

EXPLAINING MIXED-USE DEVELOPMENTS: A CRITICAL REALIST'S PERSPECTIVE

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ABSTRACT

Mixed-use developments are often used as the immediate response to revitalise vibrancy in precincts, to relieve transportation problems and to address densification issues. The concept is labelled as a 'sustainable community' and responds to contemporary state and local sustainability measures. However, case studies show that creating these types of developments have proven to be one of the most demanding real estate projects to bring together.

Mixed-use developments are characterised by their 'live-work-play' facilities and amenities in a single development. Individuals and families can choose housing options for short and long term accommodation; commercial establishments are available for shopping or working; and services and amenities are accessible for recreation and entertainment. On the face of it, there are numerous benefits for mixed-use: it minimises the need for transport and infrastructure is optimised; it increases walkability as daily activities are brought closer together; and it enhances social networks when opportunities for chance face-to-face meetings are increased.

The challenge of delivering mixed-use projects is exacerbated by a combination of several factors: development finance for mixed-use projects is often limited as such projects are deemed to be higher risk profiles, property cycles of each subsector is difficult to align, and construction and management of mixed-use requires a level of experience and specialisation.

To create a better understanding of the drivers of mixed-use developments, this paper puts forward the use of critical realism as an explanatory social science to assist in unravelling presuppositions particularly in concepts that are socioeconomic and political in nature. A critical realist's perspective allows planners and policy makers to be sympathetic to the issues confronting mixed-use developments. Cognisant of the underlying mechanisms that drive and motivate the actors that participate (or stand in the way) of its creation, legislators and governments at all levels can support its successful realisation.

This research paper provides the history of the concept, the movements and advocacies, the benefits and challenges and a way forward in accelerating the creation of mixed-use developments. The methods used for this research were derived through an extensive literature review and primary research on mixed use developments.

Keywords: mixed-use developments, critical realism, sustainable communities

INTRODUCTION

Land-use zoning policies as interpreted in current planning practice evidenced in the American, Canadian and Australian context have focused on single-use functions to the point that mixed-use developments are less likely to occur (Grant 2002; Hirt, S 2007; Wardner 2013). In other countries such as England, France, Germany, Sweden and Russia, mixed-use developments are the default mode and is largely driven by their land-use regulation and practice – even if the terminologies used in their codes are similar to that of the US their interpretation is different (Hirt, S 2007, 2012).

In Australia in particular, growing concern over the ability of the development sector to respond adequately to the challenges of urbanisation, climate change, natural and man-made disasters have state and local authorities promoting mixed-use developments. The state of Queensland's *Mixed-Use Development Act 1993* was created shortly after the United Nation's Rio Conference in 1992. It is further promoted in the *South East Queensland Regional Plan 2009-2031* (Department of Infrastructure and Planning 2009). Such policies are addressed to direct stakeholders responsible for planning, design, construction and operation of the built environment to provide more sustainable environments.

It is no wonder why the promotion and advocacy of mixed-use is highly desirable. Experiencing a mixed-use development is easy, instinctive and enjoyable because of the effortlessness when moving around in it. These types of developments, particularly those in revitalised urban areas have unique characteristics not easily replicated. Most European cities and precincts exemplify mixed-use of which the context each has evolved over time absorbing the local flavour and influences of the community over generations.

Replicating those experiences is where the difficulty lies. Creating new mixed-use developments is quite complex and has been identified as one of the most challenging types of development to deliver. However, local governments continue to require mixed-use developments without the adequate support and understanding of its creation.

It is in this light that the author attempts to provide a critical realist's (CR) perspective to explain mixed-use developments to assist legislators and policy makers to better appreciate the nuances in implementation. In a understanding mixed-use from the CR perspective, perhaps new, innovative and creative ways of encouraging, promoting and supporting these developments can emerge.

This paper begins with providing a brief background of critical realism and its use in property research and then looks into the history of the concept of mixed-use. Through structured interviews and an extensive literature review, the benefits and challenges of delivering mixed-use developments are included. A discussion then follows applying a critical realist's viewpoint of mixed-use developments. Finally, this paper concludes with some policy implications.

CRITICAL REALISM IN PROPERTY RESEARCH

Critical realism (CR) is a branch of philosophy often used when analysing real world phenomena and is primarily concerned with understanding the meaning in human actions. This type of non-positivist method is seldom used in property research as most researchers in this discipline favour of the 'value-free, detached observation' of positivist methods (Levy 2006; Levy & Henry 2003). The bias for a positivist approach is confirmed in a study of the theoretical perspective, methodologies and methods of 253 property journals from the US, UK and Australia. The study revealed that 71 per cent of articles used positivist approaches while only 29 per cent had a non-positivist standpoint (Levy & Henry 2003).

