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Supervision, presence and knowledge: clarifying 'parental monitoring' concepts within a model of goal-directed parental action

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Abstract

The presence of parents or other guardians (commonly termed 'supervision') and parental knowledge are factors that are both robustly negatively associated with a range of anti-social and risky behavioural outcomes such as adolescent crime. However, parental presence/supervision and parental knowledge are both (i) regularly used inaccurately as proxies for parental monitoring, (ii) poorly defined and operationalised, and (iii) rarely linked to negative behavioural outcomes with plausible mechanisms that adequately explain their association. These problematic aspects of the parental monitoring literature are a barrier to research into adolescent outcomes and the varied role of parents. This theoretical paper facilitates solutions these problems by clarifying the concepts of parental presence, supervision and knowledge.

This discussion delineates presence from supervision and knowledge from monitoring. It specifies how presence and knowledge are not parenting actions, and neither constitute parental monitoring. These concepts are clarified within the parameters of a recent framework of goal-directed parental action and parental monitoring. Doing so constitutes under-labouring that facilitates future discovery of their distinct and yet inter-related mechanisms of influence on adolescent action and development. These structured conceptual developments are also of benefit for our better future understanding of parenting and parental monitoring by providing a framework within which to re-situate existing empirical research findings.

Keywords Parental monitoring · Parental knowledge · Parental supervision · Presence of guardians · Situational action theory · Goal-directed parental action

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Background

Some years ago, key figures Kerr, Stattin and Engels called for "a clarification of constructs used" (2008, p. 4) because there is a lack of clarity and often disagreement in the literature as to what constitutes parental monitoring (see also, Keijsers, 2016; Keijsers & Laird, 2014; Racz & McMahon, 2011). Yet, nearly a decade later the parental monitoring concept was still being discussed in terms of "crisis and fragmentation" (Omer et al., 2016, p. 5) and the literature still boasts a rather haphazard list of diverse measures that attempt to capture parental monitoring, which tap into a range of widely differing phenomenon (Hardie, 2017, pp. 97–99). As a result, traditional conceptions of parental monitoring are only broadly helpful and conflate too many processes to be of use when designing and conducting research that aims to explain outcomes such as crime (Hardie, 2021a). Examples and implications of this problem for each aspect of parental monitoring are discussed further in the relevant sections below (for a full review of the limitations of the parental monitoring literature, see Hardie, 2017 ch 5, see also, 2021a).

This critique led Hardie to theorise a framework of parental influence (Hardie, 2022) and a model of Goal-Directed Parental Action (GDPA) within which to devise a definition of parental monitoring (GDPA-PM) that is clearer and more specific than that employed in research to date (Hardie, 2021a).[1] This model and new definition is introduced below. A key point of difference for this definition of parental monitoring that results from this goal-directed model is that parental goals are fundamental, whereas parental monitoring studies often ignore, underplay or assume the goal-directed attention (motivation) necessary for parental action and poorly specify the means (mechanisms) by which these goals can be met. The model of GDPA-PM thus results in a narrower definition of parental monitoring as information gathering and, crucially for this paper, leaves room to clarify other elements of monitoring-related parenting that are equally poorly conceptualised in the literature. This paper continues that work.

Aims and rationale

The specific aim of this paper is to apply the model of GDPA-PM (Hardie, 2021a) to clarify some problematic concepts that are commonly used in parental monitoring research. Traditionally, the most commonly and interchangeably used operationalisations of parental monitoring were parental knowledge and parental supervision or presence (Crouter & Head, 2002; Hardie, 2021a). In contrast, this paper aims to demonstrate how the concepts of parental monitoring, parental supervision, parental

[1] Others have also responded to this need for a paradigm shift in the parental monitoring field. Some attempts to clarify parental monitoring-related concepts fail to adequately delineate disparate elements (e.g. Flanagan et al., 2019), but other promising developments are not necessarily mutually exclusive and incompatible with the GDPA-PM model used here. For example, the Model of Vigilant Care (Omer et al., 2016) addresses different aspects of the challenges to the parental monitoring paradigm than the model of GDPA-PM. Vigilant Care represents a desirable and potentially effective parenting approach, whereas GDPA-PM aims to more broadly model all kinds of parenting without reference to efficacy.

presence and parental knowledge are related but distinct concepts,[2] and illuminates what the traditional empirical measures might instead actually represent. Specifically, within the refined definitions of the model of GDPA, the current paper specifies the concepts of parental presence and parental knowledge and delineates presence from supervision and knowledge from monitoring.

Why is this clarification work necessary? Under the guise of parental monitoring, measures of parental presence, supervision and knowledge have often been heavily associated with a range of adolescent risk behaviours (for a list, see Omer et al., 2016) including anti-social behavioural outcomes such as crime (Farrington, 2010; Hardie, 2021a; Hoeve et al., 2009; Laird et al., 2003a; Pagani, 2009; Steinberg & Silk, 2002). However, the mechanisms by which these relationships occur are neglected and poorly specified in the literature and this neglect of causal mechanisms is facilitated by poor definition and delineation of distinct parts of the parental monitoring process (Hardie, 2017 ch 5, 2021a). Frequent use of these various operationalisations as proxies for the ambiguous concept of parental monitoring constitute 'lumping errors' (Craver & Darden, 2013; Proctor & Niemeyer, 2019) which are a key cause of false positives and non-reproducible findings (Barnes et al., 2020; Bringmann et al., 2022; Frankenhuis et al., 2023; Vazire et al., 2022; Yao, 2023). Conceptual specification must be precise, accurate and simple in order to facilitate unambiguous operationalisation and clarification of theoretical mechanisms which can then lead to empirical testing that is effective, replicable and valid. These principles are expounded by Analytic Criminology (Hardie, 2020; Wikström & Kroneberg, 2022; Wikström & Treiber, 2017).

Parental monitoring and the model of goal-directed parental action

This paper relies heavily on Hardie's model of Goal-Directed Parental Action (GDPA) and its parental monitoring extension (GDPA-PM) (Hardie, 2021a, 2022), which are briefly introduced here. The model of GDPA has some commonalities with previous models and conceptions of parenting (Bornstein, 1995; Grusec, 2008; Maccoby & Martin, 1983), in particular, those that recognise parental goals (Darling & Steinberg, 1993; Dix, 1992). However, the model of GDPA is particularly influenced by Situational Action Theory (SAT: Wikström, 2019) and thus centralises motivation and action, distinguishes control and guidance in the action process, and delineates social and situational processes to distinguish developmental and behavioural outcomes (Hardie, 2021a, 2022). The GDPA model identifies three distinct aspects of parenting; (1) the (delineated) developmental and behavioural goals of parenting, (2) the (delineated) guidance and control actions parents are motivated to use to reach those goals, and (3) the parenting style that contributes to the emotional climate within which these processes occur.

