

'Wages are but the expression of labour time' - The foundational role of labour time in gold mines: 1886-2006.

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Abstract

The paper alludes to empirical work which traces working time arrangements in South African mining since 1886. It does so by briefly outlining the contours of both working hours (which remain remarkably stable) since 1911 and the length of the migrant labour contract (which progressively lengthens) until the collapse of the controls of the migrant labour supply system – at which point the labour contract aligns with the annual cycle of industrial working time. The paper suggests labour time has been ignored in scholarly historical analyses; explains why long working hours are required in mining and why the retention of labour in production underground is foundational to and of greater explanatory import in understanding the role of the mining industry than its supply. This view challenges the received wisdom that the exploitation of mine labour is chiefly accounted for in terms of cheap wages for black mineworkers. Labour time is asserted as the missing explanatory concept necessary for understanding the developmental trajectory of mining in South Africa, both historically and in the contemporary period.

Introduction

It is still widely accepted that the maintenance of low wages¹ is the key indicator of the exploitation² of mining labour in South African gold mining. This is perhaps not surprising seeing that without 'large numbers of low-wage, unskilled migrant workers', 'there would never have been a deep level gold-mining industry in South Africa' (Crush *et al* 1991:1). This received wisdom, this paper argues, is, however, only a partial explanation for the exploitation of gold

¹ Harold Wolpe's 'cheap labour thesis' (1972), the original and much-quoted source foundational to the Marxist revisionist tradition, has again (see Crush 1992:50) been criticised for a different set of reasons (see Alexander 2008). It retains much of its cogency, with wages for black mineworkers still being low.

² I follow Allen Wood's interpretation of Marx's construal of exploitation (of labour) as expressed in his entry in Ted Honderich's *The Oxford Companion to Philosophy* and which is devoid of moral content: '*Marx conceives the justice of economic transactions as their correspondence to or functionality for the prevailing mode of production.*' To clarify, in order to distinguish between the technical definition of exploitation held by Marx, as opposed to the commonly held moral sense in which it is often employed, Wood explains: '*Given this conception of justice, Marx very consistently (if rather surprisingly) concluded that the inhuman exploitation practiced by capitalism is not unjust, and does not violate the workers' rights: this conclusion constitutes no defense of capitalism, only an attack on the use of moral conceptions within the proletarian movement*' (Honderich 1995:526).

mining's historic industrial army of labour. By foregrounding the remarkable stability of labour time via the sustained 48 hour week over a century - as opposed to its social expression in wages - a deeper, more foundational explanatory reading of the gold mining industry and a broader understanding of the developmental trajectory of mining in Southern Africa, both historically and in the contemporary period, comes into view.³ By refocusing analysis back to the production of surplus value in the context of stalled mechanisation at the mining rock face - as opposed to the traditional focus on the realm of reproduction (the 'subsidisation' of production in labour reserves) - where the traditional focus lies, the consequences for scholarly analyses are potentially significant.

In order to provide an analytical re-reading of the history of wealth and value creation in the gold mining industry in South Africa, this paper can but point to the evidence (treated fully in Stewart 2012:99-211) of the extraordinary stability of working hours, or labour time, in the industry. It does so by briefly outlining the contours of industrial working hours won by organised white labour since 1911. In addition, it notes how the length of the migrant labour contract progressively lengthens, thereby extracting greater surplus from the massive migrant labour force which historically served the industry. It then notes the collapse of the controls of the migrant labour supply system - at which point the labour contract aligns with the annual cycle of industrial working time.

The paper then goes on to indicate how labour time has been ignored in scholarly historical analyses and explains why long working hours have been required in gold mining. I explain why the *retention* of labour in production was and remains foundational to and is of greater explanatory import in understanding value creation in the mining industry than the *acquisition* and supply of labour as the tradition has it. This view challenges the received wisdom that the exploitation of mine labour is chiefly accounted for in terms of cheap wages for black mineworkers. Labour time, it is then suggested, constitutes the missing explanatory concept necessary for understanding the developmental trajectory of mining in South Africa.

The contours of industrial working hours in gold mining: 1886 - 2006

Since 1911, whether it was the matter of working hours being the trigger to the 1913 Miners' Strike, the implementation of an actual 48 hour working week somewhere between 1917 and

³ Labour time is often ignored. Roediger and Foner decry the tendency of historians to treat the American 'shorter hours movement' as a 'secondary adjunct of wage disputes' (1989:vii).

1919, the white Mine Workers' Union's struggle from the late 1940s though to the mid-1970s, the compromise arrangement in working time thrashed out in negotiation between the Chamber of Mines and National Union of Mineworkers (NUM) in the early 1990s - (or on the platinum mines⁴ in a series of little-publicised strikes of a cluster of unions in the early 2000s) - working time has remained extraordinarily stable for around a hundred years.

The issues raised by organised labour retain a remarkable synchronicity. Sunday work is an issue at the beginning of the period and is one at present. The arguments of the trade unionists in the 1970s for a five day working week echo those made in the 2000s. The arguments of the Chamber of Mines, who lead the defense of maintaining the *status quo* regarding working hours on behalf of the gold and other mines, do not change in any qualitatively meaningful sense except at two critical points. After more than a century and even more broadly than the gold sector, working time in mining appears to have come full circle under very different social and economic conditions: the initial short contracts of two to four months in the early years of diamond mining are akin to the 'limited duration' contracts in the contemporary period of increasing numbers of sub-contracted mineworkers (Buhlungu & Bezuidenhout 2008).

The secondary literature enables a fairly precise reconstruction of working hours and the shape of the working week in the early years after the discovery of gold in the Transvaal. The Chamber of Mines first standardised working hours and rations for African labourers across the Witwatersrand gold mines in 1896. This was the first attempt to *retain* labour in the on-going struggle to acquire a regular supply of labour in the absence of both the political will and the required facilitating administrative labour control mechanisms of the agricultural State of President Paul Kruger (Marks & Rathbone 1982). The number of hours then worked on the mines is not recorded, but may have been the nine and a half hours the Chamber officially reported in 1903. This was the working time men were required to spend underground at the rock face. The working day was longer than this, as the time spent travelling to and from the site where work actually occurs generally adds significantly to the length of the working day.

