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Mediation of agency in teamwork –the construction gang as a potential collective frame for handling physical strain and pain.

Work in progress

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Abstract

In this contribution we examine the potentials of the construction gang as a frame for collegial handling of physical strain and pain in work. On a framework viewing social inclusion and a positive professional identity as dependent on the display of meaningful agency within the gang (team), we employ a methodological composition of questions to capture construction worker's sense of agency in relation to handling physical strain and pain, and furthermore seek to understand expectations towards alternative forms of agency, than the forms usually employed. In this investigation we draw upon a questionnaire-study conducted among 519 construction workers from four professions. In conclusion we find that while the construction gang might pose a potential for developing a collegiate framework for handling physical pain and strain in ways that lead to less deterioration through work, this resource seems currently untapped.

Introduction

In a recent thematic issue of the Danish working life journal *Tidsskrift for arbejdsliv* researchers have put the transformative as well as potentially straining characteristics of contemporary teamwork in organizations under scrutiny. In one of these investigations Rybjerg and Pedersen show how the implementation of teamwork along with the development of different types of standards for work contribute to an alteration of worker's sense of professional identity and create a number of additional tasks in the shape of preparing for, going to and following up on meetings and increased administrative work (Rybjerg and Pedersen, 2013). In another contribution Scheller, Grosen and Hvid specify how increased workload and time pressure, as well as reduced professional fulfillment and influence on work are potential outcomes of the implementation of a teamwork-based management tool; 'Scrum' (Scheller, Grosen and Hvid, 2013).

While these studies focus on teamwork as new forms of performing work implemented in existing types of organization, acknowledging a commonly accepted definition of teamwork as presented by Kozlowski and Bell in 2003 allows us to perceive teamwork as the traditional way of organizing work is in many types of work:

"Work teams and groups: (a) are composed of two or more individuals, (b) who exist to perform organizationally relevant tasks, (c) share one or more common goals, (d) interact socially, (e) exhibit task interdependencies (i.e., workflow, goals, outcomes), (f) maintain and manage boundaries, and (g) are

embedded in an organizational context that sets boundaries, constrains the team, and influences exchanges with other units in the broader entity” (Kozlowski and Bell, 2003, p. 338)

One such form of work (along with e.g. military units, sailing crews, surgical units and several types of service work) is construction work. Work in construction is organized in gangs (a term we¹ in this paper employ interchangeably with the team term) that usually are very self-managing. Most often, the distribution of tasks, methods employed, day-to-day production, planning and time for breaks, is largely organized by the gang. This type of organization in the construction industry can in Danish literature be traced back to, at least, the middle of the 19th century (Nørregaard, 1943). Gang organization in construction work is widely perceived to lead to a sense of autonomy which is highly appreciated among construction workers and blue collar workers in general (Applebaum, 1999; Baarts, 2009; Haas, 1977; Morton, 2002). In earlier research this has pointed to the idea that the autonomy empowered construction workers to regulate considerations towards their own work environment while still maintaining an optimal productivity (Andrésen, 1984; Appelbaum, 1981; Hasle, 1982).

While this notion seem to resonate with some aspects of work practice, recent research has pointed to a tendency towards construction workers habituating pain, in the sense that it is common practice and part of professional identity, to be able to ignore bodily sensations of pain and going to work regardless (Ajslev et al 2013). This can be perceived as a problematic issue from several perspectives, as many construction workers suffer from work-related sickness absence due to musculoskeletal disorders, which are also the main reason for disability pensions from construction work (Arndt et al 2005; Pension Denmark, 2013; The Danish Work Environment Authority, 2012), and also because living with pain can have severely negative impact on peoples sense of life quality and wellbeing (Mortensen et al, 2008).