This third aspect was outside the scope of the original presentation of the model of GDPA and is yet to be developed. This undeveloped aspect represents the 'causes of the causes' in SAT terminology, i.e., the contributory factors and processes that

[2] Discussion of the presence of guardians other than parents is also included in this paper because this concept bridges the gap between the concepts of parental presence and being unsupervised.

result in the nature and content of the factors contained in the model of GDPA-PM as currently developed, and the context with which the individuals interact and within which the processes of the model operate. This goes beyond the already- identified parenting styles and emotional climate. Much like SAT's historical social model in relation to its situational model (Treiber, 2017), future development of this background to the model of GDPA-PM can be broadened to integrate and situate much existing research, for example, findings about the parent-child dynamic and its effects over time (see, Laird & Zeringue, 2019; Omer et al., 2016; Smetana & Metzger, 2008). It is important to be clear here that any factors relating to the nature and content of the factors contained with the model of GDPA-PM may also be independently and directly related to the behavioural and developmental outcomes at hand, or indeed any other factors related to those outcomes that are not covered in the GDPA model.

This paper builds on the development of the first two aspects of parenting identified by the model of GDPA. When parental monitoring is situated within this model of GDPA (GDPA-PM; Hardie, 2021a), it is defined as *"the employment of active information-gathering behaviours by parents to help them gain knowledge about and evaluate their child's progress towards a range of parentally selected developmental and behavioural goals"*. Parental monitoring is therefore purposeful information-gathering only; as such, this narrower definition avoids conflating various parenting behaviours and processes. Figure 1 shows the model of GDPA-PM.[3] For aspects of the model shown in Fig. 1 that are not discussed in this paper, see Hardie (2021a).

Hardie (2021a) defined what parental monitoring is, and isn't, within the model of GDPA. However, she did not go on to define those aspects of parenting that are traditionally conflated with parental monitoring or used to operationalise parental monitoring, nor did she situate these within the model of GDPA. Parental monitoring is usually conceptualised as parents keeping track of their children's associations and activities (Hardie, 2021a; Kerr et al., 2010). A review by Crouter and Head (2002) of the first wave of parental monitoring research shows that parental monitoring was traditionally operationalised as either (i) parental supervision (itself usually operationalised as parental presence) or (ii) parental knowledge. Though the parental monitoring field has changed (for a history, see, Laird & Zeringue, 2019), conceptual confusion remains (Hardie, 2021a; Keijsers, 2016; Omer et al., 2016).

Paper structure

Summarising the theory and findings of the vast, fragmented, and conflated parental monitoring literature into a short traditional 'literature review' section is of questionable value for the aims of this paper (though see, Hardie, 2017 ch 5, also, 2021a). Therefore, beyond the initial introduction provided above, the relevant existing discussions, features and findings from the parental monitoring literature are instead

[3] Figure 1 depicts a model of GDPA-PM presented by Hardie (2021a), though Fig. 1 additionally situates parental knowledge, as developed in this paper. Note that the model of GDPA does not require the assumption of pro-social parental goals, though it is sometimes simpler to assume these for ease of presentation (see further Hardie, 2021a).

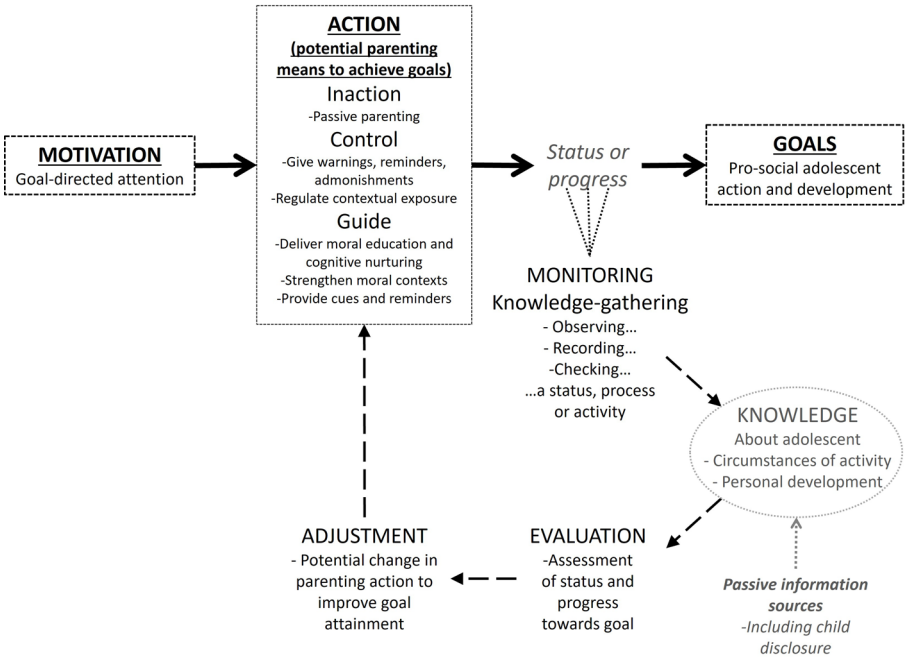

Fig. 1 Situating parental knowledge in the model of Goal-Directed Parental Action and Parental Monitoring (GDPA-PM)

structured around the key parental monitoring features as they are delineated and clarified in this paper. The model of GDPA-PM has already been introduced above as a guiding framework for addressing the identified key problems with the existing literature.

Within the model of GDPA-PM, parental supervision, parental presence and parental knowledge cannot be classified as or synonymous with parental monitoring, as is sometimes implied or stated by the literature. By situating them within the model of GDPA-PM, in contrast to the parental monitoring literature, this paper specifies the concepts of parental presence and parental knowledge and delineates presence from supervision and knowledge from monitoring. The bulk of the remainder of the paper is thus divided into two main sections which together describe how parental supervision, parental presence and parental knowledge play a specific role in the parenting process of which parental monitoring is itself a part.

The first section discusses parental supervision, parental presence, and distinguishes them. The words ‘monitoring’ and ‘supervision’ (and their derivatives) are commonly listed as synonyms and their dictionary definitions are almost indistinguishable, but these two terms have come to mean different things in the parenting literature, with the presence of the parent supervisor at the heart of the distinction. Kerr et al. (2010, p. 58) observe that “monitoring is generally conceptualized as keeping track of youths’ activities and associations when they are away from home where parents cannot supervise them directly, whereas spending time together involves direct supervision”. This section describes how parental supervision is commonly opera-

tionalised using a measure of parental presence, but it also introduces how the presence inherent in parental supervision affords both monitoring (knowledge-gathering) behaviour and also various other behaviours that are the means by which parents achieve their goals. The section goes on to discuss the extent to which 'presence' and 'supervision' should or should not be synonymous terms.

The second section is concerned with distinguishing parental knowledge from parental monitoring, clarifying the concept of parental knowledge and its antecedents, and discussing age-related changes in these. Parental knowledge does not require parental presence and is increasingly gained in absence as children age. This paper uses the term monitoring to refer to specific active parental monitoring strategies that aim to gain parental knowledge. This section describes how parental knowledge is not an action or parental monitoring strategy in itself, but is the result of active knowledge gathering carried out by parents.[4] Therefore, this section specifies how parental knowledge is crucial to the parenting process of which monitoring is a part (see also Fig. 1).

The paper concludes with a summary, and statements about the contribution made and considerations for future developments.

