

Getting Real About Youth Substance Use and Crime: How ‘Realistic’ Theories can Improve Knowledge and Understanding for Practice

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Abstract

Set against a backdrop of a need to develop new theories of youth ‘risk’ behaviour, a groundwork for how such theoretical work might be undertaken is described. Meta-theoretical principles from critical realism are used to help clarify issues such as causality in an open world, adolescents as stratified social agents, and science as a value-laden practice. A methodology for developing fallibilistic, context-sensitive knowledge is also outlined. These principles are applied to two influential risk behaviour theories—the social development model and problem behaviour theory—to illustrate how existing theory can be clarified and developed. In particular, current theories may negate adolescent agency in relation to different socio-ecological contexts. Moreover, there is a need for greater reflexivity about the moral frameworks that implicitly guide theory and thus practice. Examples of quantitative empirical studies are also discussed to demonstrate how they contribute towards building realistic theories for prevention practice.

Keywords: adolescence, prevention, substance use, crime, risk behaviour, critical realism

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Introduction

The policy and practice of preventing or intervening in adolescent ‘risk’ behaviours, such as substance use and crime, is inextricably connected

with how these behaviours are understood to develop. From national policies to on-the-ground prevention programmes, *theories* of the development of these behaviours play a central role in framing who is ‘at risk’, what the ‘risk’ is, how the ‘risk’ is best handled, and more importantly, what the goal of the intervention is. For example, national campaigns such as Just Say No were built on a theory of social influence on substance use (see Gorman, 1998) alongside a zero use goal (Beck, 1998). In terms of prevention programmes, there is at least a forty-year history of development, trialling and implementation with a considerable related research literature, for example Project ALERT (see Ringwalt *et al.*, 2010; Clark *et al.*, 2011), Keepin’ it REAL (see Caputi and McLellan, 2017) or DARE (Evans and Tseloni, 2019), Project CHOICE (see D’Amico *et al.*, 2012), Unplugged (see Vigna-Taglianti *et al.*, 2014), Strengthening Families (Kumpfer and Magalhães, 2018) and Communities That Care (see Hawkins *et al.*, 2009). Whilst this rich history has contributed a great deal to knowledge about prevention design and delivery, debate remains about the effectiveness of universal preventions programmes (Gandhi *et al.*, 2007). Meta-analyses and systematic reviews of evaluations of such programmes have shown mixed results with even the better-performing programmes demonstrating varied findings in terms of reduced substance use or criminal behaviour (see Lemstra *et al.*, 2010; Faggiano *et al.*, 2014). The common theoretical base for many of these programmes is the risk factors approach (e.g. Hawkins *et al.*, 1992). In some programmes, however, it is unclear what theory of behavioural development is used. This makes the link between the underpinning theory and the resulting effect of the programme difficult to discern. In a systematic review of universal school-based programmes, Porath-Waller *et al.* (2010), for example, found better results for programmes that were based on a *mix* of theoretical approaches, rather than those that exclusively adopted a social learning model. They suggested that research needs to look more closely at how the theoretical models that underpin prevention programmes conceptualise causal mechanisms driving adolescent behaviours. Similarly, a systematic review of the evidence on prevention programmes concluded that new approaches need to be designed using *other theories* than those that underpin existing programmes (SBU, 2015). Thus, there may be a need to take a new look at the existing developmental theories on which prevention policy and practice with youth substance use and criminal behaviour is based. By reviewing and improving theories, the intention is that social work research and practice can also be progressed.

Alongside the calls for new theoretical work, a growing body of empirical research has begun to probe heterogeneity in the development of substance use and criminal behaviours in adolescence. For example, while Moffitt (1993) originally proposed three main sub-categories of adolescent ‘antisocial’ behaviour—those who abstain, the adolescent-

limited and the life-course persistent offenders—more recent analyses using growth mixture modelling methods have found support for up to six different developmental trajectories (Piquero, 2007). In terms of substance use alone, longitudinal research has found support for substantial variation in youth alcohol and drug use patterns (e.g. Aldridge *et al.*, 2011). Heterogeneity in how alcohol, drug use and criminal behaviour cluster and change over time during adolescence has also been found (e.g. Monahan *et al.*, 2013; Turner *et al.*, 2020). These emerging findings about heterogeneity in the development of adolescent ‘risk’ behaviours may be an important part of developing a new theoretical account. Such an account would seem apposite in relation to the call for new theories to support the development of new prevention efforts. Again, the aim is that an improved social work practice, as well as research, could be supported by refined theories.

