

Making Participation Work in the New Economy
Final Report to RAC, WSIB

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Abstract:

The findings from this study are from a survey of 888 worker health and safety representatives and 51 follow-up interviews. The survey asked representatives to report on the amount of time that they spent engaging in different activities such meetings and inspections, the number of times that they attempted specific types of changes in working conditions, and the outcomes of those efforts. The interviews probed for more detailed accounts of representatives activities, strategies and tactics, and outcomes. The findings indicate that representatives varied significantly in the total amount of time spent on representation and the distribution of time spent on different activities. Using cluster analysis, we determined that worker representatives who distributed their time across a broader number of activities and those who spent more time on engaging workers and managers, reported significantly more attempts to make changes in their workplaces overall and in terms of a range of specific types of changes, both large-scale/high cost (major new ventilation system) and small scale /low cost (housekeeping). These representatives, which we refer to as *knowledge activists* because of their greater involvement in research and education, also reported significantly more positive impact overall and greater success in some specific change efforts. Several factors were examined as possible explanations for the different overall levels of success by representatives.

Making Participation Work in the New Economy

The challenges of the worker occupational health and safety representative have never been easy. There is an enormous amount to know about the different types of hazards in the workplace, the various health problems that people develop in work situations and the myriad of corporate and state regulations and policies governing workplace health and safety. There are also the challenges of operating in a joint committee context where final decision-making power is nested in management's hands and persuasion is often the central means of getting significant improvements in health and safety conditions. And then there are the demands of communicating and dealing with individual workers, supervisors and managers and their often conflicting interests, personalities and concerns.

While the contributions of joint health and safety committees and worker representatives have been recognized in many studies on the effectiveness of joint health and safety committees over the years (Lewchuk, Robb and Walters, 1996; Reilly, Paci and Holl, 1995; Tuohy and Simard, 1993; D. Walters, 1996a), relatively little is known about how representatives do their work, whether there are some strategies and approaches that work better than others, and whether different strategies and approaches work in different kinds and sizes of workplaces. Much of the research on committee impact has been focused on the characteristics of the committee such as size and meeting frequency and structure (Eaton and Nocerino, 2000; Shannon et al., 1991; Morse et. al., 2013; Walters, 1996) with very little attempt to assess the knowledge, orientation, and practices of worker representatives.

One key insight that has often been under-emphasized in this literature is the recognition of the political nature of joint committees and worker representation. Some notable exceptions include the early work of Vivienne Walters (1985) who recognized the challenges of worker representation in a research paper which she titled, “The politics of occupational health and safety”. Although she did not look directly at the actual practices of representatives, Walters clearly documented the *political* challenges that worker representatives faced when trying to address health and safety problems and worker concerns. Among others analysts who saw representation as involving a politics and the use of power, there has also been this emphasis on recognizing and identifying the structural barriers to effective worker representation, including such factors as a lack of training for representatives, uncooperative or hostile management, weak state enforcement, the lack of a union and the lack of worker activism more generally (Frick and Walters, 1998; Hall, 1999; D. Walters, 1996; Tuohy and Simard, 1993). More recently, these and other analysts have raised concerns about the power of worker representatives in the context of the decline in labour unions and the increase in precarious employment (Dean, 2010; Hall et al. 2012; Vosko, 2005; Quinlan, 2005), suggesting that the capacity of worker representatives and joint committees to prevent hazardous conditions have been substantially undercut by these developments (Gunningham, 2008; Lewchuk, Clarke and de Wolff, 2008; Weil, 2012).

Although the recognition of structural barriers to effective representation is extremely important, especially in the current context of rising employment insecurity, critical researchers have tended to ignore the capacity of worker representatives to overcome or challenge these barriers through their own agency and the agency of other

representatives, workers and even managers. Along a similar vein, analysts' rarely recognize some of the contradictory political opportunities that have been created within the broader context of structural change in employment and work. To make gains in this direction, research needs to look more closely at the different ways that representatives understand and approach their representative role, trying to understand from the perspective of the representatives themselves how they came to develop their particular orientation and the core set of practices that they use. At the same time, in the context of the new economy, we need to examine the significance of employment insecurity in shaping how representatives affect changes within their workplaces, not just as a deterrent to change but also as a possible impetus towards new strategies and tactics.

Accordingly, the central purpose of this study was to better understand the range of resources, activities, practices and understandings which characterize the political work of different worker representatives and, to examine the links between these differences and impacts on conditions. The end goal is to use these insights to inform strategies for worker representative recruitment, training, and education. Using both survey and qualitative interview data, the four key research questions are:

- 1) Can representatives be distinguished by the kinds of activities and the amount of time devoted to these activities?
- 2) Do these differences in activities reflect different orientations and strategic approaches to the representation role?
- 3) Do these differences in activities and orientations yield different outcomes in terms of the type of issues addressed and the success of those efforts?