Parental monitoring, parental supervision and parental presence

Parental supervision

Like monitoring, dictionaries broadly determine that supervision is synonymous with the words manage, oversee, care, direct, control, guide, regulate, surveillance. This means that, like parental monitoring, many conceptions of parental supervision encompass various parenting behaviours by which parents aim to achieve goals for their children, as well as including a range of monitoring behaviours (Hardie, 2021a). Supervision is thus a nebulous and often vague concept that conflates various parenting behaviours.

Within the model of GDPA, parental supervision remains a broad overarching concept that subsumes various parenting behaviours. However, the model of GDPA-PM depicted in Fig. 1 additionally delineates and defines these subsumed parenting behaviours. In defining this model, Hardie (2021a, 2022) describes and categorises the means to achieve goals as (i) guidance (e.g., guiding socialisation processes including moral education; delivering guidance, reminders, advice and instructions; providing support and cognitive nurturing; strengthening the moral content of contexts) and (ii) control (e.g., warnings, punishment and threats of punishment, physical controls, regulation of activities and friends). The model also distinguishes active monitoring behaviours as distinct from such means to achieve goals (Hardie, 2021a). This current paper elaborates further to specify the concepts of parental presence and parental knowledge and to delineate presence from supervision and knowledge from monitoring.

[4] This section also describes how parental knowledge can be gained passively.

Without such distinctions, conflation of these concepts in the supervision concept hinders theorising about the various mechanisms by which supervision plays a role and makes operationalisation and analysis of the concept difficult. For example, from a control perspective in criminology, Rankin and Wells refer to supervision as a "broad process" with multiple components (2006, p. 123). Although they suggest that these elements may combine in specific ways and interact in relation to behavioural outcomes (and even be bidirectional in casual efficacy; i.e., parents' behaviour also responds to that of their children), they provide little detail or specificity of what these components are or how these interrelations function. While a lack of adequate 'supervision' is a major correlate of adolescent crime (e.g., Loeber & Stouthamer-Loeber, 1986; Sampson & Laub, 1993), Rankin and Wells argue that it's not clear "which components of the broad process of 'supervision' are the most effective and how they specifically operate" (2006, p. 123). As this example illustrates, supervision entails more than parental presence, but the literature is not clear as to what supervision entails and by whom (conceptual ambiguity); and specifically how and why it can plausibly influence adolescent outcomes (paucity of mechanisms).

In contrast, delineating and specifying these parenting behaviours within the model of GDPA-PM clarifies that they can have their own distinct but inter-related influence on adolescent behavioural and developmental outcomes. These highly specified concepts can then be used in future to theorise and empirically test the specific mechanisms that link them with the adolescent behavioural or developmental outcomes of interest.

Parental presence

The term 'presence' requires clarification. There are situations when a parent is clearly present (e.g., parent and child watching television together on the sofa at home), or situations when a parent is clearly not present (e.g., parent is at their workplace, child is at school); but there are also commonly occurring situations when parental presence is ambiguous (e.g., parents are downstairs at home while the child is upstairs playing computer games; parents are chatting in the park while the children are playing football some way off). In reality the boundary between 'presence' and 'absence' is not always apparent, which makes operationalising 'supervision' potentially problematic. SAT's concept of 'setting' helps to clear up some ambiguity about the presence or near-presence of another person. SAT states that an individual is only influenced by the part of the social environment that they access with their senses, and that this environment is a 'setting' (Hardie, 2020; Wikström, 2006). Settings thus include the objects, persons, and events in environments to which individuals are exposed, including media and virtual content. Settings are simultaneously contexts of action and development. Thus, for parental presence to be relevant for the child's actions and development, presence must be defined by being present in the same setting. This includes being physically with them (i.e., in the same room) but can also include when they are near them but still within view or earshot (e.g., in the same house). Presence in settings can even include when parents are virtually or psychologically present (e.g., via a smartphone app that might trigger a memory of a

parent) (for a discussion and empirical study of physical and psychological parental presence, see respectively, Hardie, 2017, pp. 169–180, 2021b).

Being specific about parental presence in contrast to parental supervision means studies can be more specific about the theoretical mechanisms involved in adolescent outcomes such as crime and empirical tests of these (e.g. Hardie, 2021b, see Future directions section for other possibilities). Presence is primarily relevant to parental influence on adolescent developmental and behavioural outcomes because it facilitates other parenting behaviours; this is addressed next.

The first feature of presence that is relevant to parental monitoring is that it affords direct observation.[5] This is true of both parental presence and the presence of another guardian. Direct observation is a knowledge-gathering strategy (parental monitoring). The distinction between direct observation and other knowledge-gathering strategies - including indirect observation - is that direct observation requires presence. The direct observation of offspring by parents is the most straightforward and accessible way of gaining information about their child's development and activity. Initially, parental knowledge gathering (parental monitoring) is essentially dependent on parental presence. In very early childhood the link between the monitoring strategy (e.g., direct observation) and the parenting goal (e.g. keeping the baby safe) is very direct. Very young children are in the presence of parents almost all of the time (Morrongiello et al., 2011) and usually parents closely observe children to ensure that they do not come to physical harm (Morrongiello et al., 2006). This means that parents (at least, those who are the main day-to-day carers for their children) can have almost perfect knowledge about their young children's safety, development, wellbeing, activities, peers, and whereabouts because they are with them almost all of the time. As a result of changes and transitions in adolescence, parental presence typically reduces and parents are less able to gather information via direct observation about their child's progress towards behavioural and developmental goals (see further below).

The second feature of the presence of guardians is that presence affords various active parenting behaviours by guardians. Thus, as well as an opportunity for knowledge-gathering (parental monitoring), parental presence is also an opportunity for parents to actively control and guide their offspring. Such active parenting behaviours are the means by which to achieve their parenting goals (parental influence) (Hardie, 2021a, 2022). This aspect of presence is not therefore a monitoring strategy, but it is implicated in the wider active parenting processes in which parental monitoring plays a part. These wider processes are those often included in conceptions of supervision (see further below).

Distinguishing supervision and presence, and their effects

The general consensus in the parental monitoring literature is that parental supervision requires the presence or near-presence of the parent (Kerr et al., 2010). As such, parental supervision is usually operationalised in empirical research by some mea-

[5] Within the concept of 'setting' described above, 'direct observation' also includes aural observation, for example, when parents can hear their child from the next room.

sure of parental presence (Dickson et al., 2015) and more generally, researchers use the presence of a guardian (not necessarily a parent) to empirically denote supervision (not necessarily by a parent). In criminology, where there has been a great deal of interest in supervision, presence denotes supervision in both traditional studies (Glueck & Glueck, 1950; McCord & McCord, 1959; West & Farrington, 1973) and more recent research (Hoeben & Weerman, 2016; Osgood et al., 1996; Wikström et al., 2012, 2018, 2024).[6]

In contrast to this status quo in the literature, this section argues that parental presence and parental supervision are not, in fact, interchangeable concepts. The presence of parents and other guardians facilitates parental monitoring and active parenting, which often makes presence very relevant to supervision, yet these concepts are not synonymous. Presence is neither (i) necessary nor (ii) sufficient for supervision, and (iii) they can have independent effects via different mechanisms. Thus, there are three points of difference between the concepts. First, various supervisory activities, including active parental monitoring and active guidance and control behaviours, do not require presence. Many of these things can and commonly do happen in the absence of parents.