The current article thus aims to contribute towards this challenge of taking a new look at existing theories of adolescent ‘risk’ behaviours. The challenge also includes investigating how the emerging research concerning heterogeneity in the development of ‘risk’ behaviours may be incorporated into such theory-building. A full review of competing theories and of how they are supported or otherwise by recent empirical findings is beyond the scope of this article. Rather, the current article will present a groundwork for *how* such theory development might be undertaken. An important part of theory generation concerns paying attention to meta-theoretical issues such as causation, structure and agency, and moral frameworks. It can be argued that without clarity on such issues, theories may run the risk of being unusable for designing interventions, invalid for prevention practice and unfeasible for empirical assessment. Yet few studies exist that address the challenge of applying meta-theoretical ideas to theory development alongside incorporating new research findings. Thus, the current article will apply ideas from critical realism (CR) on causation in an open world, people as social agents, science as a value-laden practice and rational judgement of competing explanations. The article will firstly discuss how CR’s position on these issues can help extend existing theories of adolescent substance use and crime, using as examples influential risk factors theories (e.g. Jessor, 1991; Catalano and Hawkins, 1996). Secondly, some examples of emerging research on heterogeneity will be discussed, again using ideas from CR, to exemplify how these empirical findings can feed into new theoretical development. In summary, the intention is to illustrate how a critical realist perspective can be applied to existing theory and empirical findings as a method for building theory for a context-sensitive knowledge for social work with youth substance use and crime. And building better theories hopefully has positive ramifications for social work research and practice.

Method: Key principles and meta-theoretical framework

Price and Martin (2018) wrote that many applications of critical realist philosophy in the social sciences currently take the form of ‘underlabouring’. This term means using critical realist (or other philosophical) ideas to clarify concepts, strengthen theory and achieve a depth or complexity in explanation. This is not to say that such outputs cannot be achieved any other way. Indeed, Bhaskar and Hartwig (2016) described critical realism as ‘enlightened common sense’, and Bhaskar’s (1975) original philosophy of science was an attempt to describe in a more accurate, philosophically grounded way what science was *already* doing and what the world must be like for science to operate as it does. Consequently, the methods for this article take the form of a philosophical underlabouring as an application of ideas from CR, paying attention to ontology, epistemology, and ethics. There have been numerous such applications of critical realist philosophy in social science and these differ in actual method depending on the subject matter and study at hand, e.g. literature review (Isaksen, 2018), qualitative case study (Hu, 2018), reflecting on training and practice (Patel and Pilgrim, 2018). Despite such unique applications of CR, there are some common features to a critical realist method of underlabouring, such as a commitment to ontology and the realist view of causality, the use of retroduction and judgemental rationality, attention to structure and agency, and the use of moral realism (Price and Martin, 2018). These principles are just a few of the critical realist ideas that are possible to use. The current article will apply these four principles, whilst also drawing on some additional developments of critical realist theory. Rather than exposting these ideas separately they will be presented in the main text when used. This form of presentation is intended to demonstrate how the meta-theoretical principle is being applied in order to achieve a level of transparency in the analysis.

The analysis has two main parts. The first is an application of the four principles to critically examine existing risk factors theory. The second is an *example* of how an analysis of existing empirical studies can be conducted using critical realist methods. The selected studies are chosen in that they are methodologically sufficient to be able to sustain a critical realist analysis, but were not explicitly designed as realist studies. CR often focuses on hermeneutically or meaning-based methodologies as source material for theoretical work. This is, however, often to investigate the ‘interior’ of social life (Price and Martin, 2018). The current article departs somewhat from this tradition to illustrate a complimentary role of quantitative studies in building realistic theories, particularly regarding the ‘exterior’ or patterns of social life.