Kruger's *Volksraad* passed legislation for an eight hour working day in 1899, its implementation interrupted by the South African War. The demand for an eight hour day is repeated in 1904 (Katz 1976:183). A decade later, a 48 hour working week was introduced in 1911 in the Mines and Works Act, but only took effect somewhat later. The demand for a 40 hour working week is

⁴ Recorded in Stewart (2012).

thereafter repeatedly presented as the demand for a five-day work week, made by the Mine Workers' Union (MWU) from 1947 through to 1976, when it falls into dispute. The shape of the working week - but not the number of hours - then changes, as a result of the two reports of the Franzsen Commission of 1977 and 1978, to the compromise eleven shift fortnight⁵ (ESF) working time arrangement. The 48 hour working week, legislatively enshrined in 1911, was successfully defended by successive mine managements against organized labour until 1989 (Lewis 2001) the State intervened. The 48 hour working week effectively continues, however, on an unspecified number of mines, through and into the present.

Reduced hours again becomes an issue in the early 1990's when the NUM, negotiating from a position of weakness after a major strike of black workers in 1987 resulted in massive job losses and under conditions of a dramatic fall in the gold price, agreed to a series of experimental working time arrangements, including full calendar continuous operations (Fulco) (Bezuidenhout 1999). This working time arrangement, temporarily permitting shorter working hours for a fairly small number of individual production workers, is short-lived with very few gold mines working continuous, variable hours today.

Moreover, the recently established democratic government has proved unable to definitively print its rights-based promulgations over the force of the arguments regarding the geological and technological constraints defining the economics of mining production and the challenge of transforming racialised social relations. In the late 1990s, the 45 hour week is introduced as a national standard via the Basic Conditions of Employment Act of 1997 (BCEA) and an amendment in 2002. Subject to negotiations with trade unions, however, within the mining industry, the full hour for lunch is virtually never taken, half an hour instead is often added to the six shifts a week, (during which workers can informally 'rest' while underground) bringing time spent underground often back to 48 hours a week, thereby effectively maintaining the length of the working week at 48 hours. The number of mines which *do*, however, comply with the BCEA is the subject of ongoing research.

Social contestation over the length and configuration of working time consequently continues. It has in fact proved more difficult for organised labour in general to meaningfully reduce working hours than to improve wages for nigh on a century. Given that real wages for labouring black

⁵ In the ESF, 96 hours are often averaged over two weeks, permitting the individual employee every second Saturday off. The averaging of hours can occur over four months.

mineworkers did not rise from 1911 to 1969 (Wilson 1972), the significance of this fact for the argument here is taken as self-evident.

Labour time has been ignored in scholarly analyses

The powerful explanatory conceptual category of labour time has, until fairly recently, largely been neglected. Labour time is often passed over after having been noted or briefly defined. The question arises as to why this is the case. The full answer awaits writing. The simple and quick answer arguably resides in the deeply entrenched understanding of the concept of time itself. For 'time' has long been treated, Norbert Elias argued, as a Newtonian-influenced, unchanging and unquestioned Kantian absolute and unalterable 'given' (Dal Rosso 2002). This is surprising when considering the modern sociological conception of time. For while the study of time has taken manifold directions, the subsidiary concept of labour time has not received the critical theoretical scrutiny it is due.

Regarding the relevance of studies on industrial working time, a clutch of authors a few years ago suggested it was 'hardly possible to pick up a newspaper or to turn to the radio without hearing something about the relationship between time and work', before going on to detail something of the extent of this literature (Rubery *et al* 2005). Yet despite the extent of scholarly work done on time, and working time in particular, at least one writer has asserted that 'research on time and working time is badly needed' (Dal Rosso 2002). The same claim has been made for studies regarding the working of overtime (Hart 2004), which had previously explicitly been examined in the light of its socially constructed character (Martorana & Hirsch 1982). A claim made 20 years ago, that it is surprising that working time 'has not been the subject of lively debate' (Blyton 1991:461), still largely holds true.

Despite some notable exceptions (Nyland 1989; Blyton *et al* 1989; Golden & Figart 2000 and Burkett (2000) with Marx's fuller concept of labour time as a guiding category remaining somewhat in the background only in Burkett's case, a few apposite examples will support my overall contention.

In *Americanism and Fordism* Gramsci could only note, *apropos* labour time, that Fordism was the 'wearing and exhausting... consumption of labour power and a quantity of power consumed in average hours which are the same numerically...' (1971:311). While he discussed time and

motion studies, Harry Braverman did not even define labour time, simply saying that labour-power is what the worker sells and the capitalist buys, namely ‘...the power to labour over an agreed period of time’ (Braverman 1974:54). Michael Burawoy does not mention the concept in *Manufacturing Consent*, despite the critical importance of the time-study man’s role in the ‘securing and obscuring’ of surplus value and the fact that workers ‘consent’ to their own exploitation hinges on voluntarily producing more in the same temporal span of labour time (1979). In the early post-Braverman labour process literature, analysts Kraft, Noble, Yarrow and Brecher do not mention labour time (Zimbalist 1979), nor do any of the contributors to Wood’s neat edited collection of articles, featuring writers such as Elger, Beechey and Littler (1983). The concept of labour time does not feature in the ‘Glossary of Labour Process Terms’ in Thompson’s book devoted to introducing debates on the labour process (see Thompson 1983: xiii). In *The Politics of Production*, Burawoy does defines labour time as the measure of ‘...the “value” of wages: that is, the amount of labour time socially necessary for the reproduction of labour power’, but then a general silence descends (1985:28).

At home in an industrial context, virtually the same can be said of Eddie Webster’s *Cast in a Racial Mould*, where, in crucially presenting Marx’s distinction between absolute and relative surplus value, we find labour time but passed over in general terms, even while noting the key point regarding social necessity to be discussed at length later: ‘Surplus value, he [Marx] said, can be increased not only by lengthening the working day - absolute surplus value - but equally with a given length of the working day, by reducing the length of the period of necessary labour time’ (1985:2).

Even worse, seeing that for both Adam Smith and Karl Marx labour time was conceived in terms of both its *duration* and *intensity*, Marxists have generally but given a ‘formal nod’ or ignored the *intensive* component of labour time with ‘units of labour power, hours, days and so on’ being ‘treated as homogenous concepts’ (Nyland 1989:16). It is precisely matters relating to the *intensity* of time spent at work relating to net surplus value and unavailable surplus labour time (both briefly discussed below) which come to the fore when a more clearly disaggregated notion of labour time is employed.