Second, supervision implies a level of activity that is not met by mere parental presence. Action differentiates 'presence' and 'supervision'. Presence is not an active behaviour, but it affords active supervision via its facilitation of active observation and active parenting behaviours such as guidance and control behaviours (means to satisfy goals). Supervision by parents or other guardians implies a lot more than just the mere presence of these guardians (see further below and also Osgood et al. (1996).

Third, presence and supervision may have independent effects via different mechanisms. This includes the roles these parenting features play in both developmental and situational processes, as delineated by SAT (Wikström, 2019). It is possible for a parent to be present without any parental supervision taking place at all, for example, when a parent is asleep and is not observing the child at all, not exerting any kind of control over the child, and not providing any kind of guidance. Parental presence has effects that are distinct from control (Omer et al., 2016); further, the mere presence of a parent or other guardian also conceptually alters the behavioural and developmental moral context of a setting (Hardie, 2017, 2021b). Such distinctions between the effects of presence are also even true of psychological or virtual parental presence (Hardie, 2021b; Omer et al., 2016). This means that even passive presence (such as being asleep) and psychological presence are not equitable to absence, nor to being unsupervised. In addition, the following section reminds us that parents usu-

[6] There are two kinds of exception here. First, criminologists studying probation and the 'supervision' of offenders are not usually concerned with *direct* supervision (where the supervisor is present). Evaluations of probation supervision instead focus on the behavioural control approach and the guidance in development approach, and their conflict (see e.g. Canton & Dominey, 2017). These themes are also delineated in the model of GDPA (Hardie, 2022). Second, some parenting researchers do in fact delineate supervision as either direct or indirect to denote whether a supervisor is present or not; however, direct supervision (supervisor present) is then often used as a measure of supervision (for example, Coley and Hoffman (1996) refer to 'in-person proximal contacts' as supervision) and it is usually not clear what 'indirect supervision' is and in what way it is similar or different to parental monitoring.

ally increasingly trust some nominally, formally or informally appointed adults as their proxy. Studying the effects of the presence of guardians other than parents may bridge the gap between parental presence and being unsupervised when studying their effects on adolescent developmental and behavioural outcomes.

This section has delineated the two affordances of parental presence (active parenting means to achieve goals and parental monitoring via direct observation), and distinguished presence from supervision. Neither of these distinctions is explicitly acknowledged in the literature on parental supervision. This lack of specificity is perhaps to blame for disagreement in the literature about the role of supervision in parental monitoring. This disagreement is clear from Kerr et al.'s statement that "spending time in direct contact with the youth is a good way for parents to know what their youth is doing, but we question whether it should be considered a monitoring strategy." (2010, p. 58). Kerr et al. (2010) do not specify the root of this disagreement, nor specify details of how it may be resolved. Taken together, the conceptual discussions in this section settle this disagreement by specifying that supervision is indeed not a monitoring strategy, however, supervision (via parental presence) does afford monitoring. This distinction is often confused in the literature.

Furthermore, the model of GDPA-PM as developed in this section determines that (i) supervision does not require presence, (ii) presence can afford but is not sufficient for supervision, (iii) presence and supervision can have independent effects via different mechanisms. Since supervision and presence are conceptually distinct, it is important to theorise, measure and analyse them as separate factors with distinct mechanisms of influence. A theoretical framework that allows for the inclusion of such delineated concepts and distinct mechanisms is important. Situational Action Theory (Wikström, 2019), for example, has been applied to theorise and empirically study the role of parental presence in situational processes leading to acts of crime (Hardie, 2021b). The conceptual distinctions drawn in this paper are important for future linking of such proposed situational processes to concrete neurological mechanisms in order to facilitate more specific empirical testing and deepen causal understanding.

Parental monitoring, adolescent transition, and parental knowledge

Adolescence is a period of rapid change, the goal of which is to achieve agency (acting autonomously) and communion (connecting with others) (Collins & Steinberg, 2008; Steinberg, 2002). The period of adolescent transition is marked by social redefinitions and physical and psychological developments. These changes have particular relevance for parental influence (Hardie, 2022) though these will not be detailed here for reasons of space.

The impact of such changes in adolescence does not necessarily decrease parental monitoring, rather they alter the nature of the methods and techniques used (Dishion & McMahon, 1998; Racz & McMahon, 2011). This paper aims to conceptually delineate various parenting concepts that are also methods and aspects of parental monitoring. This section thus discusses age-related variations in the quantity, quality and content of parental presence, parental knowledge and parental supervision because

of the relevance of these changes for the delineation of these parental monitoring-related concepts. In addition to age, these parental monitoring factors vary in content and quality across settings, individual children, parents, family context, cultures, and history for example. These variations will not be discussed here since the focus of this paper is on the definitions and delineation of these concepts.[7]

The increasing autonomy and communion with others in adolescence mean that older children are gradually expected to become more responsible for themselves and thus parental supervision (both in terms of intensity and the proximity of supervisor to supervisee) decreases. As described above, the concept of supervision subsumes other concepts. This means that these changes in adolescence can influence the amount of time spent in the presence of parents (as opposed to other people such as peers), and the intensity and nature of the control and guidance parenting behaviours. Since the focus here is delineating concepts, the specifics of this influence will not be discussed further here, suffice to say that the nature of supervision changes by age.

Distinguishing monitoring and knowledge

The model of GDPA-PM makes clear that parental monitoring is the act of knowledge gathering (as a means to evaluate the progress towards a parental goal) (Hardie, 2021a). This paper extends this model to situate parental knowledge (Fig. 1). Unlike parental monitoring, parental knowledge is not a parenting action, but is an important part of the parenting monitoring process.

Semantically, parental knowledge is information relating to their child that is known by parents. This knowledge can refer to a wide range of topics (Grusec, 2008). The discussion of concepts in this paper builds on Hardie's framework of parental influence and model of GDPA-PM (2021a, 2022). The model of GDPA delineates the roles parents can play in both the social and situational models of SAT and distinguishes parenting goals as pertaining to developmental or behavioural adolescent outcomes (Hardie, 2022) and categorises the means by which parents attempt to achieve these parenting goals into actions that guide or control (Hardie, 2021a). These means to achieve parenting goals are distinct from the monitoring of this process (Hardie, 2021a). Building on this model of GDPA-PM, this paper categorises parental knowledge that is relevant to parenting goals as either (i) knowledge about the child's development (e.g., the child's moral development and growing decision-making abilities), and (ii) knowledge about the circumstances of their contexts and activities (relevant to situational interaction and adolescent behaviour[8]). These topics of parental knowledge are included in Dishion and McMahon's (1998, p. 61) commonly used definition of parental monitoring as 'attention to and tracking of' both (i) 'adaptations' and (ii) 'whereabouts' and 'activities'. They are also delineated in Tilton-Weaver et al. (2014) distinction between adolescent self-disclosure and activ-

[7] Note that the model of GDPA-PM does not preclude that factors that influence such variations may also relate directly to variations in behavioural and developmental outcomes, or indirectly but via influence on factors not included in the mode of GDPA-PM.

