

UNIVERSITY OF  
BIRMINGHAM



THE  
JUBILEE CENTRE  
FOR CHARACTER & VIRTUES

# *PHRONESIS:*

## USING AN ARISTOTELIAN MODEL AS A RESEARCH TOOL

RESEARCH REPORT

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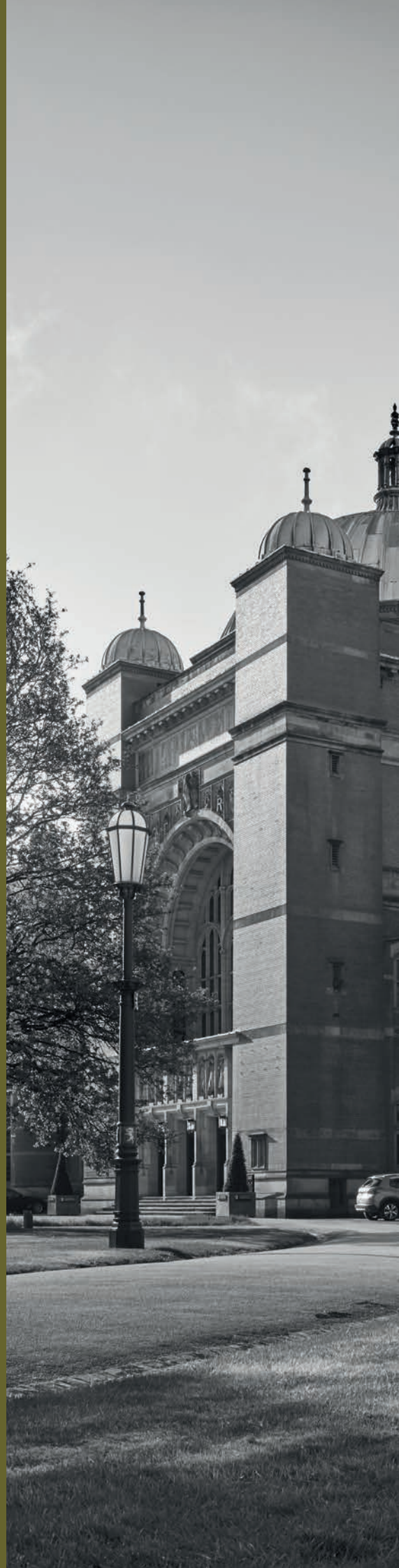


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# *Phronesis:*

## Using an Aristotelian Model as a Research Tool Research Report

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# Executive Summary

The present report complements a previous report that described findings from a project on *phronesis* (practical wisdom), conducted in the Jubilee Centre for Character and Virtues in 2018–2020 (Kristjánsson *et al.*, 2020). The previous report explored the conceptual contours of *phronesis* and proposed a four-componential model (Aristotelian *Phronesis* Model: APM) based on different functions of *phronesis* as constitutive (moral perception), integrative (moral adjudication), invoking a blueprint of the good life (moral identity) and overseeing emotion regulation (moral emotion). It also described two empirical studies, one with an adult sample and the other with an adolescent sample, to test this model via a newly designed *Phronesis Inventory*. All in all, the model proved to be fit for purpose.

Drawing on the same two data sets as the first report (285 adult participants; 207 adolescents), the present report subjected those to closer scrutiny in order to cast further light on information gleaned from the *Phronesis Inventory* on various relevant features of practical wisdom.

## This report tests the following hypotheses

- Female participants outperform male participants on measures within the APM.
- Adult participants outperform adolescent participants on measures within the APM.
- Female participants have higher levels of correspondence between chosen actions and justifications than male participants.
- Adult participants have higher levels of correspondence between chosen actions and justifications than adolescent participants.
- High correspondence between chosen actions and justifications predicts self-reported prosocial behaviour.

‘*PHRONESIS IS ‘THE SCIENCE OF WHAT IS JUST, FINE AND GOOD FOR A HUMAN BEING.’*’

 *Aristotle, Nicomachean Ethics, 1143b.*

## Key findings

In line with the hypotheses and/or previous research:

- Female participants outperformed<sup>1</sup> male participants on all components of *phronesis*, and also on all APM measures targeting assumed sub-components.
- Adults outperformed adolescents on moral reasoning *qua* moral adjudication.
- Adults outperformed adolescents on moral emotion.
- Adults had higher correspondence between chosen actions and justifications than adolescents.
- Higher action–justification correspondence predicted two kinds of self-reported prosocial behaviour (emotional and public).

Not in line with the hypotheses and/or previous research:

- Adolescents outperformed adults on moral perception and, indeed, on all three presumed sub-components.
- There was no statistically significant difference between moral identity levels in adolescents and adults.
- While females had higher correspondence between chosen actions and justifications than males, the difference was not statistically significant.

## Key recommendations for future research

The report recommends that:

- The APM model needs to be further developed and the corresponding *Phronesis Inventory* stress-tested on a wider range of participants in broader contexts.
- The unexpected findings above need to be scrutinised further, in particular looking at why adolescents seem to have a more developed sense of moral perception than adults.
- A *Phronesis Intervention* for adolescents, as designed by the Jubilee Centre, needs to be administered with a pre- and post-evaluation with the *Phronesis Inventory*. Interventions to cultivate *phronesis*, specifically geared towards young adults pursuing professional degrees and experienced professionals, also need to be developed, as well as specific measures for *phronesis* in the cyber-world.
- Further research is required to establish whether the measure of correspondence between actions and justifications is reliable and valid, as it has not been applied before.
- Future studies should investigate whether participants effectively match their chosen actions and justifications across a wider range of moral dilemmas and whether this measure effectively predicts moral behaviour, either self-reported or performance-based.

<sup>1</sup> All mentions of ‘outperformance’ in this Executive Summary refer to statistically significant differences, see Section 4.



# 1 Purpose of the Report

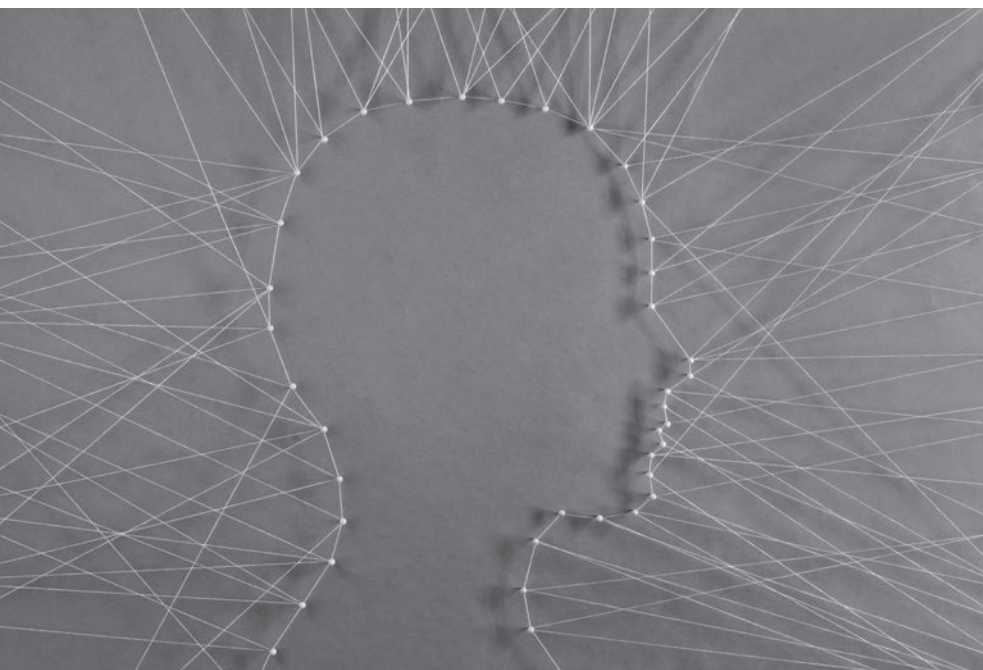
Aristotelian and neo-Aristotelian virtue ethics, which forms the theoretical basis of work in the Jubilee Centre (2017), has long assumed that the gradual development of the intellectual virtue of *phronesis* (or practical wisdom) in young people plays a fundamental role in bridging the 'gap' between knowing the good and doing the good. The development of *phronesis* is considered particularly relevant as a means of adjudicating potential virtue conflicts: when one can be 'good' in different, but incompatible, ways. For example, should loyalty to close friends take priority over honesty towards superiors, or vice versa, in a given conflict situation?

The first report resulting from the Jubilee Centre's *Phronesis Project* (2018–2020) described the conceptual and psychological work that went into developing a new *phronesis* construct and a *Phronesis Inventory* to evaluate it (Kristjánsson *et al.*, 2020).

The original plan was to devote the second part of work on this project to the creation and administration of an educational intervention for upper secondary school students, where progress would be measured by using the *Phronesis Inventory* for pre- and post-testing. A teaching pack was created and the testing of the intervention was initiated on two occasions in two different schools, first in spring and then autumn of 2020.

Unfortunately, because of events resulting from the Covid-19 pandemic, it was not possible to continue with these educational interventions in either case. The project team, therefore, decided to devote the remainder of the project to further analysing data gathered in the first part of the project – in which secondary school students and university students had piloted the *Inventory*.

As becomes apparent in the Background section of this report, while considerable progress was made in the first part of the project in obtaining a deeper understanding of the workings of the *phronesis* construct, the resulting report focussed mostly on the viability of the proposed conceptualisation and its amenability to psychological testing and predictions (of self-reported moral action). This left insufficient room to delve more deeply into some of the nuances of the data collected with respect to a number of conceptual, developmental and psychometric factors. The present report provides an opportunity to ameliorate some of those lacunae and paint a fuller picture of the original conceptualisation of *phronesis* as a psycho-moral construct.



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When subjecting the data to further investigation, the project team were guided by a number of specific research hypotheses. Those are listed in detail in Section 2.7. At the present juncture, it suffices to clarify that the guiding hypotheses were based both on previous empirical findings about moral development in general (as generally higher in females than males and in adults than adolescents), and more specific neo-Aristotelian assumptions about the nature and correlates of *phronesis* in particular. An additional purpose behind the present studies was to cast new light on a previously under-explored feature of the Intermediate Concept Measure (ICM), used as part of the *Phronesis Inventory* to measure moral reasoning in the adjudication of moral dilemmas. While the ICM traditionally asks participants to rank action choices and justifications separately in terms of acceptance, no one has, to the best of the authors' knowledge, tried to gauge whether face-valid correspondence between choices and justifications is correlated with prosocial behaviour, or whether correspondence levels are related to age or gender<sup>2</sup>. This part of the present study, therefore, contained a salient novelty factor.

In addition to these specific research goals, the present report is also conducive to a more general purpose, which is to assess whether the philosophical concept of *phronesis* lends itself to an empirical conceptualisation and measurement, and hence whether crossover work between philosophy, psychology and education is likely to further understanding of the workings of this presumed intellectual virtue. This general purpose is explained in more detail in Section 2.8, and the question about interdisciplinary research on *phronesis* is returned to briefly in the concluding Section 6.



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<sup>1</sup> Notice, however, that for the Defining Issues Test (DIT), an earlier neo-Kohlbergian instrument, Thoma, Rest and Davison (1991) demonstrated correspondence between action choices and item preferences. The degree of congruence between action choices and moral stage-based item choices there is captured by a U score, which moderates the like between moral judgements and action and is in the same family as the research described here on the ICM.

## 2 Background

### 2.1 THE PHRONESIS CONCEPT

*Phronesis*, first elaborated upon systematically by Aristotle (1985), is considered to be an intellectual meta-virtue of holistic, integrative, contextual, practical reflection and adjudication about moral issues, motivating moral action. It seems obvious that crucial moral decisions are frequently made by parents, teachers, public officials, corporate leaders and the police, to name but a few. These decisions affect the welfare of many people. It also seems undeniable that it is preferable to have those decisions made wisely rather than foolishly. When an important decision needs to be made, one can decide well or poorly about how to act. A perspicacious description of good decision-making about crucial moral issues therefore seems vital.

As a virtue, *phronesis* refers to excellence in such decision-making. As a 'meta-virtue', it includes metacognitive considerations of the injunctions of different moral virtues, especially when those conflict, to reach a measured decision (Darnell *et al.*, 2019; Russell, 2009). *Phronesis* can, metaphorically, be compared to the conductor of a large orchestra. No matter how skilfully and powerfully the different instrument groups in the orchestra can play on their own, the performance will be un-coordinated unless there is a conductor imposing harmony on the musical output.

The concept of *phronesis* enters educational discourse at various levels of engagement, and it continues to fascinate and frustrate educational theorists in equal measure (Kristjánsson, 2015a: chap. 4; Harðarson, 2019; Burbules, 2019). Most theorists will agree with the above Aristotelian characterisation of *phronesis* as a metacognitive capacity, characterising adult integrative thinking (Kallio, 2020), helping us figure out what to do when we get 'stuck' (Burbules, 2019: 131), particularly (or perhaps exclusively) in the moral domain. This is, however, the juncture at which consensus ends and controversies begin – exacerbated

by the fact that the intellectual father of the concept, Aristotle (1985) himself, was not helpful in unpacking it with sufficient clarity.

In the context of Aristotelian developmental and educational theory, *phronesis* is nothing less than the core ideal of what is nowadays named 'character education': namely, the *raison d'être* of such education once it has left the childhood stage. Yet Aristotle's (1985) own reticence about when the transition to *phronesis*-guided education occurs, and his apparent belief that somewhat mindless habituation works best at the pre-*phronesis* stage, have turned the very idea of *phronesis* education into a paradox. For it seems that, according to Aristotle, the best way to prepare the student for the critical and reflective features of *phronesis* is through methods of moral habituation that are anything but critical and reflective (Peters, 1981). This paradox notwithstanding, *phronesis* continues to occupy a significant place in contemporary character education (Kristjánsson, 2015a) – most recently when it has been applied to engagement with online issues as 'cyber-wisdom' (Harrison, 2021).