Where the struggle over labour time has been treated in a historically substantive and detailed manner, such as in Roediger & Foner’s (1989) masterful history of American labour, these writers do not significantly advance our theoretical understanding of labour time or time’s

relation to the labour process. The same can be said of the only substantive full-length local study on working time, a focus on shift work in the South African rubber and tyre industry (Adler 1991), as well as the few shorter local studies on working time⁶.

Why working time was so stable in South African mining

There are two immediate reasons for the extraordinary stability of working time arrangements in gold mining. Firstly, the geological features of the hard quartzite rock in South African deep-level gold mining constitute an often noted ecological given (Johnstone 1976). Full mechanisation at the rock face in gold mining has consistently failed to prove practically feasible. Geological constraints have limited the technological development of one of the primary technical forces of production, which remains driven by direct human labour-power. In the geo-physical and socio-technical environment of the stoping rock face, in the gold and platinum mining sectors, production continues to rely on the hand-held machine rock drill. With full mechanisation held back, the mining industry sees the continuation of aspects of ‘primitive’,⁷ absolute forms of surplus value extraction (Marx 1977:299) and the consequent sustained maintenance of relatively long working hours.

Secondly, initiated by the 1896 regulations noted above, working time proved to be the single critical issue directly under the control of the mining industry⁸. Neither the vicissitudes of its ore-body, the price of its commodity gold, nor its ever fractious labour supply - despite early control over ‘compounded labour’, the central plank in a raft of political and administrative mechanisms under colonialism, segregation and apartheid - was ever satisfactorily under the industry’s direct

⁶ There are only a handful of local studies on the topic, the most substantial being those of Taffy Adler (1986), Paul Lundall (1990), AJ Kielblock (1995), Peter Lewis and T Wegner (2000) and Glenn Adler (2001). Taffy Adler’s ground-breaking study was born out of union involvement in the rubber and tyre industry and covers a good deal of ground. Lundall’s important study argues for reduced working hours. From within the mining industry, Kielblock’s 1995 Safety in Mines Research Advisory Committee (SIMRAC) study is a comprehensive literature overview of work done to establish basic criteria for continuous working schedules, while Lewis’s 2000 SIMRAC feasibility study - a multi-variate analysis - attempted to relate working time and bonus payments to safety and the severity of injuries underground, and did not, by its own lights, meet with success. Glenn Adler’s edited collection consists of four substantial articles across the mining, transport (long-haulage), retail and metal sectors with an introduction advocating the 40-hour working week.

⁷ Primitive forms of accumulation, it has been argued, are a permanent feature of capitalism (Bonefeld 2001; De Angelis 2001).

⁸ This is not to imply that working time was not contested by labour unions.

command. Even 'working costs' were 'determined by social and economic forces' which 'often lay only marginally' under the control of the mine owners (Jeeves 1975:6).

The explanation for the morphology of labour time (measured in terms of hours, days, weeks, months and years) thus stands in close relation to the rock-breaking technology in the labour process central to production and the socio-technical challenge of delivering - by hoist - the entirety of human and physical resources often down to over 3,5km and sometimes 4km underground in gold mines. The working time arrangements this production scenario currently requires, often effectively still a 48-hour working week, provides its key producers - workers, operational supervisors and even many underground managers - with minimal temporal flexibility. Many mineworkers, sub-contracted workers especially, work considerably longer hours. The complexities attending restructuring working time schedules, evident in the late 1970's and the early 1990's, continually recur, despite changing social and political conditions and result in a series of contradictory effects. Shorter hours implemented in experimental pilot projects have often resulted in greater productivity, but not always resulted in safer mining and have always been discontinued. Where an important occupational group of workers exercised increased autonomy and control over the labour process and proved their capacity to increase production by improving labour productivity to win more 'leisure', or - to use Marx's terms - disposable or 'free' time (1973:711), their desperate efforts resulted in more injuries until they adjusted to the new regime. In short, the central role of labour time is uncovered as the previously occluded independent variable, around which a more adequate understanding of gold (and platinum mining) in South Africa crucially turns, not only in the workplace, but also beyond it.

Historically, in a racially structured society, the gold mining industry's main reason for consistently rebuffing the demands of organised white labour for shorter working hours was that reduced working time would have a significant impact on the productivity of black *African* labour. These workers have always spent inordinately long working hours underground. They have consistently served increasingly long migrant labour contracts over the decades. With the gradual dissolution of the labour contract served by African workers, their new contracts eventually aligned with traditional annual industrial working time cycles, with 93% of National Union of Mineworkers (NUM) members, for instance currently being on 'permanent contracts of employment' (Buhlungu & Bezuidenhout 2008:17).

The progressive lengthening of the migrant labour contract

Time is experienced, conceived and measured in manifold ways. In addition, the very measure of labour time qualitatively structures social life, including the way in which time itself is treated and in this instance, presented (see Stewart 2012). The cue for construing labour time as constituted and measured by the length of the labour contract was taken from the African Mine Workers Union (AMWU) submission to the Lansdowne Commission in the 1940s. The AMWU argued that the whole time of the migrant labourers' contract was effectively 'working time'. This conception of labour time effectively collapses the distinction between labour time and leisure, disposable, 'off' or 'free' time, the implications of which are not discussed here. For this measure of working or labour time, in contrast to industrial working time measured by hours and days, measures the migrant labour contract in terms of 'tickets' or shifts worked, which often extended (via the 'loafer ticket' system⁹) the number of days actually worked and which is counted in months and even years.

For the AMWU, time spent 'working underground' and time spent 'at leisure' in the migrant labour compounds was all part of serving the migrant labour contract - and hence constituted working or labour time.

This view of labour time strengthens the suggestion made in the larger work of which this paper is an extract, that the concept of labour time is an independent conceptual variable identifying the quintessential material force responsible for the fundamental social structuring of human affairs. The length of the migrant labour contract is, moreover, like industrial working time, an identifiable measure of labour time expenditure and subject to close analysis, although not as closely as that of industrial working hours by dint of the fact that the length of the labour contract is a looser measure of time (despite some very close analysis – see First 1977, 1983) than that of industrial working time. Its ramifications are, in addition, considerably wider.

