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**Governments matter for capitalist economies:
Regeneration and transition to green and decent
jobs**

Introduction

For many governments, the transition to a 'green economy' presents opportunities to identify new avenues of growth demanded by the global financial crisis, as well as address environmental concerns. In particular, there have been efforts to 'green' economic growth specifically in relation to job creation in areas of industrial decline and policy makers have begun to propose a transition towards green economies to address regional regeneration (see, for example, *Name deleted to maintain the integrity of the review process*; for discussion of the definition of 'regeneration', see Roberts, 2000). These initiatives are designed to contribute to the promotion of sustained (green)

economic regeneration in areas once dependent on high-carbon industries, but transition in such places occurs differently region by region, and country by country. A particular concern of this paper is the extent to which the (sustainable and green) transition and regeneration of formerly coal dependent regions is underscored by the creation of decent jobs. We explore the ways institutional frameworks at different levels and in different places *cultivate* (or not) ‘decent’ jobs (in the creation of new ‘green’ jobs), as part of ‘green’ transition and regeneration strategies.

While steps may be taken to move to low carbon production, they are usually part of broader economic and social shifts to develop a green economy. Such an economy, in our view, is one ‘that results in improved human well-being and social equity, whilst significantly reducing environmental risks and ecological scarcities’ (UNEP, 2011: 16). In this respect,

the focus is broader than the development of a low carbon economy focused singularly on minimising carbon emissions per unit of output (Levy, 2010). By focusing on the 'social justice' emphasis (UNEP, 2011) attention is drawn to the creation of 'decent' jobs in such transitions, a factor that is sometimes underplayed in current debate. Such jobs are remunerated with relatively adequate wages, safe working conditions, job security, skilled and satisfying work, and worker voice (UNEP, 2011) – although Yates and Leach (2006: 366) discuss the limitations of work defined as 'good' (or bad or otherwise) when the underlying capitalist nature of the social relations at work remain obscured.

This paper's analysis is focused on a consideration of transition in advanced capitalist societies, and works toward developing a political economy of regeneration and regional transition. The context for this analysis is

a cross-national comparison of two old coal dependent industrial regions: the Ruhr, Germany and the South Wales Valleys, UK. Arguments for regeneration and transition often involve claims about the quality and quantity of jobs that may result (UNEP, 2011). Estimates vary on the latter, and some suggest that net job losses might ensue (see Bowen, 2012). Indeed, it may be that at the heart of such policies there is a contradiction between developing sustainable jobs for a sustainable economy and maintaining current job levels; these moves may require lower levels of production and a dampening of demand for some commodities. Of course, in the face of mass unemployment, some might argue that for those without waged work, particularly the unskilled, policies aimed at job creation of any kind is in the interests of workers as waged employees (see Bowen, 2012). Such perspectives are reinforced by the difficulties often associated with attracting sustained

investment to these places (e.g. Wang and Eames, 2010).

Certainly, the transition to a green economy will necessarily involve changes in employment and skills. As new occupational profiles and ‘work... that contributes to preserving or restoring the quality of the environment’ (UNEP, 2011: 5) or ‘green jobs’ emerge, other occupations, jobs and skills may become obsolete (Fankhauser *et al.* 2008). Our claim is that in this process of transition, the creation of decent jobs – as defined above (UNEP, 2011) – should be central, whether the ‘job’ is specifically ‘green’ or not.

Employment related to the extraction of coal is often associated with relatively high levels of remuneration and strong levels of worker representation, as well as particular skill-sets; some of the markers of decent work, despite the evident health hazards of these particular jobs. However, the prospects of transition to

comparable 'decent' jobs in the context of social change may be limited by an evident 'skills lock-in', and the sometimes poor dispositions towards (formal) education and training that exists in these mono-industrial regions (*Name deleted to maintain the integrity of the review process*). Hence, an all-too-common feature of regeneration strategies is that they rely on low-skilled, low-paid and transitory work (see Pickernell, 2011), whereas the generation of skills and skilled employment is often viewed as integral to the creation of decent jobs (and thus central to the interests of labour). Indeed, the development of appropriate skills has been identified as a crucial element in green transition (Jagger *et al.*, 2012) although it is an under-researched factor in relation to the facilitation (or constraint) of transition.

The first analytic point to note is the importance of understanding worker needs and aspirations in the

context of transition, as well as the salience of specific political-economic contexts in which skills and job creation are embedded. We thus begin by initially situating our understandings of processes of transition and regeneration within Hall and Soskice's (2001) Varieties of Capitalism (VoC) model, thereby extending its application – it is our starting point to understand the processes of regional transition in modern capitalist economies (cf. Cooke, 2010; Couch *et al*, 2011). Hall and Soskice's (2001) framework identifies variations in the institutional patterns of different capitalist systems, distinguishing between Liberal Market Economies (LMEs) and Coordinated Market Economies (CMEs). As an archetypal CME, the Ruhr region of Germany provides an appropriate contrast with the UK, often viewed as an LME (cf. Cooke, 2010). But, decisively, the task is to extend the argument to include a consideration of state and regional governance as key factors in the promotion of

transition (the first stage of the analysis is developed in *Name deleted to maintain the integrity of the review process*).

Although subject to much debate (e.g. Crouch, 2005), the CME/LME distinction provides a means of identifying the necessary conditions for transition – as an explanation of the differences in economic and political institutions responsible for specific kinds of society and, in this respect, an account of the underlying factors that shape processes of transition (Hall and Soskice, 2001). Complementary to this analysis is an examination of patterns of urban governance, and an assessment of the interaction of state and regional political institutions and societal partners in the delivery of economic development. Our analysis is thus concerned with the way that regions are embedded within state-centric models of institutional control, as well as subject to ‘extensive

networks of local state/regional governance', which shape decision-making capacities for (green) economic development in important ways and play a critical role in the positioning of labour (and other social actors) in regeneration/transition efforts (Pierre, 2014, p.3; more specifically, on coal regions and regeneration, see Gore et al. 2007. See also Engstrand and Stam (2002) on the embeddedness of institutional structures to enable or constrain economic transition and transformation in manufacturing regions).