The central issue in this paper is to explore the ways in which participating in teamwork (e.g. the gang) has an influence on the workers sense of powerlessness in relation hard physical work (which is a risk factor for developing MSD (Andersen et al 2007)) and accepting pain in work, we narrow our focus to concern construction workers’ expectations to their colleagues reception of agency based on a quantitative study addressing of these matters. This investigation serves to examine some potential consequences of teamwork within a physically exerting type of work, involving a constant use of the worker’s body as a tool for production.

Short on analytical framework

Mainstream literature on teamwork often considers itself with the naturalness of humans working in teams, with all the positive gains in teamwork and with all the tricky barriers of commitment, distribution of tasks, leadership and inter-team relations that must be overcome in order to obtain the level of true teamwork, increasing productivity by mimicking great sports teams in their level of communication, coordination and ability to draw upon each person’s unique skills (Cohen and Bailey, 1997; Mathieu et al, 2008; West and Lyobovnikova, 2013). As our focus is rather to investigate subjectification and potentially physically problematic effects of work in teams we need rather to focus on a framework to capture these matters.

¹ The “we” in this paper refers to the group of researchers behind the study consisting of Roger Persson(Lunds University, Lars L. Andersen(National Research Center for the Working Environment) and Henrik L. Lund(Roskilde University) who, because of time issues weren’t yet included in the writing process but has a great share in this work.

In order to understand how participating in gang work can limit worker's sense of opportunity to act and rather guide conduct in certain directions in relation to certain aspects of work (handling physically straining work and pain), we draw upon the notion that being able to present positively recognizable qualities is very important to participation in the social group; to gain recognition and acceptance in the gang or team, but also to the subject's reproduction of identity, both personal and professional (not to say that there is really a waterproof separable distinction between types of identity) (Bourdieu, 1996; Honneth, 1996; Gergen, 1991 etc.). Certainly this plays a great importance in the construction gang, as workers often either belong to the same gang for many years, or participate in a larger, relatively local, network with people of the same profession, who inform and recruit each other for upcoming jobs, which happens on the basis of earlier encounters (Applebaum, 1981; Gherardi & Nicolini, 2000; Baarts, 2004). Being able to display the properly recognized conduct is necessary on both a psychological and a practical/economical level. So forth, what forms of agency that are meaningful to perform becomes somewhat limited by your expectancies to your colleagues.

This does not however mean that we should perceive the individual as determined by a mechanical set of social power, subjecting it to predefined action based on existing norms (how would change be possible within such a framework?). Rather that we adopt a Bourdieu-inspired view of the subject as an agent, in the sense that it acts on the basis of a *practical sense* – a knowledge of the social fields in which it participates, which predisposes for certain types of agency based on the subject's interpretation of the most appropriate response to a situation (Bourdieu 1996). In order to understand the particular forms of power that subjectify the agent to these prepositions forming practical sense however, we draw on a foucauldian framework of power as present within all social relations. Employing this view allows us to question and investigate the function of subjectification to certain types of agency, by focusing on the rationalities behind this power (Foucault 1983).

One important aspect of analyzing power and the effects of power is to pay attention to positioning's of powerlessness, as these tell something of the contextual matters that people perceive as narrowing their options for agency (Davies and Harré 1990). By examining the positioning's of powerlessness in relation to physically hard work and habituating pain expressed by the construction workers in an earlier interview study, we formed a number of questions for our questionnaire in order to investigate the extent in which they perceive themselves as potential agents of alternative action on handling physical strain in work, and also the expectations that construction workers report in relation to their colleagues perception such agency².

Methods (very short)

The paper draws upon empirical perspectives from a survey comprising 519 (response rate 81%) construction workers collected in 2013. Respondents were from the four professions carpentry, concrete work, bricklaying and scaffolding. As only 3 women responded to the questionnaire and 12 people failed to respond on the question on gender, we disqualified these respondents for this analysis, as we wanted to avoid overlooking possible gender related differences. This left 504 respondents viable for analysis. Further all respondents did not answer all questions in the pen and paper questionnaire, why the number of valid cases in each analysis varies.