In what follows here, the construal of the labour contract, as a measure of labour time, is adopted as a guiding conceptual category for a further re-reading of the secondary literature. It is also used to try and understand the impact of labour time, *qua* social phenomenon, when employed in this broader, seemingly all-inclusive sense. The picture of working and social life viewed through this perspective of labour time, by dint of its looser quantitative measure,

⁹ The 'loafer ticket' amounted to a shift of unpaid work (see van Onselen 1980) and lengthened the migrant labour contract.

consequently becomes considerably more complex. Even more clearly than illustrating the social impact of the conventional notion of industrial working time, which measures the part of the day spent at work in an industrialised society, time spent serving the labour contract, as articulated by the AMWU, represents the most complete social form the collective production of a social surplus, as the alienated creation of value under capitalism, can - beyond actual slavery - assume. For under the discipline of the labour contract, the virtually complete subsumption of the whole time of a compounded migrant worker, including non-working, 'leisure', 'disposable' or 'free' time, takes place. The extent and length of this labour contract is hence of critical importance in understanding the importance to the mining industry of this phenomenon. The question which arises is why the labour contract in South African gold mines progressively lengthens over a century and is only ever shortened in the context of a shortage of labour or to attract migrant mineworkers back into wage labour? While this paper provides a direct response to this question, the range of closely related issues and matters this raises range broadly, only some of which are briefly noted and are not treated in the depth they deserve and point to the sustained and programmatic research required to provide a fuller answer.

Taking the labour contract as a measure of labour time, the paradigm case is the labour time regime of compounded Mozambican mine workers who eventually officially ended up working set minimum 12 month migrant labour contracts. Recent informants suggest Mozambican mineworkers worked 18 month contracts (see Nite & Stewart 2012). These labour contracts were initially longer - up to 24 months and apparently then again renewed - until the Mozambican workers' labour contract and its length was settled at the political level of negotiations between the Chamber of Mines and the Portuguese colonial authorities. Though in less dramatic fashion and not over the same duration, labour contracts progressively lengthened in the comparative case of Lesotho, as they did in regions within South Africa at key points, especially from the mid-1970s onwards. Such lengthening of the labour contract across Southern Africa continued to occur independently of changes in State power over the past century.

The standard case of Mozambique, the instance of Lesotho and the contract of local South African workers constitute all instantiate the point regarding the gradually increasing length of the migrant labour contract. Intimately linked to the time spent serving this contract is the extent of the mineworkers' socialisation and acculturation into compound life and industrial

discipline. I have shown elsewhere (Stewart 2012) how this temporally bounded socialising process powerfully contributed to the acquisition of the unique skills mining requires, permits a re-reading of the driving social forces behind proletarianisation, initiates the first social distinction within a previously undifferentiated mass of African workers and resulted further in intra-working class occupational differentiations (see Stewart 2012). Once African laboring workers acquired skills born of their labour expended over time and progressed in the emerging occupational hierarchical structures of the mining industry, this resulted in changed managerial definitions and perceptions of them within the industry. The upward movement of Africans within the industry further affected the relation between these workers and the echelon of white miners. This contributed to the importance of the value of African labour power which cast a long shadow over relations between organised white labour and the Chamber of Mines.

While the migrant labour contract lengthened overall, those of South African workers were shorter than those of other non-South African workers. The numbers of non-South African workers steadily increased until 1973, when they ‘reached an all time peak of 80 percent’ (First 1983:31). The oft-noted external factors of the Malawian air crash disaster in 1974 and Mozambican independence in 1975 - when these countries’ labour was withdrawn from the mines - were then to change the numerical balance between labour sourced from elsewhere in Southern Africa and South Africa itself (Davis & Head 1995). In 2000, the balance was about 50% for each (Lewis 2001:33). When South African labour was actively sourced from the mid-1970s and mine wages rose dramatically¹⁰, albeit off a very low base (see James 1992:20), these contracts then lengthened.

The labour contracts of non-South African workers also enables a fresh explanatory reading of the long, uneven and incomplete process of proletarianisation of migrant mine labour that took place.

The point of highlighting the evidence of the gradual lengthening of labour contracts in the secondary literature is, as noted, to signal the critical importance of the *retention* of labour, which has not attracted its due measure of attention. For instance, the historical roots of the lengthening the contract lie in the earliest days of mining in the diamond fields and institutional measures to control the length of the labour contract succeeded earlier (and were consistently

¹⁰ James Mhlophi, very recently interviewed, did not feel any difference to the purchasing power of his wage at this point, he says, due to simultaneously increasing prices (Nite and Stewart 2012:136).

sustained) than those attempting to control the *acquisition* of mine labour. The intention here is simply to show the importance of labour time as the conceptual prism through which a plethora of other matters are cast in a fuller light.

The alignment of the labour contract with the annual cycle of industrial working time.

The transition to South African labour in the early 1970's and the temporarily shortened contract which accompanied this transition - precisely to attract local workers to the mines - did not last long, with the 1980s proving to be a period of 'unprecedented stability' (Crush *et al* 1991:157). Wages as the social expression of labour time is, in addition to the production centered issues discussed below, also subject to the 'historical and moral (social)' factors (see Stewart 2012:230-235¹¹). By 1980 the labour contract had tightened up and functioned as a force for technically free labour, with men from the Transkei only staying at home for between one and four weeks (O'Connell 1980:278). This was the case more generally, periods at home 'now weeks instead of months' under conditions of 'greatly lengthened contract periods' (Crush *et al* 1991:152). The luxury of 'going home' had become even less affordable than in earlier years. Migrant labour, however, continues. The comment of a retired mineworker spoke of a situation that may have become institutionalised:

...a man should never go home without a very good reason. To do so would be sheer extravagance. While at home a man loses the money he would have earned and the fares to and from work are expensive (Cited in O'Connell 1980:186).

In the pattern of the gradually increasing length of the migrant labour contract over the past century and supporting Ruth First's findings that given the possibility of extending a contract, the individual miner probably spent longer on the mines than its minimum length suggests, labour contracts were in practice further lengthened under the two-tier system: '...to 13,5 months in early 1984 compared with 8 months under the old system'. 'All labour, local and foreign is in fact becoming increasingly stabilised' (Yudelman & Jeeves 1986:122) (my emphasis). These two authors assert that labour turnover is down, and that miners return more often and after shorter intervals. The geographical 'stabilisation' the tradition refers to turns out to be a function of labour time expenditure measured by the length and regularity of the labour contract.

¹¹ I use Marx's designation (1977:168) of 'historical and moral (social)' factors to further re-read aspects of the analyses of South African gold mining of Katz (1976), Legassick (1976) and Moodie (2005) (see Stewart 2012:231-234).