Moreover, *phronesis* has come under renewed scrutiny recently within professional ethics, in general (Schwartz and Sharpe, 2010), and the ethics of teaching, in particular (Cooke and Carr, 2014), as the late 20th century focus on formal rules and codes of conduct has abated and attention turned towards more intuitive, uncodified and tacit-knowledge-driven strategies to negotiate dilemmatic space in classroom practice. However, just as within other professional domains, such as medicine (Kristjánsson, 2015b), the construct of *phronesis* at work in this discourse is anything but unified and consensual. In most cases, it relies on a MacIntyrean conception of 'practice' (as the sphere in which *phronesis* is enacted) rather than Aristotle's own notion of praxis that is less sociological than MacIntyre's (1981) and more circumscribed to the venue of the standard moral virtues.

Both these discourses, while educationally salient and enlightening from a practical classroom perspective (eg, Harðarson, 2019), are hampered by the fact that – as Burbules puts it – there is little consensus on what *phronesis* really is (2019: 217). More specifically, one could identify the problem as being that of a concept without any agreed-upon conceptualisation. There is no shortage of philosophical analyses of *phronesis*, especially within the confines of standard Aristotelian scholarship. Although many of those studies are nuanced and informative (esp. Russell, 2019), they are typically not helpful in adapting the concept to the needs of social scientific (including educational) research, as they are not 'operationalised' – to use a philosophically controversial term. The resulting lack of clarity and consensus is such that some researchers (eg, McGrath, 2019) have concluded that the concept is redundant or replaceable with other less cumbersome constructs.

### 2.2 A NEW MODEL OF PHRONESIS

The conceptual and psychological research on *phronesis*, in the first part of this project (Darnell *et al.*, 2019; Kristjánsson *et al.*, 2020), must be understood against the backdrop of the above-mentioned lack of clarity and consensus. By delving into Aristotelian and neo-Aristotelian sources and subjecting the discourse on the knowledge–action gap in moral psychology to scrutiny, the research team came up with a new model of *phronesis*: a neo-Aristotelian *Phronesis* Model (APM). The team decided, first, that the Aristotelian characterisation of *phronesis* would have to be elaborated upon and populated with sufficient specificity to constitute a psychological model. Second, instruments would have to be found or designed to measure the various components of the model. The team agreed upon a four-component model of *phronesis* with the following functions (subsequently endorsed in all essentials by Wright, Warren and Snow, 2021: chap. 1).

<sup>1</sup> For a more detailed elaboration of the content of Sections 2.1–2.7, see Darnell *et al.*, 2019.



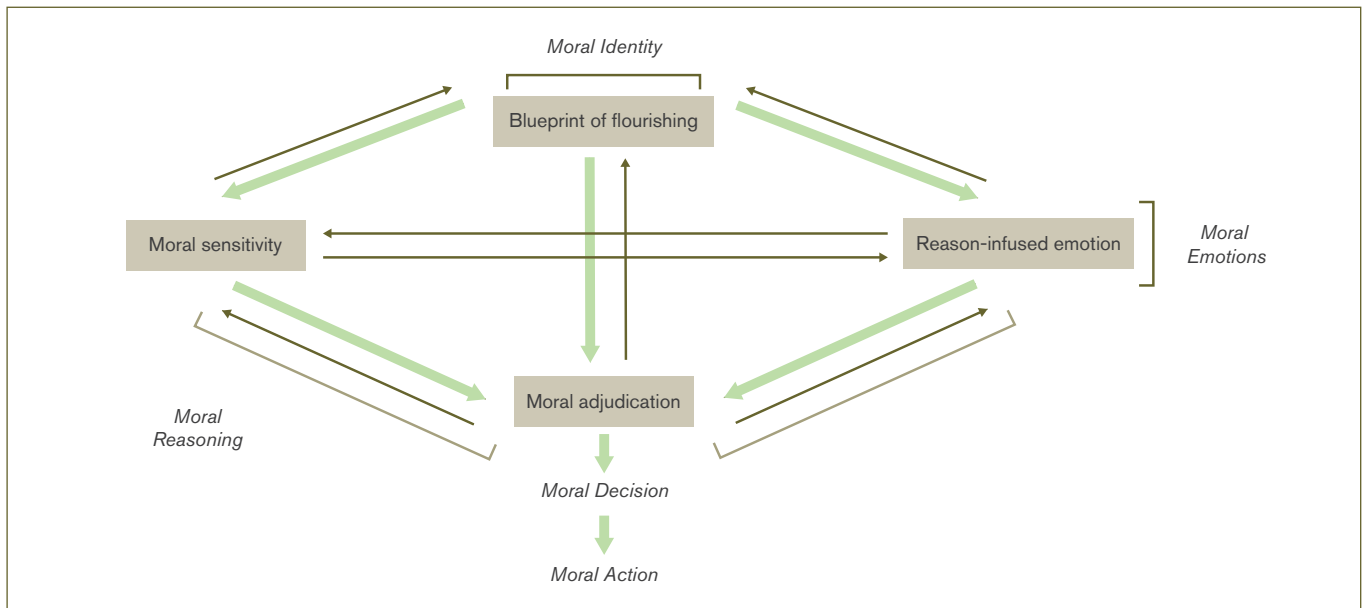


Figure 1: A Neo-Aristotelian Model of Wise (*Phronetic*) Moral Decision-Making

*Constitutive Function.* *Phronesis* involves the cognitive ability to perceive the ethically salient aspects of a situation and to appreciate these as calling for specific kinds of responses. This ability can be cultivated and should develop into the sort of cognitive excellence that merits the label of 'practical wisdom'.

*Integrative Function.* *Phronesis* integrates different components of a good life, through a process of checks and balances, especially in circumstances where different ethically salient considerations, or different kinds of virtues or values, appear to be in conflict and agents need to negotiate dilemmatic space.

*Blueprint Function.* The integrative work of *phronesis* operates in conjunction with agents' overall sense of the kinds of things that matter for a flourishing life: the agents' own ethical identity – their understanding of what it takes if they are to live and act well and their need to live up to the standards that shape and are shaped by their understanding and experience of what matters in life.

*Emotional Regulative Function.* *Phronesis* both requires and contributes to persons' emotional wellbeing by helping to bring their emotional responses into line with their

understandings of the ethically salient aspects of their situation, their judgement and their sense for what is at stake in the moment. For example, *phronesis* might show that a person is having an excessive or deficient emotional response, given their construal of the situation at hand, and then help them adjust accordingly by, for instance, giving themselves an inner 'talking to' or asking themselves questions about why they are so upset (or not upset enough).

Figure 1 illustrates the overall conceptualisation of *phronesis*. Notice that the components there are couched in a language that will be more familiar to social scientists (italicised words) than the names of the four 'functions'. Notice also the central role accorded to the blueprint component. Without the central magnet of that component, all the other components would, so to speak, fall back into their respective heaps.

The empirical hypothesis motivating the work on the APM was that the meta-virtue construct of *phronesis*, combining the variables of moral perception (*qua* the constitutive function), moral adjudication (*qua* the integrative function), moral identity (*qua* the blueprint function), and moral emotions (*qua* the

emotional regulative function), would predict moral action better than any of the variables on their own. Since no instrument to measure *phronesis* existed, the research team piloted a new instrument, a *Phronesis Inventory*, making use of a battery of available scales and some modified measures, to test the hypothesis. For convenience of initial testing, the team relied on a standard self-report prosociality scale as a proxy for the action component, but future research plans include replacing it with experience-sampling methods for recording moral actions.

Pilot data were collected for two empirical studies to structurally model the APM with measures expected to approximate the components of the APM, and the predicted latent components were consistent with predictions in all but one case. Most importantly, the latent components were found to be structurally related to an anticipated second-order latent *phronesis* variable and, promisingly, this variable was correlated with a latent prosocial behaviour variable (Kristjánsson *et al.*, 2020). These results are quite preliminary, and will be added to in due course, but at least they are suggestive about the possibility of specifying and applying a multi-component *phronesis* construct.

### 2.3 SOME UNANSWERED QUESTIONS

The research questions that initially guided the research project on *phronesis* were:

- How can *phronesis* be conceptualised in a way that is reasonably faithful to its Aristotelian provenance but also potentially useful from a current psychological perspective?
- Is it, in principle, possible to measure *phronesis*, and can a new *Phronesis Inventory* be developed?
- When and how does *phronesis* develop?
- Can *phronesis* bridge the gap between moral thought and action?

The project team considered the first two questions to have been addressed adequately in the first report (Kristjánsson *et al.*, 2020). The third question has never been subjected to serious empirical inquiry. Part of the reason has to do with the reluctance of virtue ethics in general and its educational incarnation, as character education, in particular, to build bridges to contemporary developmental psychology (Swanton, 2016). A more specific reason is the earlier mentioned dearth of previous empirical research into the workings and development of *phronesis* itself. Various developmentally relevant hypotheses about *phronesis* have been proposed (see Section 2.6), but they have mostly, so far, been exercises in ‘armchair psychology’. The current report begins to fill some of those gaps, for example regarding the variables of age and gender, but much more work remains to be undertaken in this area.

The previous report (Kristjánsson *et al.*, 2020) offered cause for optimism regarding a positive answer to the fourth question, but it stopped short of explaining why or how *phronesis* can act as a bridge-builder between thinking and doing. For example, does correspondence between choices of acceptable actions and acceptable reasons for those particular choices predict prosocial tendencies? The study presented here begins to address that question.

### 2.4 A NEW COMPETING MODEL FROM PSYCHOLOGY

In the summer of 2020, Professor Igor Grossmann and colleagues, including many of psychology’s most prominent wisdom researchers, produced a comprehensive new ‘common’ wisdom model (hereafter: CWM) – followed by critical commentaries and finally a response by some authors of the target article (Grossmann *et al.*, 2020a; 2020b). As this new model can, in many ways, be seen as a competitor to the APM, some critical engagement with it is in order here.

From a historical and philosophical perspective, previous conceptual work in psychology has been hampered by attempts to reconcile or elide a standard distinction between three discrete historical concepts of wisdom derived from Aristotle: *sophia* (theoretical wisdom), *phronesis* (practical wisdom), and *deinotes* (instrumental wisdom or ‘cleverness’). The new CWM comes in many ways close to *phronesis*, and it cites previous Jubilee Centre work (Darnell *et al.*, 2019) on *phronesis* repeatedly. Pitched as unifying perspectival metacognition and moral aspirations, the CWM thus seems to align well with the *phronesis* construct. This potential rapprochement, however, opens up various complex questions – theoretical as well as practical – about a potential competition, or at least division of labour, between wisdom, as understood in the CWM, and *phronesis*.

The CWM has two main pillars, ‘perspectival metacognition’ and ‘moral aspirations’ (Grossmann *et al.*, 2020a; 2020b). The CWM does not explain how perspectival metacognition guides wise action, arguably the central function of wisdom, at least on Aristotle’s understanding of practical wisdom or *phronesis* (Darnell *et al.*, 2019). But is this lacuna then filled by the other pillar: moral aspirations? From a neo-Aristotelian perspective, the fact that the CWM posits ‘moral aspirations’ as one of the two main pillars of wisdom counts as a positive

‘WE SAY THAT PEOPLE WHO DO JUST ACTIONS [WITHOUT *PHRONESIS*] ARE NOT YET THEREBY JUST, IF, EG, THEY [SIMPLY] DO THE ACTIONS PRESCRIBED BY THE LAWS.’

 Aristotle, *Nicomachean Ethics*, 1144a.

development, especially given psychology’s penchant for the performative and instrumental over the moral (Fowers, 2005). It is particularly positive, from a neo-Aristotelian perspective, to see the word ‘moral’ appear almost 100 times in the target article on the CWM (Grossmann *et al.*, 2020a). However, the way the concept of ‘moral aspirations’ is unpacked in the article is not entirely persuasive – at least not from the standpoint of those concerned about finding an action-guiding decision procedure to resolve virtue conflicts and trade-offs (Kristjánsson *et al.*, 2020).

At the beginning of their target article, Grossmann and colleagues specify moral aspirations in terms of aspirational goals that aim for a balance of self-and-other interests and an orientation toward a shared humanity (2020a: 103). The main difficulty here is that these are empty referents that require elucidation. Instead of providing such an elucidation, the remainder of their (2020a) article and the (2020b) rejoinder refer back to this specification without deepening it. In one instance (2020a: 107), ‘prosociality’ is added to the mix, though ‘prosocial’ is not the same as ‘moral’ or an elucidation of it (Fowers *et al.*, 2020). ‘Orientation toward a shared humanity’ and a ‘balance of self-and-other interests’ can also mean a number of different things with radically different moral ramifications. One interpretation of the apparent emptiness of Grossman *et al.*’s (2020a) account of moral aspirations is that they are expressing ambivalence about biting the evaluative bullet

by providing substantive meaning to their moral terms. They would have many sympathisers among psychologists in this reluctance to make moral commitments explicit (Richardson, Fowers and Guignon, 1999). However, the ultimate worry here is that Grossman *et al.*'s (2020a) avoidance of substantive moral commitments leaves wisdom unmotivated and inert.

Additionally, whereas Aristotelian *phronesis* is clearly meant to highlight overt moral performance rather than self-views, Grossmann and colleagues remain extremely flexible about which methodological approach they prefer (2020a: 114). This is perhaps understandable, given that psychological researchers may obviously be interested in various aspects and correlates of wisdom, including people's mere self-reports about how wise they believe themselves to be. Considering the practical nature of the CWM and its explicit departure from *sophia* toward *phronesis*, one would have expected the main focus of the CWM to be its explanation of actual wise actions rather than what it tells us about the nature of wise thinking abstracted from actual performance, or about people's varying transparent conceptions of themselves as wise agents. The relationship between cognition and behaviour is of perennial interest to psychologists, and *phronesis* appears to represent a promising construct to bridge the gap between moral judgement and moral action (Darnell *et al.*, 2019). From a practical (action-guiding) perspective, the APM construct is better positioned to assist in this work than is the CWM. Nevertheless, the new CWM must count as a game-changer in the field of psychological research into the practical side of wisdom, and given Grossmann's sympathies with the Jubilee Centre's work on *phronesis* (see his foreword to Kristjánsson *et al.*, 2020), the time seems ripe for further integrative, cross-disciplinary work on the construct.