[8] Rooted in SAT, situational interaction in action outcomes refers to causal effects on behaviour resulting from particular person-environment convergences (Hardie, 2020).

ity-disclosure with regards parental knowledge. However, in addition to explicitly distinguishing parental monitoring and parental knowledge, the model of GDPA-PM importantly also distinguishes between developmental and behavioural parental *goals* for their children (Hardie, 2021a, 2022). This not only results in a more impactful delineation of the developmental and circumstantial topics of parental knowledge than would be derived from Dishion and McMahon's concept of parental monitoring (for a discussion of parental monitoring definitions, see Hardie, 2021a), it also provides a framework within which to study the different sources, processes and outcomes of these different kinds of knowledge.

When situating parental knowledge, the distinctions drawn by the model of GDPA-PM highlight two main problems with parental knowledge studies within the parental monitoring literature. The first is that in the last century, the circumstantial (rather than developmental) kind of parental knowledge dominated research (Crouter & Head, 2002; Laird & Zeringue, 2019).[9] One of the distinctions drawn by the model of GDPA highlights that this led to a focus on action at the expense of development in the parental monitoring literature. This imbalance is arguably related to the focus on control rather than care in the parental monitoring literature identified by Omer et al. (2016), where 'care' may be seen as a facet of or even prerequisite for the guidance elements of the model of GDPA. There have been more recent developments in child disclosure research (which evolved from the parental monitoring literature) that redress the control focus of the parental knowledge literature (e.g., Chaparro & Grusec, 2015; Laird & Zeringue, 2019; Tilton-Weaver et al., 2014). However, more fundamentally, the model of GDPA-PM could provide structure to facilitate future integration of the parenting and moral development literature (e.g., Grusec, 2019; Laible et al., 2019) with the traditionally control-focused parental monitoring literature.

The second problem with the traditional parental knowledge literature is already widely recognised. Poor definition and confounding of parental monitoring and parental knowledge prior to the turn of the century means that many studies treated measures of how much information parents have (parental knowledge) about their child's activities, companions and whereabouts as a proxy for parental monitoring (Laird & Zeringue, 2019; Racz & McMahon, 2011; Stattin & Kerr, 2000). A key problem for studies that measure parental knowledge as a direct proxy for parental monitoring is that the essential requirement of parental action in parental monitoring is not met. In their seminal reappraisal of parental monitoring at the turn of the century, Kerr and Stattin exploded the assumption that parental knowledge is the outcome of active information-gathering strategies by parents (i.e., parental monitoring) (Kerr & Stattin, 2000; Stattin & Kerr, 2000). These studies have had profound impact on the study of both parental monitoring and parental knowledge (Laird & Zeringue, 2019; Omer et al., 2016). Since this seminal work, there has been a "resurgence of activity" (Racz & McMahon, 2011, p. 377) that constitutes a new wave of paren-

[9] Studies asked 'How often do your parents know where you are in the afternoon after school?', 'How much do your parents know about where you go when you are with friends in the evening?' 'How often does your mother/father know what you are doing when you are away from home?' 'Do your parents know who your friends really are?' (e.g., Brown et al., 1993; Cernkovich & Giordano, 1987; Crouter et al., 1990; Dishion & McMahon, 1998; Patterson & Stouthamer-Loeber, 1984; Weintraub & Gold, 1991).

tal monitoring research (Laird & Zeringue, 2019). The major implication was that parental monitoring studies must capture parental monitoring strategies themselves directly, and not rely on a proxy that is the (incorrectly) presumed outcome of parental monitoring (Kerr et al., 2010; Kerr, Stattin, & Pakalniskiene, 2008). As a result, parental monitoring research since the turn of the century has generally become careful not to simply equate parental knowledge with parental monitoring (Keijsers et al., 2010; Kerr, Stattin, & Pakalniskiene, 2008; Laird et al., 2010; Laird & Zeringue, 2019; Omer et al., 2016). Measures that capture parents' active knowledge gathering strategies (parental monitoring) are much improved (Kerr, Stattin, & Pakalniskiene, 2008).

Parental knowledge

Irrespective of being disguised as parental monitoring for so long, measures of parental knowledge of adolescents' activities when they are unsupervised has been a consistent major feature of studies of risk and protective factors for various adolescent outcomes (Dishion & McMahon, 1998). The dramatic changes precipitated by Stattin and Kerr's reinterpretation of parental monitoring mean that parental knowledge is rightly no longer conceptualised as resulting from parental monitoring efforts (Crouter et al., 2005; Fletcher et al., 2004; Kerr et al., 2010; Laird & Zeringue, 2019; Soenens et al., 2006; Waizenhofer et al., 2004).

In establishing this distinction, the literature has become focused on how the knowledge was gained and conditions favourable for knowledge. A recent review of extensive 21st century empirical research reveals that family background, demographics, characteristics and culture, parent-child relationships and interactions, and both parent and child cognitions and behaviours are all antecedents of parental knowledge (Laird & Zeringue, 2019). Some have tried to empirically establish whether parental knowledge is primarily driven by child processes (Kerr et al., 2010), parent processes (Dishion et al., 2004; Laird, Pettit, Bates et al., 2003a), or complex reciprocal processes (Finkenauer et al., 2008; Smetana et al., 2006). Parents can make requests or demands for information from their children, referred to as solicitation and control in the parental monitoring literature. These constitute modern measures of active parental monitoring efforts (see e.g., Kerr, Stattin, & Engels, 2008; Stattin & Kerr, 2000). Ultimately, however, it seems that the key source of parental knowledge about activities and lifestyles is active spontaneous disclosure by the child (Keijsers et al., 2010; Kerr et al., 2010; Laird & Zeringue, 2019; Soenens et al., 2006; Stattin & Kerr, 2000), though the disclosure-parental knowledge link may not be so robust with regard to rule breaking behaviour specifically (Laird & LaFleur, 2016). Children can inform their parents about various aspects of their lifestyles with or without having been asked, including via virtual or digital means. The parent-child relationship, family context and parenting styles all may be relevant to both the success of the solicitation-disclosure process, and the quality and quantity of lifestyle information spontaneously disclosed by children to their parents (Fletcher et al., 2004; Omer et al., 2016; Soenens et al., 2006; Tilton-Weaver et al., 2010). Although these processes are not depicted in Fig. 1, the model of GDPA-PM allows

for inputs to parental knowledge that are independent of parental monitoring (this could be further developed in future).

Increasingly, digital monitoring is a key source of parental knowledge about unsupervised activities that is facilitated by hardware such as smartphones and smart wearables and software such as tracking and forced response applications (for example apps, see, Hardie, 2021b). Of course, digital monitoring also refers to the monitoring of digital behaviour (Anderson, 2016), which has implications for the study of parental knowledge (circumstantial and development), but also its impact on control and guidance. This makes digital monitoring another area for future development of the model of GDPA-PM.

Another source of parental knowledge is direct observation afforded by either parental presence (see above), or parents may become informed about their children's behaviour and activities when they are not present via third party supervision such as the police or their child's school (e.g. Waizenhofer et al., 2004).[10] However, many measures of parental knowledge capture knowledge of the circumstances of activities when the child is unsupervised, so knowledge gained by direct observation by a parent or guardian is often excluded in studies of parental knowledge.