By this time workers from the former Bantustans, the ‘TBVC States’ of the Transkei, Bophutswana, Venda and Ciskei, no longer sign contracts. ‘The recruiting network is now a shell’ (Crush *et al* 1991:165). ‘The vast majority of mineworkers now return regularly and repeatedly to mine employment’ (Crush 1992a:63). Mineworkers began to ‘shoot straight’ (see James 1992: 69-70) and ‘simply sign on at the gate of the mine’ (Davies & Head 1995:442).

The changing patterns of migrancy from the 1970’s onwards, cutting back non-South African labour¹² from Mozambique and Malawi, yet with rising numbers from Lesotho, saw South African workers supplying up to 60% of mine labour by 1985 (see Yudelman & Jeeves 1986). Wilmot James briefly tracks¹³ the areas in South Africa supplying mine labour and specifically indicates that the mining workforce was stabilised by contracting workers for 12 months; 50% of the 1985 complement of over 120 000 workers coming from the Transkei, increasing in 1988 to 95% of workers on 12 month contracts, at this point representing over 100 000 men (James 1992:66). The following table graphically bears this out.

<i>Contract Lengths of Mine Recruits, 1981 – 1987(percentage of total)</i>			
	26 Weeks	45 Weeks	52 Weeks
1981	22	59	19
1982	18	63	17
1983	14	62	24
1984	9	46	45
1985	3	40	57
1986	3	13	84
1987	3	7	90

Crush *et al* (1991:160)¹⁴

¹² Cutting labour in gold and coal from 73,8% from the Southern African Development Community (SADC) in 1975 (Davies & Head 1995) or 78% ‘foreign’ labour in 1973 (Yudelman & Jeeves 1986).

¹³ For a fuller, chapter-length account, see Crush, Jeeves & Yudelman (1991).

¹⁴ Note that the figures for 1983 do not add up to 100, but which makes no material difference to the point being made.

In 1982 the National Union of Mineworkers (NUM) was formed and in 1987, under its banner, mineworkers went out on the biggest ever mineworkers' strike. During negotiations the Chamber during offered what had, in time-honoured fashion, often proved successful in negotiations with organised white labour, namely to increase the holiday leave allowance (Moodie 2009:59). This time it was to no avail in a strike which ended up having 'nothing to do with money', but 'was about power as well' (Moodie 2009:60). The massive retrenchments were a watershed for mining employment. Now that labour could be hired directly from the queues at the gates of the mine, workers automatically became subject to the working time regime of industrial time with wages and working conditions as negotiated by workers' unions. Crush describes the effectiveness of NUM strategies in organising, where 'large blocks of workers live cheek by jowl twenty four hours a day, to great effect' in a context where 97% of miners are still migrants (1989:17). The longer periods of employment on the mines and the shorter periods of leave, James has argued, 'produced a greater commitment' on the part of workers to pursue their 'mine-related' interests' (1992:82). By 1988 the one year contract was effectively in force across the industry, with nearly 70% of 'foreign' workers and over 90% of South African workers on the 'standardised one-year contract by 1990' (James 1992:29).

It is no accident that as a single labour time regime for all underground production workers finally occurs labour productivity belatedly becomes a focus (Jones & Inggs 1994). In addition, after the BCEA reduced the 48 hour week to 45 hours the length of time workers spend underground is increased by other means. Sub-contracting begins, with Bezuidenhout (2006) showing how Davies and Head's (1995) fears are realised as sub-contractors undercut union rates and their plight, including 'technically illegal' long working hours, comes into focus, with some sub-contracted workers working seven days a week (Crush *et al* 2001:23-24). Davies and Head's normative prescriptions and hopes in expecting support from a 'new and more sympathetic government' are rudely shattered (1995:450).

Why long working hours are required in mining

Historically, it has not proven easy to limit the working day on South African gold mines. (The same can be said of the platinum mines of the Igneous Bushveld Complex). Working hours have remained remarkably stable despite massive technological developments and social changes in what has been called the 'workplace regime' (Burawoy 1985). The tenacity with which gold mining capital defended long industrial working hours was matched only by the progressive lengthening of the migrant labour contract. The question is not just why the maintenance and

extension of these two forms of labour time systematically went against both local and international work time trends: it also hinges on why these two qualitatively different, racially defined, long-hour labour time regimes continued unabated. Industrial working hours were often longer than legally stipulated and indeed systematically lengthened in the case of the duration of the migrant labour contract. Why was a persistently regular industrial working time arrangement, effectively spanning a century, and the lengthening of the migrant labour contract ever necessary? For, as noted, apart from the introduction of the Eleven Shift Fortnight in 1978 (which *maintained* the numbers of hours worked) and the essentially abortive first attempts at the introduction of continuous operations in 1991 (which were *never generalised*) and the BCEA in 1997 (when the three hour reduction *was often clawed back*), working hours have remained remarkable stable for around a century. The simple answer, to which my thesis addressed itself at some length, is due to the form value creation assumed and how profitability was secured in the South African gold mining industry and beyond.

In order to explain the profitability of mining on the predominantly low-grade-ore-bearing reef of the Witwatersrand basin, excavated at ever increasingly deep levels from the earliest days, low mine wages have consistently been cited as shaping labour demands (Johnstone 1976; Richardson & van Helten 1982:78; Moodie 1994:45, 2005:564). A further reason, generally insufficiently recognised, was that ‘minimal mechanisation’ took place underground (Richardson & van Helten 1982:85). In important respects, mechanisation has effectively remained stalled at the stoping rock face in gold mines. Even in 2007, only 14% of stopes in platinum mines were fully mechanised.

Combined, the factors of low ore grade, the depth at which mining takes place¹⁵ and stalled mechanisation which resulted from these geological factors, constitute the framing structural givens that begin to explain why local gold mining is so time-consumingly laborious. Gold mining in particular needed massive tranches of capital and a regular and plentiful cheap-labour supply working long hours (labour time being under the industry’s control) to exploit what remain the largest gold deposits ever discovered. (Platinum mining, like gold mining, which boast the largest reserves yet discovered, again follows suite). As noted, what was crucially at issue here was the value of the labour time of black mineworkers.

¹⁵ A now somewhat outdated projection estimated that around 40% of gold production would be sourced from below three kilometers by 2015 (see Gurtunka 1998:1).

In order to support the contention regarding the importance of labour time, it is consequently to labour time expenditure in the mining labour process, a process physically embedded in the artificially created, spatially all-encompassing underground geological environment of solid rock, to which this paper will now turn.