CR is a branch of realist philosophy founded by British philosopher Roy Bhaskar (1944-) in the 1970s. Bhaskar originally created the philosophy as 'transcendental realism' in his book *A Realist Theory of Science* (1975). This eventually became known, with his concurrence, as 'critical realism' (Sayer 1992). CR is different from an empirical positivist research approach and from linguistic realism (an interpretivist research approach), as it views the world as, composed of events, states of affairs, experiences and discourses with underlying powers, structures and tendencies (Patomäki & Wight 2002). These powers, structures and tendencies may or may not be detected or known through experience and/or discourse but the conditions for possibility are present. It is that underlying reality that makes an empirical experience possible (Bhaskar 1998, 2010).

CR basically divides reality into three levels – the knowledge and beliefs about a social phenomenon that occurs at level of the actual experiences, the events that cause them, and the causal mechanisms that drive these events (Farmer & Gruba 2004; Mingers 2004). This is illustrated by Johnston and Smith (2010) in Figure 1 below.

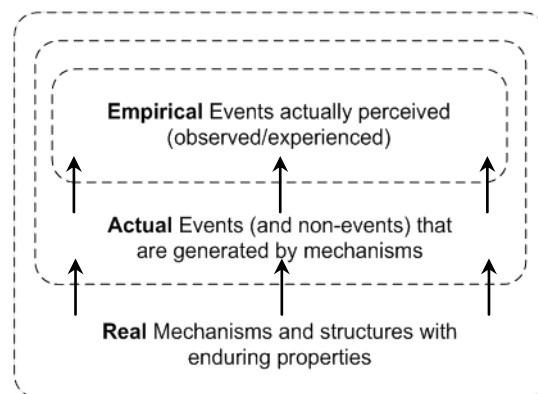


Figure 1 Stratified realities of critical realism

Source: Johnston & Smith (2010, p. 7)

A 'critical' stance claims that the social world is created by those people who have the capacity to change it and it is influenced by the prevailing social, political, demographic, cultural and economic conditions (Myers & Klein 2011). Through time however contradictions emerge resulting in conflict and inequalities, allowing new social forms to emerge (Myers & Klein 2011). This approach differs from both positivist and interpretive which 'seem to be content to predict or explain the status quo (Orlikowski & Baroudi 1991)' (Myers & Klein 2011). Table 1 provides the basic differences between the three major research approaches in qualitative research of positivist, interpretative and critical to assist the understanding of the perspective in this paper.

Table 1 Distinctions of research approaches

Source: Adapted from Crotty (1998) and Myers (1997)

Research approach	Positivist	Interpretive	Critical
Assumption	Test theory	Access to reality (given or socially constructed) is only through social constructions such as language, consciousness and shared meanings	Social reality is historically constituted and is produced and reproduced by people. Although people can consciously act to change their social and economic circumstances, they are constrained by various forms of social, cultural and political domination.
Goal of research	Increase predictive understanding of phenomena	Understand the phenomena through the meanings people assign to them (hermeneutics and phenomenology)	Bring to light the
Existing data	Formal propositions, quantifiable measures of variables, hypothesis testing, drawing inferences about a phenomenon to a stated population	Does not pre-define dependent and independent variables but focuses on the full complexity of human sense-making as the situation emerges	Oppositions, conflicts, contradictions in contemporary society

The establishment of a philosophical base is important for this research. It dispels the notion that the qualitative method is synonymous with interpretive research. This misconception has been recognised by Myer (1997) where he points out that qualitative research can be influenced by positivist, interpretive or critical philosophical assumptions. This third approach, the ‘critical’ stance, should not be overlooked.

CR shares fundamentals with the ‘critical’ stance to qualitative research methods outlined above. The term ‘critical’ addresses the weight given to a structure and/or agency and the link of both as a causal determinant of events (Cruikshank 2003). Ekström (1992, p. 107) supports this view and points out the fundamental similarities between CR and Max Weber’s critical theory in that they address both the “causal explanations directed towards the uncovering of causal properties, and the processes whereby social actions arise out of the complex interaction of internally related mental dispositions, meanings, intentions, social contexts and structures”. Similarly, Hungarian philosopher Georg Lukács (1885-1971) used the term ‘critical realism’ to describe literary narratives that demonstrate how the economic system forms human character as the structure encouraged self-interest and competitiveness (Sim 1995).

CR has been viewed as a relevant method of social research for urban and regional studies (Banai 1995) urban land use and mobility (Næss & Jensen 2002) and geographic literature (Yeung 1997). Using CR as a philosophical standpoint to assist analysing the real world issue of mixed-use developments and to explain the causal mechanisms that create the actual and empirical phenomena observed will inform policy and governments on how to create them.

MIXED-USE DEVELOPMENTS

The term ‘mixed-use’ emerged in urban planning circles over a period of two decades – the 1960s and the 1970s – as a tool for urban revitalisation, particularly in large-scale projects (Miller & Miller 2003). The revival of interest in mixed-use developments today can be traced back to the submission of the Brundtland report to the World Commission on Environment and Development in 1987 (Walker 1997). This document addressed the direct and indirect effects of economic growth on the ecology, particularly in third world countries, and stimulated considerable international debate and political action (Brundtland 1987). This was how the term ‘sustainable development’ began to appear in urban development policies and regulations.