The argument that CR has something useful to offer social work has been made before, in terms of a general argument (Houston, 2001) and

specifically in terms of grounded theory (Oliver, 2012). Houston's (2001) focus was as much on the case against social constructionism, as for putting forward a theoretical argument for the relevance of CR for social work *practice*. The current article links with Houston's arguments but also departs from them by a focus on CR's relevance for taking stock of *theories for practice*. The current article also extends Houston's (2001) discussion of Bhaskar's original philosophy of science (1975) and social science (1979) with Archer's (2000) account of the human as social agent, and also with Pawson's (2006, 2013) theory of realist knowledge for practice. This is not to say that these authors' viewpoints and arguments cohere in a straightforward manner; on issues such as agency, the stratification of social life and methodology, there is room for contrast and comparison. Such discussions are, however, beyond the scope of this article.

Section 1—'Re-viewing' risk factors theory on youth substance use and crime

The risk factors approach to youth substance use and crime is perhaps the most well-known and influential perspective regarding adolescent 'risk' behaviours, both for theory and in terms of informing prevention and intervention design (see Jessor, 2014, 2018; Cambron *et al.*, 2018; for a discussion of the risk factor approach, see Farrington, 2006). Two influential examples of the risk factors approach will be used in the current discussion: Jessor's (1991) problem behaviour theory (PBT) and Catalano and Hawkins' (1996) social development model (SDM). While PBT and the SDM have minor differences, they both build upon similar reasoning and conceptualisations regarding risk factors. They also underpin many current universal and selective prevention programmes designed to reduce youth substance use and crime. The SDM, developed by Catalano and Hawkins (1996), has been subject to over thirty years of testing, refinement and research (Cambron *et al.*, 2018) and is the theoretical base for interventions such as Communities That Care (see Hawkins, Catalano and Arthur, 2002; EMCDDA, 2019). Similarly, Jessor's PBT has been developed over six decades of research and has been highly influential in informing prevention design (Jessor, 2014, 2018).

Drawing on the risk factors literature, the SDM aims to explain the development of adolescent 'antisocial behaviour'. The SDM as such is a general theory of prosocial and antisocial behaviour, as explained by similar developmental processes. It hypothesises that there is a chain of social development that leads either to pro- or antisocial behaviour. In

brief, this chain starts with opportunities for pro- or antisocial behaviour leading to involvement in that behaviour. At this stage, the developing adolescent learns social and interaction skills associated with the context and the behaviour, and in turn these interpersonal skills lead to social and interpersonal rewards and a sense of belonging and bonding to others. This social development is compounded in a final stage of internalising the learnt skills and rewards as core values and beliefs of a pro- or antisocial nature (Cambron *et al.*, 2018). The PBT also draws on the risk factors research hypothesising that factors in biology, personality, the perceived environment, the social environment and in behaviour increase the likelihood of engaging in ‘risk’ or ‘problem’ behaviours (Jessor, 1991, 2014). The descriptions given of the SDM and PBT are necessarily brief. Next, I will apply to these theories the four principles of critical realist thinking noted in the methodology.

A commitment to ontology and the realist view of causality

In critical realist terms, there is ‘something there’ in the world beyond our understanding causing the things or processes we observe or experience, whether as correlations in data or as socially interpreted meanings (Bhaskar *et al.*, 2017). The implications of the critical realist ontology for risk factors approaches may seem initially subtle. For example, an example of research on the SDM provides explanations such as ‘Paths from improved skills to both reduced problem behaviours and increased prosocial beliefs [...] were significant and *increase* the variance explained to 35 percent’ (Cambron *et al.*, 2018; my emphasis). Or Jessor (1991) wrote ‘Multiple regression analyses [...] generally yield multiple correlations (Rs) of about 0.70 when *accounting* for an index of multiple problem behaviour’ (my emphasis). Whilst these are important empirical results, a question remains about *what* is being explained, increased or accounted for beyond the immediate empirical data, which is fundamentally a question of how causality is really (ontologically) conceptualised. When findings are analysed more in line with a traditional positivist approach to causality, explanations stay close to the empirical data and statistical associations are themselves deemed sufficient to ‘explain’ causal processes. CR’s view of causality and ontology means, however, that there *must* be more going on ‘behind’ the data, which needs explaining.