By way of briefly providing some context, the low-grade ore of the Witwatersrand gold reefs located at ultra-deep levels (increasingly below 3000m), tackled with the rock drill, requires the breaking and removal of rock. Access is provided by either vertical shafts (on all gold mines) or either incline or vertical shafts (on platinum mines) which are broken out into shaft stations on the vertical axis of the mine shaft, horizontally developing out to a complex spatial lattice-work of haulages and smaller travelling ways leading to underground workshops, refrigeration and electrical plants, slime dams, stores and refuge bays. Off the horizontal, depending on the design of the mine, further incline and decline shafts lead to further narrower winzes, travelling ways, ore passes and the working stopes. The disturbed geology of these excavated spaces and its manifold and unpredictable impediments - falls of ground and rock bursts - constitute an unnatural set of 'external' environmental conditions. Together, all of this constitutes the working environment. The operational goings-on of this constructed underground world are controlled and administratively mirrored in the shaft offices on surface. For the miner encased in solid rock in the bowels of the earth, the footwall is 'the ground', the sidewalls 'the horizon' and the hanging-wall is 'the sky': all of which are illuminated by 'the sun' of the lamp on the compulsory hard-hat once beyond the haulages and cross-cuts, which are variously well-lit in contemporary, modern mines.

Within this 'external', quasi-natural geological environment, the social and institutional context and its shortfalls - the systemic dysfunctions of equipment failure, material and labour shortages - the 'internal' organisational life and the working conditions of mining situations are embedded. By referring to a series of examples, instances and events drawn from this institutionalised artifactual domain, as recorded in the historiographical and sociological literature on mining and direct personal experience and research, here I but sketch out the main aspects of a potentially deeper explanatory re-reading of the astonishing narrative of South African mining, a reading couched in terms of labour time expenditure. This explanatory reading, I am arguing, accounts for the exploitation of labour, whether construed as 'cheap labour' (Wolpe 1972), 'ultra-subordination' and 'super-exploitation' (Rex 1974; Levy 1982), 'ultra-exploited' (Legassick

1974a) or ‘ultra-cheap labour’ (Johnstone 1976) and ‘racial ultra-exploitation’ (Moodie 2005) more adequately than doing so in terms of low wages and racial despotism.

The value of labour time in the underground mining labour process

In order to analyse value creation in a production which is both exceptionally porous and where work takes place further from the shaft stations on a daily basis (thereby increasing travelling time underground), the relation between time and the expenditure of labour-power needs to be shown, most especially the central role ‘direct labour time’ plays in the production of net surplus value. For, without the application of direct labour time, there is no produce to constitute economic surplus under any social and historical configuration, let alone capitalist profit, nor is there anything to ‘transform’ into exchange value in the capitalist market place. This is the fundamental assumption of my thesis. This is not to deny the role played by extra economic and political factors in this process; my focus is the genesis of *value* in production under capitalism, not the historical, social and political conditions for it. A further assumption, of course, is the propertylessness of workers which brought them into capitalist ‘hidden abode’ of production in the first place where value creation is initiated under given social conditions.

The central point, as argued in my thesis, is that labour time expenditure is responsible for the creation of the entire panoply of human production. More specifically here, that portion of the working day *directly* responsible for the creation of net surplus value is the quintessential source of actual wealth, to which, under capitalism, the rest of the value chains emanating from it are initially subordinate. Ultimately, economic value is created every shift by completing the support, drill and blasting working cycle and it whether this can be done (net surplus value creating work) or not (unavailable surplus labour time) to which the following two sections all too briefly turn. Both components of value creation implicate labour time, albeit in diametrically opposed ways.

Net surplus labour time

*...aggravated problems of finance, rock temperatures, rock pressures, water and ever lengthening lines of communication ... materially affect the transport of men and material as well as the transmission of power. Coupled with this is the steady whittling down of **that vital portion of the shift spent on actual production...***

RN (Dick) Lambert, Assistant Manager at Western Deep Levels, 1957 (Cited in Oxley 1989: 88) (my emphasis)

The component of net surplus value is ‘that vital part of the shift’ of which Eric Olin Wright notes: ‘...the critical objective of the capitalist class’ is to ‘expand this component’ by reducing ‘the other components’ (1981:68). Workers, given the right conditions and especially when it is in their particular interests, ironically struggle, as will be seen - as does the capitalist - to maximise net surplus value by attempting to maximise the time they productively spend *directly* on net surplus production. Even without the right conditions, workers do this, for otherwise they do not earn their bonuses, an important part of the wage positively linked to actual *direct* working time. Mineworkers do not generally hold back on production or hold others back to ensure the maintenance of a ‘rate for the job,’ thereby ensuring the continuation of the ‘game’ whereby the securing of surplus value is obscured *a la* Burawoy (1979). Mineworkers rather, as a general rule, work purposively and often strain to get the job done, as the two following chapters will show. Their complaints will centre on low wage rates, in other words essentially bemoaning the poor value of their labour time.

In the analytical schema of Eric Olin Wright (1981) I have deployed to analyse the mining labour process in my larger work, this component of the working day - actual hours of work directly performing work in production - signifies net surplus value, but does not correspond to any particular form of struggle. This is, however, not a satisfactory aspect of his schema. Workers can be performing work tasks more or less intensively, which results *directly* in net surplus value, but be simultaneously engaged in a go-slow *or* consciously be working harder. This could be for any number of reasons, from being engaged in a struggle for physical survival and better wages by embarking on a go-slow, through to exerting themselves and working more intensively to win targets in a planned manner to win reduced working hours, as the next two chapters will show. The number of hours *actually* spent directly on production does not, consequently, mean that such hours producing net surplus value are necessarily devoid of contestation.

Further, the *actual* number of hours of worked is made up of both *direct* and *indirect* surplus producing labour time. Much work underground also constitutes *indirect* surplus labour and which is often the result of difficult geology or managerial inefficiencies. I hence distinguish between *direct* surplus labour for labour-power actually expending itself over time producing net surplus value, and reserve the term *indirect* surplus labour for any necessary work performed during regular, timed working hours *establishing conditions for direct working time*. Both of these forms of applied labour power create value. Wright’s component of *actual* hours of work performed thus includes both *direct* and *indirect* value-producing work. ‘The value of the product

is determined by the hours working *directly* and *indirectly* absorbed in its production' (Catephores 1989:61) (my emphasis).

Given the gaping porosity of the working day in mining, many *actual* hours can be spent fighting the rock and getting nowhere and yet be establishing the conditions for net surplus value creating labour time.

