking prayer (IT) is concerned with the meaning of truth and justice, and with the response of the human race to the divine challenge of righteousness. Extraverted feeling prayer (EF) is concerned with connecting with other people in support, encouragement, compassion, warmth, loyalty, and faithfulness. Introverted

feeling prayer (IF) is grounded in deeply held values, expressed in reflective prayer waiting for God to speak and in passionate prayer for the needs of the world.

Keating (1989) focused his analysis by concentrating in turn on each of the eight constructs on which the theory is positioned. For the introverted personality he focuses 'prayer within ourselves'. He argues that introverts may pursue an inward-facing spirituality that they may eventually find unfulfilling. For extraverted personality he focused on 'open prayer'. He argues that extraverts are attracted to an outward-facing spirituality conducive to their spiritual growth. For the intuitive spirituality he focuses 'prayer of hope'. He argues that intuitive types benefit most from a spirituality that looks to possibilities. For the sensing spirituality he focuses 'practical prayer'. He argues that sensing types experience problems when their immediate environment is not conducive to their spiritual growth. For the feeling personality he focuses 'feeling prayer'. He argues that feeling types need strong emotional dynamics for spiritual growth. For the thinking personality he focuses 'prayer of reason'. He argues that thinking types must face the leap of faith that goes beyond reason. For the judging personality he focuses 'orderly prayer'. He argues that judging types find it difficult to tolerate ambiguity and are the most inclined to make false starts. For the perceiving personality he focuses 'lived prayer'. He argues that perceiving types are the most comfortable with an eclectic spirituality.

Goldsmith and Wharton (1993) focused their analysis on the sixteen complete types, looking at each one in turn. For each of the sixteen complete types they first take into account the orientation and the attitude, and then they consider the strengths of the dominant and auxiliary functions. Finally, they give consideration to potential weaknesses of the third and the least-preferred functions that may point to areas for further development and nurture. By way of example, for the ISTJ they note that their orientation (introversion) suggests that 'time alone with God will be a high priority' (p. 169). They note that their attitude (placing their

preferred judging function in the external world) suggests that they may establish a set time for prayer each day. They note that their dominant (sensing) and auxiliary (thinking) functions 'will mean that they are clear-headed, practical and earthed in their praying' (p. 169). Their third-preferred function (feeling) 'suggests that they will need to develop a greater sensitivity towards others' (p. 169). Their least-preferred function (intuition) suggests that they will need to 'allow their imagination more scope' (p. 169). As introverts ISTJs may need to learn how to become more comfortable praying with others and expressing their feelings more openly. As judging types ISTJs should be aware of the dangers arising from rigidity in prayer, and from being over-planned and too methodical.

Michael and Norrisey (1984) focused their analysis on temperament theory and did so by linking each of the four temperaments with an established spiritual tradition. According to their model, the SJ preference is styled the Ignatian Temperament, with an emphasis on structured traditional prayer. They argue that SJs prefer to project themselves back into the biblical narrative or historical setting, connecting the past events to contemporary life. The NF preference is styled the Augustinian Temperament, with an emphasis on constant striving for future growth. They argue that NFs prefer to transpose the biblical narrative to the here and now with little concern for the historical setting. The SP preference is styled the Franciscan Temperament, with an emphasis on going wherever the Spirit calls. They argue that SPs see the presence of God in the whole of creation and prefer to pray through acts of service. The NT preference is styled the Thomistic Temperament, with an emphasis on logical, orderly progression of thought. They argue that NTs are future-oriented and prefer to pray through acts of study and striving after truth and goodness.

Empirical perspectives

In spite of the potential richness in psychological type theory and temperament theory for generating theoretical perspectives concerning the connections between personality and the

practice of prayer, few attempts have been made to test such predictions in published studies of empirical research. In an early study reported by Ware, Knapp, and Schwarzin (1989) 170 self-defined Christians (66 men and 104 women) completed the Myers-Briggs Type Indicator (Myers & McCaulley, 1985), together with the Knapp-Ware Prayer Form Questionnaire, a four-part instrument designed to explore four hypotheses derived from the Michael and Norrisey (1984) analysis of the relationship between prayer and temperament outlined above. The findings provided only very partial support for the hypothesised relationship between temperament and prayer preference. The first hypothesis that SJs would demonstrate a higher preference for structured traditional prayers than other temperament types was supported. The second hypothesis that community prayer would be preferred more by extraverts was not supported. The third hypothesis that each of the four temperaments would prefer prayer forms that corresponded to their own temperament was not supported. Three of the four types of liturgy (SJ, NF, and SP) were in fact rated highest by SJs, while NTs rated all but the NT liturgy (contemplation) the lowest. The fourth hypothesis that each of the four temperaments would prefer meditation forms that corresponded to their own temperament was not supported. No clear correspondence appeared between the kind of meditation and temperament or type.