At that time, under the economic regimes of the Thatcher and Reagan governments and other economies modeled on them, capital grew rapidly, private equity was mobilised and institutions were restructured (Amott & Krieger 1982; Tickell & Peck 2003). Consequently, growth pressures in the cities and their inner suburbs, caused by increased population and migration, made the conversion of agricultural land in the outer fringes a more affordable alternative for individuals and families seeking to home ownership (Beder 1993). Exclusionary zoning policies encouraged separate and single-use developments. These policies, together with the construction of federally funded motorways, increased the development of suburban and exurban developments (Squires 2002).

The term ‘revival’ above was purposefully used – as the concept of mixed-use had been established long before it became vogue. Crawford (1995) writes that, as far back at 1645, ‘company towns’ or ‘model towns’ were erected in the

US so housing and industry could be closer together. Two centuries later, the concept of ‘garden cities’ created by Ebenezer Howard (1850–1928) in the UK, emerged to address the social and economic interrelationship of urban functions within the community and the integration of urban and rural life (Howard & Osborn 1965). These garden cities were intended to be planned, self-contained communities surrounded by greenbelts, containing carefully balanced areas of residency, industry and agriculture. Other authors (Christoforidis 1994; Coupland 1997; Grant & Mittelsteadt 2004; Moudon 2000; Roberts 1997) have credited the ‘village life’ found in medieval towns to be the main predecessor of mixed-use developments.

The definition and use of the term ‘mixed-use’ has varied over time, but in 2006, four leading property associations in the US [composed of BOMA International (BOMA), the International Council of Shopping Centres (ICSC), the National Association of Industrial and Office Properties (NAIOP) and the National Multi Housing Council (NMHC)] provided the following industry-consensus definition of mixed-use:

“A mixed-use development is a real estate project with planned integration of some combination of retail, office, residential, hotel, recreation or other functions. It is pedestrian-oriented and contains elements of a live-work-play environment. It maximises space usage, has amenities and architectural expression, and tends to mitigate traffic and sprawl.” (Niemira 2007, p. 54)

The components of mixed-use are those of the typical land use (e.g. residential, office, retail, restaurants, entertainment), but have been expanded to include activities (live, work, play, learn) and to cater to the demographics of the communities (income, wealth, gender, age, education, skill levels) located within those developments (Grant 2002; Niemira 2007; Rabianski, JS et al. 2009). The types of mixed-use also vary in terms of its physical setting, location (city/town centre, inner urban, suburban or greenfield), time (time of day, day of the week, month, year), and use (residence, office, retail, entertainment). The level of integration, transition, density, intensity and diversity within those mixed-use developments determines the characteristics described by planners. These include:

- Grain – level of integration (fine/close, medium, coarse)
- Sharpness – level of transition from one use to the next (sharp to blurry)
- Density – level of compactness (horizontal to vertical)
- Intensity – level of development use (in terms of retail – neighbourhood shops to regional shopping centres)
- Diversity – level of mix of components

Rowley (1996) integrates these concepts as illustrated Figure 2, highlighting the transactional qualities of use (levels of exchange), which in turn are influenced by the physical layout (including district, streets, street blocks and buildings) and the characteristics of the place (level of intensity of mix in terms of grain, density and permeability).