## 2.5 EDUCATING PHRONESIS

As indicated in the Purpose Section, the original aim of the second part of the *Phronesis Project* was to test an educational intervention to cultivate *phronesis*. Although that plan fell through for pandemic-related reasons – to be resumed at a later juncture in the work of the Jubilee Centre – it is worth offering a few comments here regarding how little is known about the education of *phronesis*. Aristotle's own reticence about it was mentioned in Section 2.1. He seems to offer little more than platitudes about how *phronesis* is best cultivated through 'teaching and experience' (1985: 33 [1103a14–16]), for the questions remain: what kind of teaching?; what sort of experience?

Although there is insufficient space here to detail possible wisdom interventions, some comments can be made about the shortcomings of current literature. Not only are interventions to cultivate wisdom much rarer than interventions to build many other character strengths and virtues, such as gratitude or forgiveness, but the 'practical' or educational literature is yet more eclectic than the general psychological literature on wisdom, and it is often difficult to see what various scholars have in common (Ferrari and Potworowski, 2010). Attempts to give an overview of the educational literature are also few and far between; it is indicative of the current state of play that the fairly brisk overview by Grossmann and colleagues (2020a: 117–119) is probably the best place to begin for researchers wanting to gain a comprehensive view of what has been done in this area (see also Huynh and Grossmann, 2020).

The diffusion characteristic of extant wisdom interventions lies partly in the fact that most interventions do not take any distinct model of wisdom, such as the CWM or the APM, as their starting point. Such interventions almost invariably work on just one, or maximum two, components of wisdom or *phronesis*, rather than the virtue as a whole. For example,

an educational project on social reasoning, based on dialogical and collaborative methods (Lin *et al.*, 2019), can be seen as developing the constitutive and integrative functions of *phronesis*, but has little to do with the blueprint function or the emotional regulative one. A host of interventions to develop 'emotional intelligence' via 'social and emotional learning' exist (Durlak *et al.*, 2011), but they usually do not work on other aspects of *phronesis*, nor indeed see themselves as having anything to do with practical wisdom as such. Studies have made progress regarding how to build a sense of purpose and moral identity in young people (Damon, 2008), but less is known about how such teaching can interact with work on the other components of *phronesis*. As Jeste *et al.* (2020) remind us, enhancing individual components of wisdom is not the same as increasing overall wisdom. Grossmann *et al.* (2020b: 191) add the well-founded admission that 'little is known' about the salience of the *order* of teaching: for example (given the two pillars of their CWM), whether perspectival metacognition requires the moral aspirations to be taught first or vice versa.

To end this brief educational discussion on a more positive note, two things stand out. First, the fact that many relevant interventions exist in related areas, such as that of social reasoning or dialogic reflection, means that new interventions will not need to be constructed *de novo*; the key will lie in combining them together correctly under the guidance of holistic models like the APM or the CWM. Second, as previous findings tend to indicate that people are better at taking wise decisions on behalf of others than themselves (Huynh and Grossmann, 2020), a successful intervention is likely to work on third-person scenarios in the first instance and progress later, through ego-decentring, to first-person ones.

The good news is that almost all wisdom scientists view practical wisdom as malleable and educable (Grossmann *et al.*, 2020a). With agreement on that starting point, there is ample scope for progress.

## 2.6 SOME HYPOTHESES ABOUT PHRONESIS

The dearth of empirical research on *phronesis* notwithstanding, Aristotelians and neo-Aristotelians have proffered various (mostly untested, if essentially testable) hypotheses about the nature and development of *phronesis*. From a standard social scientific perspective, these hypotheses would count as armchair psychological, at worst, folk psychological, at best. However, given their theoretical (and in some cases intuitive) appeal, they would form natural starting points of extensive educational research programmes. Some of those common hypotheses are listed below.

**Hypothesis 1:** Apart from the individual variance in the four specific components (as proposed in the APM), there is also variance in the overall possession of *phronesis*, and it is a scalar concept.

This hypothesis may seem unnecessary, for if there is individual variance in the components of *phronesis* (between individuals and within the same individual, depending *inter alia* on age and experience), then surely the same will apply to the construct as a whole. However, this hypothesis is needed because of remarks Aristotle himself makes about how *phronesis* secures the unity of the virtues. Aristotle thus says that when one has *phronesis*, one has 'all the [moral] virtues as well' (1985: 171 [1145a1–3]). This has given rise to the interpretation that, for Aristotle, *phronesis* is an all-or-nothing affair: either one is a full-fledged *phronimos* with all the moral virtues secured or one does not possess *phronesis* at all. While it is plausible to consider *phronesis* to develop over one's character as a whole, in a holistic way, neo-Aristotelians tend to depart from this strict reading and see it as one of many examples of Aristotle falling prey to the habit of defining concepts with respect to their idealised realisations. On a standard neo-Aristotelian understanding, in contrast, then, *phronesis* (just like the moral virtues) represents a scalar, developmental concept



(Fowers *et al.*, 2020). This is why most of the salient discourses about *phronesis* are, in fact, educational discourses.

**Hypothesis 2:** The development of *phronesis* takes off in late adolescence/early adulthood.

Aristotle says that 'the young' cannot develop *phronesis*, as they lack the relevant experience (1985: 160 [1142a12–16]). He does not indicate, however, how young is 'young' or when exactly *phronesis* begins to develop. Combining Aristotle's insights with modern knowledge about the development of adult integrative (metacognitive) thinking and identity formation (Kallio, 2020), most neo-Aristotelian theorists assume that *phronesis* development takes off in (late) adolescence to early adulthood. However, much more research is needed to confirm that hypothesis. Indeed, this may be one of the least plausible of the Aristotelian and neo-Aristotelian hypotheses listed here. There is, for example, considerable psychological evidence indicating that adolescents can reason about risk-taking dilemmas as effectively as adults from early adolescence. Generally, the current evidence indicates steep metacognitive development from early adolescence to late adolescence and then a gradual plateauing (Weil *et al.*, 2013).

**Hypothesis 3:** The earlier that the foundations of *phronesis* are laid in childhood, the better for its future development.

This hypothesis departs substantially from standard 'originalist' exegeses of Aristotle, according to which he considered the phases of early virtue-trait habituation and later *phronesis*-formation as fully separate (Burnyeat, 1980). Many neo-Aristotelians lean more towards Sherman's (1989) interpretation, according to which reason-responsiveness should ideally be cultivated from early childhood, through exposure to reasons and arguments. This Shermanian neo-Aristotelian hypothesis carries the additional benefit of dissolving Peters' (1981) earlier-mentioned 'paradox of moral education'. However, at the moment, empirical data to confirm or disconfirm this hypothesis is mostly non-existent.

**Hypothesis 4:** How *phronesis* develops and how (well) it functions depends partly on individual constitution.

Aristotle obviously did not know, as we do today, about our mostly genetically constituted (esp. Big-Five) personality traits and how these amoral traits may partly condition the formation of moral character qualities (Kristjánsson, 2013: chap. 3).

However, this current knowledge is fully in line with Aristotle's own strong emphasis on the individualisation of virtue, which is fairly unique historically in character education theory. For example, according to Aristotle, temperance in eating is not the same for Milo the Olympic athlete as for the novice athlete, because what is intermediate in virtue is relative to the individual, 'not in the object' (1985: 43 [1106b1–7]). And, from an educational perspective, a boxing instructor will not 'impose the same way of fighting on everyone' (1985: 295 [1180b9–11]). Thus, it is not a concession from an Aristotelian perspective to admit that honesty will come more naturally to a person with a strong personality trait of conscientiousness, or compassion to a person who is strong on agreeableness. This hypothesis has dramatic implications for the idea of character education in schools, as such education needs to be tailored to the individual constitution of each student.

**Hypothesis 5:** What counts as a *phronetic* decision depends on developmental level.

This hypothesis is a direct implication of the developmental strand that permeates the whole Aristotelian corpus and of his insistence on how different virtues and virtue constellations characterise different phases of one's life – coupled with *Hypothesis 1*, on *phronesis* as a scalar concept. More specifically, Aristotle seems to believe that in early adulthood, people need to rely strongly on their 'character friends' in order to reason wisely (namely, for honing and executing their *phronesis*), while this need will diminish with greater experience (Aristotle, 1985: 266, 208 [1172a11–14, 1155a15–16]).

These are just five of many hypotheses that have been suggested by neo-Aristotelians, and they have been listed here as examples of the abundant empirical work that awaits researchers interested in the *phronesis* topic.

## 2.7 THE SPECIFIC HYPOTHESES TESTED IN THIS REPORT

Many of the hypotheses introduced in the preceding section are extensive enough to require whole research projects of their own. While the data set already gathered in the *Phronesis Project* does not warrant confirmations or disconfirmations of those general hypotheses, it can be mined to answer various more specific questions.

The hypotheses scrutinised in Sections 4 and 5 of the present report are:

### STUDY 1

1. Female participants will outperform male participants on measures within the APM.
2. Adult participants will outperform adolescent participants on measures within the APM.

### STUDY 2

1. Female participants will have higher levels of correspondence between chosen actions and justifications than male participants.
2. Adult participants will have higher levels of correspondence between chosen actions and justifications than adolescent participants.
3. High correspondence between chosen actions and justifications will predict self-reported prosocial behaviour.

## 2.8 OVERALL EVALUATIVE GOALS

The capacity to make wise decisions about weighty and moral matters has always been valuable, but it has seldom been as necessary as it is now, considering the global pandemic and vocal protests about inequality. Life-altering and life-ending decisions have been required of various people. Although there is a great deal of disagreement about which decisions are best, the outcomes of these decisions can be stark. For example, death rates have varied widely between countries during the pandemic. Two points are plain when so many lives are

at stake. First, wisdom is desperately needed. Second, decision making of this sort is a moral concern because it is a matter of the life and death of many people.

Wise moral decision making is not only necessary in extreme life-and-death situations, however. It is vital in ubiquitous and prosaic settings as well, such as education, child-rearing, business and government. The price of folly can be high. Therefore, few topics seem more urgent than formulating an understanding of how wisdom develops, what motivates it and how it can be enhanced so as to inform apt actions.

The overall evaluative aim of the *Phronesis Project* was never to answer all the remaining questions about wisdom as such. However, it aimed to provide a deeper understanding, and appreciation, of the workings of wisdom as a practical capacity, relevant to making moral decisions. Although the immediate aims of the present report may seem to be fairly specific and well circumscribed, readers must be reminded of the wider and more profound evaluative goals of the project as a whole (as set out in Kristjánsson *et al.*, 2020). Those have to do both with the viability of Aristotelian moral psychology and character education, and the future directions of moral psychology, insofar as it wrestles with the famous puzzle posed by the Apostle Paul, in saying: 'I do not understand what I do. For what I want to do, I do not do. But what I hate, I do' (Romans, 7:15).

As the rationale of neo-Aristotelian character education rests on the credibility of the 'connective tissue' that holds it together – namely *phronesis* – any enhanced insight into the workings of *phronesis*, however specific, is conducive to advancing its theoretical and practical foundations. To secure those foundations, the construct of *phronesis* as a whole must be analysed meticulously in terms of all its nuts and bolts, and those nuts and bolts must, in turn, be understood against the backdrop of the construct as a whole.

# 3 Methods

## 3.1 DATA COLLECTION

### 3.1.1 Overall Methodology

The data used for both studies reported on here were collected as part of the earlier phase of the project to develop an APM. The details regarding participants, measures and procedure are described first briefly (see Kristjánsson *et al.*, 2020 for a fuller version) before an explanation of each analysis is given.

### 3.1.2 Participants

The adult sample consisted of 285 participants (females = 143), aged between 18–50 years (mean = 27.69, SD = 10.02), recruited via a research participation scheme for an undergraduate Psychology course at the University of Birmingham and a crowdsourcing research participation website in the UK. All participants were completing a college or University course/degree and received

either course credit or £2 for completing the study. The adolescent sample consisted of 207 adolescents attending full time secondary school education (females=112), aged between 15–17 years (mean=15.59, SD=1.2), recruited from 15 UK secondary schools. Secondary schools were offered presentations on character education for their students' participation in the study.

### 3.1.3 Measures

A number of standardised measures were used to assess the four components of *phronesis* (Darnell, *et al.*, 2019): Moral Reasoning (via both the constitutive and integrative functions); Moral Emotion (the emotion-regulation function); and, Moral Identity (the blueprint function). Given the wide age range, the questionnaires used in the study were selected because they had at least moderate construct validity (ie, they measure what they purport to) in adult populations,

and all scales showed acceptable reliability in the adult sample (Table 1); additionally, all scales bar the IRI-Perspective-Taking scale showed acceptable reliability in the adolescent sample (Table 2). Although the IRI-PT had a Cronbach's alpha below an acceptable threshold, it was retained to maintain consistency with Kristjánsson *et al.* (2020).