- 4) Are these differences in practices and impacts related to characteristics of the employment context, with particular reference to unionization, job security and management orientation to health and safety?

Methodology

The study began with a closed question format survey of worker health and safety representatives across the province in which we asked them about job security, their representation activities, practices and outcomes and, their overall assessments of management commitment to safety and overall health and safety conditions. The survey was distributed and made available on- line and in hard copy. All current representatives in Ontario were eligible. We publicized the study in a myriad of ways using various union and health and safety publications, web sites and e-mail list serves. The survey was also distributed in hard copy form principally through the Ontario Worker's Occupational Health and Safety Centre (WHSC) via their representative certification and other training programs.¹ Just under 1200 surveys were completed in total, 542 of which were completed in the hard copy format. However, three hundred and nine respondents were determined to be management, health and safety professionals, or retired worker representatives leaving us with N=888 valid worker representative surveys for the analysis. The principal statistical methods were multiple regression and cluster analysis.

The second stage of the study involved open-ended interviews aimed at gaining more details from representatives on their activities, their strategies and tactics and their

¹ The Workers Health and Safety Centre is a health and safety training centre in Ontario. www.whsc.on.ca

outcomes. Our original sampling plan was to select representatives (N=50) seeking a range of levels of activity and success as reported in the survey within both unionized (N=25) and non-unionized (N=25) workplaces. Three sub-sample groups were created for selection within the unionized and non-unionized representatives: 1) active and successful with the criteria being that the representatives reported attempts and some success on at least five different types of hazard issues; 2) active and unsuccessful, with the criteria being that the representative reported activity in at least five areas but little or no success; and 3) inactive, with the criterion being that the representatives reported little or no attempts. For the unionized representatives, respondents were randomly selected from the three lists with the initial intention being to over sample the successful representatives on a 3:1 ratio. However, since relatively few non-unionized representatives consented to the interview, we contacted all the non-union representatives who had consented to the interview, only three of which were active and successful. We accordingly decided to alter our sampling of the unionized representatives with a more balanced number from all three groups within the unionized workforce. In the final analysis, we had 18 active successful representatives, 13 active and less successful representatives, and 21 inactive representatives. The interviews were transcribed, coded and analyzed using NVivo, a commonly used qualitative analysis program.