In a more recent study, Francis and Robbins (2008) extrapolated from psychological type theory to design a set of eight seven-item scales intended to operationalise aspects of prayer preference associated with the components of the theory, namely accessing preferences for: introverted prayer, extraverted prayer, sensing prayer, intuitive prayer, feeling prayer, thinking prayer, judging prayer, and perceiving prayer. Drawing on data provided by 1,476 newly ordained Anglican clergy from England, Ireland, Scotland, and Wales, five of these eight scales recorded satisfactory levels of internal consistency reliability (Cronbach, 1951): extraversion, $\alpha = .80$; introversion, $\alpha = .79$; judging, $\alpha = .78$; perceiving, α

= .73; feeling, α = .69. The other three were less satisfactory: intuition, α = .60; sensing, α = .56; and thinking, α = .55. Examining the highest correlations between individual items and the sum of the other six items, extraversion prayer preference was associated with the items, 'I am energised when I pray with a group of people', and 'Belonging to a prayer group energises me'. Introversion prayer preference was associated with the items, 'I am energised by praying in silence', and 'I prefer personal meditative prayer to open shared prayer'. Sensing prayer preference was associated with the items, 'I find that looking at a religious picture helps me to pray', and 'My prayer life is enhanced by a sense of smell'. Intuition prayer preference was associated with the items, 'For me prayer opens up new ideas and possibilities', and 'Prayer expands my visionary horizons'. Thinking prayer preference was associated with the items, 'My prayer life is shaped by my mind', and 'I only pray for what is theologically coherent'. Feeling prayer preference was associated with the items, 'In prayer I share God's anguish for human pain', and 'My prayers are often full of compassion and emotion'. Judging prayer preference was associated with the items, 'I prefer to pray at the same time each day', and 'I prefer to set aside a specific time for prayer'. Perceiving prayer preference was associated with the items, 'I prefer my prayer time to be flexible and spontaneous', and 'I don't like planning fixed times for my prayer'.

In the study reported by Francis and Robbins (2008), the 1,476 newly ordained Anglican clergy also completed the Keirsey Temperament Sorter (KTS; Keirsey & Bates, 1978). Their research aim was to examine the correlations between the eight newly constructed prayer preference scales and the four continuous scale scores of personal type preference generated by the KTS (from extraversion to introversion, from intuition to sensing, from thinking to feeling, and from perceiving to judging). The findings from this study confirmed the basic thesis that there were clear links between personal type preferences and prayer preferences. An introverted style of prayer was valued more highly by introverts,

while an extraverted style of prayer was valued more highly by extraverts. A sensing style of prayer was valued more highly by sensing types, while an intuitive style of prayer was valued more highly by intuitive types. A thinking style of prayer was valued more highly by thinking types, while a feeling style of prayer was valued more highly by feeling types. A judging style of prayer was valued more highly by judging types, while a perceiving style of prayer was valued more highly by perceiving types.

Although the study reported by Francis and Robbins (2008) supported the basic thesis, they offered three caveats regarding these findings. First, three of the eight prayer preference scales failed to demonstrate satisfactory internal consistency reliability (intuition, sensing, and thinking). Second, the correlations between personal type preference and prayer preference, while statistically significant, were relatively weak: intuition (r = .36), feeling (r = .35), thinking (r = .33), judging (r = .30), perceiving (r = .29), extraversion (r = .27), introversion (r = .19), and sensing (r = .09). Third, there were also significant correlations between individual prayer preference scales and other components of psychological type. Such observations proposed a clear agenda for future research.

Research aim

Two main themes emerge from the forgoing review of theoretical and empirical research concerning the connections between prayer preferences and psychological type or temperament. The first theme concerns the diversity and complexity of approaches taken within the broad frame of the building blocks proposed by psychological type theory. Within this broad frame there are three main strands concerning the two core mental processes (perceiving and judging) as expressed through the four functions (sensing, intuition, feeling, and thinking); the four temperaments as formulated by Keirsey and Bates (1978); and the two contextualising variables, the orientations (introversion and extraversion), and the attitudes (judging and perceiving expressed in the external world). The second concerns the lack of

investment in empirical research rooted in this theoretical frame and the need for clear focus in future empirical studies.