Table 1:  
Cronbach's Alphas for the Adult Sample

Variable	Cronbach's $\alpha$
IRI-Empathic Concern Scale	0.75
IRI-Perspective-Taking Scale	0.59
Moral Self-Relevance Measure	0.85
Contingencies of Self-Worth	0.86

Table 2:  
Cronbach's Alphas for the Adolescent Sample

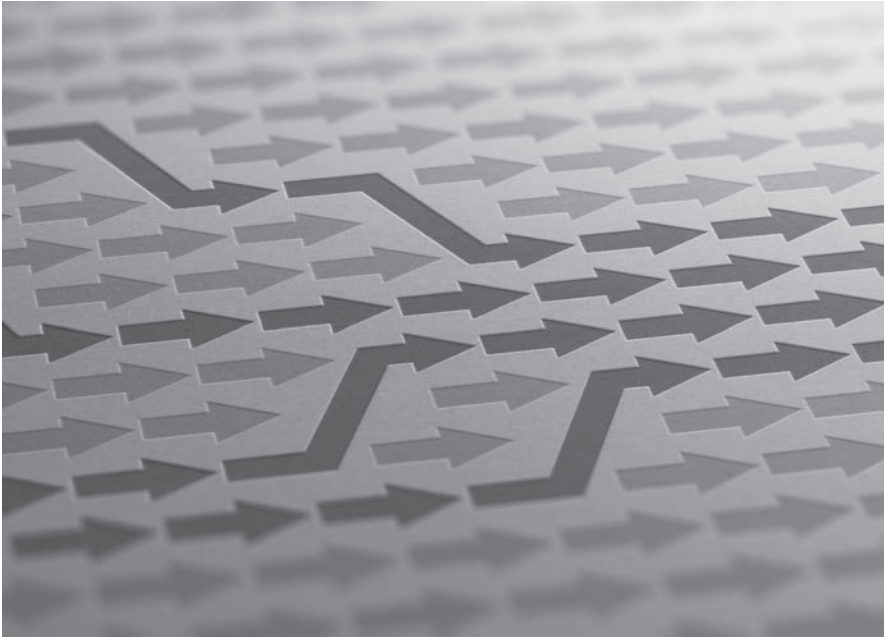
Variable	Cronbach's $\alpha$
IRI-Empathic Concern Scale	0.77
IRI-Perspective-Taking Scale	0.47
Moral Self-Relevance Measure	0.79
Contingencies of Self-Worth	0.7

### 3.1.3.2 Moral Reasoning

The two hypothesised components of Moral Reasoning (Perception and Adjudication) were measured via a series of newly designed tasks and questionnaires centred on two dilemmas selected from the Adolescent Intermediate Concept Measure (AD-ICM) of moral reasoning (Thoma *et al.*, 2013). Each dilemma describes a situation in which a specific virtue concept (eg, courage) is in play. The two dilemmas chosen for the current study emphasised *honesty* (what to do when friends cheat in a test) and *justice* (whether to dismiss a friend who is the weakest worker). These dilemmas were chosen by the research team due to the relevance of the scenarios to both the younger and older participants. Participants were asked to answer all the questions as if they were the protagonist in the story (eg, 'If you were Nikki in this situation, what would you do?').



<sup>2</sup> The panel consisted of two psychology professors and a research fellow working in the field of moral psychology and one philosophy professor and research fellow working in the field of virtue ethics. This included one of the authors of the ICM (Thoma *et al.*, 2013).



#### 3.1.3.1.1 Moral Perception

Moral Perception was assessed with three novel tasks: Virtue Identification, Virtue Selection and Virtue Relevance, based on modifications of the AD-ICM (Thoma *et al.*, 2013). Virtue Identification assesses whether participants can identify a conflict within a dilemma, Virtue Selection assesses whether individuals can select the most pertinent virtues in the situation and Virtue Relevance assesses whether the virtues selected are relevant to the participants' initial description of the problem.

*Virtue Identification:* Participants were required to identify a conflict presented in the dilemma, and scored points for the degree to which their responses recognised a conflict similar to experts' judgements, relating the conflict to virtue and explaining the conflict with reference to virtue-based justifications. Two independent raters scored all participant responses.

*Virtue Selection and Virtue Relevance:* Following the Virtue Identification task, participants were presented with a list of eight

virtues (honesty, compassion, loyalty, justice, respect, gratitude, humility, and integrity) and asked to indicate which qualities they thought were most relevant to the protagonist in the dilemma. Participants' virtue-selection choices were compared against the virtues selected as most appropriate for the dilemma by an expert panel. To secure inter-coder reliability, independent raters then determined whether the virtues selected by participants were relevant to their descriptions of the conflict in the Virtue Identification task.

#### 3.1.3.1.2 Moral Adjudication

##### **Situated Wise Reasoning Scale (SWIS)**

(Brienza *et al.*, 2018): The SWIS is a 21-item questionnaire, reflecting five interrelated facets of wise reasoning: a) Recognition of others' perspectives (four items, eg, 'Took time to get the other people's opinions on the matter before making a decision'); b) Consideration of change and multiple ways a situation may unfold (four items, eg, 'Believed the situation could lead to a number of different outcomes'); c) Intellectual humility/recognition of the limits of one's knowledge

(four items, eg, 'Double checked whether my opinion on the situation might be incorrect'); d) Consideration of compromise/importance of conflict resolution (five items, eg, 'Considered first whether a compromise was possible in resolving the situation'); and, e) View of an event from the vantage point of outsider (four items, eg, 'Wondered what I would think if I was somebody else watching the situation'). Typically, the SWIS asks participants to respond to the items based on a personal situation they have experienced. However, as the aim here was for participants to reflect on the dilemmas presented, participants were told to imagine themselves as the protagonist in each of the two dilemmas before answering the questions on a five-point scale from 'Not at all', to 'Very much'.

##### **Adolescent Intermediate Concept Measure (AD-ICM)**

(Thoma *et al.*, 2013): The AD-ICM measures adolescents' moral thinking, specifically their 'intermediate concepts' (ie, the transition from thinking based on personal interests to conventional thinking). For each story, participants were asked to rate (on a five-point scale from 'I strongly believe this is a bad choice' to 'I strongly believe this is a good choice') a list of action choices, which reflected actions the protagonist might carry out based on the dilemma (eg, 'Danielle should send an anonymous note to the teacher about what happened'). Following this, participants were asked to rank the three best and two worst action choices. Participants then repeated the same procedure for a list of reasons that the protagonist may use as possible justifications for the actions (eg, 'Those that received information were not likely to remember it anyway'). These were rated on a five-point scale from 'I strongly believe this is a bad reason' to 'I strongly believe this is a good reason'. Participants then ranked the three *best* and two *worst* justifications. For the AD-ICM scoring, participants' scores were calculated based on their responses to the ranked items and whether these responses were categorised as 'acceptable', 'unacceptable' or 'neutral'



by an expert panel (see Thoma *et al.*, 2013). *Best choices* and *justifications* that were categorised as acceptable by an expert panel received the highest scores while *best choices* and *justifications* that were categorised as unacceptable received the lowest scores. Similarly, *worst choices* and *justifications* categorised as unacceptable by an expert panel received the highest scores, while *worst choices* and *justifications* that were categorised as acceptable received the lowest scores.

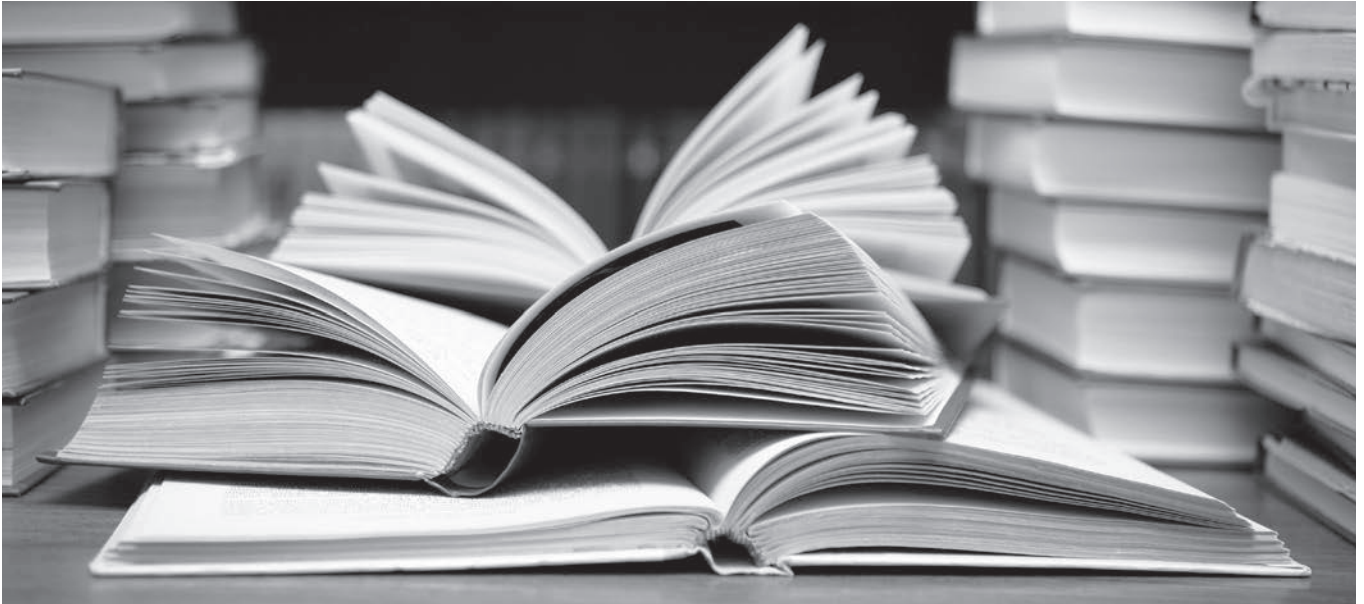
#### 3.1.3.2 Moral Emotions

**Interpersonal Reactivity Index (IRI)** (Davis, 1983): The IRI measures four aspects of empathy (perspective taking, fantasy, empathic concern and personal distress). The subscales can be used separately to measure the individual aspects of empathy. As such, participants completed the perspective taking (unplanned adoption of others' points of view, eg, 'I sometimes try to understand my friends better by imagining how things look from their perspective') and empathic concern (an individual's feelings of compassion and concern for others, eg, 'I am often quite touched by things that I see happen') subscales, as these items best reflected the features of an Aristotelian definition of moral emotion. Participants rated how well each statement described them on a five-point Likert scale ranging from 'Does not describe me very well' to 'Describes me very well'.

#### 3.1.3.3 Moral Identity

**Moral Self-Relevance (MSR) Measure** (Patrick and Gibbs, 2012): The MSR measure asks participants to rate how important moral and non-moral qualities are to their sense of self and consists of two sections. First, participants rate on a five-point scale (from 'Not important to me' to 'Extremely important to me') how important 16 qualities are to their sense of self. These 16 qualities consist of eight moral (eg, honest, kind, fair) and 8 non-moral items (eg, imaginative, cautious, athletic). Then participants chose eight qualities from a list of 32 that they felt were most important to them as a person. The 32





qualities consisted of the same eight moral qualities (eg, generous, helpful, sincere) and 24 non-moral qualities (eg, popular, talkative, strong). The MSR is the sum of the two transformed scores from each section.

#### **Contingencies of Self-Worth (CSW)**

(Crocker *et al.*, 2003): The CSW measures seven sources of an individual's self-esteem. Participants completed only the 'Virtue' subscale from the CSW as this subscale specifically focusses on the importance of virtuous living to one's self-esteem. Participants rated five items (eg, 'My self-esteem depends on whether or not I follow my moral/ethical principles') on a seven-point Likert scale ranging from 'Strongly disagree' to 'Strongly agree'.

**Aspects of Identity (AOI)** (Cheek *et al.*, 2002): Participants completed one item from the 'Personal Identity Orientation' subscale of the Aspects of Identity questionnaire. On a five-point scale, they rated how important 'my personal values and moral standards are...' from 'Not at all important to my sense of who I am' to 'Extremely important to my sense of who I am'.

#### **3.1.3.4 Prosocial Tendencies**

The Prosocial Tendencies-Revised Scale (Carlo *et al.*, 2010): This scale provides a 21-item measure of prosocial behaviour with six subscales: Public (three items, eg, 'When other people are around, it is easier for me to help others in need'); Anonymous (four items, eg, 'I think that helping others without them knowing is the best type of situation'); Dire (three items, eg, 'It is easy for me to help others when they are in a bad situation'); Emotional (five items, eg, 'I respond to helping others best when the situation is highly emotional'); Altruism (four items, eg, 'One of the best things about doing charity work is that it looks good on my resume'); and, Compliant (two items, eg, 'When people ask me to help them, I don't hesitate'). Participants rate how accurately each statement describes them on a five-point scale from 'Does not describe me at all' to 'Describes me greatly'.

‘ERROR IS EASY AND CORRECTNESS HARD, SINCE IT IS EASY TO MISS THE TARGET AND HARD TO HIT IT.’

⊗ Aristotle, *Nicomachean Ethics*, 1106b.



### 3.1.4 Procedures

Adult participant data were collected online, with participants completing the battery of questionnaires in a single one-hour session. The order remained the same for each participant with the questionnaires completed in the order listed in the measures section above. Consent was obtained for all participants prior to completing the questionnaire. Adolescent participants completed the questionnaire either online or in a paper format, depending on the preference of the school. The procedure and content remained the same for either format and participants completed the questionnaires in the same order. Parental consent was obtained from parents/caregivers and assent was obtained from all adolescents prior to completing the questionnaires. Questionnaires were completed in one session at school during a form period (approximately one hour).

## 3.2 STUDY 1

### 3.2.1 Rationale

Study 1 was designed to investigate whether there were significant differences in scores recorded from the measures described above between participants of different age groups and genders. The rationale was to perform an early analysis of whether participants of a particular age group or gender recorded scores that would indicate they have higher levels of *phronesis*.

### 3.2.2 Analytical Strategy

Two-way analyses of variance (ANOVAs) were used to assess whether there were significant differences between adults and adolescents, as well as male and female participants in scores on measures related to APM components. All measures specified in the APM were tested in this analysis, including: Virtue Identification, Virtue Selection, Virtue Relevance, the SWIS, AD-ICM (Total ICM), IRI (empathic concern and perspective-taking), MSR, CSW and AOI. Significantly higher scores in these measures may indicate better performance within the hypothesised components of *phronesis* in the APM.

## 3.2 STUDY 2

### 3.3.1 Rationale

Study 2 was designed to investigate whether participants' moral action choices matched their moral justifications as reported on the AD-ICM measure. While past research has used the AD-ICM measure to investigate moral decision making, no past studies (to the authors' knowledge) have attempted to investigate the correspondence between participants' chosen actions and justifications. This study theorises that participants who are better able to link their moral actions to their justifications will engage in more prosocial behaviours. Therefore, this study investigates whether AD-ICM correspondence (on the above understanding) predicts self-reported prosocial behaviour. It also investigates whether there is a difference in action–justification correspondence between different genders and age groups.

### 3.3.2 Analytical Strategy

Action–justification correspondence scores were computed by testing whether the selected best three actions for a given dilemma corresponded with the best three justifications as reported by participants. This was assessed with reference to a key determined by an expert panel that indicated which justifications best matched each potential action. Some actions were determined to share the same best justifications, while others were determined not to have an obvious logical justification. Correspondence between actions and justifications was calculated as a percentage, so that if the justifications selected all corresponded with the best justifications for a given set of three actions, the participant would receive a correspondence score of 100%. If only one of the three reported justifications matched the key, then participants would receive a correspondence score of 33%.