In CR, the empirical domain that is accessed in science is just a surface of a stratified reality. Bhaskar (1975) drew a distinction between three domains: (i) the empirical; (ii) the domain of the actual, that is, the patterns of events that occur in the world, whether or not we do research on them; and (iii) the domain of the real, that is, of structures and processes containing causal powers. It is the domain of the real, and its causal powers, that science aims to understand. However, because the

world, including social life, is an open system with competing processes, the empirical, the actual and the real are oftentimes not in phase with each other (Bhaskar, 1975). In other words, sometimes causal mechanisms do not actualise because of contextual conditions, or they get thwarted by other competing mechanisms. For science, this means that events that do occur in the actual domain are not deterministic; only causal tendencies in specific contexts can be *explained*. This introduces an important meta-theoretical shift, as instead of attempting to empirically demonstrate causal powers, CR argues that this is rarely possible. Rather, the *possibility* for understanding causal processes in the real world, in both natural and social sciences, is to theorise the mechanisms ‘behind’ the data (in the real domain). At first glance, this way of theorising is not incompatible with the theories of the SDM or the PBT. As noted earlier, Bhaskar intended to explain, in a clearer way, what science was *already* doing. The benefit of this ‘underlabouring’ is its warrant for a more principled theoretical explanation that moves from accounts of ‘associations’ between variables to viewing empirical patterns as being indicative of a causal, ontological reality.

Retroduction and judgemental rationality

To theorise causal mechanisms from empirical data, Bhaskar uses the term ‘retroduction’, i.e. to theorise back from the empirical patterns to the real domain of causal processes. This is a form of ‘inference to the best possible explanation’ based on the available data. Alongside ontological realism, CR is thus a form of epistemic relativism; our knowledge is always incomplete and open to change and correction. Bhaskar’s (1975) argued, however, that there must be an ‘intransitive’ dimension to reality, separate from our knowledge of it, and which operates in reliable enough ways for science to transcend the specific context in which the knowledge was created. Science can only access this real dimension, argues Bhaskar, through a retroductive analysis and by using judgemental rationality. This means a form of inferential adjudication between competing theories. Again, at first glance, the charge could be made that this is what theories such as the SDM are already doing. The difference from a CR perspective is clarity about the inference and judgemental processes in operation and transparency about how the scientific work of theory-construction and its evaluation proceeds.

Given the open systems nature of the world—that is, causal mechanisms may only activate in specific contexts—theories need to be specified in a particular way in order to make rational judgements about them. Cruickshank (2004), for example, contended that Bhaskar’s (1975) account of retroduction becomes dogmatic and thus infallible. The arising question is how a retroductive analysis is to be done. Cruickshank

(2007) proposed a Popperian approach to theory-specification and falsification, that is, theories must be sufficiently specified so that they can be testable (in some way) with empirical data (see Lakatos (1976) and Motterlini (1999) for further discussion beyond the scope of the current article). Similarly, Pawson (2006, 2013) drew on Popper's (1934/1992) 'critical rationalism', alongside Bhaskar and other theorists, to develop a methodology for retroductively deriving causal mechanisms given a stratified and complex reality. The core of the methodology is the context–mechanism–outcome–configuration (CMOC), initially put forward Pawson and Tilley (1997), and was designed as a way of generating fallibilistic 'mini-theories', that is, specific and testable theories of why practice or interventions are working (or not). The CMOC takes Bhaskar's notion of the causal mechanism that only operates, or becomes *actualised*, in specific social contexts, and in open systems. A mechanism is operationalised as a person's reasoning and motives for action *in relation to* the social resources to hand, yet the resources available will depend on context (Pawson and Tilley, 1997). It is through specifying and then studying outcome patterns within a CMOC model that we can make the case for a rational judgement between competing theories, and thus apply Popperian fallibilism in the analysis. In other words, in a CMOC model, it should be possible to determine which theories in specific contexts are falsified (or supported) by the empirical data.