Against this background, the contention of the present study is that the path to progress resides in tackling the three identified strands (mental process, temperaments, and contextualising variables) separately. The foundations of empirical research set by Francis and Robbins (2008) suggests that the strongest current basis on which to build concerns the contextualising variables (orientations and attitudes). The theoretical conceptualisation regarding the implications of the orientations and attitudes has been fairly clearly set. Moreover, all four of the contextualisation scales of prayer preferences proposed by Francis and Robbins (2008) reported satisfactory levels of internal consistency reliability and construct validity against the relevant measures of personal type preference.

The specific research aim of the present study is therefore to construct and test more robust measures of extraversion prayer preference, introversion prayer preference, judging prayer preference, and perceiving prayer preference, as reflected in strong internal consistency reliability and strong construct validity against measures of personal type preference.

Method

Procedure

Over a nine-year period from 2008 to 2016 Anglican and Methodist ministry training candidates studying at Durham, were invited to complete a measure of psychological type and a prayer preference questionnaire. Completed data across both measures were provided by 207 participants.

Measures

Prayer preferences were assessed by two sets of 40 items, incorporating the items published in the scales developed by Francis and Robbins (2008). The first set comprised 10 items

designed to assess each of the orientations (extraversion and introversion) and the attitudes (judging and perceiving). The second set comprised 10 items designed to assess each of the functions (sensing, intuition, thinking, and feeling). The participants were invited to rate each item on a five-point Likert scale: agree strongly (5), agree (4), not certain (3), disagree (2), and disagree strongly (1).

Psychological type was assessed by the 126-item Form G (Anglicised) of the Myers-Briggs Type Indicator (Myers & McCaulley, 1985). This instrument proposes forced-choice questions to distinguish between the two orientations (introversion and extraversion), the two attitudes (judging and perceiving), the two perceiving functions (sensing and intuition), and the two judging functions (thinking and feeling). Introversion and extraversion are distinguished by questions such as: When you are with a group of people, would you rather join in the talk of the group (E), or talk with one person at a time (I)? Judging and perceiving are distinguished by questions such as: When you go somewhere for the day, would you rather plan what you will do and when (J), or just go (P)? Sensing and intuition are distinguished by questions such as: If you were a teacher, would you rather teach fact-based courses (S), or courses involving theory (N)? Thinking and feeling are distinguished by questions such as: Do you more often let your heart rule your head (F), or your head rule your heart (T)? Satisfactory psychometric properties for this instrument in studies among clergy were supported by Francis and Jones (1999).

Participants

The 207 participants comprised 112 men and 95 women; 161 were training for ministry in the Anglican Church and 46 were training for ministry in the Methodist Church.

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 sixteen 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 this table will, however, be restricted to those aspects of the data strictly relevant to the research question.

Results and discussion

- insert table 1 about here -

Table 1 presents the psychological type profile of the 207 ministry training candidates who participated in the study. This type table combines Methodists and Anglicans, males and females. Its purpose is to display the profile of the whole group among whom the analyses were conducted. In terms of the dichotomous type preferences these data show clear preferences for intuition (64%) over sensing (36%), for feeling (64%) over thinking (36%), and for judging (60%) over perceiving (40%). These findings are broadly consistent with other studies of Anglican clergy (see Francis, Craig, Whinney, Tilley, & Slater, 2007). While earlier studies have consistently reported preference for introversion among Anglican clergy, these data show a slight preference for extraversion (52%) over introversion (48%). In terms of the sixteen complete types, the most frequently occurring types were ENFJ (12%) and ENFP (12%). In terms of dominant types, 35% reported dominant intuition, 31% dominant feeling, 22% dominant sensing, and 12% dominant feeling. In terms of the four temperaments, 43% reported the Apollonian (NF) temperament, 28% reported the Epimethean (SJ) temperament, 21% reported the Promethean (NT) temperament, and 9% reported the Dionysian (SP) temperament. This, too, is in line with the hierarchy of

temperaments reported among Anglican clergy by Francis, Craig, Whinney, Tilley, and Slater (2007).