More specifically, we assess the ways in which the shift to low carbon production (and ultimately, a green economy) involves transformation of the existing socio-technical regimes, to overcome path-dependent 'lock-in' (Hassink, 2010). It thus becomes necessary to examine particular sets of institutions (e.g. Vocational Education and Training systems), as well as (local)

governance structures involved in regeneration and transition, which rely on the existence of social capital for their efficacy. The outcome is a comparative assessment – in terms of the potential for decent jobs creation – of regeneration and green economy transition politics and policies in two former coal regions.

The Research

Many governments have developed policies aimed at stimulating the transition of declining industrial regions, and increasingly, green economic activity forms the core aspect of regeneration strategies (see *Name deleted to maintain the integrity of the review process* for a review). The primary data for this analysis comprises national government policies, regional government and development policies, public reports and other primary source data, such as

commentaries and announcements about such policies and their objectives. In addition, expert research commentary was sought where appropriate (for full details and the research context, see *Name deleted to maintain the integrity of the review process*).

The cross-national/regional basis of the study allows for the comparison of similar policy objectives within the distinct (and thus limited) institutional contexts of the Ruhr, Germany and South Wales Valleys, UK. Our analysis is distinctive in that it offers an account of the way different regions with similar industrial histories might transition from unsustainable pasts to sustainable (i.e. 'green' and socially just) futures. The purpose is to illuminate the distinctive ways in which transition policies are elaborated and implemented in former coal regions. Specifically, in presenting our data, the aim is to identify and analyse the core features of regeneration in these two regions, and

within the specific context of green transition, explore the capacity for the creation of decent jobs in capitalist societies, characterised by liberal democratic regimes of differing institutional forms.

From short-term policies to long-term strategies

The Ruhr and South Wales Valleys regions have both experienced the decline of their coal industries followed by a range of regeneration policies. More recently, such policies (as well as wider industrial and economic development strategies) have been located within green transition frameworks. To understand these processes, we provide a brief outline and history of each case, before detailing a number of ‘green’ (and other) efforts to ‘regenerate’ each region’s economy. We begin with the Ruhr region before turning to the Valleys. The accounts provided are not exhaustive of regeneration efforts within each region, but are aimed

at identifying some of the core policies and approaches that underscore efforts towards regeneration and green transition.

The Ruhr region

The Ruhr region forms part of the North Rhine Westphalia (NRW) Länder, currently governed by a Social Democrat/Green coalition. The Ruhr is an extensive, polycentric urban area, one of Europe's most densely populated conurbations with approximately 5.3 million inhabitants. It was once the largest industrial site in Europe, with coal constituting a major source of employment. Since the 1960s, however, the area has experienced industrial decline and rising unemployment – the figure stood at 11% in December 2013 compared with the NRW figure of 8.4%, and the national average of 5.1% (EURES, 2013). Coal mining retains a presence, with seven hard-coal

mines, employing some 35,000 workers, still operational in the Ruhr (Jung *et al*, 2010). The (unprofitable) mining industry is currently subsidised by the German government by up to €3.5 billion annually, with financial support assured until the last mine closes in 2018. This phase-out was agreed with the mining union, IG Bergbau, with the stated objective of job preservation, reflecting the role of labour as a stakeholder in this context.

It is estimated that the phase-out of subsidies could lead to a rise in unemployment by two percentage points (Block, 2011). Current policies are therefore important indicators of how well the region is set to deal with the further demise of mining employment. The timeframe involved has allowed for longer-term planning for regeneration and the creation of replacement jobs (Block, 2011). Longer-term regeneration strategies began in the 1980s when

unemployment peaked at 17%. The regional government attempted to attract investment from knowledge-based firms, expand the service sector, and promote local entrepreneurship. Moreover, it promoted regeneration based on ecological and sustainability concerns (Trettin *et al*, 2010).

Of note, the level of technological innovation of German mining companies in the Ruhr means that where they once produced mining technology, they are now leading producers of wind turbine parts, biomass generators and drilling machinery for geothermal energy. The RuhrKohle AG (RAG) is transforming its mines into sources of renewable energy, with conversion of one former mine into a biomass centre and the conversion of other underground mines into pump-storage hydro-electric facilities for storing excess renewable power. RAG has also founded a solar farm development company with the expectation that

these developments will create jobs for many of the 24,000 miners employed by the company (Dohmen and Schmid, 2011).

Regional government – with federal and European Union (EU) funding – has been central in shaping these regeneration strategies, acting in ‘corporatist’ partnership with municipalities and private actors.

The creation of the IBA Emscher Science Park, established in 1988, is one such example, developed as part of a public-private partnership to revitalise brownfield sites in the Emscher Valley (Trettin *et al*, 2010). The NRW government established the IBA planning company, which initiated 120 projects.

However, the actual instigation of the initiative was by local networks of municipal authority representatives, business associations, trade unions, environmental actors, planning and architecture experts – rather than state-centric. These actors were wholly responsible for

these projects and, as will be explored in more detail later, this suggests something of a 'governance without government' and 'governance by networks' thesis (Ward, 2009). The Emscher Park projects created an estimated 5000 new jobs, employing significant numbers of former miners in green retrofit and ecological restoration (Block, 2011).

This long-term, developmental perspective is further exemplified by the regeneration of the city of Gelsenkirchen into a 'solar city', which was, until recently, the largest supplier of solar energy in Europe. Regeneration focused on the creation of renewable energy sources and energy efficiency improvements, so as to diversify the industrial base, provide new employment and enhance the environment. This began with the construction of a science park/technology centre. Alongside clean energy research institutes, a number of cell and module

photovoltaic (PV) production facilities have been established. Regional companies increasingly began to engage in the planning, installation, maintenance and marketing of solar technologies, cultivating a 'solar service sector' and jobs across the supply chain, although some estimate that the industry may only create 1000 new jobs within the next ten years (Schmitz-Borchert, 2011). Nonetheless, renewable energy R&D has become an important activity in the Science Park, thus the sector is high value-added, knowledge-intensive, highly-skilled and in this respect constitutes 'decent work'. By 2010, the portfolio of companies in Gelsenkirchen's clean energy cluster extended beyond the PV sector and included production facilities for solar thermal collectors, ground-based heat pumps, cogeneration units and components of wind power stations, as well as engineering companies focusing on biogas and wind energy (Jung *et al*, 2010).