Correspondence scores were averaged across the two dilemmas. The first analysis investigated whether there was a difference between age groups or genders in levels of correspondence using a two-way ANOVA. The second analysis used a regression model to test whether participants with higher levels of correspondence also reported higher levels of prosocial behaviour (Prosocial Tendencies-Revised Scale).

### 3.2.6 Limitations of the Research

Study 1 assumes the validity of the APM as a model that effectively characterises *phronesis* and its components (Darnell *et al.*, 2019). While the initial findings are promising (Kristjánsson *et al.*, 2020), it may be that the APM is incorrectly calibrated. For example, it may have too many or too few components, or it may include the wrong components. Given that this investigation is still in its early stages, positive results should only be tentatively interpreted to mean that some groups of participants had higher levels of *phronesis*. Similarly, Study 2 attempts to compare components of the AD-ICM that have not been compared previously in this way, so any interpretation of positive results should again be tentative.

### 3.2.7 Ethical Considerations

Ethical approval was granted for the research by the University of Birmingham Ethics Committee and informed consent was obtained for all participants. In the case of the adolescent sample, informed parental opt-in consent was sought. Consent was required from both the parent and child for the child to take part in the study.

‘THE DECISION WILL  
NOT BE CORRECT  
WITHOUT *PHRONESIS*  
OR WITHOUT  
[ETHICAL] VIRTUE.’

⊗ Aristotle, *Nicomachean Ethics*, 1145a.



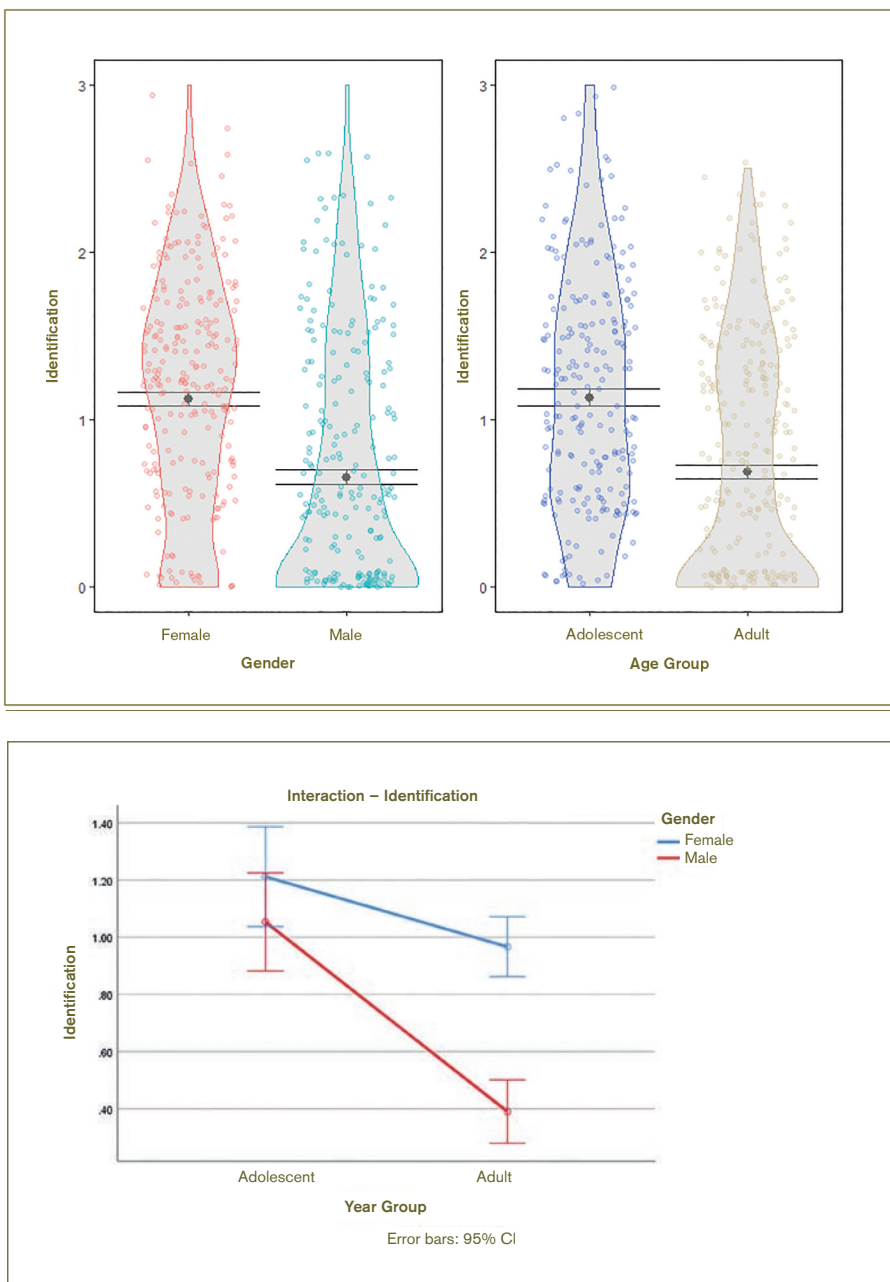
# 4 Findings

## 4.1 STUDY 1

### 4.1.1 Identification

Descriptively, adolescent participants ( $M = 1.11, SD = 0.76$ ) recorded higher identification scores than adult participants ( $M = 0.68, SD = 0.71$ ), and female participants ( $M = 1.12, SD = 0.72$ ) recorded higher scores than male participants ( $M = 0.64, SD = 0.74$ ). The two-way ANOVA revealed that there was a statistically significant difference in scores between genders ( $F(1, 505) = 55.39, p < .001$ ) and age groups ( $F(1, 505) = 41.91, p < .001$ ), as well as a significant interaction between these two independent variables ( $F(1, 505) = 4.47, p < .05$ ). This pattern of results suggests that adolescent (vs. adult) and female (vs. male) participants were better able to identify the salient features of a moral scenario. Such findings also suggest that the difference between female and male participants grows over time, with adult female participants recording similar identification scores to adolescent female participants, while male performance may decline.

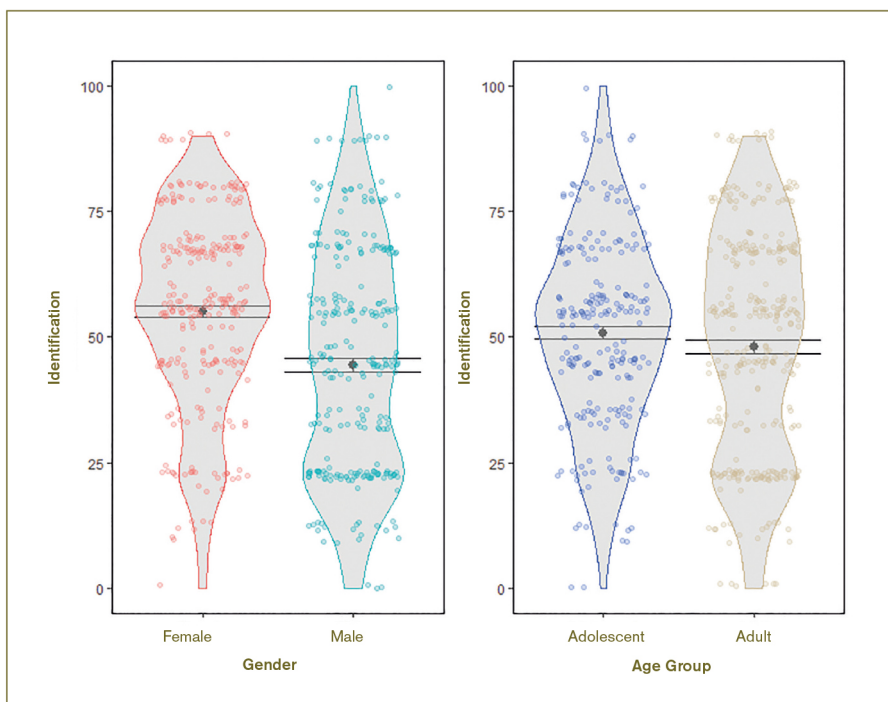
Figure 2: Upper panel: Violin plots of scores for gender and age groups (error bars represent the standard error, and a jitter was applied to increase clarity). Lower panel: Interaction plot (error bars represent 95% confidence interval).



**4.1.2 Selection**

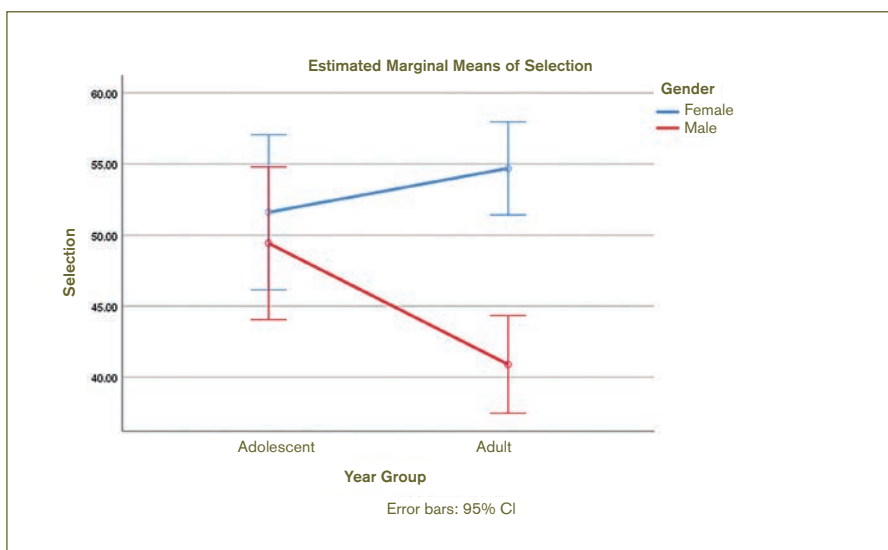
Adolescent participants ( $M = 50.90, SD = 19.02$ ) recorded higher selection scores than adult participants ( $M = 48.07, SD = 23.05$ ) and female participants ( $M = 55.10, SD = 19.78$ ) recorded higher scores than male participants ( $M = 44.22, SD = 22.52$ ). The two-way ANOVA revealed that there was a statistically significant difference in scores between genders ( $F(1, 507) = 31.37, p < .001$ ) and age groups ( $F(1, 507) = 6.45, p < .001$ ), as well as a significant interaction between these two independent variables ( $F(1, 507) = 3.62, p < .05$ ). These results suggest that adolescent (vs. adults) and female (vs. male) participants were better able to select virtues that applied to the given scenario. The interaction effect suggests that male and female participants diverge with age, with female participants in different age groups recording similar selection scores, while adult male participants may be worse at selecting appropriate virtues relative to adolescent male participants.

Figure 3: Upper panel: Violin plots of scores for gender and age groups (error bars represent the standard error and a jitter was applied to increase clarity). Lower panel: Interaction plot (error bars represent 95% confidence interval).



THE VIRTUOUS AGENT MUST KNOW THAT HE IS DOING VIRTUOUS ACTIONS; SECOND, HE MUST DECIDE ON THEM, AND DECIDE ON THEM FOR THEMSELVES; AND, THIRD, HE MUST DO THEM FROM A FIRM AND UNCHANGING STATE [OF CHARACTER].

*Aristotle, Nicomachean Ethics, 1105a*



**4.1.3 Relevance**

Adolescent participants ( $M = 0.92$ ,  $SD = 0.59$ ) recorded higher relevance scores than adult participants ( $M = 0.58$ ,  $SD = 0.67$ ) and female participants ( $M = 0.85$ ,  $SD = 0.69$ ) recorded higher scores than male participants ( $M = 0.46$ ,  $SD = 0.61$ ). The two-way ANOVA revealed that there was a statistically significant difference in scores between genders ( $F(1, 375) = 35.17$ ,  $p < .001$ ) and age groups ( $F(1, 375) = 16.18$ ,  $p < .001$ ); however, there was no significant interaction between these two independent variables ( $F(1, 375) = 1.70$ ,  $p = .18$ ). These results suggest adolescent (vs. adult) and female (vs. male) participants were better able to select the relevant virtues of a given scenario.

**4.1.4 Situated Wise Reasoning Scale (SWIS)**

Adolescent participants ( $M = 3.39$ ,  $SD = 0.52$ ) recorded similar SWIS scores to adult participants ( $M = 3.43$ ,  $SD = 0.65$ ), and female participants ( $M = 3.53$ ,  $SD = 0.52$ ) recorded higher scores than male participants ( $M = 3.34$ ,  $SD = 0.66$ ). The two-way ANOVA revealed that there was a statistically significant difference in scores between genders ( $F(1, 488) = 12.10$ ,  $p < .001$ ) but not between age groups ( $F(1, 488) = 1.62$ ,  $p = .20$ ). These results indicate that female participants recorded higher levels of wise reasoning than male participants.

Figure 4: Upper panel: Violin plots of scores for gender and age groups (error bars represent the standard error and a jitter was applied to increase clarity).