A number of the 'internal' institutional factors, found to have been critical issues over the course of the past decade in the research and quantified elsewhere (see Stewart 2012) in the case of platinum mining, have recently been confirmed as bedevilling value creation in gold mining (Phakathi 2009). The factors Phakathi documents under contemporary mining conditions occurred on the Zambian copper mines 40 years ago (Burawoy 1985:237). Tensions and struggles within production relations often turn around conflicting interpretations regarding the causality of events and incidents flowing out of such conditions and which incidents may have been avoided or not. These factors, both 'internal' and 'external', conditioning mining production, all play their part in requiring long working hours, thereby altering the magnitude of value extracted from any specific shift underground, a specific mine shaft or corporate mining group, and more generally the value extracted from aggregate social labour.

These factors, both germane to production itself and more broadly, separately and most especially when combined, all impact on whether a crucial part of workers' wages, such as bonuses, is earned or not. Production bonuses have long been a part of mine wages. For Leger, the bonus remains the hidden form of supervisory control, which, in this case, would secure workers' co-operation, but not necessarily their loyalty (1985:2). If Burawoy is correct that '... the autonomous self-regulating group controlled by the wages system is still the most effective form of work organisation' (1979:207), mining in South Africa is a case in point and has recently received detailed attention (Phakathi 2011). Tensions, conflicts and social struggles in production are inextricably integrated and woven into these conditioning factors, which, treated in particular ways, deny workers their bonuses. In brief, often the expenditure of *actual* labour time is insufficient to win a bonus: actual production targets - which both 'external' and 'internal' factors often inhibit - must be met. Too great a proportion of the actual hours spent working is spent *indirectly* on preparing or *improvising (planisa)* to create the conditions to work directly on the job at hand. In other words, *actual direct net surplus labour time* must be sustained for an appreciable duration over the working days in a month in order to win a bonus. For a rock drill

operator at the face, working consistently as one did (as I sat though it all), this consumed five hours of a shift of around eight hours.

The failure of managerial systems and procedures consumes time unnecessarily underground and is often the cause of the manufacture of *dissent* (see Phakathi 2011). Briefly, one issue here is the extent to which workers not only *consent*, as Burawoy (1979) has long held, to their own exploitation, but *actively* and *positively* desire more rational systems¹⁶; they *planisa* (Phakathi 2011) and employ strategies that save and do not waste time in the interests, often, of their own safety and survival underground. In addition, workers argue that improving systems, ensuring the provision of the right materials and equipment at the right place at the right time would enable the shortening of working hours.

Whereas the focus on this net surplus value-producing, direct labour time (*actual production* at the face in Dick Lambert's terms) is the general focus of managers in all profit-seeking concerns, at times this component comes explicitly into focus as it did on the van Eck Commission on Conditions of Employment in the Gold Mining Industry (UG 28 of 1950) and which did *not* result in reduced working hours. With all other factors remaining the same and with the prospect of reduced hours for white workers, this would have reduced 'face time' - *direct* labour time spent at the rock face. The industry was compelled in the interests of net surplus value to defend the length of the working day. African workers, it has been shown, were allegedly working anything from '12 to 13 hours on some mines' a few years before (Allen 1991:462).

In this instance, the struggle of organised white labour to reduce the length of the working week was denied on the grounds of the effect on the net surplus value-producing labour time of African workers. In terms of Wright's schema, the industry was concerned *not* to increase unperformed surplus labour (see the following section) of African workers by virtue of the absence of white supervisors in production. The industry was again defending the length of the working day by

¹⁶ The issue is not so much Burawoy's question of 'Why do workers work as hard as they do?', arguing for workers' consensual quiescence in the process and relegation to 'playing games' in production (noticeably absent in deep level mining at the face); rather, it is that workers are compelled to do so in the face of managerial irrationality and the systemic wasting of time in order to snatch moments of reprieve from work underground to preserve their own physical strength. This is a worker critique of management and their 'ignorance' as to 'what really happens down here' - confirmed by a leading Chamber of Mines head-office official to the candidate personally: "Some of us were shocked at your research Paul. No! *All* of us were shocked!" This was said about the Deepmine Research project (Webster *et al* 1999) (my emphasis).

defending the racialised organisation of the labour process, or perhaps, more cynically, using the legally racialised construction of the labour process to deny organised labour reduced working hours. Whatever perspective is adopted it amounts to the same thing: productive time at the face in the labour process *determined* (purposively used here in its strong epistemic sense) mining capital's response to organised labour's demands.

I have illustrated how (Stewart 2012:451-478) a miner's gang wanted to finish off an extended stint of *indirect* surplus labour time, precisely to get onto metres-per-month *direct*, bonus-winning net surplus value working time. The young mineworkers in Phakathi's study were not prepared to complete the support-drill-and-blast cycle (the broader net surplus value-producing cycle) as they experienced a long working day (of around 14 hours from door to door) having to travel to work from the townships surrounding the mine, as well as believing the miners, under whom they worked, stole their bonuses and so cheated them out of the critically *valuable* portion of the working day (2009). Their 'unorganised' protest or informal resistance of either being late or not pitching up for work is best explained, I maintain, in terms of a struggle over working time, or, more precisely, over the value of their labour time. For a female mineworker the reasons were clearly thoroughly social ones: after only getting back home after having left 15 or 16 hours earlier, she said: '...it's hard to be a mother, a wife and a mineworker at the same time' (Benya 2009:90).

The trilogy of workers' *production demands* - labour, materials and equipment - related crucially to often frustratingly *wanting* to get on with the job of net surplus value production in order to win a five day working week or, more prosaically, simply to earn bonuses. The demand of the artisan and miners' union representatives for infrastructural changes to the workplace on a platinum mine in 2003 amounted to the same thing: a demand for greater efficiency so that their demands for either a bonus-bulked wage packet or increased leisure time could be met.

That mineworkers work considerably more autonomously than in many other enterprises, often with a degree of pride, despite the factors compelling them to be there in the first place, has long been noted. Black mine workers sometimes, as one of Moodie's informants averred, 'discuss boastfully their ability to perform a perfect job in their various tasks in the stopes. They are keen that every one of them should do a perfect job ... else they all face the risk of falling rocks' (1976:12). Or as a miner, assuring me that the drastic situation (related in Stewart 2012:443-450) would come under control, the result, he said, would be 'a beautiful panel' (rock-face). Boasts of a job well done were legion in the then still predominantly white working class bars on the West

Rand around the mines a decade ago, and you can hear the same thing today. Underground, generally speaking, mineworkers get on with the job. A generation ago it was said that ‘workers seem to know what they are about’ in the informal moral economy of mining (Moodie 1976:12). My own experience underground certainly fits in neatly with the statement of Moodie’s informant of over thirty years before.