Furthermore, since the 1970s, resources have been directed at developing the regional 'skill infrastructure', opening universities and encouraging R&D investment. Regular training programmes for architects, project developers, workers and unemployed people (including training programmes for former miners) have been initiated and hosted by the Science Park (Schmitz-Borchert, 2011). The German tradition of a strong dual VET system also means that the workforce is relatively well placed to make the transition to a sustainable economy, with environmental issues integrated into all VET regulations in the system (CEDEFOP, 2010). The range of specific VET courses related to environmental protection is also substantial (e.g. *Name deleted to maintain the integrity of the review process*).

Unemployment remains a problem and it is unlikely that 'green' jobs will replace all the jobs lost from coal across the region, with many such jobs created too long after displacement occurred (Block, 2011). The German solar sector has moreover, recently been besieged with problems, as the global sector consolidates (Hawley, 2013). However, the presence of other clean energy manufacturing in the region (e.g. wind equipment) is more positive, with net employment expected to rise steadily (Luhr et al., 2011). Over 3,000 renewable energy firms, employing around 19,000 workers are currently located in NRW and a third of these firms are based in the Ruhr (Block, 2011). It is estimated that a thousand domestic wind equipment manufacturers supplied over 77% of the German domestic market (the world's fifth largest) in 2009, and they have also benefited from growing international renewables markets – as much as 80% of German-made wind power equipment

is exported. Thus, whilst displaced workers have not always benefitted from regeneration/transition strategies, the area is developing the foundations for a 'green' transition based on a knowledge-intensive, high skill trajectory, encouraged by effective and robust VET systems, environmental regulation and wider government policy.

The South Wales Valleys

The South Wales Valleys is one of the poorest regions in the UK, with a Gross Value Added per capita standing at 75% of the UK average (Hunt, 2011). The region has experienced significant deindustrialisation, as its core industries of coal mining and steel production have declined, with subsequent regeneration initiatives failing to provide sustained employment (Pickernell, 2011). In the 1970s, the main strategy for dealing with job displacement from

primary industry was relatively generous redundancy payments, providing older miners with early retirement and supposedly facilitating the retraining/re-employment of younger workers. However, new employment opportunities proved scarce (Parry, 2003). In December 2013, the unemployment rate across the Valleys was approximately 12% (rising to 18% in some constituencies), compared to the 7.5% UK national average (StatsWales, 2014).

The first long-term regeneration strategy was the Conservative government's 'Programme for the Valleys', introduced in 1988. A principal plank of the programme was the creation of manufacturing employment opportunities through Foreign Direct Investment (FDI). Via subsidies and exemptions for private companies, FDI was encouraged. Indeed, up until the late 1990s, there was an exclusive focus on

attracting FDI for regeneration, rather than the cultivation of indigenous entrepreneurship, local business and SMEs (Brooksbank and Pickernell, 2001). However, whilst the region proved extremely adept at attracting such investment, the FDI displayed a 'branch office syndrome', where factories focused on the assembly of low-value, mature products rather than high value-added, R&D intensive activity (Hunt, 2011). This approach perpetuated the high numbers of low-skill machine operators in the Valleys area, reinforcing the 'low pay-low skill' equilibrium characteristic of much of UK manufacturing (Pickernell, 2011). Many of these jobs proved insecure, with significant numbers of these relatively mobile firms leaving after a short time – with an estimated 31,000 jobs lost (Evans et al, 2008). The Valleys' subsequent designation as a European Union Objective One region, and thus a recipient of various funds to address social-dislocation and stimulate growth

highlighted the failure of the strategy – the region continues to qualify for ‘structural funds’ to this day.

Following the election of New Labour in 1997, the transition strategy focused on joint central, regional and local approaches, with much rhetoric about the value of community empowerment and citizen participation (Doering, 2013). One related outcome was a process of devolution, establishing the Welsh Government in 1999. From the outset, the Welsh Government stated its policy objective of stimulating economic development (Welsh Assembly Government, 2005). In conjunction with Objective One funding, the government promoted its ‘Communities First’ programme, a revised regeneration approach. Its principal aim was job creation with a focus on the cultivation of small local enterprises. However, the absence of the necessary skills and social

infrastructure undermined the programme's aims (Pike *et al*, 2006).

The programme remains, nonetheless, part of the Welsh Government's 'toolkit'; and, as of March 2013, has been subsumed under the 'Vibrant and Viable Places' regeneration framework. Aimed at establishing strong local economies, this framework adopts a targeted approach to investment, extending out the Communities First partnership model and linking it with broader economic development strategies across Wales; principally the Wales Infrastructure Investment Plan (WIIP) for Jobs and Growth. Within the WIIP there is an explicitly defined vision of moving towards a low carbon economy, which connects with distinctive Welsh Government strategies on skills generation. An additional 'Green Growth Wales' investment strategy brings together the Welsh Government with the networking organisation Sustain

Wales (Cynnal Cymru) to promote investment in 'green growth' across Wales; a strategy that is based on promoting Wales' natural resources, as well as developing its infrastructure and encouraging collaboration and partnership.

The Welsh Government has focused heavily on skills development. The *'Skills that Work for Wales'* (Welsh Assembly Government, 2008) strategy document, for example, emphasises skills development for sustainable jobs (not necessarily 'green' jobs) and the more recent *Skills Policy Statement* (Welsh Government, 2014) refocuses Welsh Government investment priorities with regard to skills at a time of austerity and scarce resources. Nonetheless, across both documents, the Welsh Government recognises the need to target funds, prioritise higher-level skills (as well as literacy and numeracy) and ensure closer

links between skills demand/employer needs and supply.

The more recent, policy statement on skills specifically identifies the need for developments to support high quality and higher paid jobs, and in doing so links closely with the aims of the WIIP (Welsh Government, 2014). Elements of partnership on these goals are evident in the Wales Employment and Skills Board (WESB), which comprises employer members, training providers, trade unions and economic development experts. Further, as part of its Sustainable Development Scheme, the Welsh Government declares that its skills investment will continue to focus on ensuring the right training is available to help deliver a low-carbon transition in Wales, supporting opportunities for skills development and job creation within the emerging green economy (Welsh Government, 2012). However, despite Welsh

Government efforts to develop collaborative rather than a competition-based (as is in England) skills/VET systems, a reliance on 'voluntarist' and market-based training systems means that systematic disincentives for employers to develop their workforce persist (see Bosch and Charest, 2008 on LME and CME approaches to VET; and Keep (2008) and Payne (2009) for discussions of different approaches to skills policy in different parts of the UK).