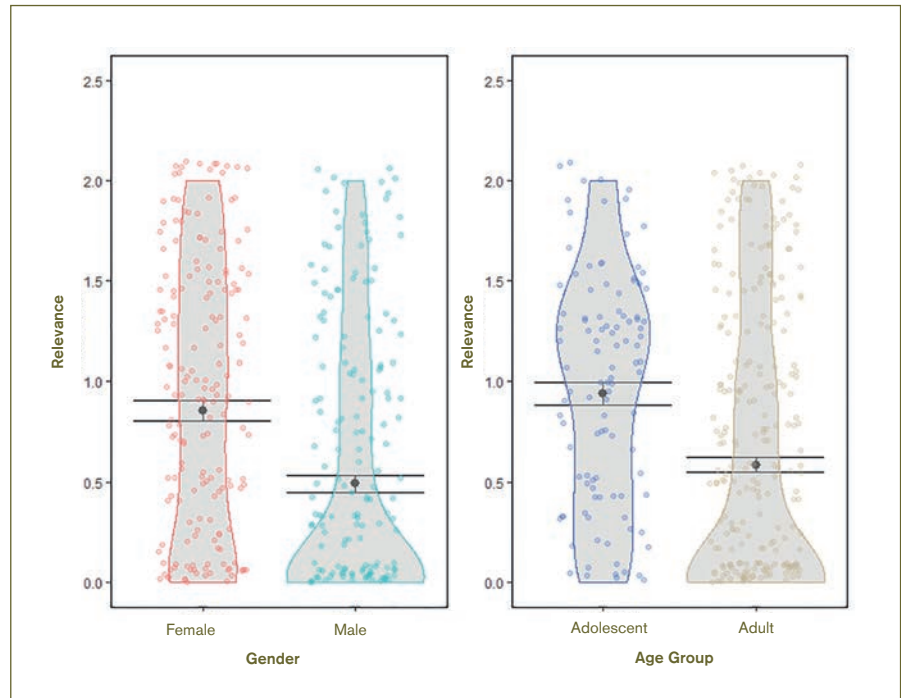
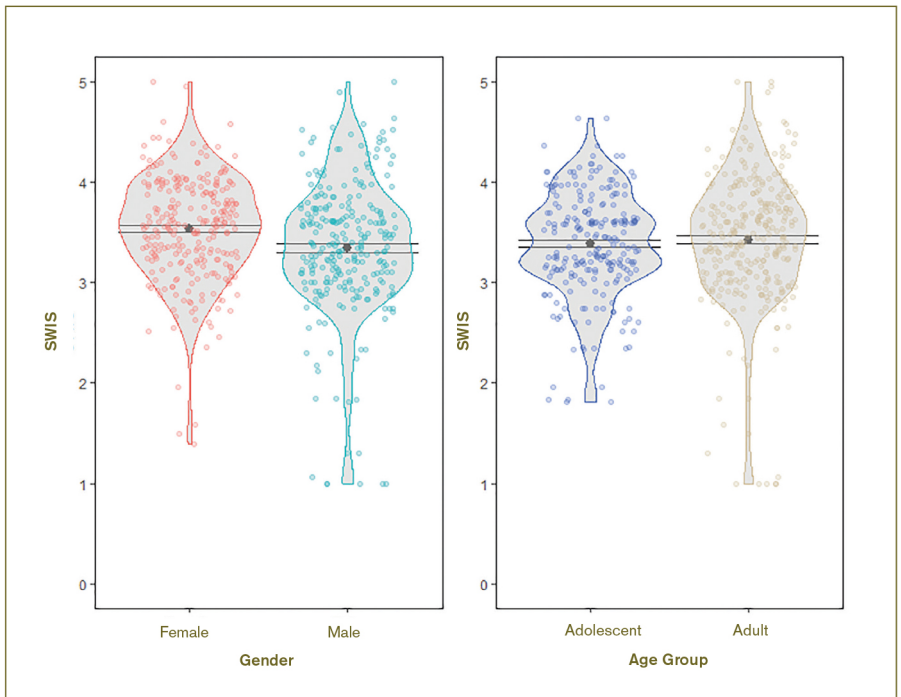


Figure 5: Violin plots of scores for gender and age groups (error bars represent the standard error and a jitter was applied to increase clarity).



#### 4.1.5 Adolescent Intermediate Concept Measure (AD-ICM)

Adolescent participants ( $M = 7.84$ ,  $SD = 11.64$ ) recorded lower AD-ICM scores than adult participants ( $M = 9.01$ ,  $SD = 10.27$ ), and female participants ( $M = 11.11$ ,  $SD = 10.95$ ) recorded higher scores than male participants ( $M = 7.81$ ,  $SD = 10.28$ ). The two-way ANOVA reveals there was a statistically significant difference in scores between genders ( $F(1, 507) = 9.09$ ,  $p < .01$ ) and age groups ( $F(1, 507) = 10.42$ ,  $p < .001$ ), but there was no significant interaction effect ( $F(1, 507) = 0.17$ ,  $p = .85$ ). This pattern of results suggests that adult (vs. adolescent) and female (vs. male) participants reported higher levels of moral reasoning.

#### 4.1.6 Interpersonal Reactivity Index – Empathic Concern (IRI-EC)

Adolescent participants ( $M = 15.74$ ,  $SD = 5.64$ ) recorded lower IRI-EC scores than adult participants ( $M = 16.82$ ,  $SD = 4.85$ ), and female participants ( $M = 18.40$ ,  $SD = 4.76$ ) recorded higher scores than male participants ( $M = 14.86$ ,  $SD = 4.71$ ). The two-way ANOVA revealed that there was a statistically significant difference in scores between genders ( $F(1, 508) = 67.63$ ,  $p < .001$ ) and age groups ( $F(1, 508) = 3.64$ ,  $p < .01$ ), but there was no significant interaction effect ( $F(1, 508) = 0.03$ ,  $p = .97$ ). This pattern of results suggests that adult (vs. adolescent) and female (vs. male) participants reported higher levels of empathic concern.

Figure 6: Violin plots of scores for gender and age groups (error bars represent the standard error and a jitter was applied to increase clarity).

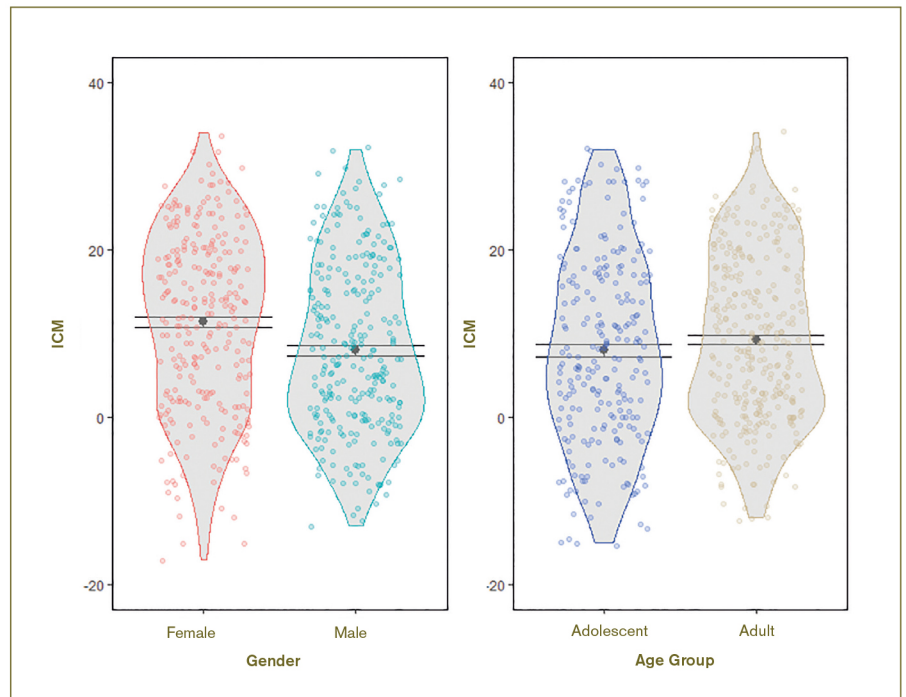
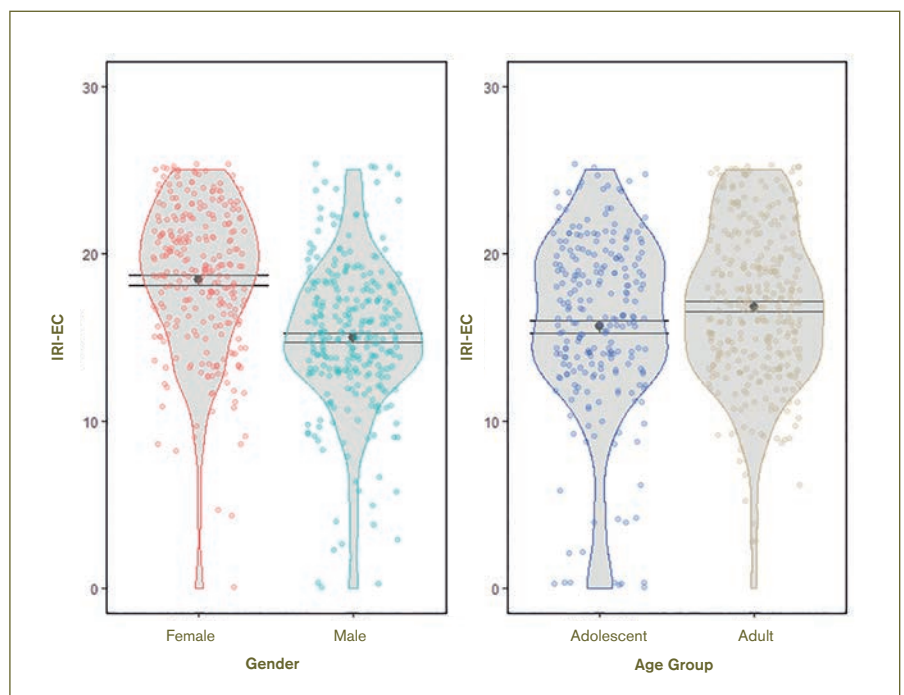


Figure 7: Violin plots of scores for gender and age groups (error bars represent the standard error and a jitter was applied to increase clarity).



**4.1.7 Interpersonal Reactivity Index – Perspective-taking (IRI-PT)**

Descriptively, adolescent participants ( $M = 12.82, SD = 6.08$ ) recorded lower IRI-PT scores than adult participants ( $M = 14.63, SD = 3.81$ ), and female participants ( $M = 14.80, SD = 3.95$ ) recorded higher scores than male participants ( $M = 13.44, SD = 5.10$ ). The two-way ANOVA revealed that there was a statistically significant difference in scores between genders ( $F(1, 507) = 11.04, p < .001$ ) and age groups ( $F(1, 507) = 6.07, p < .01$ ), but there was no significant interaction ( $F(1, 507) = 1.63, p = .20$ ). This pattern of results suggests that adult (vs. adolescent) and female (vs. male) participants reported higher levels of perspective-taking.

**4.1.8 Moral Self-Relevance (MSR)**

Adolescent participants ( $M = 9.51, SD = 3.78$ ) recorded similar MSR scores to adult participants ( $M = 9.56, SD = 4.20$ ), and female participants ( $M = 10.81, SD = 3.82$ ) recorded higher scores than male participants ( $M = 8.39, SD = 3.82$ ). The two-way ANOVA revealed that there was a statistically significant difference in scores between genders ( $F(1, 500) = 48.28, p < .001$ ) but not age groups ( $F(1, 500) = 0.81, p = .81$ ). This pattern of results suggests that female (vs. male) participants rated moral qualities as being more important to their sense of self.

“EVERY EXPERT AVOIDS EXCESS AND DEFICIENCY AND SEEKS AND CHOOSES WHAT IS INTERMEDIATE – BUT INTERMEDIATE RELATIVE TO US [AS INDIVIDUALS], NOT IN THE OBJECT.”

 Aristotle, *Nicomachean Ethics*, 1106b

Figure 8: Violin plots of scores for gender and age groups (error bars represent the standard error and a jitter was applied to increase clarity).

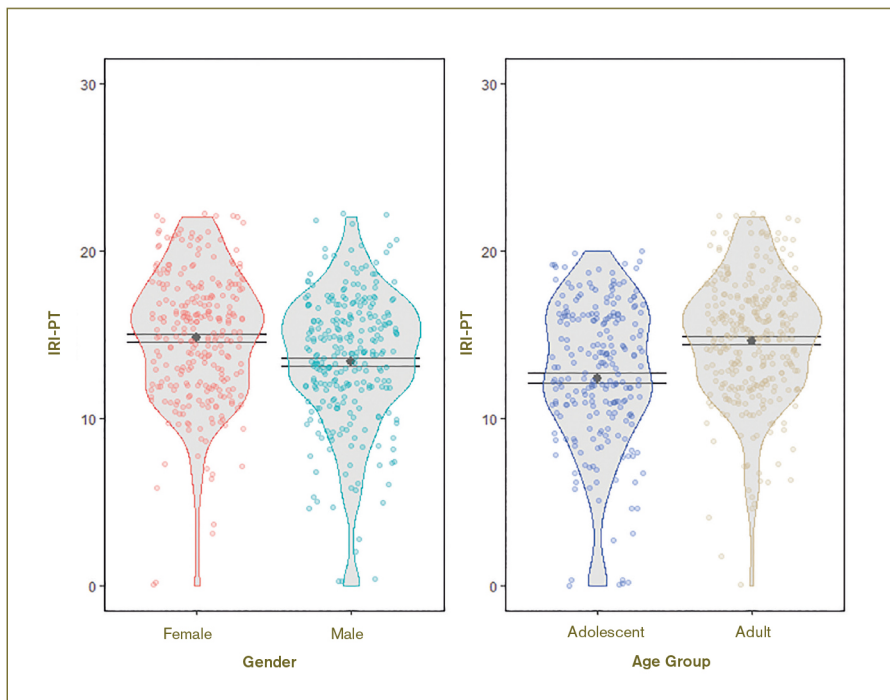
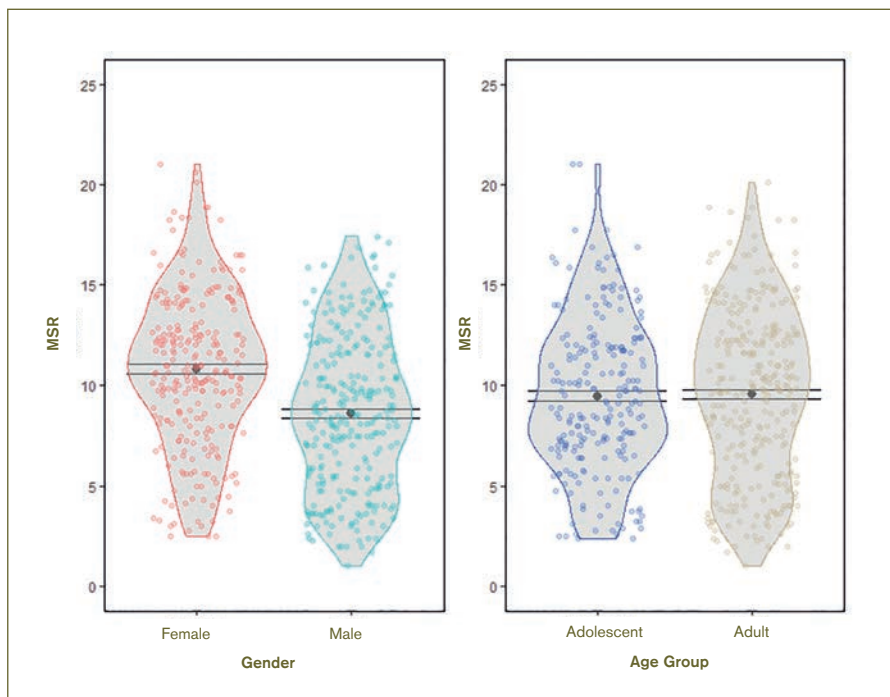


Figure 9: Violin plots of scores for gender and age groups (error bars represent the standard error and a jitter was applied to increase clarity).