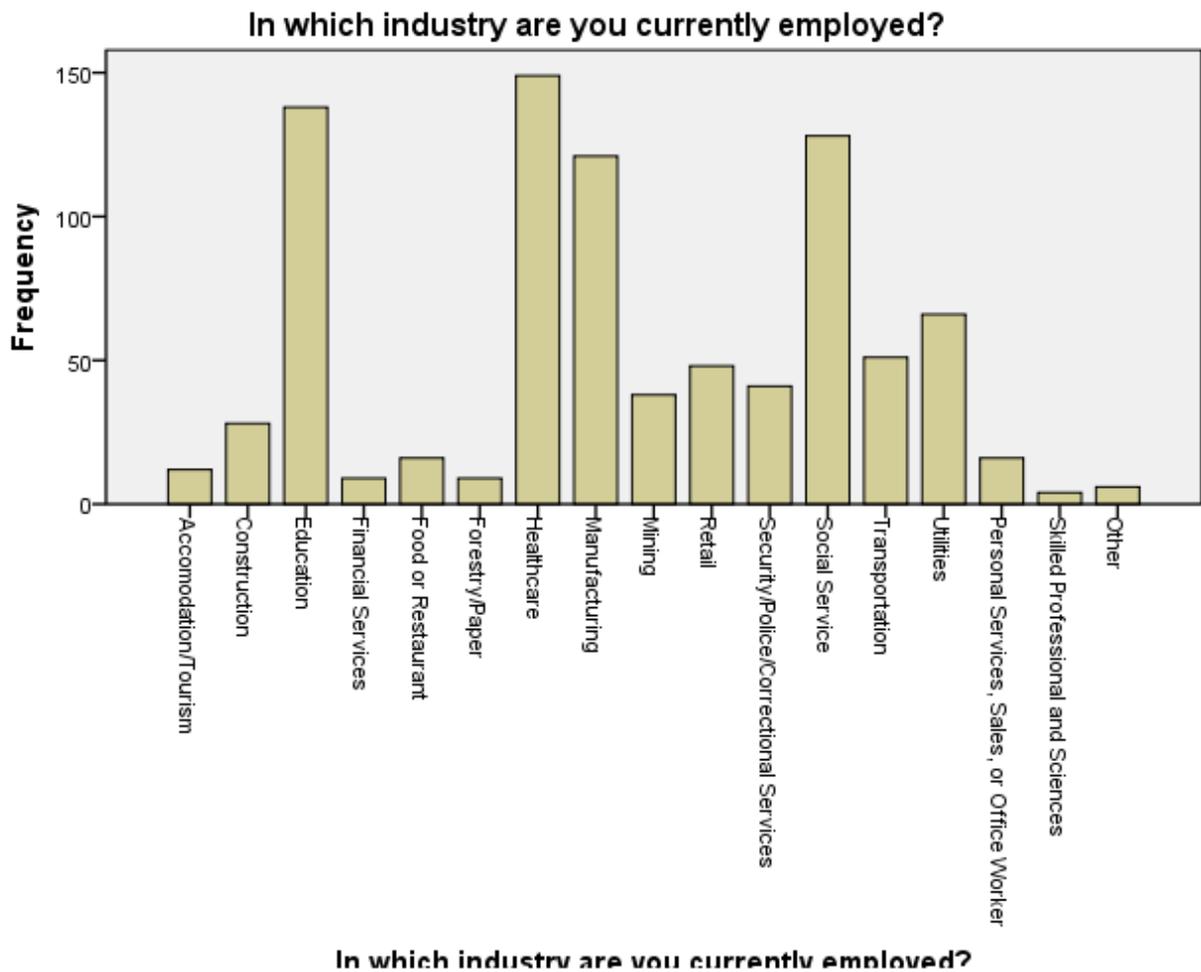
The findings are presented in two main sections. First, we provide a descriptive overview of the survey results and interview data, identifying the key distinguishing characteristics of the sample which we examine later in the analysis. Second, we present the results of our analysis which address the four research questions as outlined above. We end with a conclusion which considers the implications and limitations of the study and, next steps.

I. Descriptive Overview

A. Characteristics of the Survey Sample:

The survey received responses from a wide range of different industry sectors and occupations, crossing blue collar and white collar as well as the private and public sector (See Chart 1). The gender distribution was also fairly well split with 57% male representatives and 43% females. As expected, gender was closely tied to industry with women being more prominent in health, education and retail, and men more dominant in construction, mining, manufacturing, and transportation.

Chart 1: Industry Distribution



Although not unexpected, the large majority of the responses were from unionized representatives (88%). Nevertheless, we still had a sufficient number (N=100) of non-union representatives to do basic comparisons of their responses. The survey sample was also quite varied in terms of firm size with good representation from small, medium and large sized firms in terms of the number of workers (see Table 1).