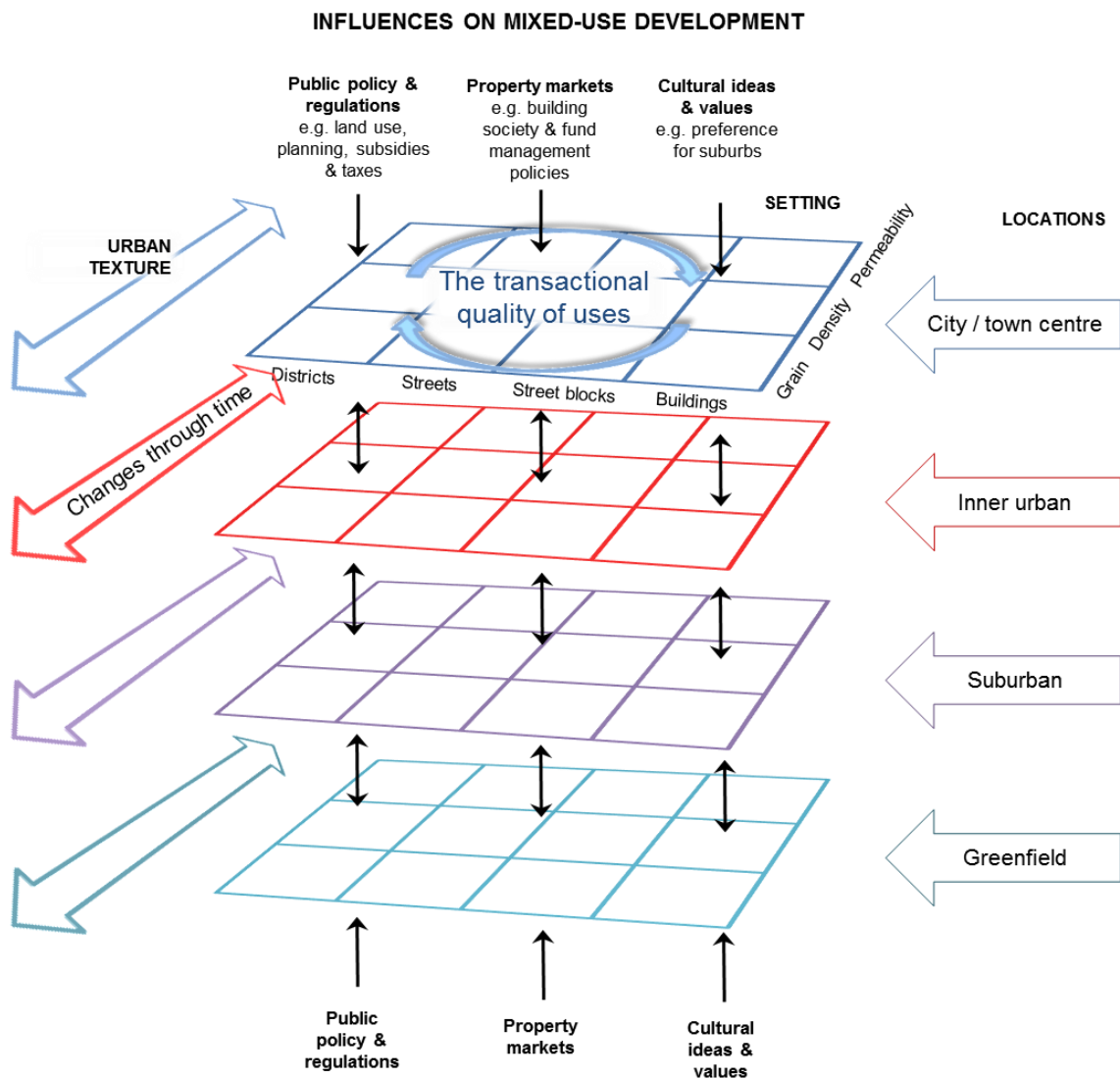


Figure 2 Influences on mixed-use developments

Source: Rowley (1996, p. 86)

The level of transactions is what gives the vitality and energy to a place, making it attractive, convenient, safe and secure. All these affect the dynamism of the urban texture, described by some as the ‘grit’ of the place, and expected to evolve over time, giving an area a particular character and ‘feel’.

Creating mixed-use promotes urban quality by making settlements more attractive, liveable and memorable (Rabianski, J et al. 2009). In the long term, rental income and values have proven to be much higher in mixed-use than in single use developments as well as land having better appreciations (Niemira 2007). A variety of activities also benefits the service providers within them as some supplement the competencies of others in the exchange of good and services.

Rogers (1998) illustrates the time gained by shorter travel distances in his compact city model in Figure 3 below. Part of this time gained was used to do things other than sit in traffic. Consequent to the shorter travel distance is the minimisation of environmental impacts. Fewer roads have to be built to accommodate the volume of cars and the associated parking spaces required. Increased densities mean more infrastructure can be shared amongst a greater number of users (Lee et al. 2011).

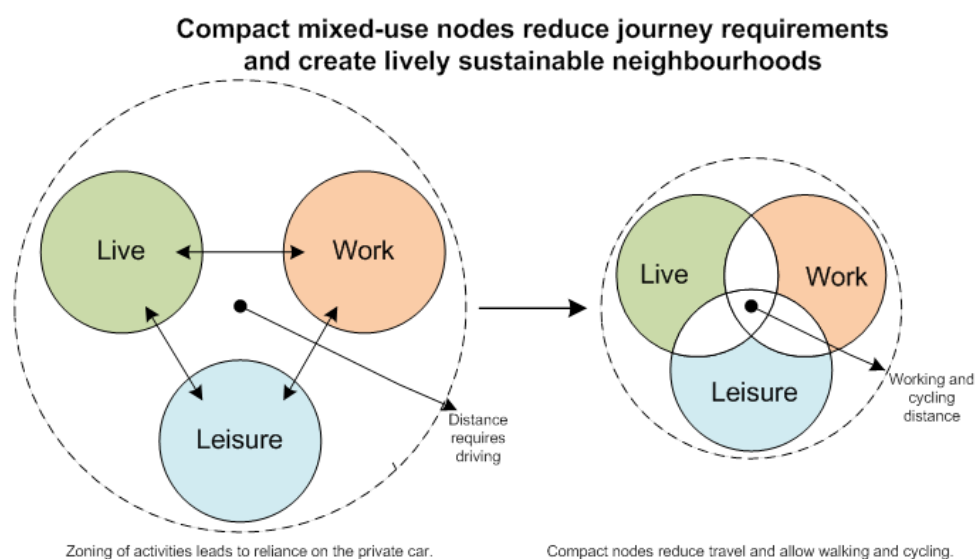


Figure 3 Live, work, leisure (play) concept and sustainability

Source: (Rogers 1998)