#### 4.1.9 Contingencies of Self-Worth (CSW)

Adolescent participants ( $M = 4.85$ ,  $SD = 1.12$ ) recorded lower CSW scores than adult participants ( $M = 5.01$ ,  $SD = 1.24$ ), and female participants ( $M = 5.22$ ,  $SD = 1.06$ ) recorded higher scores than male participants ( $M = 4.74$ ,  $SD = 1.29$ ). The two-way ANOVA revealed that there was a statistically significant difference in scores between genders ( $F(1, 497) = 19.96$ ,  $p < .001$ ) but not between age groups ( $F(1, 497) = 0.59$ ,  $p = .55$ ). This pattern of results suggests that female participants rated virtuous living as being more important to their self-esteem than male participants.

#### 4.1.10 Aspects of Identity (AOI)

Finally, adolescent participants ( $M = 3.73$ ,  $SD = 0.95$ ) recorded similar AOI scores to adult participants ( $M = 3.77$ ,  $SD = 1.07$ ), and female participants ( $M = 3.97$ ,  $SD = 0.92$ ) recorded higher scores than male participants ( $M = 3.60$ ,  $SD = 1.08$ ). The two-way ANOVA revealed that there was a statistically significant difference in scores between genders ( $F(1, 495) = 15.76$ ,  $p < .001$ ) but not between age groups ( $F(1, 495) = 2.23$ ,  $p = .11$ ). This pattern of results suggests that female participants felt their personal values and moral standards were more important to their identity relative to male participants.

For a summary of the results of each analysis in Study 1, see Table 3, pg. 26.

Figure 10: Violin plots of scores for gender and age groups (error bars represent the standard error and a jitter was applied to increase clarity).

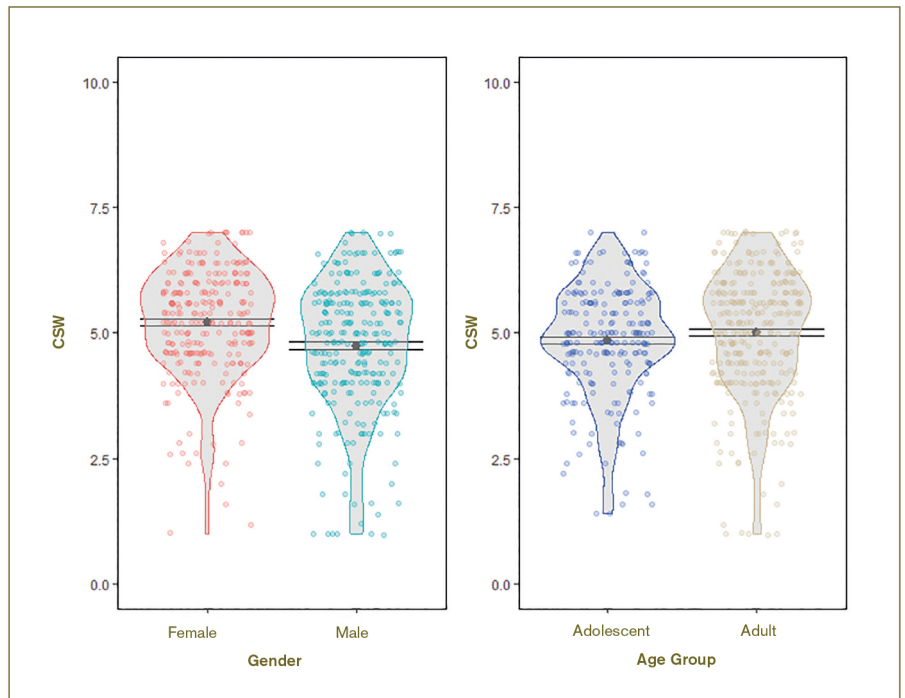
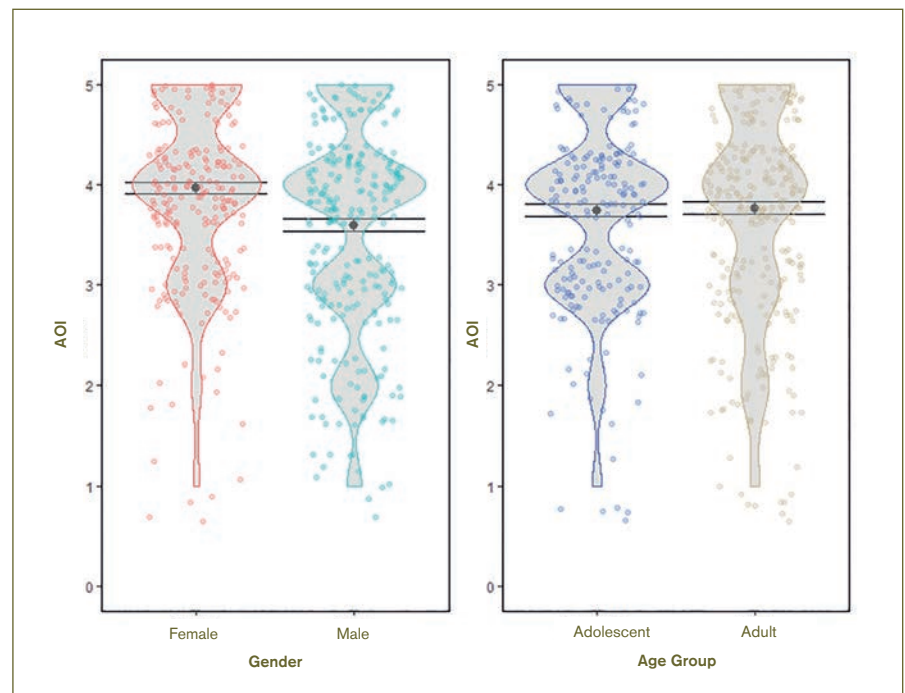


Figure 11: Violin plots of scores for gender and age groups (error bars represent the standard error and a jitter was applied to increase clarity).



**Table 3:**  
Simplified table, depicting the results of each analysis in Study 1

Variable	Gender	Age Group	Interaction
Identification	✓	✓	✓
Selection	✓	✓	✓
Relevance	✓	✓	
SWIS	✓		
AD-ICM	✓	✓	
IRI-EC	✓	✓	
IRI-PT	✓	✓	
MSR	✓		
CSW	✓		
AOI	✓		

**4.2 STUDY 2**

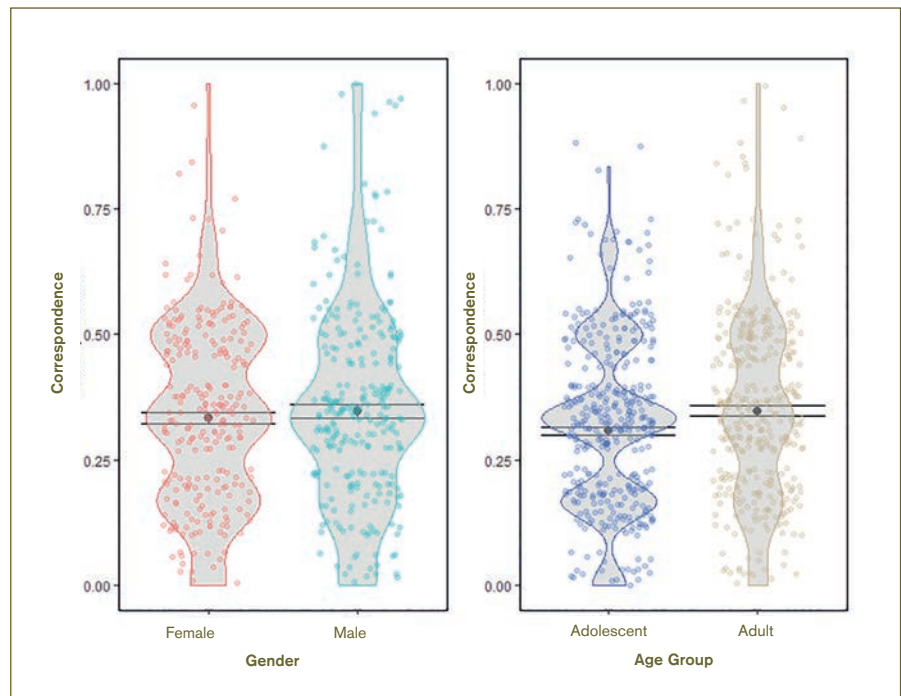
**4.2.1 Age group and gender differences**

Descriptively, adolescent participants ( $M = 0.31, SD = 0.17$ ) recorded lower correspondence scores than adult participants ( $M = 0.35, SD = 0.21$ ), and female participants ( $M = 0.35, SD = 0.18$ ) recorded higher scores than male participants ( $M = 0.32, SD = 0.21$ ). The two-way ANOVA revealed that there was not a statistically significant difference in scores between genders ( $F(1, 511) = 2.39, p = .12$ ), but there was between age groups ( $F(1, 511) = 3.76, p = .05$ ). This pattern of results suggests that adults were significantly better at marrying moral actions and justifications relative to adolescent participants.

**4.2.2 Correspondence as a predictor for prosocial behaviour**

Regression analyses were performed using AD-ICM correspondence as a predictor for the different components of prosocial behaviour recorded by the measure. Analyses indicated that correspondence predicted public prosocial behaviour ( $R^2 = .02, \beta = -0.66, p < .01$ ) and emotional prosocial behaviour ( $R^2 = .01, \beta = 0.57, p < .01$ ). However, there was no evidence that correspondence significantly predicted dire ( $R^2 = .01, \beta = -0.05, p = .79$ ), altruistic ( $R^2 = .01, \beta = 0.24, p = .22$ ), compliant ( $R^2 = .01, \beta = 0.02, p = .90$ ), or anonymous prosocial behaviour ( $R^2 = .01, \beta = -0.08, p = .67$ ).

**Figure 12:** Violin plots of correspondence scores for gender and age groups (jitter applied to increase clarity).





# 5 Discussion

## 5.1 STUDY 1

Study 1 was designed to investigate whether there were significant differences between gender and age groups in scores on measures related to the hypothesised *phronesis* components.

*Moral Perception.* The results demonstrated that for all measures there were differences between groups. Identification, selection and relevance measures, related to the *moral perception* component, all produced the same pattern of results. In all cases, adolescents outperformed adults and female participants outperformed male participants. Additionally, interaction effects were present in the case of virtue identification and relevance, suggesting that female participants either produce stable or improving *moral perception* scores and that male participant scores seem to decline with age. These results suggest that there is a gender gap within different facets of *moral perception* and this gap may increase over time. It should be noted that as this study has a cross-sectional design, no longitudinal conclusions can be drawn regarding age effects. Nevertheless, this result complements a wealth of studies, which find that female participants respond better to moral dilemmas (Walker, Thoma, Jones and Kristjánsson, 2017).

Contrary to the initial hypotheses, adolescent participants were found to display higher levels of *moral perception* than adults. With this finding being, to the authors' knowledge, unprecedented in the literature, it is a difficult one to interpret. The authors tentatively suggest it might be due to the current school context. The mechanism for this interaction is unclear but it may result from adolescent participants being more used to testing in this format, given the increased interest in character education in the last few years, and hence more attention possibly paid to moral dilemmas than when the adult participants were at school. More generally speaking, the whole *phronesis* construct assumes that context matters, and the



context in the dilemmas used in this survey was arguably more central to adolescents. If there is a mismatch between context and the individual, the motivation to engage the relevant concepts may differ and the resulting level of performance becomes more superficial. For example, adults may be more dismissive of the relevant dilemmas (treating them as highlighting 'past issues'), and hence only skim them. However, any interpretation of this unexpected finding should be treated sceptically.

*Moral Adjudication.* Analysis of responses to the SWIS measure suggested that there was a significant gender difference in wise reasoning, which aligns with past research suggesting that female participants engage in higher levels of moral reasoning than male participants (Loe and Weeks, 2000). Results from the analysis of the AD-ICM also revealed significant gender and age group differences, which show that adult participants demonstrated higher levels of reasoning than adolescent participants did. The finding regarding gender differences is supported by past research suggesting that female participants record higher scores in the AD-ICM than male participants (Mays, 2009), and the age difference is in line with previous ICM research (Thoma, Derryberry and Crowson, 2013).

*Moral Identity.* Significant gender differences were found between male and female participants in the MSR, CSW and AOI. All results indicated that female participants consistently reported more secure moral identities, which reflected the importance of virtue to their self-esteem, self-image, and identity relative to male participants. These results are in line with past findings suggesting, for instance, that virtue-associated self-worth is associated with less academic cheating in female (vs. male) participants and that the strength of moral identity importance increases the propensity to donate to out-groups in female participants more so than male participants (Niiya *et al.*, 2008; Winterich, Mittal and Ross, 2009).

*Moral Emotion.* Finally, significant gender and age group differences were found in measures associated with the *moral emotion* component. Females recorded higher scores in both empathic concern and perspective-taking, relative to male participants, and adults recorded higher scores than adolescents in both subscales of the IRI. Gender difference findings replicate a number of studies that report females tend to score higher than males on all four subscales of the IRI (Davis, 1980; Hawk, *et al.*, 2012). Similarly, levels

of empathic concern and perspective-taking have also been shown to improve throughout adolescence (Hawk *et al.*, 2012; Pollard, Burnett-Heyes and Apperly, 2018; Van der Graaff *et al.*, 2014).