Table 1: Firm Size

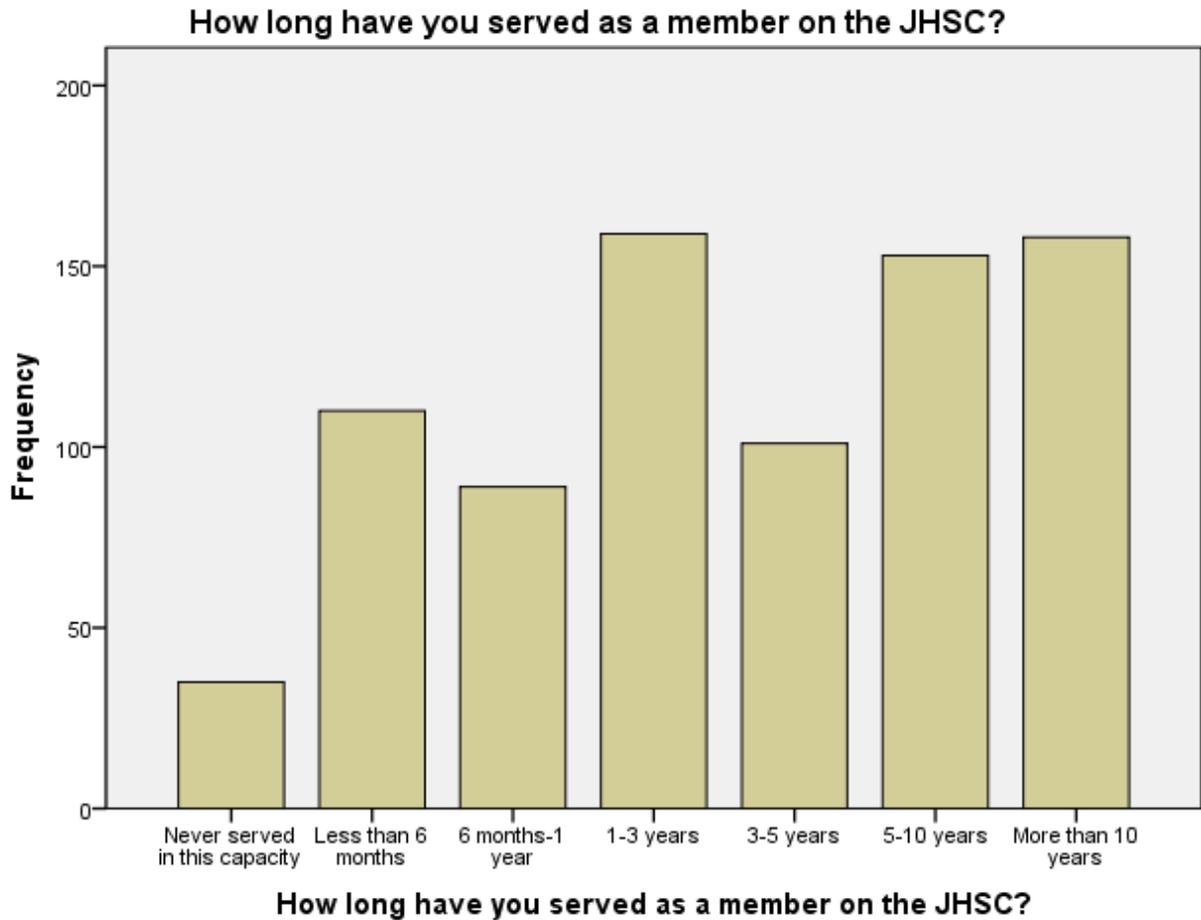
<i>Number of Workers</i>	<i>% of Sample</i>
1-20	12%
21-50	19%
51-100	15%
101-500	32%
501+	23%

Along with firm size and unionization, we asked two questions aimed at assessing the level of employment security in the workplace. First, we asked for an estimate of the proportion of workers who were temporary employees on limited term contracts or through a temporary agency. Second, we asked the representative about their level of concern regarding the prospect of layoffs in the workplace. With respect to temporary workers, the majority of the firms (60%) had less than 10% of their workforce on average, whereas only a small minority (7%) had more than 50% temporary workers. The level of concern over layoffs was somewhat more varied with 25% of representatives reporting that they were “extremely or very concerned” and 19% reporting “some concern”. However, the majority again (55%) expressed little or no concern about job security.

There was a good range of employment seniority among the representatives themselves, with a range of 1 to 40 years, a mean of 9 ½ years and a median of 9 years. With respect to the periods of time serving in the worker representative or co-chair positions – there was again considerable variability as seen in Chart 2. Co-chairs were over-represented in

the sample at 38% of the representative surveyed. Nine per cent of the representatives reported that they did not have a joint committee in their workplace. Interestingly enough, the proportion of representatives elected by the workers (41%) was about split with the union appointed representatives (39%).

Chart 2: Length of Time as Representative



The amount of paid and unpaid time devoted to representation duties per week was also examined. As Table 2 indicates, close to one third of the representatives were spending less than one hour per week paid time and less than one hour per week unpaid time on representation. While some of these representatives balance a low level of hours in the paid category with higher levels of unpaid hours, half of these representatives (16% of the total) were spending less than one hour in both paid and unpaid time per week. On the whole, workers who spend more paid time tended to spend more unpaid time as well

($r=0.40$). The amount of paid hours spent on representation was unrelated to unionization ($r=0.07$) but unpaid hours were significantly correlated ($r=0.123$, $p<.01$). The number of employees ($r=0.182$ $p<.01$ and the position of the representative (i.e. co-chair, $r=0.153$, $p<.01$) were also significantly correlated with paid hours but, were less related to unpaid hours. Given the size of these correlations, it is clear that other factors are shaping the amount of time spent by representatives which we will argue later relates to the orientation of the worker representatives *and* management.