- insert table 2 about here -

Table 2 presents the psychometric properties of the newly proposed Durham Indices of Prayer Preferences (DIPPs). After iterative application of exploratory factor analysis suggested the removal of eight of the 40 items designed to capture prayer preferences associated with the orientations (extraversion and introversion) and with the attitudes (judging and perceiving), the rotated solution (constrained to two factors) recovered the two clear dimensions differentiating between the orientations and the attitudes. The first factor accounted for 24.0% of the variance and the second factor for 15.8%. The correlations between each of the items and the other seven items within the scale demonstrate that each item is contributing well to the homogeneity of the scale. Each of the four scales recorded an alpha coefficient (Cronback, 1951) in excess of .80: perceiving, $\alpha = .81$; judging, $\alpha = .82$; extraversion, $\alpha = .85$; introversion, $\alpha = .86$.

The item with the highest correlation with the sum of the other item in the scale may be interpreted to characterise the scale. Introverted prayer preference is characterised by the item, ‘I am energised by praying in silence’ ($r = .74$). Extraverted prayer preference is characterised by the item, ‘Belonging to a prayer group energises me’ ($r = .74$). Judging prayer preference is characterised by the item, ‘I prefer to set aside a specific time for prayer’ ($r = .69$). Perceiving prayer preference is characterised by the item, ‘I prefer my prayer time to be flexible and spontaneous’ ($r = .62$).

The percentage endorsement gives an indication of the prevalence of each preference among the group of ministry training candidates. In terms of introverted prayer preference, 78% reported that listening to God in the silence is an important part of their prayer life; for 72% stillness was an important part of prayer; 66% were energised by praying in silence;

59% naturally became absorbed in personal prayer; 56% preferred to pray alone; 54% were refreshed after long silences in prayer; 49% preferred personal meditative prayer to open shared prayer; and 34% needed to be away from people when they pray.

In terms of extraverted prayer preference, 62% enjoyed free and open-ended prayer; 60% were energised when they pray in a group of people; 55% reported that belonging to a prayer group energises them; 48% naturally became engaged in prayer groups; 48% found it easy to pray with strangers; 45% agreed that for them sharing their experiences of God with others is real prayer; 31% preferred to pray with others; and 19% preferred shared prayer to personal meditative prayer.

In terms of judging prayer preference, 70% considered prayer as part of an ordered way of life; 57% preferred to pray at the same time each day; 56% often followed a set pattern of praying; 53% preferred to set aside a specific time for prayer; 37% used prayer time to order the day ahead; 36% agreed that there are patterns in their prayer life which they are reluctant to change; 26% got annoyed if they have to reschedule their prayer time; and 25% found it helpful to plan their prayer time well.

In terms of perceiving prayer preference, 91% reported that they often pray what comes into their mind at the time; 81% found that praying when the mood takes them is helpful; 69% were happy to reschedule their prayer time if something else comes up; 46% preferred their prayer time to be flexible and spontaneous; 45% preferred to fit a time to pray in whenever they have space; 32% found scheduled prayer to be limiting; 27% did not like planning fixed times for prayer; and 26% often felt constrained by a set prayer time.

- insert table 3 about here -

Table 3 presents the mean scale scores recorded on the introversion prayer preference scale and on the extraversion prayer preference scale by psychological type preferences. The data demonstrate that introverts recorded significantly higher scores than extraverts on the

introversion prayer preference scale, and that extraverts recorded significantly higher scores than introverts on the extravert prayer preference scale. There were, however, no significant differences recorded on either scale between sensing types and intuitive types, between thinking types and feeling types, or between judging types or perceiving types. These data support the construct validity of the introversion prayer preference scale and the extraversion prayer preference scale.

- insert table 4 about here -

Table 4 presents the mean scale scores recorded on the judging prayer preference scale and on the perceiving prayer preference scale by psychological type preferences. The data demonstrate that judging types recorded significantly higher scores than perceiving types on the judging prayer preference scale, and that perceiving types recorded significantly higher scores than judging types on the perceiving prayer preference scale. There were, however, no significant differences recorded on either scale between introverts and extraverts, between sensing types and intuitive types, or between thinking types and feeling types. These data support the construct validity of the judging prayer preference scale and the perceiving prayer preference scale.

Conclusion

Following a review of previous conceptual and empirical studies exploring connections between prayer preferences and psychological type or temperament, the present study identified three distinct strands, distinguishing between focus on mental processes, temperaments, and contextualising variables (orientations and attitudes), and argued that progress in the field may best be made by pursuing these three strands separately. On this basis the present study focused on the contextualising variables. The specific research aim of the present study was to construct and to test more robust measures of extraversion prayer preference, introversion prayer preference, judging prayer preference, and perceiving prayer

preference, as reflected in strong internal consistency reliability and strong construct validity against measures of personal type preferences.