Adolescent transition and other guardians

Irrespective of decreasing time spent in the presence of parents or even any guardian, most parents remain concerned for the wellbeing, health, and safety of their child as the age into adolescence. When children are being directly supervised by their parents, parents know what their children are up to because they are present, or at least, for example, in the same house. This information gained via parental presence is particularly rich and accurate. In addition, a certain amount of knowledge is available incidentally. For example, parents may know that their child is at the cinema with two friends because they provided the transport. Incidental information may be actively recorded by parents as part of the parental monitoring process; however, incidental knowledge of activities, companions and whereabouts may only be correct at a certain point in time (e.g., the child may move or circumstances change without the parent's knowledge). As adolescents become more and more independent (maybe with increased mobility and resources) and spend more of their discretionary time outside the home (perhaps with a broader peer-group) the potential for accurate incidental knowledge decreases. In particular, the reduction in direct parental supervision and therefore direct observation as their children age into adolescence means that parents lose a key source of knowledge and start to gain information about the activities of their offspring without being physically present (Dishion & McMahon, 1998; Kerr et al., 2010; Martens, 1997; Racz & McMahon, 2011).[11] Mutual trust and

[10] Age-graded changes in these processes are discussed below.

[11] Regardless of the transition in the source of parental knowledge from direct observation (facilitated by parental presence) to other sources, parental knowledge still decreases with age as a young person's activity outside the home increases during adolescence (Keijsers et al., 2010; Kerr et al., 2010; Padilla-Walker et al., 2008). However, changes in parental monitoring that result from the changes inherent in the transitional period of adolescence need not necessarily have negative consequences. For example, Janssen et al. (2014) found that as adolescents age, a decrease in their parents requiring them to ask permission before

agreement, facilitated by effective listening and good quality conversation are crucial as children age and parental knowledge becomes underpinned by child disclosure rather than direct supervision methods of knowledge gathering (Dishion & McMahon, 1998; Laird et al., 2003b; Smetana & Metzger, 2008; Tilton-Weaver et al., 2010; Willoughby et al., 2015). However, since concealment is common for many reasons (Tilton-Weaver, 2014), active knowledge gathering must and can still play a role (see also Omer et al., 2016).

A main feature of adolescence is that adolescents experience growing unsupervised discretionary time (Laird, Pettit, Dodge et al., 2003b; Larson et al., 1996; Patterson & Stouthamer-Loeber, 1984; Wikström et al., 2012). Despite this change in discretionary time, there is no straightforward age-graded swap from being in the presence of parents to being unsupervised. Despite decreasing parental proximity and decreasing parental supervision intensity, younger children and even adolescents do not spend a great deal of time unsupervised because instead they are often in the presence of other supervisors (Hardie, 2021b; Wikström et al., 2012). Financial or social pressures and parental autonomy mean parents return to work, societal expectation means children start to attend compulsory education and maybe preschool before that, and increasing autonomy means children often have activities and experiences outside of the family context that are structured and supervised. In short, parents regularly trust people other than themselves to supervise their children. As they age, children and adolescents spend a lot of time with supervisors other than their parents such as childcare figures (e.g., babysitter, child-minder, and nursery staff), school teachers, employers, extended family and the parents of friends (Wikström et al., 2012).

When children are being supervised by others this is often because the parents have formally or informally passed some level of responsibility for the child over to another guardian. In this sense the other guardian is a proxy parent (or 'assigned handler', see Felson, 1995). Perhaps due to differing levels of either attachment (e.g. Gottfredson & Hirschi, 1990), or responsibility (e.g., Clarke, 1992; Felson, 1995), the parent and the proxy may be differentially invested in the behavioural and developmental outcomes of the child. This means that the nature and strength of the motivation for behaviours that will help that child meet outcome goals (Fig. 1) may differ between parents and their proxies. Although there may be exceptions, we would expect in most cases the presence of other guardians (such as proxy parents) to bridge the gap between parental presence and being unsupervised in terms of active parenting behaviours such as guidance and control.[12] The presence of other guardians can also bridge the gap between unsupervised time and time spent in the presence of parents in terms of parental monitoring and parental knowledge. This is because guardians can act as informants; the less proximal the guardian, the less effective an informant they are (Felson, 1995).

an activity and actively seeking information afterwards does not result in an increase in the amount of time spent in criminogenic settings by the adolescent and may be entirely normative, whereas decreases during adolescence in the quality of parent-child relationships and a reduction of limit-setting (a form of parental control) did result in potentially criminogenic changes in exposure to criminogenic settings.

[12] In some cases (for example when social care workers or foster parents are responsible for the children of neglectful parents), the strength of motivation may be stronger in proxy parents, and the goals may differ.

Guardian informants are another way in which parental knowledge changes as adolescents age because, other than child disclosure, the presence of other guardians is often a source of parental knowledge when parents are absent. When children are in the presence of other guardians (e.g., teacher, friend's parent, other adult guardian such as sports coach or employer), parents have or are usually able to gain knowledge about their children's activities by various means. Parents can gain parental knowledge about their child's activities, movements and companions from these guardians actively (by asking them directly; solicitation) or passively (by being informed). As is the case for parental supervision, the quality and intensity of the supervision by others may vary, and, additionally, in some cases the young person may not be supervised or even in the presence of a guardian when their parent thinks they are (e.g., truancy). Although this 'second hand' knowledge is potentially less accurate, such inaccuracy may not affect the efficacy with which parental knowledge may impact upon a child's behaviour (for a discussion of perceived as opposed to actual parental knowledge, see below). Furthermore, much supervision by others takes place in controlled or structured environments (e.g., school) where information is routinely fed back or available to parents and the potential for inaccuracies are reduced.

Parental knowledge mechanisms

Despite the focus on the sources and antecedents of parental knowledge in the most recent wave of parental monitoring research, there is an important distinction between questions of (i) how the knowledge was gained and (ii) what the knowledge can/may do. The ways in which parents come to have parental knowledge (and the parental action that these sources may or may not infer) are distinct from the effect that parental knowledge (and/or adolescent perception of it) may have on adolescent outcomes.

Over a decade ago, little was known about what parental knowledge actually represents (Kerr et al., 2010). A decade later, Laird and Zeringue's (2019) review shows that antecedents and sources of parental knowledge are now widely researched, and importantly, their model separates these antecedents and adolescent outcomes. Crucially, the analytical approach embodied by this current paper additionally suggests that these antecedents should not only be distinct from outcomes; but they should not be conflated with active parental behaviours and parental knowledge itself in order to remain distinct from the proximal mechanisms that relate parental knowledge and active parenting behaviours to adolescent outcomes (which should also be delineated into behaviour and development). As we move from improving concepts, to describing functional roles, to ascribing plausible mechanisms, it is crucial that these concepts, roles and mechanisms are as highly specified and delineated as possible to facilitate clarity of hypothesis and specificity of measures and empirical testing.