For developers, the economies of scale in developing mixed-use projects generate construction efficiencies and a more rapid realisation of the site's potential. Increased densities also result in lower land content value per square metre built and increased profits and turnover due to a lower cost base. Given these benefits, mixed-use developments seem to be gaining traction, with a recent study claiming:

“The concept is being embraced by both the public and private sectors, and by each of the major parties involved in the real estate development process: the end user who demand space, the developers, investors, and financial institutions that supply space and the planners and policy makers that regulate space.” (Herndon 2011, p. 1)

While mixed-use has its benefits, the challenge seems to lie in its creation. To start with are the zoning ordinances and interpretations particularly – in the US, Canada and Australia. This theory prompted a study by Hirt (2012) where she concludes that, in Europe, mixed-use happens by default and is not prompted by zoning regulations as in the US version of the same. She evaluated the land use regulations in five European countries representing British, Napoleonic, Germanic, Scandinavian, and East European planning families (England, France, Germany, Sweden, and Russia). Hirt (2012) found that Europeans use ‘form-based zoning’, which means that restrictions relate to what can be built, not how the space is to function. Zones are created on a predominant use basis and are not exclusive to a single use and hence, more mixed-use developments can be found in these European countries.

Mixed-use developments are no doubt more complicated and requires a capable and diverse development team to create them (Cheah & Tan 2005). Cheah and Tan illustrates in Table 2 below the level of difficulty between mixed-use and single-use projects. Table 2 mainly highlights the increased number of major issues, such as coordination, specialisation, and financial exposure, for the mixed-use experience at all the phases of development.

Table 2 Comparison of main features between mixed-use and single-use projects

Source: (Cheah & Tan 2005)

Phases of development process	Mixed-use development	Single-use project
Phase 1: Project initiation	<ul style="list-style-type: none"> Experienced and diverse project development team Involvement of public sector agencies crucial Both financial and non-financial development objectives must be well defined Analysing multiple markets/development potential and evaluating the overall market synergy 	<ul style="list-style-type: none"> Single experienced architect/project manager acting as project team leader Relatively minor/routing involvement of public sector agencies Common and obvious development objectives Analysing only a specific market potential; there is little concern on synergy since it is meant for single use.
Phase 2: Feasibility studies and financing	<ul style="list-style-type: none"> Necessity to define alternative development programs and strategies Complex feasibility analysis to define and optimise the development programs Necessity to securing large, multi-layer financial commitment and structuring financial arrangements 	<ul style="list-style-type: none"> Independent development program and strategy Simple pro-forma analysis and economic modeling Single source of financing possible and financial arrangement is straightforward between project and owner and bank
Phase 3: Planning and design	<ul style="list-style-type: none"> Complex planning and design issues involving urban considerations Creation of interrelationships among design elements and also between project and the surrounding environment Significant involvement of specialists 	<ul style="list-style-type: none"> Conventional architectural and design process Urban considerations play a more limited role in overall planning and design Involvement of specialists is less profound due to simplicity of design
Phase 4: Construction	<ul style="list-style-type: none"> Multiple contractors working in different parcels/phases; interfacing is critical Interaction with more specialists/designers 	<ul style="list-style-type: none"> Usually single contractor who has sole control of planning and coordination of site works Fewer number of architects/design engineers
Phase 5: Marketing and operational management	<ul style="list-style-type: none"> More varied and innovative approaches on marketing strategies for numerous uses Long-term promotion is necessary to continue building interests among general public Centralised control management systems for multiple uses 	<ul style="list-style-type: none"> Marketing approaches targeting specific use only More effort on promotion before project completion and relatively less thereafter Single responsibility for property management agency

The difficulty of mixed-use developments lies in their very nature. There are multiple stakeholders and users in such a development that reconciling all their interests would be near impossible. A level of compromise has to be negotiated primarily with the key stakeholders – the users. Residential users and commercial users have fundamentally competing needs and wants from their respective accommodation. Residential users want to keep as much of the general public out to protect and secure their privacy while the commercial operators would like to attract as many people as they can, whoever they may be, into their shops/premises.

The lease cycles of these two groups also vary. Residential tenants have short cycles (usually six to 12 months) while commercial tenants have longer (three to five years minimum). The tenure of ownership also provides a level of difficulty. Some major companies want to enhance their image while others do not (Niemira 2007). Mixed-use developers and managers have to reconcile the basic use and management of facilities to accommodate the different level of waste, odour, parking and security for the users (Niemira 2007). Each group has a different level of service management and intensity of use requirement.