² Along with a long line of other questions which are not reported here.

The questions address a number of factors drawn from *habituating pain* (Ajslev et al 2013), concerning alternative agency in relation to handling physical strain and pain among construction workers. In the questionnaire we formulated these questions in order to capture the expectations towards their colleagues, we hereby gain an insight on the ways in which they expect it to be received if they chose to perform agency in relation the concerned subjects. At the same time we also rephrased the questions to show how the individual respondent would perceive colleagues' performing the same kinds of agency.

Analysis³

In the study 270 (54%) workers experienced pain every day or several times a week, of these 138 (51%) registered experiencing chronic pains (for more than 6 months) in the lower back with a mean of 6.2 on a 0-10 scale. From an earlier study on pain as a risk factor for long term sickness absence among blue-collar workers, it has been shown that scoring above 4 conveys a significantly increased risk of long term sickness absence with a hazard ratio (HR) of 1.39⁴ (Andersen et al, 2011). This frames the analysis as it shows that out of the 504 workers included in the analysis 138 (27%) experience lower back pain in a degree that severely increases risk of long term sickness absence⁵. in a similar way, workers report to experience very high levels of physical exertion in work.

Commencing the analysis, we start out by looking at the question of where workers place the responsibility for the physical strain undertaken during work:

Table 1.

<i>In your opinion, who has the main responsibility for the physical strain you undertake during work?</i>		
	N	%
My-self	327	65%
My colleagues	31	6%
My employer	198	39%
Construction material producers/suppliers	55	11%
The construction industry in general	171	34%

<i>Do you have the opportunity to lessen the physical strain you experience during work?</i>	in a very high/high extent	to some extent	in a poor/very poor extent				
	N	%	N	%	N	%	Total N
	69	14%	271	55%	152	31%	492

Table 1 show that a rather high percentage of respondents see themselves as mainly responsible for this physical strain. However, turning our focus to the second question of the table, we see that only 14% of workers perceive themselves as having high or very high opportunity to lessen the physical strain in work. 55% of the respondents report to have some extent of opportunity to lessen physical strain, as such adding these two response categories corresponds somewhere in the vicinity of the 65% of workers perceiving themselves as mainly responsible. However it does seem paradoxical that only 14% of workers should feel a

³ Some of this material is at a very premature state and will of cause be further developed in future work.

⁴ Meaning just about 40% average increased risk compared to workers reporting less than 4 on this scale.

⁵ In this we have indeed limited our scope to lower back pains, whereas chronic pains in other body regions can be risk factors aswell.

high level of opportunity to lessen physical strain while 65% view themselves as mainly responsible. It seems proper to ask ourselves how it is possible that you can view yourself as mainly responsible, while feeling only slightly able to lessen physical strain?

This paradox can be seen as the consequence of the double bind (Bateson XXX) that workers find themselves in, in relation to perceiving and handling physical strain and pain in work. The construction workers often see themselves as responsible, as they carried out and participated in the planning of work in the gang, while being subjected to the pressures of timeframes, economic and productive demands as well as the need to display the masculine characteristics as described earlier (Ajslev et al 2013).

As we asked the open question on ways to lessen the physical strain in work, the following picture emerged:

Table 2⁶

A total of 170 people provided responses to this question, some provided several, adding up to a total of 310 perspectives on the question.