The Welsh Government has a statutory duty to promote sustainable development within its constitution and appears determined to play an internationally leading role in tackling climate change (Wang and Eames, 2010). It has established ambitious targets and, unlike national UK policy, the Welsh policy discourse places climate change very much in the context of sustainable development (*cf.* Scott-Cato, 2007). It is moreover, said to 'have made good

progress towards reducing carbon emissions and preparing for climate change' (UK Committee on Climate Change, 2012). Indeed, the Welsh Government has published a dedicated 'green jobs' strategy (Welsh Assembly Government, 2009), therein recognising the role of such a transition in economic development and the necessity of targeted skills provision.

Characteristic of its current approach, the Welsh Government announced a £75 million scheme to create 12,000 jobs with one of three specific streams of support targeting green jobs (Welsh Government, 2012).

Further, a £30 million scheme (Arbed) was created in 2010 with the aim of 'greening' the existing housing stock in the most deprived areas of Wales, which constitutes a regeneration strategy through the development of 'green' jobs and skills (Welsh Government, 2011). In addition, a British Gas Green

Skills Training Centre opened in 2010, with a target to train 1000 people each year. The first of its kind in the UK, this public-private partnership offers accredited training for energy efficiency assessment and green technology installation. It is too soon to gauge the extent to which these 'green' schemes will contribute to 'regenerating' former coal areas and promote the transition to a green economy. However, it is clear that deep-seated economic and social problems persist. Unemployment and economic inactivity remain high in the Valleys region, a situation exacerbated by the recent recession. There is moreover, little evidence that sufficient (decent/sustainable) jobs are being created and the roots of education and skills deficits in the Valleys region continue to constrain opportunities, thereby reproducing patterns of inequality and disadvantage (WTUC, n.d.).

From regeneration to transition

Forms of political and institutional governance shape policy and decision-making processes, and the ways in which social actors engage in such processes. Within the LME context of the UK, state policy and regulation ensure that market forces prevail, encouraging the formation of short-term, low trust, competitive relations between economic actors (Hall and Soskice, 2001). Accordingly, such institutional contexts are inimical to the cultivation of longer-term, collaborative orientations, resulting in chronic capital under-investment (Lee, 1996). Typically, there is a lack of parity for labour as a stakeholder; both reflected in and perpetuated by low levels of employment protection, weak forms of institutional 'voice' and 'voluntarist' market-based training systems (Godard, 2004). Here, VET systems are low-status, with typically poor quality of provision and outcomes,

contributing to high numbers of low skilled workers in the labour market (Bosch and Charest, 2008). These parameters constrained the 'Programme for the Valleys' and more recent community-based initiatives have been similarly undermined (see Gore *et al.* 2007), as has the potential for economic growth more generally, including with regard to 'green' growth.

Indeed, one possible assessment is that there is a limited engagement with the green agenda within the UK because the prevailing view is that 'green' issues are an unnecessary restriction on business. Certainly, there is a limited vision and investment in the technology and skills necessary for green transitions (e.g. Macalister, 2010). Wider environmental policies have, moreover, increasingly been attacked and the UK has the largest green skills deficit of comparator EU states (IES 2012). The Renewable Energy Association (2012) identified the lack of appropriately skilled

labour as a significant problem for any green transition. Further, whilst the UK has a strong legislative basis for climate action, coupled with ambitious targets, it lags behind other Organisation for Economic Co-operation and Development (OECD) countries in government energy R&D spending, with such expenditure declining substantially over the past twenty years (Bowen and Rydge, 2011). This approach goes against an effective policy grain, where business investment in green R&D/innovation depends on well-designed, consistent public policies that provide long-term credibility (e.g. Haščič, 2012).

The contrast with the CME context of the Ruhr region is stark. Within such arrangements, markets are 'deeply embedded in an array of co-operative, redistributive and regulatory institutions' (Streeck, 1992: 6). These include business/employer associations, trade unions, cross-shareholding

networks, as well as regulatory systems that encourage collaboration and interdependency (Hall and Soskice, 2001). The German political system is typified by power sharing, with institutions correlated with high levels of associational activity and social capital. Indeed, the German process of setting environmental policy is strongly democratic (Haščič, 2012). Environmental protection has been at the centre of public policy for decades and is a reflection of the strong environmental movement, the political success of German Green Party and the subsequent integration of environmental issues by other political parties (Blühdorn, 2009). Thus, a principle focus for the German government is, for example, renewable energy, with it set to account for 60% of gross final energy consumption in 2050, alongside the phasing out of nuclear power plants by 2022 (Lehr et al. 2011). The driving force for Green Party success is the electorate's wider concern with the environment and

opposition to nuclear energy (Rudig, 2012), but environmental policies have long been perceived by government and industry as a mechanism to develop market opportunities for domestic firms, to encourage innovation (Hašič, 2012).

Germany's institutional context, with its longer-term orientation, fosters capital investment. Specifically, Germany has the strongest record on green innovation in Europe (Fankhauser *et al*, 2012). Innovation is supported by high-quality German VET programmes, centred on industry-specific engineering/technical skills. The system is highly responsive to industrial innovations and changing employer demands (Bosch and Charest 2008). Robust frameworks for incorporating changes in industry/occupational skills needs into training responses exist, namely the institutions that support sectoral dialogue between social partners. Through such mechanisms, the

occupational competences and the training regulations/curricula that accompany them have been 'greened', despite a lack of an overarching state-driven green skills policy (*Name deleted to maintain the integrity of the review process*). This process of organic collaboration stands in sharp contrast to top-down efforts to drive such agenda in the UK.

In both regions, there is an aspect of 'greening' the economy by default. Coal extraction (and all that it implies environmentally) no longer occurs or, in the case of the Ruhr, has been vastly diminished prior to phase-out. Further, improvement of the physical environment may also take place. Such outcomes are more or less unintended and can become part of the *post facto* rationale for claiming benefits from deindustrialisation. Hence, we suggest the reasoning for transition to a green economy lies elsewhere.

First, the transition to a 'new' economy based on the promotion of low carbon economic activity and 'green' industries requires policies aimed at a comprehensive restructuring of the regional economic landscape.