Applying the CMOC model to the SDM provides a deeper consideration of the theory and poses a number of questions that may be important for social work research if not practice. For example, in the SDM, three external factors are theorised as playing a role in the development of substance use or crime: social constraints, position in the social structure (such as socio-economic status, gender, race) and individual characteristics. Within a CMOC model, these factors are viewed as contextual conditions, that is, the different settings in which a hypothesised mechanism will actualise. The implication of the search for CMOCs (in the plural) is that at the outset there is a presumption of heterogeneity, of different people in different contexts responding differently to the complexities of social life. Thus, a CR 're-viewing' of the SDM and PBT would be to specify *differences* in contextual conditions that might be related to different mechanisms and different outcome patterns. Rather than attempting to explain 'antisocial behaviour' *per se*, the scientific endeavour would be to explain its development in different, specific contexts. For example, particular kinds of adolescents in particular kinds of interpersonal relationships in particular kinds of settings may have different developmental patterns of behaviours. Again, the goal is not to test causality empirically to establish universally applicable laws, but to provide the best available explanation of causal mechanisms operating in specific contexts. In turn, this means context-specific empirical analyses and retroductive theorising. For practice, an advantage would be more

specific mini-theories of what mechanisms are likely to be working in different contextual conditions. Examples of this using empirical work will be given in Section 2.

Attention to structure and agency

A key part of the CMOC model—and critical realist theory more generally—is that of the causal mechanism (Bhaskar, 1979; Pawson, 2006). In social science, Bhaskar (1979) argued that both social structure and individuals as social agents possess causal powers in the real domain. He proposed a model of structure and agency in a mutually transformative relationship comprising *positions* in the structure and *practices* that social agents act and enact from these positions. In other words, the existing set of socio-cultural forms is necessary for a social agent to act with some degree of intention, even if this intention is not always comprehended in the moment of acting. Archer (2000) extended Bhaskar's (1979) account to describe the individual's causal powers emerging through our relations with our physical, experiential, but also social being. As part of different social collectivities, we have access to particular nodes in the social structure, which provide different resources, opportunities and expectations, and thus different value and moral systems. In this way, the person, as the central mechanism, cannot be reduced to either language/culture, on the one hand, or individual behaviours, on the other; a mechanism is always reasoning *in relation to* resources and structure (Pawson, 2013).

Drawing on this stratified notion of human agency, the SDM's theory, if not risk factors theories more generally, would need to incorporate more fully adolescents' reasoning, intentions and choices into their explanations of developmental (and causal) processes. The SDM hypothesises that adolescents' beliefs in pro- or antisocial values are important. Similarly, Jessor (1991) noted that adolescent substance use and criminal behaviours are 'purposive, instrumental, and goal directed' (p. 598). Beliefs, a sense of purpose, or intended goals, are all, in critical realist terms, one side of the mechanism coin. If we are to try and look into the 'black box' of causality for youth risk behaviours, theorising agency is key. Yet, the account of why adolescents make the choices they do and what sort of reasoning is employed seems lacking in much of the risk factors approach. From a CR perspective, however, there also is the other, structural, side of the mechanism coin: adolescent choices would also need to be viewed as arising in response to the social values, positions and resources immediately available. This shifts the focus somewhat from risk factors being deterministic 'pushes' that belong to or reside in the developing adolescent, to agential choices made *in relation to* situational and structural possibilities. While both the SDM and

the PBT, to differing extents, allow for a notion of risk factors residing in the social environment, these seem to be conceptualised as explanations in themselves—as a ‘push’—rather than contextual possibilities framing or limiting young people’s choices. An important upshot of this shift in thinking is that the assessment of ‘risk’ cannot necessarily be person-based but also situation- or context-based.