<i>How can the physical strain you experience in work be lessened?</i>	N
More/better assistive devices	106
Staying at home/no clue/it can't be done	44
Lighter, easier handled materials	26
More use or availability of crane	24
Better planning/projecting	24
Better lifting technique/taking care while lifting	21
better timeframes/more time/less stress and time pressure	15
Helping each other more	14
Better usage of assistive devices	13
Work less/shorter work week	7
Stricter demands from work authority	4
Forbidding piece rates	3

What seems very striking here, is that the two top scorers on the list is the sense of powerlessness in relation to lessening physical strain - 44 replies stating it can't be done, no clue or that the only way is to stay at home – and to get access to more and better technical assistive devices which is suggested by more than half of the workers responding to the question (106 replies). However, as has been put forth by both Westgaard and Winkel (2011) in a review on ergonomic interventions, and by Ajslev et al (2013) about construction work in specific, there is a tendency towards the use of technical assistive devices to only be applied in work if their usage, lead to an increased productivity. This means that hoping for a decreased physical strain in work as a direct consequence of technological development is unlikely to be a solution as

⁶ The following perspectives was left out of the table as they were only mentioned once (which of cause does not make them irrelevant at all: saying no to hard work, bodily training, better descriptions of work, equal distribution of tasks in the gang, more people for each task, companies won't pay for it, economy, accept from the companies, new thinking.

another type of intensification of work is likely to take place (take for instance the use of the power drill instead of the hand drill, allowing for way more holes to be drilled rather carpenters drilling the same number of holes and taking the rest of the day off).

Of special relevance to this analysis is to examine which of the depicted replies that actually places the worker as an agent for lessening the physical strain in work. Here the first perspective is better planning, which can be related to both planning in the projecting phase, but also to the gangs own planning of work both of which are subject to Baarts' perspective of trial and error explaining that work is rather often not very well planned at all, and heavy lifting, transport of materials and working in awkward positions is often not thought through (Baarts 2004). As such this perspective seems to not only be relevant in relation to prevention of accidents, but also to physical strain and deterioration. Second, better lifting techniques and taking care is an area for more learning and thoughtfulness both for workers individually and potentially as a group. However, as Ajslev et al shows, time pressure may very often be counterproductive to worker's wishes of taking care for the body, both individually and in relation to how you want to position yourself in the gang (Ajslev et al 2013)

The last perspectives; better usage of technical assistive devices, and helping each other out, can be accounted for through perspectives of displaying the proper masculine behavior and tells us that at least a part of workers are aware of the tendency towards not helping each other out, in order to display self-reliance, strength and endurance (Gherardi and Nicolini 2002; Ajslev et al 2013). Whether forbidding piece rates is an area of worker influence could be debated as unions are part of the three-party system negotiating the agreements for wages and piece rates. For now we will leave out discussion of the remaining aspects mentioned as they are not entirely related to worker influence. While there are perspectives as to how workers could take action in relation to the physical strain they experience, it still strikes us as paradoxical that out of 310 responses to this question a maximum of 72 (23%) are related to worker agency⁷. So while 65% of workers place themselves as being mainly responsible only a way smaller part actually present any perspective on ways in which they could potentially affect this.

Looking back at Table 1 we further find it very interesting is that only 6% perceive their colleagues as having a main responsibility for the strain they undertake, since several sources has pointed to the importance of displaying socially acceptable behavior as earlier described (Ajslev et al ,2013; Applebaum, 1981; Baarts, 2004; Gherardi and Nicolini, 2002). We investigate this dilemma further through the questions presented in table 3:

Table 3.

⁷ Further analysis of these numbers are surely needed as we need to look for how many respondents actually has worker agency in their scope (some of these responses might stem from the same respondents. We have not yet had the time to account for this.

1: How do you think your colleagues will perceive the following?	Very positive/positive reception		It will be of no consequence		Negative/very negative reception		Total N
	N	%	N	%	N	%	N
That someone lowers work pace to better take care of their body?	125	26%	197	41%	164	34%	486
That someone turns in sick because of pains or soreness?	128	27%	248	52%	106	22%	482
That someone complains about the physical strain in work?	144	30%	238	49%	100	21%	482
That someone will only work if the appropriate technical assistive devices are present?	173	36%	181	38%	122	26%	476