These two case studies indicate, to varying degrees, that 'green' activity can become a specific part of economic development and regeneration strategies. A number of policies implemented within the NRW and Valleys regions (as well as Wales, more generally) are evidence of governance efforts to transition toward a 'sustainable, low-carbon economy'. More particularly, both have sought to engage 'local' stakeholders, as well as look more widely for investment and partnership, to drive development. However, of central importance is the wider political economy and institutional frameworks that shape and inform the direction of these policies. Clearly, the patterns of transition are uneven and varied across the two cases. The prevailing institutional arrangements mean that

(nations and) regions evolve along particular path-dependent trajectories, locked into specific patterns of development (Couch *et al.*, 2011).

Within the explicitly CME context of NRW, the decline of the mining sector within the region has been managed across several decades in ways that preserved jobs. Additionally, the gradual phasing out of mining subsidies provided time for the diversification of activities to create new (green) employment opportunities. This approach stands in sharp contrast to Britain's rapid and brutal pit closure programme of the 1980s, illustrated by the Valleys case, where there was little planning or provision for alternative employment and economic development (Bennett *et al.*, 2000). Despite such differences, in both cases past regeneration strategies have not always produced the desired effects in re-locating displaced workers. However, within the LME context, in

particular, there has been a failure to generate high-skill, sustainable employment opportunities, with more success evident in the CME context.

The institutional configuration found in the CME context of Germany has been more conducive to overcoming – at least partially – ‘lock-in’ to existing high-carbon socio-technical regimes (Unruh, 2000), stimulating an early focus on ‘green’ economic activity as a means of regeneration. Growing demand for low-carbon activities is manifested in different forms of economic activity, with one scenario being export-oriented, manufacturing-led growth. Germany is a leader in this approach, with ‘first mover’ advantages in the global market (e.g. Levy, 2010). The outputs from such a sector are highly tradable over distance, making for more sustainable activity. Indeed, the longer-term orientation of German governments has facilitated the creation of a framework of

environmental regulation, long-term protection and sustainability, with climate change mitigation enshrined in legislation. This framework stimulated green economic activity in the Ruhr regeneration. The outcome has been a developmental perspective, credited with encouraging apposite investments in human capital and low-carbon technology, leading to an impressive record on innovation, particularly within engineering and manufacturing sectors (see Hall and Soskice, 2001).

The strong base of engineering and technical skills already available in the German region, along with a responsive and high quality VET system that has been extensively greened has ensured that necessary re-skilling could be undertaken (see *Name deleted to maintain the integrity of the review process*). The outcome is the *cultivation* of high value-added and knowledge-intensive green economic activity in the

region, with such competitive strategies, based on quality and innovation, associated with high-performance work systems, investment-orientated human resource practices and thus the creation of 'decent' jobs. While 'green jobs' are not synonymous with decent work, the institutional supports within the German context mean that there is a higher probability that new jobs created will constitute 'decent' work; it is more likely that jobs in such contexts are designed in such a way so as to utilise available high skills, thereby encouraging worker autonomy and involvement and a higher likelihood of 'mutual gains' materialising.

Conversely, the Valleys region is 'locked-in' to a low-skill, low pay trajectory. The 'branch plant syndrome' of FDI is both a reflection and a reinforcement of this condition, which the more recent Communities First programme struggles to tackle. At present, the

necessary infrastructures – as well as social and political support – is lacking to facilitate a capital-intensive, high-skill trajectory, leading to the creation of decent jobs (Meadway, 2013). Moreover, the two flagship Welsh Government initiatives discussed were aimed at construction/building retrofit, and thus are representative of a low-carbon technology *implementation* activity (Levy, 2010). The focus is on installation, implying import of higher value-added and skilled inputs, with little scope for generating substantial export revenues. Retrofit construction/maintenance activities are labour-intensive with substantial potential for employment creation; however, and of significance, any jobs created will be based on manual labour with relatively low-skill requirements and predominantly precarious, utilising short-term contracts (Levy, 2010). This ‘low road’ approach to employment and job design stands in contrast to the Ruhr, where green/low carbon

technologies are being researched, developed and manufactured, with a significant proportion of this output exported.

The UK's technical skills deficit has been identified as a principal barrier to developing low-carbon manufacturing-led growth (e.g. Levy, 2010). Further, this factor also highlights the inherent problems of 'employer-led' systems of VET (*Name deleted to maintain the integrity of the review process*). Thus, the more rudimentary development of green economic activity in Wales is attributable in part to a wider green skills deficiency. There is some evidence that employer demand for green skills is increasing more generally (HM Government, 2011), but this state of affairs is threatened by uneven approaches by (Westminster) government to environmental/climate change policy. If government policy is complex and inconsistent – accusations that have been levelled at

UK policy (e.g. Bowen and Rydge, 2011) – employers will mistrust the long-term validity of the plan, hedge their behaviour and fail to make necessary investments in both technology and skills (Jagger *et al.*, 2012). A vicious circle is created, where a lack of skills itself is a cause of policy or market uncertainty, which in turn further deters skills provision (Foxon, 2011).

The premise here is that effective regeneration and transition policies only emerge where a co-productive partnership is developed between the state *qua* government and the social groups that comprise the region, including employers, workers and their representatives (Beer and Clower, 2013). Indeed, the two cases demonstrate the extent to which different interests are represented in policy development and outcomes. Central governments in both cases stressed forms of governance that emphasise the importance of partnerships at the regional level. However, with the

pervasiveness of the neoliberal approach to governance, underwriting the primacy of the economic, has become more apparent in policy focus, leading to regional policy and regulation which primarily gives voice to business interests (Peck and Tickell, 2002; Beer et al, 2005). Thus, business leaders and related members of the local political elites are the lead players in such developments.

The implication of the assessment in terms of regional political and business elite dominance is that other social actors are marginalised, such as labour, including trade unions, community groups and the educational and social security sections of government. To illustrate the conundrum, where such regeneration measures involve the creation of networks of partners, it does not necessarily mean that labour and its associations will find a place at the policy table. Clearly, in CME contexts, labour is often

viewed as a legitimate stakeholder with accompanying institutional arrangements (Hall and Soskice, 2001). However, the involvement of trade unions and related organisations as the voice of labour is less evident within LMEs, arguably leading to a lack of emphasis as to the need for decent work (Godard, 2004). Of course, even within such contexts, the porosity of relations in capitalist societies mean regeneration strategies can involve more inclusive forms of governance based on partnership working, illustrated by some of the emergent institutions in the Welsh case (e.g. WESB), but trade union involvement tends to be notional and tokenistic.