Niemera's (2007) study supports the earlier findings of Cheah and Tan (2005) above with the statistics below. The largest risks of mixed-use are usually taken upfront, at the early stages of the development. These include:

- Delivery of the mixed-use takes longer than individual components of single use developments (54.8% report it will take longer; 8.7% considerably longer)
- Construction costs are higher (52.7% report higher; 8.9% considerably higher).
- During the planning phase, the top three cited (1) assembling land and parcels, (2) maneuvering and negotiating through zoning regulations and (3) managing the financial challenge of the sequenced roll-out of the project components
- 70% of financiers and investors have found mixed-use to be financially riskier than single use projects.

Investors for mixed-use developments are often more difficult to assemble for the following reasons (Grant & Perrott 2011; Niemira 2007; Rabianski, JS et al. 2009; Rowley 1996):

- Complication of timing and phasing increase the risk profile.
- Sites are often in secondary locations.
- Schemes are often too small.
- Most of the time tenanted by small business. (This results in covenants that are not highly attractive.)
- Multiple tenancies mean higher management requirements (costs).
- Residential space imposes constraints on what can be done in the future.
- There is no development mechanism that provides a good track record.
- Institutions and investors like 'clean and tidy' deals on future purchases.
- There is a smaller investor market. (Therefore is more difficult to unload when required.)
- Riskier profile means higher yield and lower exchange value.

Finally, one of the biggest challenges of mixed-use developments is often the communities themselves – those who prefer the low-density, space, privacy and level of a green environment that suburban living provides them (Rowley 1996). Creating mixed-use developments in the outer areas of the rural to urban transect further increases the level of difficulty. The economic vitality of mixed-use developments within these areas, particularly in greenfield master planned communities, is even more challenging, as businesses are locating themselves in a new area (greenfield) where markets are often less accessible and sometimes require pioneering endeavour. It has been recognised that 'a new urbanist town' is a static product of a developer's marketing campaign' and while development is evolutionary – a town must grow bit by bit over time, accumulating uses, meaning, and size (Neuman 2003).

It is recognised in this research that providing mixed-use can only be responded to by urban planning policy to a point. The provision of transportation infrastructure, housing affordability, and federal government and taxation laws also need to be considered (Shaw 2013). This research only addresses one aspect of this complex concept.

In summary, the concept of mixed-use developments goes beyond those associated with its land use components as commonly used today. Having traced the evolution of the drivers promoting mixed-use developments allows a better appreciation of the research problem and creates a base to predict their increasing importance and prominence. Ultimately, the key driver of mixed-use is the achievement of sustainability – and this should remain at the forefront of efforts to rationalise further urban development.

EXPLAINING MIXED-USE FROM A CRITICAL REALIST'S PERSPECTIVE

Mixed-use developments and all their components are socially constructed. To understand them, according to Berger and Luckmann (2011), we must analyse the processes through which they emerge.

Postmodern geographers would argue that mixed-use developments would have emerged due to influences of contemporary capitalism and time-space compression as expressed in art and architecture (and in effect urban planning and development) which Marden (1992) and Saitluanga (2008) discuss. In CR however, we dig deeper than those influences to the phenomena and determine where the stimuli (events) comes from.

Hence, applying the stratified reality of CR to the problem, the sociology of knowledge can be found. This process may confirm (or dismiss) the modern culture of property development – often confused with the practical/experience-based anecdotes when the changing context in which they are applied is often neglected.

There are three key elements to the way critical realists see the world. They concern the characteristics of the objects considered, the stratification of reality and the structures and agency that create it.

- (1) Objects of knowledge are seen as either transitive or intransitive. Intransitive objects are 'real things and structures, mechanisms and processes, events and possibilities of the world; and for the most part they are quite independent of us' (Bhaskar 1975 in Johnston & Smith 2010). Intransitive objects are not like transitive objects (theories, paradigms, models and methods), which are dependent on the existence of human activity to validate them, and if people cease to exist, so do the transitive objects (Johnston & Smith 2010). According to Bhaskar, in the natural sciences, an event can be explained and predicted by a generative mechanism. Similarly then, in the social sciences, objects of inquiry that are socially constructed entities, including the social structures that create them, have structures (objects and generative mechanisms that assist in its manifestation) – and the job of the social scientist is to uncover (as often these are unobservable) and explain those structures and the elements they links whether or not an event happens (Burnett 2007; Johnston & Smith 2010).
- (2) Reality is stratified into the empirical, actual and real domains as shown in Figure 1 previously. The *empirical* domain is where the reality of events can be perceived through observation or experience. Even after the fact of the event happening, empirical traces are left by the event. At this level of reality, this is where the problem

is observed or experienced (or not) and/or where ‘clues’ are found to suggest what is going on. The limitation to this is that the senses may not be able to perceive all the traces. The recall of an individual is subjective. Perception may vary from one witness to the next. The *actual* domain is part of reality where mechanisms can generate an event or not (referred to as non-event), thus the intention to conduct an event is viewed as ‘actual’ reality. The *real* domain is where the generative mechanism and structures that give rise to some reality are encompassed. Hence, from the CR perspective, it is possible to understand the generative mechanisms in the real domain that cause the observable events found in the empirical domain, and/or those events or non-events that are created in the actual domain. The effort to understand things accordingly is what creates theory (Burnett 2007; Johnston & Smith 2010).