Taken together, these findings represent a coherent pattern of results. In all measures, female participants significantly outscored male participants, supporting past research, which finds that female participants typically outperform male participants in many dimensions of moral processing. In the case of adolescent participants, this finding may also support research arguing that females develop a variety of competencies sooner than males and that this developmental difference reflects itself in behaviour and task performance (Jensen and Nutt, 2014).

Age group differences were less consistent but still informative. In the case of *moral adjudication* and *moral emotion*, the age effects were positive in line with predictions. Adult participants tended to outperform adolescent participants. Scores associated with the *moral perception* component were more curious as they indicated adolescents were better than adults at identifying the relevant moral features of a moral scenario. This finding must not be over-interpreted, as it is not supported by the literature, but we suggest further investigation into this effect to determine whether it is replicable and whether it can be explained by contextual differences between adults and adolescents that could be experimentally manipulated. Finally, within the *moral perception* component, an interaction between age group and gender was found, which suggests that male and female participant scores diverge with age. This is a highly interesting finding that warrants further investigation to establish whether this effect holds in a longitudinal study, which would lend credence to the divergence claim and open the door to studies that could seek to better understand why this divergence may occur.



In sum, this pattern of results clearly demonstrate that gender is an important determinant of *moral perception*, *moral adjudication*, *moral identity* and *moral emotion*, whereas age group is associated with differences in *moral perception*, *moral adjudication* and *moral emotion*. These results must be treated with caution as they have been calculated based on ten separate analyses of variance. This analysis strategy makes the results vulnerable to the multiple comparisons problem, which stipulates the greater the number of tests, the greater the chance of a false-positive. In addition, the framework of this study centres on the hypothesised Aristotelian *Phronesis* Model (APM), which is obviously not beyond reproach. However, these findings should not be taken to implicitly assume the validity of the APM. It may be that future studies find the APM to be an insufficient model of wise, or *phronetic*, reasoning; this would not in itself undermine the importance

of these results. Meanwhile, readers should consider that while significant differences were found between groups on each measure, these measures may not ultimately reflect the hypothesised components of *phronesis* (Darnell *et al.*, 2019). Confirmatory studies and analyses are encouraged to build on existing work and to ensure the robustness of these findings. In the case of resolving the multiple comparisons problem, an invariance analysis is suggested.

## 5.2 STUDY 2

Study 2 was designed to investigate whether greater correspondence between chosen moral actions and justifications in the AD-ICM would reflect a higher level of moral reasoning that could be used to predict prosocial behaviour. Additionally, the team were interested in whether gender and age group differences in correspondence would

be observed. The analysis suggests that while there was not a statistically significant difference between male and female participants in terms of how accurately their chosen moral actions and justifications cohere, a significant difference between age groups was observed. Adult participants were better able than adolescents to match their chosen moral actions to their moral justifications within the two presented moral scenarios. This finding may reflect Aristotle's concept of the development of *phronesis*, whereby individuals ascend closer to the state of a *phronimos* through experience. It may also generally be anticipated that adults are better able to match their chosen moral actions and justifications than adolescents, but to the authors' knowledge, this kind of analysis of AD-ICM has never previously been attempted and it is therefore a novel step forward in our understanding of the development of context-based measures of moral reasoning.

Regression analyses revealed that correspondence between chosen moral action and justification in the AD-ICM predicted public and emotional prosocial behaviour, but not the other components recorded in the APM. It may be that this is because the scenarios used in the AD-ICM better reflect the former components of prosocial behaviour. Scenario One describes a situation in which a protagonist has completed a test and feels pressure to help classmates cheat. Scenario Two involves a newly promoted protagonist who is being pressured to increase productivity in her department and feels pressure to fire a friend. Both scenarios involve elements of public and emotional potential prosocial behaviour and, therefore, correspondence scores within these dilemmas may reflect a higher level of moral reasoning in the context of public and emotional scenarios. However, this interpretation must be treated sceptically, as this analysis was merely a first attempt to try to relate the correspondence



between chosen actions and justifications to self-reported behaviour. Ideally, given Aristotle's scepticism towards people's knowledge of themselves in isolation from close friends and family, future measures of the behaviour component, associated with scores from the *Phronesis Inventory*, would replace self-reports with more objective (performance-tracking) variables.

This study demonstrates the potential utility of including analyses that quantify how well participants relate chosen moral actions to moral justifications; these correspondence scores can be used to investigate group differences and as predictors for behaviour. While this analytic tool clearly has utility within the context of the ICM, it must be remembered that its use as a predictive and descriptive tool is still not fully characterised. The correspondence variable might be best seen to constitute routine complementary analysis within traditional ICM studies, or it might be considered an informative variable on its own. In either case, a lot of work is still needed to discern the reliability of the measure and its validity as a tool for better understanding moral reasoning.

### 5.3 FUTURE STUDIES

Both studies have demonstrated a framework for how the APM and the AD-ICM can be used in novel ways to elicit information about moral reasoning in both adults and adolescents. The development of the APM was itself a foundational achievement that allowed for a more complete characterisation of *phronesis* (Kristjánsson *et al.*, 2020), but this model still needs to be stress-tested on a wider range of participants in a diverse range of contexts. While it may seem that the development of a potentially robust model would be the crowning achievement of the Jubilee Centre's *Phronesis Project* (Darnell *et al.*, 2019), it is

‘WE CANNOT BE FULLY GOOD WITHOUT *PHRONESIS*, OR *PHRONETIC* WITHOUT VIRTUE OF CHARACTER.’

 Aristotle, *Nicomachean Ethics*, 1145a.

in fact what one can do with the model that is most interesting. Researchers are encouraged to test the APM and investigate whether the suggested components both cohere as latent determinants of *phronesis* and how they may differentially relate to behaviour between groups. Given the specific interest in *phronesis* within professional ethics, the *Phronesis Inventory* needs to be adapted to the needs of both budding and experienced professionals in fields such as teaching, medicine, nursing and policing. Finally, in light of the emerging discourse on cyber-wisdom (Polizzi, 2020; Harrison, 2021), the *Phronesis Inventory* may need to be revised to track features of the cyber-world.

Study 2 was an early attempt to derive a new variable out of an established measure: that of correspondence between moral action choices and justification. Further research is required to establish whether this new measure of correspondence is both reliable and valid. Future studies should seek to investigate whether participants effectively match their chosen actions and justifications across a wider range of moral dilemmas and whether this measure effectively predicts moral behaviour. Researchers should ideally test whether correspondence predicts prosocial behaviour that is not self-reported: for example, prosocial behaviour in economic games or experimental contexts. Finally, future studies might investigate the behaviour of high- and low-moral reasoning individuals to better delineate the capacities of those that can best match their chosen actions to their justifications against those who cannot.



# 6 Conclusions

The *Phronesis Inventory* was not designed with the specific hypotheses set out in Section 2.7 in mind; it was therefore not expected that the data set reported in Kristjánsson *et al.* (2020) would elicit statistically significant findings. The *Inventory's* purpose was of a more general nature; identifying a correlation between (the components of) *phronesis* and prosocial behaviour, as a contribution to the ongoing post-Kohlbergian discourse about what bridges the 'gap' between moral cognition and moral action.

The findings reported on in Sections 4–5 turned out to be more conclusive than expected. While it is not a novelty to see females outperform males on various variables linked with moral development, it is striking to see females record statistically significant higher scores on every sub-measure of *phronesis* used in the *Inventory*. The reasons for the moral advantage among females remains a conundrum in the general moral psychological literature, with conjectures ranging from genetic ones (about an evolutionary adaptation), to speculations about females' socially developed ingenuity in responding 'correctly' to test questions in line with social desirability. The findings do not offer any further explanations, but they do show that *phronesis* is no exception here; females seem to perform better than males.

It is reassuring, from the perspective of neo-Aristotelian theory, to see adults score higher on moral adjudication and moral emotion than adolescents. This is what should ideally

happen, in line with Aristotle's (rudimentary) developmental theory about *phronesis*.

It is perhaps not a significant anomaly to see adolescents equalling adults in terms of the moral-identity component. After all, Aristotle described young people as more idealistic than adults, and the relevant measures target a self-conceived prioritisation of values, rather than moral identity as actualised in the cut and thrust, and the messy complexities, of real life. What is truly surprising, however, is the finding that adolescents score higher than adults on all three sub-measures of moral perception. The idea that sensitivity to identify complex moral situations develops with age is both in line with Aristotelian theory as well as having intuitive appeal. This finding calls for urgent replication and – if confirmed – some theoretical account of why secondary school students in the UK seem to be better at identifying moral issues inherent in a situation than their counterparts who are a few years older.

Finally a few concluding words are in order about the research orientation undergirding the whole *Phronesis Project*, namely, that of combining insights from philosophy and the empirical sciences in trying to understand *phronesis*. Though the authors acknowledge that relying too heavily on a philosophical tradition can become a burden for moral psychology (Lapsley, 2019), and that the research foci of the two disciplines are quite often contrasting because of various diverging methodological assumptions, the analyses of the philosophical literature on *phronesis* and

the psychological literature leading up to and embedded in the APM indicate that academics in both disciplines are interested in the same substantive questions about the role of the relevant intellectual meta-virtue.

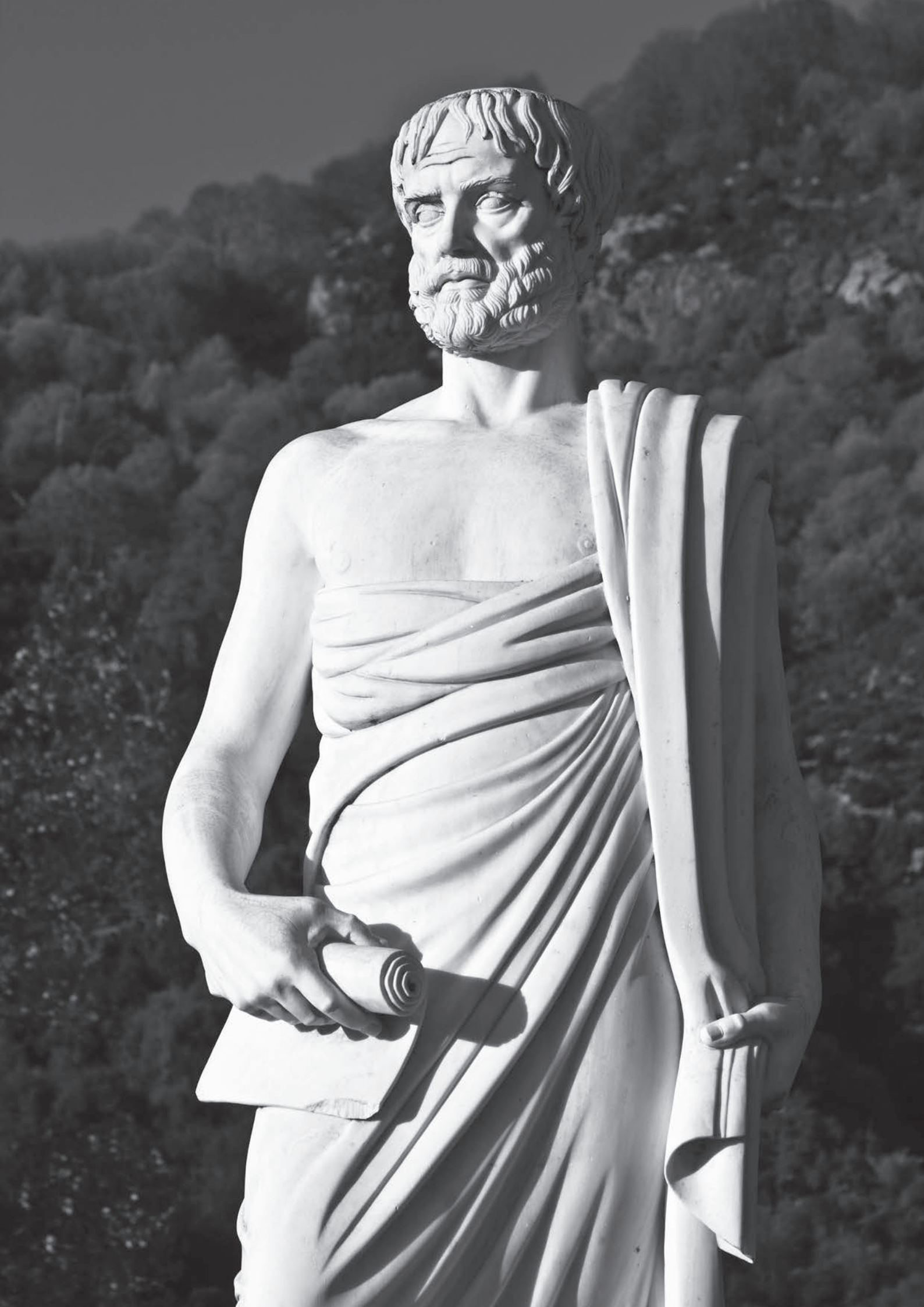
The authors have strived to present the APM not as the last gasps of an antiquated Aristotelian psychology, but rather as a neo-Aristotelian model that draws on recent research in moral philosophy and psychology. *Phronesis* is a theoretical construct but one whose natural habitat is in practice. For MacIntyre (1981), *phronesis* is nothing less than the ideal characteristic mode of thinking within any 'practice'. It would be a mistake to fail to subject such a construct to serious empirical inquiry and just rest content with treating it as a philosophical plaything.

Aristotle himself and a number of neo-Aristotelians have, during the course of history, made various empirical (developmental and educational) claims about *phronesis*. What characterises most of those claims is that they have barely, if at all, been substantiated empirically. Any viable educational research programme, based on one of the new conceptualisations that are being developed (such as the APM or CWM), or some other model yet to see the light of day, must engage with these empirical claims to check whether they prove robust. The present report constitutes a step in that direction.

“WE MUST DRAG OURSELVES IN THE CONTRARY DIRECTION [FROM THE ONE TO WHICH WE ARE INCLINED]; FOR IF WE PULL AWAY FROM ERROR, AS THEY DO IN STRAIGHTENING BENT WOOD, WE SHALL REACH THE INTERMEDIATE CONDITION.”

 Aristotle, *Nicomachean Ethics*, 1109b.





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