Three analytic points can now be made, thereby extending a political economy approach to the study of regeneration and regional transition. First, effective policy initiatives depend upon approaches to governance. Of course, even where there are clear

efforts in this direction, unless policy is 'joined-up' it risks the 'green' credentials of the region (on joined up-governance, see, for example, O'Flynn *et al.*, 2011). For example, where the use of coal remains part of energy policy – as in Germany – and, moreover, where patterns of consumption remain unchanged, questions might be raised about the extent to which regions can properly be defined as 'green' or 'low-carbon'. Indeed, it is improbable that the geographic distribution of green activities will map neatly onto existing patterns of economic activity (in coal regions). On the contrary, green activities are, in fact, much more likely to be distributed unevenly throughout economies.

Second, networks based on trust, subject to rules negotiated by network participants and characterised by a significant degree of autonomy from central government – 'governance without government' (see Rhodes, 1996) – were more evident in the German

case. Such networks are facilitated by high levels of social capital and broader stakeholder perspectives, and institutionalised through corporatist-type arrangements and embedded forms of social partnership. However, Grabher (1993: 24) suggests the embeddedness of actors and inter-firm networks (a consequence of the shape and form of social capital in the region) may stymie innovation, and this helps describe the decline of the Ruhr area. Indeed, Engstrand and Stam (2002) find that some manufacturing sectors (e.g. shipyards) with strong unions and political 'lock-in' at the level of the locality (similar to the coal industry) can constrain the economic development of the region (p.383).

However, we suggest that the close working relationships in relation to the governance of the Ruhr region appear to have helped facilitate innovation and a shift towards a 'green' transition. This is innovation

that is facilitated by institutional structures and the politics of the region, which unlocks the potential for renewable energy and is serviced by developing the existing skills-base (*cf.* Engstrand and Stam, 2002). The pioneering examples at Emscher and Gelsenkirchen illustrate how a process that centres on labour – and, indeed, involves labour organisations – can expedite critical initial steps towards transition. Moreover, and crucially for our analysis, decent jobs are more likely to ensue from such initiatives. Trade unions have emerged as powerful forces in German urban politics and regeneration activity (DiGaetano and Strom, 2003). Despite a more hostile climate to corporatist decision-making in recent years (between social partners and with regard to inter-union competition), wider evidence points to continued trade union influence (Burgess and Symon, 2012; Greer and Turner, 2009; Hassel, 2012).

In contrast, within the UK, the importance of 'partnership' in urban renewal from the mid-90s onwards is largely rhetorical. Partnership working was seemingly indicative of growing governmental recognition of the importance of social capital and the application of US-style urban policies, involving 'governance by networks' and its engagement of public sector officials and private economic elites (Davies, 2002). However, despite the heavy discursive emphasis on the importance of decentralisation and community-led partnerships for successful regeneration, not only did central government retain a 'tight grip' on funds, there was a marked tendency for regional institutions to exercise power and create 'vertical networks' to the detriment of horizontal networks (Bennett *et al.*, 2000). The reality was one of increased political centralisation, with central government attempting to purchase added leverage

over a range of local 'stakeholders' via partnerships (Davies, 2002).

Third, in all liberal democratic capitalist societies, government approaches steer their way through pressures toward partnership (coordination) and market based initiatives. The Welsh Government, for example, has a statutory duty to consult with representatives of business and other organisations, such as trade unions, where the exercise of the Welsh Government's functions impacts on their interests. This is embedded through the statutory Council for Economic Renewal. In contrast however, the partnership boards of the Communities First Programme have seldom involved union input (e.g. Adamson, 2010; see Pike et al, 2006). The situation in Wales reflects that in other parts of the UK. In England, for example, the Local Enterprise Partnerships (LEPs) aim to foster collaboration between business

representatives and local authority leaders, but have failed to effectively engage trade unions and other key social, economic and environmental stakeholders (TUC, 2013).

There is however, some level of departure between the constituent parts of the UK and policies developed by the devolved administrations. In Wales, the devolved government has attempted to promote and formalise partnership arrangements at the level of the Principality, involving trade unions as the voice of workers, the WESB being one such example. But, on this development, whilst Wales is engaging in ways more consistent with CME practices in relation to institutional frameworks for skills and training, its EU partners would not necessarily be able to distinguish such distinctions between Wales and other parts of the UK. As with many of the neo-liberal institutions of the UK, it is unclear how the deeper cultivation of social

capital and partnership working will evolve in this hybridised case. There are moves towards institutionalising extant norms and practices of 'social solidarity', an unusual trajectory for LMEs, and at variance with the generalised trend for increasing liberalisation and/or growing segmentation and duality within CMEs (see Thelen, 2009). Thus, we must be cautious about overstating the distinctiveness of either the LME or CME case; Germany and the United Kingdom illustrate variations in the capitalist relations that define both societies (Jessop, 2011). It remains to be seen whether this 'layering' (i.e. attaching new elements to existing institutions) will lead to any deep-rooted transformation of regeneration processes and outcomes, particularly in terms of decent jobs and green transitions (see Streeck and Thelen, 2005). Capitalist societies and economies in general face this challenge.

Concluding remarks

Transitions to low carbon economies are contested and uneven. Nonetheless, it is possible to identify three critical and interrelated conditions that facilitate such a shift in focus in established capitalist economies. First, the value of the typology associated with the varieties of capitalism analyses is that it allows a specification of the relationship between state and economy in terms of broader policy imperatives, with implications for regeneration and related transitions. German environmental policy has, for example, encouraged investment in green technology and renewable energy in particular in ways that are not evident within the UK.

Second, the analysis demonstrates the centrality of 'governance without government', with the proviso that these dimensions are not mutually exclusive. The

high levels of social capital and broader stakeholder perspectives within the CME context underscores an industrial policy focused on the *cultivation* of high-end value added 'green' economic activity. In contrast, the Welsh case illustrates the ways in which a devolved government, pursuing social democratic policies can become influential in shifting the direction of policies associated with the regeneration, but in limited ways focused on narrow strategies of *implementation*. Overall, the national institutional framework in which 'green' and related transitional developments occur is crucial; a necessary condition of the '*power to*' promote and underwrite strategies at a regional level (see Pierre, 2014).