- (3) Structures and agency have a transactional relationship. Structuration is a social theory that posits a continuous process of creation and reproduction of social systems between structures and agency (Yeung 1997). The interactive nature of the individual and society is an important element in the causal relations in CR where there is a belief in the ‘dual character view of the world’ (Collier 1994). Individuals and society are what creates the social structures under investigation – both are interactive and independent, but they have an interdependency with each other; they have the capability to reproduce and transform social structures that also shape and constrain them (Burnett 2007). Bhaskar illustrates this in Figure 4 below:

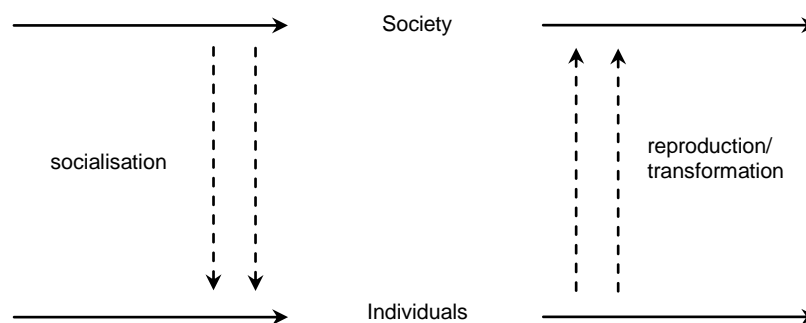


Figure 4 The transformational model of society activity

Source: Bhaskar (1998, p. 217)

This feature of CR is important in this research as there is an opportunity for transformational social activity when individuals impact on society, while recognising that society impacts on them (Burnett 2007). Values, beliefs and meaning are intransitive and social actors bring their own perspectives, values, and knowledge to bear on any given situation given their respective constructions of reality (Burnett 2007). Bhaskar (1989 p. 409 in Burnett 2007) states this element as follows:

“Human sciences are necessarily non-neutral; that they are intrinsically critical (both of beliefs and their objects) and self-critical; that accounts of social reality are not only value-impregnated but value-impregnating, not only practically-imbued but practically-imbuing; and that, in particular, they both causally motivate and logically entail evaluative and practical judgments ceteris paribus.”

It remains the prerogative of the substantive social science to discover empirically grounded theories and set up their distinctive methodological apparatus (Yeung 1997). The key goal is to uncover the abstract causal mechanisms that affect the phenomena. For this paper, that means the prerogative to establish the components of a ‘mixed-use development’ phenomenon and to develop an explanation and understanding of how it works, particularly in the context an urban/suburban environment.

This paper involved consideration beyond the empirical realities observed and experienced to gain insights into the research problem that have not been previously considered in the literature. This was achieved by delving into the actual and real domains as illustrated in Figure 1 Stratified reality of CR based on critical realist philosophy. The following rationale will cast the light of specialised knowledge on the phenomena currently experienced.

As regards CR’s stratification of reality (Figure 1), empirical events are those realities that have been observed and experienced. From previous research, these issues in mixed-use development (particularly in master planned communities’ employment centres) included vacancy, the wallflower syndrome, sense of place and activity centre strategy (Wardner 2013). These events, as analysed, have provided a basis for beginning to understand the problem. However, they do not explain why they occur.

Actual events (and non-events) are the mechanisms that generate those empirical events or phenomena that are observed or experienced. In this case, one of drivers of these phenomena is the policies and legislation that create

mixed-use developments and the assumptions of society in their creation. Beyond these actual events lies the elements that gives rise to them. These are the real mechanisms which have enduring properties that drive the creation of these actual events. While the direction of this research is not towards the concepts of 'alethic truths', as defined in Bhaskar's critical realist philosophy, this research embraces these concepts to assist in understanding the phenomena at hand.

Bhaskar makes it clear that the 'real' mechanism is a complex interaction between dynamic, open, stratified systems, both material and non-material, where particular structures give rise to certain causal powers, tendencies, or ways of acting (Bhaskar 1979, p. 170 in Mingers 2004). Additionally, a characteristic of real structures is intransitivity, that is, their potential effects are beyond human control (Mingers 2004). Mingers however clarifies that 'our activities are conditioned by social and psychological factors, and have consequences and effects, of which observers are generally unaware and science must go beyond the individual in its search for explanations'.