2. How would you yourself perceive the following?	Very positively/positively		It will be of no consequence		Annoying/very annoying		Total N
	N	%	N	%	N	%	N
That someone lowers work pace to better take care of their body?	239	50%	157	33%	85	18%	481
That someone turns in sick because of pains or soreness?	227	47%	194	40%	62	13%	483
That someone complains about the physical strain in work?	259	54%	163	34%	61	13%	483
That someone will only work if the appropriate technical assistive devices are present?	276	57%	138	29%	67	14%	481

What we see is that there is a mostly equal share of workers having positive and negative expectations towards their colleagues' reception of someone performing agency in relation to lowering work pace in order to take care of the body, turning in sick because of pains or soreness, complaining about the strain in work or only wanting to work if the appropriate assistive devices are available. However it is worth to note that more than 20% in all categories have negative expectations towards their colleagues' reception of agency. This tells us something about the strength of the sense of having to conform to these socially acceptable forms of behavior that can have a negative effect in relation to developing musculoskeletal disorders. From cross tabulations with worker's experiences of pain intensity and frequency, we actually see that a slightly higher percentage of workers with negative expectations to their colleagues reception of agency also experience pain more frequently (ca. 10-15% higher). This points in the direction that for some workers, experiencing pain either gives them more negative expectations, or that they have directly negative experiences regarding colleagues, as presented by Ajslev et al (2013).

At the same time there is also 26-36% expecting positive responses towards agency in these four matters, which tells us that a part of workers should not feel limited by expectancies towards social exclusion from the gang. However this analysis completely misses the expectations towards employer's perspectives on agency which is not addressed here, as they do not tell much of the social relations in the gang. Expectations in this regard, are of course very interesting to workers opportunities for performing agency in general.

However, in the comparison between the two tables we perceive a most interesting discrepancy. Here it becomes apparent that there is a general tendency towards workers seeing themselves as being much more positive towards agency in relation to taking care of the body. On all four parameters the percentage of workers perceiving agency as positive is 20-25% higher than the percentage expecting colleagues to perceive it positively. This means that either the workers are performing what they perceive to be a positive self-positioning through the questionnaire, or alternatively that there is basis for a much better acceptance of taking care of the body in the work gang, than is the current practice. No matter what, it seems that a greater shared insight on this acceptance could confer to a more collective stance on how workers handle this pain and physical strain.

Conclusive remarks

It is apparent that many workers experience a high frequency and intensity of pain. As earlier studies have shown, it seems that they perceive themselves as being mainly responsible for this situation, however not many pose solutions as to how they could alternatively handle work to reduce physical strain in work.

A fair share of workers, have negative expectations towards their colleagues' reception of alternative practices in relation to handling physical strain and pain, which is likely to keep them from acting. At least in regard to the topics concerned in our questions. On the other hand, an equal share has positive expectations towards the reception of such agency, and would therefore be more likely to act in accordance to what they perceive as the proper way of handling pain and strain. At the same time, many workers report a very positive attitude towards the proposed forms of agency, which points to a potential within the gang. The very high degree of discrepancy, between workers' expectations to their colleagues and their own attitudes, point to a potential for increased collegiate solidarity through a more widespread acknowledgement of the common conditions of pain and physical strain in work that so many construction workers share. This does however, far from mean that physical strain and pain in the construction industry will be solved through more collegiate action among workers as this is a very complex space of power relations, made up from the workers reproduction of masculine qualities, employers requirements of fast production, and the handling of legislation in the area as well as use of technical assistive devices.

So is the gang an arena for worker oppression and exploration? In some ways yes; we show that workers do have negative expectancies towards their colleagues, and earlier research has shown that this leads to a number of problematic effects as described in the introductory parts of the contribution. However at the same time the gang seems to be a potential arena for collegiate solidarity in handling this problematic area of work, a potential which at the moment seems to be an untapped source for agency.

The discrepancy we see between worker's expectancies to their colleagues and their own presentation of values in these regards are not very well captured by our theoretical framework which is something to work on.

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