Third, this analysis also draws attention to the political economy of economic organisation and operation that characterise capitalist states *qua* capitalist states. The cases each demonstrate the importance of skills and

training as centre pieces of the transition toward a green economy. Here, success depends on both the supply of and demand for 'green' jobs which are 'decent'. This is a contested future and workers and their representatives are central to the achievement not only for transition to a green economy but one that also rests on decent jobs.

References

Adamson D (2010) Community empowerment: Identifying the barriers to 'purposeful' citizen participation. *International Journal of Sociology and Social Policy* 30(3/4): 114-126.

Beer A, Clower T, Haughton G and Maude A (2005) Neoliberalism and Institutions for Regional

Development in Australia *Geographical Research*,
43(1): 49 – 58.

Beer A and Clower T (2013) Mobilizing leadership in
cities and regions *Regional Studies, Regional Science*,
1(1) 5-20

Bennett K, Beynon H and Hudson R (2000) *Coalfields
Regeneration: Dealing with the consequences of
industrial decline*. Bristol: Policy Press and the Joseph
Rowntree Foundation.

Block B (2011) *The Afterlife of German Coal Mining*.
Washington DC: Worldwatch Institute.

Blühdorn I (2009) Reinventing Green Politics: On the
Strategic Repositioning of the German Green Party.
German Politics 18(1): 36-54.

Bosch G and Charest J (2008) Vocational training and the labour market in liberal and co-ordinated economies *Industrial Relations Journal* 39(5): 428-47.

Bowen A (2012) *Green Growth, Green Jobs and Labor Markets* Policy Research Paper 5990 Washington DC: World Bank.

Bowen A and Rydge J (2011) *Climate Change Policy in the United Kingdom*. Policy Brief. Grantham Research Institute, London School of Economics.

Brooksbank D and Pickernell D (2001) Changing the Name of the Game? RSA, Indigenous and Inward Investors, and the National Assembly for Wales *Regional Studies* 35(3): 271-277.

Burgess P and Symon G (2012) Collective bargaining unity and fragmentation in Germany: two concepts of

trade unionism? *Economic and Industrial Democracy*
34(4): 719-739

CEDEFOP (2010) *Skills for Green Jobs: A European
Synthesis Report*. Luxembourg: EU Publications Office.

Cooke P (2010) Socio-technical Transitions and
Varieties of Capitalism: Green Regional Innovation and
Distinctive Market Niches *Journal of the Knowledge
Economy* 1(4): 239-67.

Couch C, Sykes O and Börstinghaus W (2011) Thirty
years of urban regeneration in Britain, France and
Germany: The importance of context and path
dependency *Progress in Planning* 75: 1-52.

Crouch, C. (2005) Models of Capitalism *New Political
Economy* 10(4): 439-56.

Davies J (2002) The Governance of Urban Regeneration: A Critique of the "Governing without Government" Thesis *Public Administration* 80(2): 301-322.

DiGaetano A and Strom E (2003) Comparative Urban Governance: An integrated approach. *Urban Affairs Review* 38(3): 356-395.

Doering H (2013) Competing Visions of Community: Empowerment and Abandonment in the Governance of Coalfield Regeneration *International Journal of Urban and Regional Research* 38(3) 1003-1018

Dohmen F and Schmid B (2011) Mining Green Energy: A Coal Region's Quest to Switch to Renewables. *De Spiegel International Online*, 9/11/11
<http://www.spiegel.de/international/business/mining-green-energy-a-coal-region-s-quest-to-switch-to-renewables-a-796399.html> (accessed 13 January 2015).

Engstrand AK and Stam E (2002) Embeddedness and economic transformation of manufacturing: a comparative research of two regions *Economic and Industrial Democracy* 23(3): 357-388

EURES (2013) *Labour Market Information – Germany, Nordrhein Westfalen*. The European Commission Job Mobility Portal. Available at: <http://ec.europa.eu> (accessed 13 January 2015)

Evans P, Holz R and Roberts A (2008) *Empirical Investigation of Foreign Direct Investment in Wales*, Welsh Assembly Government Research Unit, Cardiff: Welsh Assembly Government.

Fankhauser S, Bowen A, Calel R, Dechezleprêtre D, Rydge J and Sato M (2012) *Who will win the green race? In search of environmental competitiveness and innovation*. Working Paper No. 111, London: LSE CCCEP.

Fankhauser S, Seheiler F and Stern N (2008) Climate Change, Innovation and Jobs *Climate Policy*, 8(4): 421-429

Foxon T (2011) A coevolutionary framework for analysing a sustainable low carbon transition *Ecological Economics* 70: 2258-2267

Godard J (2004) A critical assessment of the high-performance paradigm *British Journal of Industrial Relations*, 42(2): 349-378.

Gore T, Fothergill S, Hollywood E, Lindsay C, Morgan, K, Powell R and Upton S (2007) *Coalfields and Neighbouring Cities: Economic regeneration, labour markets and governance*. York: Joseph Rowntree Foundation

Grabher G (1993) *The Embedded Firm. On the Socioeconomics of Industrial Networks*. London and New York: Routledge

Greer I and Turner L (2009) Why do local unions build coalitions? Evidence from the US and Germany *International Industrial Relations Association*, 24-27 August, Sydney.

Hall P and Soskice D (2001) An Introduction to Varieties of Capitalism. In: P. Hall and D. Soskice (eds.) *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage* Oxford: Oxford University Press, pp.1-70

Haščič I (2012) Environmental Innovation in Germany *OECD Environment Working Papers*, No. 53. Paris: OECD.

Hassel A (2012) The Paradox of Liberalization - Understanding Dualism and the Recovery of the German Political Economy *British Journal of Industrial Relations* 52(1): 57-81

Hassink R (2010) Locked in decline? On the role of regional lock-ins in old industrial areas. In R. Boschma and R. Martin (eds) *Handbook of Evolutionary*

Economic Geography. Cheltenham: Edward Elgar,
pp.450-468.

Hawley C (2012) Setting Sun: Eastern Germany Hit
Hard by Decline of Solar *Spiegel Online International*,
27/04/2012. Available at:
[http://www.spiegel.de/international/business/easter
n-germany-hit-hard-by-the-solar-industry-crisis-a-
830188.html](http://www.spiegel.de/international/business/easter-n-germany-hit-hard-by-the-solar-industry-crisis-a-830188.html) (accessed 13 January 2015)

HM Government (2011) *Skills for a Green Economy*,
Department for Business Innovation and Skills,
Department for Energy and Climate Change,
Department for Environment, Food and Rural Affairs:
London

Hunt M (2011) *Cardiff and South East Wales: Social,
Economic and Sustainability Context*. Retrofit 2050
Working Paper Version 1, Cardiff University.