Adolescent-perceived parental knowledge of the circumstances of activity

Even greater specificity around the concept of parental knowledge will allow better understanding and testing of the mechanism by which parental knowledge has an effect on adolescent outcomes. Knowledge refers to information held about a factual reality. Parental knowledge of the circumstances of the child's activity therefore

cannot be measured without capturing and cross-referencing (for each unsupervised activity) both the circumstances of the adolescent's actual activities and the information the parent holds about these. This would require a complex and costly research design which means that the accuracy of parental knowledge is rarely tested. Researchers do not align whether the knowledge the parents have is factually correct, i.e., whether children are where parents think they are, are with whom parents think they are, and are doing what parents think they are doing.

Instead, measures of parental knowledge typically capture a *perception* of the level of parental knowledge of the circumstances of the adolescent's activities. Parents, their children, and third parties may all independently perceive the level of parental knowledge, which can therefore lead to multiple measures that capture these different forms of perceived parental knowledge. Evidence shows that the perceptions of parental monitoring factors (including parental knowledge) by different people differ, and parents' and adolescents' perceptions of family processes are often only modestly correlated (Gonzales et al., 1996; Krohn et al., 1992; Laird et al., 2010; Loeber & Stouthamer-Loeber, 1986). For example, typically, adolescents report that their parents engage in less monitoring activities than parents themselves report (Keijsers et al., 2009; Laird et al., 2010).

Like all perceptions, perceptions of parental knowledge may of course be flawed in relation to objective reality. For example, a parent may think they have accurate knowledge but are mistaken (e.g., they have been actively misled or poorly informed by their child or a third party), or an adolescent may be mistaken in thinking their parents don't know the details of their activity when actually they do (e.g., the parents have undertaken secret surveillance or have sources of knowledge unknown to the child, or do not believe their child's disclosures). Since a key source of parental knowledge is adolescent disclosure (Kerr et al., 2010; Laird & Zeringue, 2019) and adolescents are motivated to manage what their parents know (Marshall et al., 2005), it is likely that adolescents heavily influence the accuracy of the parental knowledge (Frijns et al., 2010; Keijsers et al., 2009; Kerr et al., 1999; Smetana et al., 2006). Adolescents (particularly boys) disclose less and conceal and manage information more as they age into middle adolescence (for a review, see, Laird & Zeringue, 2019). This means that parents and their offspring may disagree as to the level of accurate knowledge they believe the parent to have, and there is no guarantee of knowledge accuracy (i.e., relative to the reality of the activity).

It is important to use the measure that is most suited to the research question and analytical approach (see also Dishion & McMahon, 1998), not least because parental monitoring factors as perceived by different people relate differently to outcomes (Dishion & Patterson, 2006). Most fundamentally however, the particular kind of measure captured must match the research question because the mechanism in which these different measures may be implicated could be quite different. Within an integrated SAT framework, both long-term developmental processes and short-term situational processes can encompass plausible mechanisms to link parental knowledge to adolescent outcomes, but crucially, these mechanisms are differentiated. For example, *actual* (objectively accurate) parental knowledge may be a marker for factors such as parent-child relations, child disclosure or even active parental monitoring. Within the framework of SAT and criminology, such markers would be relevant

to specific processes which impact upon crime propensity (via the process of social emergence) and criminogenic exposure (via processes of selection) (for discussion, see, Hardie, 2017, ch 5). In contrast, Hardie's Hardie (2021b) parental knowledge study develops SAT to theorise and evidence the situational mechanism leading to adolescent acts of crime. Hardie (2021b) focuses on *adolescent perception* of their parent's knowledge (as a proxy for the salience of parents and their psychological presence in settings) because adolescent *perception* is more relevant (situationally) to adolescent behaviour than either the parent's perception of their own knowledge or the objective accuracy of the parental knowledge.

Conclusion

Summary

Both theory development and empirical measurement and testing require highly specified concepts to be accurate (valid), and replicable (reliable). However, the traditional parental monitoring and parental supervision literature has been characterised by a lack of theoretical discussion, and vague and inconsistent definition. This resulted in poorly conceptualised measures of parental knowledge (often used as a proxy for monitoring) and of the presence of parents or other guardians (often used as a proxy for supervision).

The model of goal-directed parental action (GDPA) introduced by Hardie (2021a), 2022) facilitates the conception, delineation, and locating of features, factors, and measures that are often neglected or conflated in parental monitoring research. These are parental goals (both developmental and behavioural), the means to achieve those goals (particular parenting actions including those encompassed within the concept of supervision), and the monitoring and evaluation process. This paper built on that previous work by specifically conceptualising parental presence and parental knowledge within the GDPA-PM framework. This discussion delineates presence from supervision and knowledge from monitoring; and situates these concepts within a wider model of parental monitoring and parental influence on adolescent development and behaviour. Parental presence and parental knowledge are not parenting actions, and neither constitute parental monitoring. Presence facilitates but is not necessary nor sufficient for two aspects of parenting that are often subsumed under the term 'supervision', namely; active parenting means to achieve goals, and parental monitoring (via direct observation). Knowledge is information that is a crucial component of the monitoring process. This knowledge can be gained via many means and does not necessarily require active information gathering (parental monitoring). The extent and quality of this knowledge can be perceived differently by different actors involved in the parenting and parental monitoring process. Different perceptions of parental knowledge may be captured to appropriately study different research questions.

Contribution

In the last twenty-five years, the parental monitoring field has begun to better conceptualise and operationalise active parental monitoring strategies. For example, the parental monitoring literature now recognises that, although implicated in the parental monitoring process, parental knowledge is not an active parenting behaviour and does not capture parental monitoring. This positive development in the field has resulted in a shift in focus away from the study of factors such as 'adolescent-perceived parental knowledge of the circumstances of activities' and 'parental presence', which have traditionally dominated the literature due to their consistent association with negative developmental and behavioural outcomes (e.g. crime). Instead, there is more research focus on the study of relationships, family and cultural context, parent and child cognition, and demographics, as sources and antecedents of parental knowledge.

Any redefinition of parental knowledge and parental presence doesn't change the fact of their association with negative outcomes such as crime, only how we might conceive of their role in the causal process. Research into the nature, sources and antecedents of parental knowledge should continue. This kind of research will help to understand what parental knowledge is and what it represents. However, simultaneously, research into the implications of parental knowledge and parental presence for developmental and behavioural outcomes should also continue. To facilitate this, the literature needs detailed and specific theory and empirical evidence about the mechanisms by which parental knowledge and presence are relevant to adolescent action and developmental outcomes.

Both the presence of guardians and parental knowledge about unsupervised activities are relevant to parental monitoring in adolescence, though the mechanisms by which they influence behaviour may be different. These mechanisms may also be distinct from (but inter-related to) mechanisms that link other aspects of the parenting and parental monitoring process to adolescent outcomes, such as active parenting means to achieve goals, and parental monitoring. The theory-led conceptual developments described in this paper build clarity and specificity that is fundamental to ongoing research into the mechanisms by which specific features of parenting influence behavioural and developmental outcomes (e.g. Hardie, 2021b), and also contribute to the developing GDPA-PM framework.

By removing, or at least reducing, the lumping errors that are inherent in the parental monitoring literature, the conceptual discussion and delineation of constructs presented in this paper is essential under-labouring in the analytical study of the mechanisms by which key parenting features influence adolescent outcomes such as crime. The increased clarity facilitates otherwise unattainable future inter-disciplinary integration and therefore the explication of processes at the sociocultural, psycho-behavioural and neurocognitive levels. Furthermore, any contribution to the reduction of the lumping errors that lead to false positive and non-reproducible findings, such as the improved conceptual clarity provided in this paper, represents a contribution towards tackling the so-called replication crisis in criminology (Barnes et al., 2020; Niemeyer et al., 2022; Pridemore et al., 2018; Proctor & Niemeyer, 2019).