Moral realism and the transitive/intransitive distinction

The fourth principle from CR relates to Bhaskar’s distinction between the transitive dimension of science, language, culture, etc. and the intransitive dimension of real causal powers. Bhaskar’s (1975) central argument was that science is a social process undertaken by people in specific circumstances, and as such, science and its aims, methods and conclusions are inextricably bound up with a society’s values and morals. In contrast to a supposed value-neutrality of positivism or a value-relativism of hermeneutic/constructionist approaches, CR, at least in some versions, subscribes to moral realism (or ‘scientific realism about values’, see Elder-Vass (2010) for further discussion). This is an acceptance that there is no value-free social science, but also that science is and should be able to adjudicate in matters of what ought to be done in a society. Bhaskar (1979) maintained that if scientific enquiry is to make statements that have some bearing on the factuality of the world, then this implies that other statements of an ideological or less reasoned nature can be claimed to be less worthy. Social science in particular will necessarily imply a critique via its descriptions and explanations of the social world. Moreover, that the description of some social facts will only reach descriptive adequacy if the description is of a critical or value-laden way, as value-neutral description could result in an inadequate description of the facts (Cruickshank, 2010). The notion of descriptive adequacy is also an ethical commitment to taking into account the values of the social agents, which in part form the mechanisms under study.

Questions can be raised about the descriptive adequacy of some central terms in the risk factors approach. The SDM aims to explain the development of ‘antisocial’ behaviour, whereas Jessor (1991) uses the term ‘problem behaviour’, which at times in both theories can include: smoking, alcohol use, drug use, sexual activity and criminal behaviour. The SDM also uses a reverse term ‘prosocial’, which is undefined in key texts (e.g. Cambron *et al.*, 2018) but operationalised in research as participating in school activities, attending church and, among other things, doing volunteer work. From a CR perspective, values and morals are presumed to be at work in definitions and the task would be to achieve a level of transparency or reflexivity about these. There is a risk of a tautological

position arising when adolescent behaviours are defined *a priori* as anti-social, and then explained by ‘antisocial opportunities’ or lack of ‘prosocial bonding’ as in the SDM. Jessor’s (1991) definition of ‘risk behaviour’ is ‘any behaviour that can compromise [...] psychological aspects of *successful* adolescent development’ (p. 599; my emphasis). The definition of success is, however, a transitive activity open to a society’s or an individual’s own particular morals. It also risks becoming tautological when value-loaded risk factors are used to ‘explain’ value-loaded risk behaviours, e.g. ‘problem drinking’ is a risk factor for ‘problem behaviour’ (Jessor, 1991). Achieving some degree of descriptive adequacy would involve not just adolescents’ own views on their behaviours. Concepts and their components would need to be subject to conceptual and empirical analysis, both qualitative and quantitative. In summary, CR’s presumption of heterogeneity would expect diverse patterns in the different behaviours that are grouped together under the label ‘antisocial’ or ‘problem’, thus requiring a more nuanced, reflexive account of the values at work in scientific description.

Section 2—getting ‘real’ about youth substance use and crime: Realistic theories for practice and policy

Building on the above discussions, this section aims to consider how existing empirical studies can be re-viewed from a critical realist perspective to contribute towards theory-building. In particular, the latter two principles from the preceding discussion—on structure and agency, and moral realism—will be in focus. A secondary aim of this section is to demonstrate how quantitative approaches can provide an essential piece of critical realist theory-building; this being the identification of differential patterns, which may be indicative of mechanisms actualising (or failing to actualise) in different contexts. Within Pawson’s (2006, 2013) theory, the specification of mechanisms in context, and the piecemeal accumulation of knowledge of different CMOCs, provides a basis—and part of the evidence-base—for social work practice and policy.

Investigating structure, agency and the stratified adolescent

CR’s presumption of variable tendencies in outcomes in different settings implores an empirical search for heterogeneous effects of the mechanisms relative to different contexts. Archer’s (2000) model of the stratified human agent (comprising physical, experiential and social domains) and Pawson’s (2006) notion of context, bear similarity to the well-known socio-ecological models of adolescent development (e.g. Bronfenbrenner, 1979; Sameroff, 2010), albeit with a different

philosophical fundament. Thus, empirical studies employing methods to search for heterogeneity in outcomes, particularly using a socio-ecological perspective on youth development, are well suited for supporting critical realist theory-building. For example, in a full model test of the SDM (Sullivan and Hirschfield, 2011), important links were found between socio-ecological contexts such as schools, leisure time and parenting. The overall model, however, only accounted for a modest amount of ‘problem behaviour’ (22 per cent of the variance). From a realist perspective, heterogeneous outcomes in different contexts are expected; explaining homogenous outcomes is likely to be difficult. Using the CMOC model, differential outcomes could be hypothesised along these lines: under particular socio-ecological contexts, such as poverty, highly adverse upbringing, neighbourhood deprivation (contexts), adolescents have x, y, z choices open to them to achieve a, b, c , positions (mechanisms) in their social environment, resulting in i, ii, iii behaviours (outcomes).