These aims have been achieved with the development of the Durham Indices of Prayer Preference (DIPPs) proposing four eight-item measures of introversion prayer preference, extraversion prayer preference, judging prayer preference, and perceiving prayer preference. Each of these measures recorded an alpha coefficient of internal consistency reliability above .80 that is generally regarded as good for scales of this length (DeVellis, 2003). The item rest of test correlations confirmed that each item was playing a full part within an homogeneous measure. The item endorsements demonstrated a good range of item discrimination. Construct validity was demonstrated by the way in which each scale related positively to the measure of personal type preference from which it had been derived but was independent of other components of psychological type theory. On the basis of these data the Durham Indices of Prayer Preferences can be commended for further testing in other studies.

While the present study was able to advance empirical knowledge in one of three strands of research exploring connections between prayer preferences and psychological type or temperament evidenced in previous publications, similar work is now needed in respect of the other two strands concerning mental processes and temperaments.

A clear limitation with the present study is that the Durham Indices of Prayer Preferences have been developed and tested on a relatively limited constituency of Anglican and Methodist ministry training candidates studying at Durham. These scales now need testing among diverse groups of participants.

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Conflict of interest

No potential conflict of interest was reported by the authors.

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Data availability

Anonymised data are available from the corresponding author upon reasonable request.

Ethical approval

This study received ethical approval from the Ethics Committee of the Department of Theology and Religion at the University of Durham (2008).

Informed consent

All participants were over the age of 18 and gave informed consent by participation in the project.

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Table 1

Type distribution for ministry training candidates

The Sixteen Complete Types

ISTJ *n* = 18 (8.7%) +++++ ++++	ISFJ *n* = 16 (7.7%) +++++ +++	INFJ *n* = 19 (9.2%) +++++ ++++	INTJ *n* = 15 (7.2%) +++++ ++
ISTP *n* = 2 (1.0%) +	ISFP *n* = 5 (2.4%) ++	INFP *n* = 20 (9.7%) +++++ +++++	INTP *n* = 5 (2.4%) ++
ESTP *n* = 2 (1.0%) +	ESFP *n* = 9 (4.3%) ++++	ENFP *n* = 24 (11.6%) +++++ +++++ ++	ENTP *n* = 15 (7.2%) +++++ ++
ESTJ *n* = 9 (4.3%) ++++	ESFJ *n* = 14 (6.8%) +++++ ++	ENFJ *n* = 25 (12.1%) +++++ +++++ ++	ENTJ *n* = 9 (4.3%) +++++

Dichotomous Preferences

E	*n* = 107	(51.7%)
I	*n* = 100	(48.3%)
S	*n* = 75	(36.2%)
N	*n* = 132	(63.8%)
T	*n* = 75	(36.2%)
F	*n* = 132	(63.8%)
J	*n* = 125	(60.4%)
P	*N* = 82	(39.6%)

Pairs and Temperaments

IJ	*n* = 68	(32.9%)
IP	*n* = 32	(15.5%)
EP	*n* = 50	(24.2%)
EJ	*n* = 57	(27.5%)
ST	*n* = 31	(15.0%)
SF	*n* = 44	(21.3%)
NF	*n* = 88	(42.5%)
NT	*n* = 44	(21.3%)
SJ	*n* = 57	(27.5%)
SP	*n* = 18	(8.7%)
NP	*n* = 64	(30.9%)
NJ	*n* = 68	(32.9%)
TJ	*n* = 51	(24.6%)
TP	*n* = 24	(11.6%)
FP	*n* = 58	(28.0%)
FJ	*n* = 74	(35.7%)
IN	*n* = 59	(28.5%)
EN	*n* = 73	(35.3%)
IS	*n* = 41	(19.8%)
ES	*n* = 34	(16.4%)
ET	*n* = 35	(16.9%)
EF	*n* = 72	(34.8%)
IF	*n* = 60	(29.0%)
IT	*n* = 40	(19.3%)

Jungian Types (E)			**Jungian Types (I)**			**Dominant Types**		
	n	%		*n*	%		*n*	%
E-TJ	18	8.7	I-TP	7	3.4	Dt.T	25	12.1
E-FJ	39	18.8	I-FP	25	12.1	Dt.F	64	30.9
ES-P	11	5.3	IS-J	34	16.4	Dt.S	45	21.7
EN-P	39	18.8	IN-J	34	16.4	Dt.N	73	35.3