Hence, going beyond the individual, it is proposed that there are two real generative mechanisms that explain the drive for mixed-use developments:

The first is that humans are social beings motivated to belong to a group (Fiske 2009). **Belonging** is an intrinsic desire and a key driver of human behaviour (Baumeister & Leary 1995; Kenrick et al. 2010). The concept of 'belonging' appears in Maslow's hierarchy of needs first presented in the 1940–50s to model human motivation. The hierarchy shows more basic needs (biological/physical needs, safety) have to first be satisfied before the next level of needs (belongingness and love, self-esteem, self-actualisation) can be activated. The motivation of 'belongingness and love' is found in the third tier. The first two tiers are more basic needs and are important for survival – belongingness however is not (Kenrick et al. 2010). Researchers have shown that 'belonging' affects oxytocin-based neurophysiological systems in human beings (Kenrick et al. 2010). Translating this to a business environment, Kenrick et al. (2010) considers 'belonging and love' to be equivalent to 'social affiliation' with a group for means of anthropological survival rather than the 'romantic love' which has a different set of motivations and cognitive states. Human beings have an intrinsic longing to participate in group life and thus in constructs such as society and culture. The practice of living and working together in cooperation and community evidences this. As such, the concept of live, work and play in community encapsulates a natural tendency in human interaction. The real mechanism of 'belonging' drives the concept of mixed-use developments as a preferred mode of urban organisation which (when fully developed) provides an ideal sustainable response. As discussed earlier Rogers (1998) illustrates in Figure 3 Live, work, leisure (play) concept and sustainability on how mixed-use developments reduce journey requirements and create lively sustainable neighbourhoods.

The second generative mechanism is to be found in the adaptation of physical structures to changing needs of the community over **time**. The acceptance of the mixed-use concept is exemplified by the adaptation of the Rio conference principles, in which 'sustainability' was widely accepted and advocated. The mixed-use concept has endured through the historical development from walled cities and medieval towns through to urban villages, cities and CBDs (Hirt, S. & Zahm 2012). These urban forms have evolved organically and responded to the changing market needs, just as social structures and individuals' mental structures have evolved over time. Consequently, there would appear little argument that mixed-use developments have persisted through various forms of civilisations. However, the other actual mechanisms that create it and support it, like economic planning, active role of government and current planning practice, have not taken into account the other alethic truth, '**time**', in order to make the mixed-use concept work. Over time, physical structures will be reconfigured and made to adapt to suit desired use. This can take decades or even centuries to manifest, as we now witness in the complexity of cities and their level of sophistication and urbanisation.

Considering the actual economic, social, and political mechanism operant and influencing the processes intrinsic to success or failure of mixed-use developments, the findings of the current research point to a need to either accelerate transactions or take away time consuming restrictions.

Without suggesting the need for deregulation of land use zoning and to do away with the current functional based zoning, some actions to promote mixed-use could include:

- positive discrimination policies whereby these mixed-use developments can be created as 'special zones' or 'priority development areas providing tax incentives to increase investment attractiveness into the area (Wardner 2013)
- facilitation of collaboration between businesses contributing to mixed-use centres and capital investors (Wardner 2013)
- some local councils in South-east Queensland in Australia have adopted the use of temporary local planning instruments (TLPI) to assist the 'time' factor to allow mixed-use to occur
- allow flexible neighbourhoods – where single-family residential use can evolve over time to accommodate more intensive uses (Kelly & Breadon 2012)

- Property professionals to act as educators to reduce citizen's angst with nearby small commercial uses in hurting property values (Hirt 2007).

The use of CR has uncovered that due to our natural desire for belonging, humans will continue to desire their activities to congregate together in mixed-use developments – the issue of time however, is where most of the solutions of its creation rely.

SUMMARY

Understanding the underlying assumptions that drive the actions to create policy for land use and planning, particularly for mixed-use affect the development of urban forms. Mixed-use developments are a social reality that is constituted, produced and reproduced by people, and hence can be also be changed by people. It was helpful to use CR as a perspective to review those assumptions that create various forms of social, cultural and political domination factors to review those that hinder its outcomes. Certain assumptions have created unrealistic expectations from the development community in creating mixed-use developments given the short time frame for completion without government intervention and support.

The real mechanisms driving the desire for mixed-use developments were identified. Individuals will choose to cluster their activities to live, work and play as 'belonging and social affiliation' is part of human need. The other factor was 'time'. Mixed-use developments are created over time – as societies develop physical structures which adapt to those changing needs. The planning and land-use zoning policies (particularly in Queensland) somewhat curtail the desired outcome due to the immediacy required. To support the desired legislative requirements, the creation of mixed-use developments require greater state and local economic support and involvement as property developers can deliver urban developments but do not have the economic or community/social reach and influence governments possess.

The real mechanisms of belongingness and social affiliation required by humans and manifested through their settlements patterns is inevitable. 'Time' however is a factor that is not often taken into account when creating these mixed-use developments.

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