Different methodological techniques would be needed to support and test such theorising. To probe heterogeneity in outcome patterns from a socio-ecological perspective, latent class approaches can be applied. Turner *et al.* (2020) used latent transition analysis to investigate how substance use and criminal behaviours cluster and change during adolescence. Different socio-ecological contexts covering individual, peer and family domains were *differentially* linked to four latent groups. For example, a negative pre-teen family environment, as well as criminal peers, was most strongly associated with a more entrenched group, but not with a ‘Dabblers’ group who had more sporadic engagement in substance use and crime. Linking heterogeneous outcomes with different contexts in this way can feed into realistic theory-building. For example, if the family/parenting context is linked to more entrenched or frequent outcome behaviours, it may be that negative family environments limit adolescent choices to specific peer groups. The peer effect has been explored, for example, using longitudinal social network analysis, with studies suggesting that teenagers *choose* friends with similar levels of criminal behaviour, rather than being influenced (see Knecht *et al.*, 2010). But theory is unclear on the mechanism (in realist terms) for *why* some teens choose criminal friends and some do not. For example, one mechanism in a context of financially strained home environment and low/no access to other leisure facilities might be something along the lines of ‘these are the (only) friends from my block/street’.

An advantage of CR’s model of structure and agency is that it provides a meta-theoretical position to pull together both qualitative and quantitative findings. For example, mechanisms can be described by drawing on existing qualitative work, for example, phenomenological methods on the lived experiences of adolescents and their reasoning as physical, emotional, but also social beings (see e.g. Larkin and Griffiths,

2004; Järvinen and Ravn, 2014). Given the expected heterogeneity and complexity in human social life, it is unlikely that one study design alone, irrespective of sample size or methodology, will provide the necessary empirical material to support theoretical explanation. Rather, Pawson (2013) advocated a ‘piecemeal’ accumulation of knowledge through ‘realist synthesis’. This starts with an outline of the theory of the CMOC, which is then compared with a number of empirical studies. Rather than summing the studies in an additive manner, as done in meta-analysis and systematic review, in realist synthesis it is expected that different contexts will reveal different results; these differences become the stuff with which to develop the initial CMOC into a more nuanced, realistic theory of generative causal mechanisms operating in different social settings. Improving the risk factor theories that underpin prevention programmes could begin with developing explanations of the *different* ways that young people as stratified social agents in different settings develop these behaviours. This would in turn encourage or allow a more nuanced, context-sensitive social work practice.

Moral realism and examining key concepts

CR’s notion of descriptive adequacy of central concepts encourages both an ethical commitment to the values in use by research subjects—in this case adolescents—and a reflexivity about the moral positions being used in science. Several authors have highlighted the problematic way that academic and policy discourse somewhat carelessly groups together a number of diverse adolescent behaviours (see Males, 2009, 2010; Sercombe, 2010, 2014). Essential to a realistic theory is an attempt to reflect on compound concepts, such as ‘antisocial’ or ‘problem’ behaviour and examine empirically whether the component parts of a key concept cohere. Identifying quantitatively whether component behaviours, for example, factors or variables such as drinking alcohol and smoking are related over and within time has traditionally been the work of cross-lagged panel models (statistical models that assess interactions between variables over time). However, expecting heterogeneity among adolescents, interactions between behaviours would need to be examined at the within-person level (see Curran and Bauer, 2011; Hamaker *et al.*, 2015), that is, whether behaviours are related *within* individuals, rather than just at a group level. For such an analysis, a potential statistical model is the random-intercept cross-lagged panel (RI-CLP) model (see Hamaker *et al.*, 2015), which allows estimates of the within-person (intraindividual) cross-lagged interactions between two (or more) behaviours. Using a RI-CLP model, Turner *et al.* (2018) found that three component behaviours—drunkenness, drug use and criminal behaviour—do not easily cohere during adolescence, as many risk factor theories might suggest.