Note: *N* = 207 (NB: + = 1% of *N*)

Table 2

Durham Indices of Prayer Preferences (DIPPs): Psychometric properties

	Factors		*r*	Yes
	1	2		%
Introversion				
I prefer to pray alone	.77		.61	56
I am energised by praying in silence	.67		.74	66
I am refreshed after long silences in prayer	.62		.67	54
I need to be away from people when I pray	.59		.42	34
I prefer personal meditative prayer to open shared prayer	.83		.68	49
I naturally become absorbed in personal prayer	.39		.41	59
Stillness is an important part of prayer for me	.60		.64	72
Listening to God in the silence is an important part of my prayer life	.56		.60	78
alpha			*.86*	
Extraversion				
I am energised when I pray in a group of people	-.71		.71	60
I enjoy free open-ended prayer	-.33		.47	62
I prefer to pray with others	-.76		.64	31
I naturally become engaged in prayer groups	-.70		.72	48
Belonging to a prayer group energises me	-.69		.74	55
I prefer open shared prayer to personal meditative prayer	-.81		.61	19
I find it easy to pray with strangers	-.47		.49	48
For me sharing my experiences of God with others is real prayer	-.37		.36	45
alpha			*.85*	
Judging				
I prefer to pray at the same time each day		-.77	.65	57
I prefer to set aside a specific time for prayer		-.74	.69	53
I find it helpful to plan my prayer time well		-.54	.45	25
I am annoyed if I have to reschedule my prayer time		-.59	.53	26
There are patterns in my prayer life which I am reluctant to change		-.50	.45	36
For me prayer is part of an ordered way of life		-.57	.58	70
I often follow a set pattern of praying		-.65	.51	56
I use prayer time to order the day ahead		-.40	.45	37
alpha			*.82*	
Perceiving				
I often pray what comes into my mind at the time		.49	.42	91
I prefer to fit a time to pray in whenever I have space		.58	.49	45
I find scheduled prayer limiting		.65	.61	32
I often feel constrained by a set prayer time		.63	.56	26
I don't like planning fixed times for prayer		.74	.62	27
Praying when the mood takes me is helpful		.51	.42	81
I am happy to reschedule my prayer time if something else comes up		.55	.43	69
I prefer my prayer time to be flexible and spontaneous		.72	.62	46
alpha			*.81*	

Note: Factor loadings below .21 have been suppressed; *R* = correlation between the individual item and the other seven items in the scale; % = sum of agree and agree strongly responses

Table 3

Scores on the prayer orientation scales by psychological type

	N	Mean	SD	*t*
Prayer preference for introversion				
Introverts	100	31.0	5.1	
Extraverts	107	25.5	5.8	7.2***
Sensing types	75	27.4	6.8	
Intuitive types	132	28.6	5.7	1.4
Feeling types	132	28.6	5.8	
Thinking types	75	27.4	6.5	1.4
Judging types	125	28.3	6.2	
Perceiving types	82	27.8	6.1	0.6
Prayer preferences for extraversion				
Introverts	100	22.4	5.7	
Extraverts	107	28.1	4.8	7.9***
Sensing types	75	24.8	5.8	
Intuitive types	132	25.7	6.0	1.1
Feeling types	132	25.7	5.8	
Thinking types	75	24.8	6.2	1.0
Judging types	125	24.9	5.7	
Perceiving types	82	26.1	6.2	1.4

Note: *** $p < .001$

Table 4

Scores on the prayer attitude scales by psychological type

	N	Mean	SD	*t*
Prayer preference for judging				
Introverts	100	25.6	5.8	
Extraverts	107	24.2	5.8	1.7
Sensing types	75	25.2	5.6	
Intuitive types	132	24.8	5.9	0.5
Feeling types	132	24.6	6.0	
Thinking types	75	25.5	5.5	1.1
Judging types	125	26.9	5.5	
Perceiving types	82	21.9	5.0	6.6***
Prayer preferences for perceiving				
Introverts	100	26.0	5.3	
Extraverts	107	27.1	5.3	1.5
Sensing types	75	25.9	4.7	
Intuitive types	132	26.9	5.6	1.3
Feeling types	132	27.0	5.5	
Thinking types	75	25.7	4.8	1.7
Judging types	125	24.9	5.0	
Perceiving types	82	29.1	4.7	6.2***

Note: *** $p < .001$