Future directions

This paper sets up a number of potentially fruitful areas for future development, which are themselves all related: (i) integrating with a mechanistic approach to theorising and researching parental monitoring; (ii) theorising broader parental influence more generally; (iii) integrating GDPA-PM with both the Model of Vigilant Care and moral development areas of the parental monitoring literature to develop theory and facilitate future research into the most effective parenting for pro-social and positive outcomes for adolescents. These three areas for future development will each be discussed below.

First, SAT and, by extension, the model of GDPA-PM, provided a map of functional roles from which this paper has been able to develop and refine parental monitoring concepts with which to better enable empirical testing. This paper thus provides an example of under-labouring to refine concepts in response to the current status of the literature. This approach follows that of proponents of Analytic Criminology (Hardie, 2020; Pauwels et al., 2009; Wikström & Kroneberg, 2022; Wikström & Treiber, 2017). In future, these 'prototypical types' developed and refined here could be used to bridge the gap between two different kinds of theorising about parental monitoring: i) The functional role maps provided by SAT and GDPA-PM all housed within the Analytic Criminology approach, and ii) the implication and linking of concrete mechanisms uncovered in other disciplines (such as neuroscience) as required by the Mechanistic Criminology approach (Proctor & Niemeyer, 2019). This venture would involve retrofitting (and presumably, refining) the SAT-inspired model of GDPA-PM and the concepts derived from it here (for an example of such a retrofitting endeavour, see, Proctor & Niemeyer, 2020). The aim of this would be to further the science of criminology, better understand the causes and mechanisms by which parental monitoring influences crime-related adolescent action and behaviour, and address the limitations of the model of GDPA-PM that would be highlighted by the integration with the mechanistic approach. Examples of these limitations are likely the lack of consideration of concrete neurological mechanisms such as; mechanisms of need states in the functional role of goal-directed attention; operant conditioning mechanisms in the learning of new actions; episodic memory in the evaluation of success or failure; and working models in semantic memory that are relevant to the concepts of psychological presence and parental knowledge (Proctor & Niemeyer, 2019, 2020).

Second, this, and two papers relating to the model of GDPA-PM (Hardie, 2021a, 2022) have so far defined what parental monitoring is, and defined some parenting features that parental monitoring is not. The model of GDPA also paves the way for the application of a broad model of action (informed by Situational Action Theory) to parenting research in order to understand how related factors (other than parental monitoring, parental knowledge, parental presence and the presence of other guardians) might be situated within future research on parenting and adolescent developmental and behavioural outcomes (and re-situated in reviews of existing research)[13]. Development and application of this framework would help situate some very impor-

[13] For an example of how the GDPA-PM structure has been applied to the parental monitoring literature relating to crime, see Hardie (Hardie, 2017, ch 5).

tant aspects of parenting and parental supervision including; efficacy of various control and guidance behaviours as well as their content, quality and quantity; adjustment in parenting behaviours in response to evaluation; parental capacity and efficacy and the sources and antecedents of this; child characteristics and cognition; parent-child relationship, family, cultural and societal context; and the role of technology.[14]

Third and furthermore, there follows two examples of progressive areas of parental monitoring research that would (i) benefit from the conceptual insights and structural framework of the model of GDPA-PM and (ii) provide content with which to develop the model of GDPA. First, the analytical approach of the model of GDPA-PM prioritises questions of 'why' and 'how' particular parenting and parental monitoring behaviours and features influence adolescent behavioural and developmental outcomes. Such a focus on mechanisms is beneficial for informing 'what works' in family and parenting interventions, policy, and practice. 'Vigilant Care' (Omer et al., 2016) describes an approach to parenting and parental monitoring behaviour that is theoretically (and increasingly empirically, see e.g. Shimshoni et al., 2015) efficacious in improving or resulting in positive adolescent behavioural outcomes. The Vigilant Care model suggests that reciprocity and guided learning are important for parenting and monitoring that prevents or reduces adolescent risk behaviours. The Vigilant Care model could be complementarily embedded within the model of GDPA-PM, which aims to *explain* how parenting actions relate to adolescent outcomes rather than *describe* which parenting actions are most effective for a particular (positive) outcome.[15] Integrating these approaches would therefore be mutually beneficial to both our understanding of mechanisms of parental influence on adolescent behaviour and development, and determining the most effective parental monitoring-related ways to reduce adolescent risk behaviour.

Finally, moral development is a key component of SAT's integrated explanation of adolescent action (Wikström, 2019; Wikström et al., 2024). Since the model of GDPA builds on the principles of SAT (Hardie, 2022), it provides for a highly specified and delineated space for adolescent moral development in its explanation of Goal-Directed Parental Action and its influence on related adolescent outcomes (i.e. moral development and moral action such as crime). Thus, work in the parental monitoring field that explicitly acknowledges adolescent moral development (e.g., Chaparro &

[14] The experience of psychological parental presence is likely rooted in working models of parents that the adolescent has stored in working memory, which is an important consideration for future development. This experience can be triggered by a number of means, most direct is surely the frequent messaging, geolocation tracking and even apps forcing adolescents to acknowledge and even reply to their parents' messages that is facilitated by almost ubiquitous smartphone use. These, and parental monitoring of adolescent digital activity, are also some of the most direct ways in which parents can gain circumstantial parental knowledge (which is, itself, also reliant on semantic memory). Digital monitoring is also an important sub-category of parental monitoring activity that has implications for control and guidance behaviours. For these reasons, any theoretical or empirical psychological presence, parental knowledge, or parental monitoring research must account for digital monitoring and technological facilitation of virtual presence.

[15] The vigilant care literature does attempt to address 'why' vigilant care is related to positive behavioural outcomes, but the focus on 'anchoring' (Kahn et al., 2019) does not adequately offer a plausible mechanism (process) but instead provides another variable for analysis, albeit one that is plausibly causally relevant to a process. Plausible mechanisms are essential to answers to 'why' questions. Mechanisms describe processes and explain (not describe) the link between cause and effect, and as such, factors or variables are not mechanisms (Bunge, 2004; see also, Hardie, 2020; Hedström & Ylikoski, 2010; Wikström, 2019).

Grusec, 2015; Laird & Zeringue, 2019; Tilton-Weaver et al., 2014) would benefit from the conceptual distinctions of the GDPA framework, which delineates control and guidance parenting behaviours and adolescent situational and developmental processes (Hardie, 2022). Such work on parental guidance and adolescent development would help redress the imbalance that has resulted from the general focus on parental control behaviours and adolescent activities in the parental monitoring literature.

These future developments would all be part of a more progressive way to think about parental influence as not just control (of negative developments and behaviour), but also guidance (of positive developments and behaviour). Such an approach is already advocated by some in the parenting field (e.g. Laird & Zeringue, 2019), but is fundamentally consistent with the SAT-informed model of GDPA.

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