Moreover, that the risk of continuation differed between the behaviours with criminality showing a much more stable pattern over early to mid-adolescence, but less so for drug use. Where these behaviours do group together ‘syndromatically’, they tend to cluster for the ‘severe 5%’ (Vaughn *et al.*, 2014).

Such studies help provide a more nuanced, descriptively adequate, account of the key concepts in risk factor theories, highlighting heterogeneity in developmental or outcome patterns. However, other methods would be required to probe descriptive adequacy of key concepts. Adolescents’ own accounts of their transitions in and out of substance-using behaviours show complex accounts of relaxation and enjoyment, alongside risks and dangers (MacLean, 2008; Aldridge *et al.*, 2011). Larkin and Griffiths (2004), drawing on phenomenological accounts of young people’s drug use, suggested the phrase ‘risky but rewarding’ behaviour, to capture adolescents’ own conceptions. In terms of criminal activity, McAra and McVie (2012) also demonstrated a depth and complexity in adolescents’ accounts of different aspects of criminal activity, including how some crimes are gender-coded, while some are only viewed as legitimate in specific cultural–spatial contexts. This is not to privilege teenagers’ own descriptive accounts over scientific concepts. Rather, if theories of adolescent risk behaviours are to be ‘realistic’, they need to acknowledge something of the lived realities of young people. Failure in descriptive adequacy may mean that the theories that underpin prevention programmes may misjudge or mystify (Karlsson, 2010) adolescent behaviours, and in turn lead practice to ‘dig in the wrong place’.

Conclusion

Reflecting on six decades of research on adolescent risk behaviour, Jessor (2018) bemoaned the limited role of theory in developmental science, calling for its greater development and application. There are a number of ways that theories can be developed and the current article has presented a groundwork for one such way. CR offers a toolkit for dealing with meta-theoretical issues such as social ontology and causation, people as stratified social agents, moral realism, as well as a methodology for a piecemeal building of fallibilistic, context-sensitive knowledge. This approach also has its limitations. In providing clarity on principles of the scientific process according to CR, one is then wedded to these definitions. For example, the operationalisation of ‘mechanism’ in the current article is just one such version (see e.g. Hedström, 2005). Other definitions may lead to different explanations. It is hoped, however, that clarity assists rational adjudication of scientific theories.

Meta-theoretical concepts from CR do more, however, than just attempt clarification of issues such as people as social agents and causality; they invite us to look again, or *re-view*, and build upon existing theory and research. They provide a clear framework for how theories could be developed, both conceptually and by drawing on new empirical research. In turn, this provides a means of improving theories *for* social work research and practice, with the ultimate aim of helping to refine practice. For example, an application of critical realist principles highlighted the need for risk factor theories to better account for adolescents' own reasoning and motives, within a model of contextual, socio-ecological factors. This would encourage a more context-sensitive social work practice, moving away from 'one-size-fits-all' programming. It also calls attention to promoting understanding of adolescents' own reasoning, again supporting a social work practice that intentionally works with different, situated perceptions of risk, rather than absolute, universal definitions. The analysis further suggests that 'risk' thus also needs to be understood as situation- or context-based (see Rhodes, 2003). For prevention practice, this may mean a focus on situational prevention or harm-reduction (e.g. Measham, 2019). Realism about values in science also encourages a reflexivity about how a theory's key concept, if not prevention design itself, is constructed. While such conceptual critique could also be achieved by, for example, deconstruction methods (see Clark and Hepburn, 2015), such approaches often negate ontology and thus disable discussion of causal powers in people and structures. Social work research and practice needs to be able to describe, discuss and work with powers to change, in both structures and people. Regarding the direction of that change, CR suggests that science has a role to play in rationally adjudicating in moral matters and *constructing* theories for practice, while avoiding moral relativism. In particular, the current article demonstrated how quantitative studies can support a reflexive exploration of key concepts in risk factors theories, highlighting where *a priori* moral assumptions do not empirically hold and need revising. Further, it was shown how empirical material can be used to retroductively theorise the links between contexts and differential outcomes. These are important building blocks in the task of developing theories for an improved prevention design and practice.

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