Unperformed surplus labour

The struggle over control of the labour process revolves around unperformed surplus labour and the actual length of the time spent working during the working day. In his analytical schema Wright has made this clear by referring to how the work of a number of writers can be read as revealing this aspect of labour time expenditure. As Wright puts it:

Generally speaking, workers will not actually perform as much labour on the job as the number of hours they are employed: there is ‘wasted’ time or unperformed surplus labour and which occurs ‘through a wide variety of mechanisms’ (Wright 1981:68).

The natural porosity of the working day in the mining labour process provides much scope for the occurrence of this crucial analytical category, which both managers and workers, for different reasons and in different ways, try to eliminate, for it erodes profits and ‘steals’ leisure time. Wasted time underground has long been a bone of contention in mining, more broadly than the ‘complaints about delays in hoisting blacks from underground [which] are as old as deep-level mines themselves’ (Moodie with Ndatshe 1994:284). For Moodie, such delays, particularly when they become unusually long for no apparent reason, are a causal factor in incidents of racially inspired violence. My concern is how such time-wasting and other delays impacts on the value of labour power.

Hours spent hoisting, travelling and waiting are unavoidable, but can be and have been reduced through improved technologies and work-flow processes. Managing labour shortages is a constant issue confronting managers, let alone dealing with them underground. Systemic dysfunctions can be and are ‘engineered out’, generally not without difficulty. The time consumed in all these instances constitutes periods of unperformed surplus value, which erodes both *direct* and *indirect* labour time (i.e. Wright’s *actual* hours of work performed), directly affecting net surplus value.

In many instances, the improvising role workers and organising supervisors assume in the labour process, dubbed *planisa* or ‘making a plan’, exemplifies unperformed surplus labour (see Phakathi 2001, 2011). For instance, on one occasion I personally walked for three hours through

the haulages with a team leader in search of a piece of ventilation pipe, prior to an official visit of the ‘bosses’ to a very far-flung development-end, in order to ensure the miner’s workplace was ‘up to standard’, but to no avail. This was wasted, unperformed surplus labour time.

Workers in the miner’s gang noted above *wanted* to get on with the job, precisely in order to get on to direct net surplus value bonus creating labour time, but were prevented by the miner on safety grounds; he was proven correct by the continued fall of rock from the hanging, which would certainly have injured, if not killed, those workers. The struggle was over decision-making authority - literal control over the labour process, in other words - and the workers fortunately lost that particular round.

The round the miner lost was the struggle to convert indirect surplus labour time into direct net surplus value bonus-creating work. His experiential knowledge, won over time, had enabled him to report, upon seeing signs such as black water and the drill-steel getting stuck in the rock face that the closed haulage was close by. He was overruled by the engineer, who had calculated that the impediment was further ahead. Had the miner’s ‘reading’, which proved correct, been accepted, the target face advance, the measure of actual work and net surplus value, would have been adjusted lower to account for the delay. Workers could have feasibly attained their target and won their bonus. Because workers did not have control over the labour process, because they were overruled, ‘the mine’ benefited from subsequent face advances made, without having to pay for them at bonus rates, effectively increasing the ratio of unpaid (surplus) to paid (necessary) labour for net surplus value-producing labour time. This affected the mood and morale of the development team, who had lost all prospect of earning a bonus that month.

The work on the tunnels is necessary work, indirectly establishing the conditions for net surplus value extraction. This indirect labour also attracts a bonus when a target (a specified face advance in a development tunnel) is met. When workers work with a particular degree of intensity, it is assumed that they can win a bonus and *vice versa*. When workers nevertheless work at the required degree of intensity, but do not have control over the labour process, they can, if their attempts at improvisation (*planisa*) are unsuccessful, forfeit their potential bonus.

Wages are known beforehand and hence calculable as one of the costs, which, when calculated alongside all other costs (which in mining are high) are but a portion of the sale price of the product. Managers’ plans and the monitoring of them will consequently be concerned with ensuring that the time spent in any aspect of production will not be more than the amount of

wages budgeted for particular work activities; in other words, the costs of the reproduction of labour must not be exceeded at any point. For if this is the case, then the component of indirect surplus labour (essentially necessary preparatory work) no longer attracts value. The bonus is designed to ensure this does not happen.

For the miner and his gang, the stalling of the face advance raised two issues: their normal working day was lengthened by struggling with the rock face, plus they had forfeited their monthly bonus. The slow rate of work in the development-end drew the attention of managers and got them down to the far-flung tunnel as the desired progress as specified in the mine plan was not being achieved. Had the workers successfully met their target face advance they would have exceeded the necessary labour portion of the working day; they would be producing a surplus over and above the cost of their wage; they would have been assured of their bonus; and capital would, by noting their bonus-attracting capacity, be assured of their productivity and its own profitability. In accordance with Wright's schema, then, the struggle of the miner and his gang is a matter of a struggle over the labour process, of whether the actual hours expended in production were producing a surplus in terms of the costs of production, and hence whether or not they were producing surplus value.

Conclusion

Briefly stated, the Marxist revisionist tradition holds that cheap wages explains the historic exploitation of mine labour. This explanation lies in the realm of reproduction and circulation. By highlighting the labour time expended, of which wages are but the social expression, a deeper, production orientated explanation comes to the fore and completes, if not supersedes, the cheap-labour thesis. The underlying reasons for the stability of labour time are geological - poor ore-grade and depth of mining. In addition, travelling time underground increases daily. Given further that working time was the sole factor directly under the industry's direct control, mine management consistently resisted the demands for reduced working hours by organised white labour as this implicated the value of the labour power of black workers who performed the vast bulk of the physical labour underground. While not explicitly noted in this paper, there is evidence that mine management considered the temporal stability of its labour supply once on the mines as even more important than containing costs in a notoriously cost sensitive industry - labour costs generally constituting over 50% of operating costs.

This explains the high on century-long stability of the labour time regime of gold mining underpinning its historic low wage regime and the primary importance of the expenditure of labour time for value and wealth creation in the South African gold mining industry.

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