IES (2012) *Green skills and Environmental Awareness in Vocational Education and Training Synthesis Report*. Research Paper 24, European Centre for the Development of Vocational Training (CEDEFOP), June 2012.

Jagger N, Foxon T and Gouldson A (2012) *Skills Constraints for Low-Carbon Transitions*. Sustainability Research Institute Paper No. 31, University of Leeds.

Jessop B (2011) Rethinking the diversity of capitalism: varieties of capitalism, variegated capitalism, and the world market. In Lane C and Wood GT (eds) *Capitalist Diversity and Diversity within Capitalism*, London: Routledge, pp. 209-237

Jung W, Hards A and Schroeder W (2010) From industrial area to solar area – the redevelopment of

brownfields and old building stock with clean energies. Available at: http://www.solarstadt-gelsenkirchen.de/fileadmin/solarstadt/Medienspiegel/2009-05-15-Solar_City_Gelsenkirchen.pdf (accessed 13 January, 2015)

Lee S (1996) Finance for industry. In Michie J and Grieve Smith J (eds), *Creating Industrial Capacity Towards Full Employment*. Oxford: Oxford University Press, pp. 113-140

Lehr U, Lutz C, and Edler D (2011) Green Jobs? Economic impacts of renewable energy in Germany *Energy Policy* 47: 358-364

Levy C (2010) *A 2020 Low Carbon Economy*. London: The Work Foundation.

Macalister T (2010) EIRIS review names Britain as
'dirty man' of Europe *The Observer*, 27 June 2010.

Meadway J (2013) *Towards a Welsh industrial strategy:
a new economics foundation report commissioned by
Wales TUC*. London: new economics foundation

O'Flynn J, Buick F, Blackman D and Halligan J (2011)
You win some, you lose some: Experiments with
joined-up government *International Journal of Public
Administration* 34(4): 244-254.

Parry J (2003) The changing meaning of work:
restructuring in the former coalmining communities of
the South Wales Valleys. *Work, Employment and
Society* 17(2): 227-246.

Peck J and Tickell A (2002) Neoliberalising Space
Antipode 34(3): 380-404.

Pickernell D (2011) *Economic Policy Development in Wales: From Where to Despair*. CASS Papers in Economic Geography 03/2011, Cardiff: Cardiff University.

Pierre J (2014) Can Urban Regimes Travel in Time and Space? Urban Regime Theory, Urban Governance Theory, and Comparative Urban Politics *Urban Affairs Review*, published online 10 January 2014 DOI: 10.1177/1078087413518175

Pike A, O'Brien P and Tomaney J (2006) Devolution and the Trades Union Congress in North East England and Wales *Regional & Federal Studies* 16(2): 157-178

Renewable Energy Association (2012) *Renewable Energy: Made in Britain*. London: Renewable Energy Association.

Rhodes R (1997) *Understanding Governance: Policy Networks, Governance, Reflexivity and Accountability*. Milton Keynes: Open University Press.

Roberts P (2000) The Evolution, Definition and Purpose of Urban Regeneration. In Roberts P and Sykes H (eds) *Urban Regeneration: A Handbook* London: SAGE, pp.9-36.

Rüdiger W (2012) The perennial success of the German Greens *Environmental Politics* 21(1): 108-130

Scott-Cato M (2007) Green and pleasant land: Building strong and sustainable local economies in Wales *Contemporary Wales* 19(1): 96-115.

Schmitz-Borchert H (2011) *The Gelsenkirchen Case: Catalyzing industrial transformation with clean*

energies. Available at: http://www.ils-forschung.de/down/HP_Schmitz-Borchert_Notes.pdf
(accessed 28 October 2014).

StatsWales (2014) ILO Employment Rates by Welsh local areas and year.
<http://www.statswales.wales.gov.uk> (accessed 16 May 2014)

Streeck W (1992) *Social Institutions and Economic Performance: Studies of Industrial Relations in Advanced Capitalist Economies* London: Sage.

Streeck W and Thelen K (2005) *Beyond Continuity: Institutional Change in Advanced Economies*. Oxford: Oxford University Press.

Thelen K (2009) Institutional Change in Advanced Political Economies *British Journal of Industrial Relations* 47(3): 471-498.

Trettin L, Neumann U and Zakrzewski G (2011) Essen and the Ruhr Area: The development of tourism and the role of small firms and entrepreneurs. *European Regional Science Association Papers*, ESRA 10 p357.

TUC (2013) Written evidence submitted by the TUC as regards Local Enterprise Partnerships to the Innovation, Business and Skills Select Committee. <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmbis/598/598we35.htm> (accessed 16 May 2014)

UNEP (2011) *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*. Switzerland: UNEP.

Unruh, G. (2000) Understanding carbon lock-in.
Energy Policy 28: 817-830.

UK Commission on Climate Change (2013) *Progress
reducing emissions and preparing for climate change*
London: Committee on Climate Change

Wang Y and Eames M (2010) Regional governance,
innovation and low carbon transitions: exploring the
case of Wales. *ERSCP-EMSU Conference*, Delft,
Netherlands, October 25-29.

Ward K (2009) Towards a relational comparative
approach to the study of cities *Progress in Human
Geography* 34(4): 471 – 487

Welsh Assembly Government (2005) *Wales: A Vibrant
Economy*. Cardiff: Welsh Assembly Government

Welsh Assembly Government (2008) *The Skills that Work for Wales*. Cardiff: Welsh Assembly Government.

Welsh Assembly Government (2009) *One Wales: One Planet, a Sustainable Development Scheme for Wales* Cardiff: Welsh Assembly Government.

Welsh Government (2011) *A Low Carbon Revolution: Wales' Energy Policy Statement*. Cardiff: Welsh Assembly Government

Welsh Government (2012) *£75 million scheme to create 12,000 jobs in Wales*. Cardiff: Welsh Government.

Welsh Government (2014) *Policy Statement on Skills*. Cardiff: Welsh Government

WTUC (n.d.) *Economic Development and Regeneration*.

Cardiff: Wales TUC.

Yates CAB and Leach B (2006) Why 'Good' Jobs Lead to

Social Exclusion *Economic and Industrial Democracy*

27(3): 341-368