Table 2: Paid and Unpaid Representation Time per Week

	<i>Paid</i>	<i>Unpaid</i>
<i>Less than One Hour per week</i>	34.1%	34.7%
<i>One to Five Hours per week</i>	43.6%	46.9%
<i>Six to Ten Hours per week</i>	7.1%	12.6%
<i>Plus Ten Hours per week</i>	15.1%	5.8%

Representatives were also asked about the amount of time devoted to nine specific kinds of activities measured in terms of hours per week, month or year (see Table 3). This particular configuration of activities was designed to distinguish representatives according to whether they devoted more or less time in absolute and/or proportional terms to certain kinds of activities over others. We will examine this question later through the use of cluster analysis but, at this point, it is interesting to note that the distribution is fairly consistent across most activities, with the largest chunk of representatives falling in around 1-4 hours per month, with over a half of the representatives devoting on average 1-4 hours per month to committee preparation (59.9%) and attendance (62.2%) and to inspections and investigations attending (53.3%) and somewhat less than half of the representatives tending to spend 1-4 hours per month on dealing with workers (43%) and managers (43.9%), writing and reviewing reports and other written materials (47.1%), doing research (40%), and building and organizing worker support. Representatives tend to spend less time on their own training and on

specific safety training of other workers, with 42% spending no time at all training workers and 45% spending less than one hour a month with their own training.

Although not often defined as a formal requirement of representation, it is also interesting that a significant proportion of representatives were involved in doing their own research and building and organizing worker support for health and safety. As will become clearer later, from the perspective of our model of effective representation, it is especially significant to note that close to one quarter of the representatives (23%) were spending two or more hours per week searching for information and doing research. At the same time, it is important to also note that significant proportions of representatives, around one quarter of the sample in each activity area were spending very little time, that is, under one hour per month, attending committees, writing and reading reports, doing inspections, or dealing with workers and managers on specific issues. This seems to suggest, in combination with the general estimates of total time spent on health and safety (Table 2), that a substantial proportion of the worker representatives are quite inactive.

Table 3: Time Distribution of Representatives' Specific Activities

<i>Type of Activity</i>	<i>Amount of Time Spent on Average</i>				
	<i>None</i>	<i>Less than 1 Hr. per mth.</i>	<i>1-4 Hrs. per mth.</i>	<i>2-4 Hrs. per week</i>	<i>5+ Hrs. per week</i>
Joint Committee Meetings 100%	3.1	17	62.2	12.5	5.3
Preparation for Meetings	7.1	21.5	59.9	8.6	3
Inspections/Investigations	6.6	17.7	53.3	14.4	8
Writing/Reviewing Reports	14	23.1	47.1	9	6.7
Interacting with Workers	5.5	20.4	43	19	12
Interactions with Managers	7.7	21.3	43.9	17.2	10.1
Training for Self	19.8	45	25.8	7.4	1.8
Training Workers	42	28.6	20.9	5.4	3.1

Research/Web Searches	11.4	23.9	40	17	6
Building/Organizing Workers	21.7	26.6	36.4	8.8	6.5

To get another measure of activity level among representatives but, also with reference to impact, we asked representatives to report on the number of times they had attempted to resolve eleven specific types of hazardous conditions or issues in the workplace over the last couple of years and, how often they were successful in getting the problems resolved. These activities were designed to distinguish relatively high cost interventions (e.g. changes to ventilation systems) from lower cost interventions such as housekeeping with the expectation that some representatives would be more active in the high cost intervention areas. As Table 4 shows, certain types of changes were more common than others, with particular reference to basic housekeeping and purchasing new personal protective equipment (PPE), although even in these categories, there were a substantial number who reported never having intervened to achieve a change of this type (20% and 28% respectively). On the other hand, a good proportion of the representatives had never been involved in trying to alter workloads (56%), improve ventilation (50%), or substitute a safer product (42%). With respect to the other areas of attempted change, there was a consistent proportion of around one third of the representatives who had never engaged in the change effort, while close to one quarter of the representatives reported multiple efforts. These tended to be the same group of representatives – that is, some were involved in making change attempts across a broad spectrum of issues while others were active in very few change efforts. This again underscores the previous point that some representatives were much more active than others. However, it is important to note that although the correlation between the total time devoted to health and safety and the number of change attempts was quite strong ($r=.323$ $p<001$), it is also clear from this result that the relationship was not one to one. It is also worth noting that the relationship between time and the number of total change attempts was somewhat stronger with paid time ($r=.276$) than with unpaid time ($r=.206$).

Table 4: Frequencies of Attempts to Address Hazardous Conditions

<i>Type of Change Effort</i>	<i>Number of Attempts</i>				
	Never/NR	Once	Twice	Three XS	Four + Times
Substituting Safer Product 100%	42.3	16.9	14.4	6.7	19.7
Reorganizing Work Process 100%	33.5	20.7	13.9	7.3	24.6
Replacing Unsafe Machinery 100%	31.5	17.0	17.5	7.0	27.0
Altering Workload 100%	55.8	11.2	6.4	4.0	22.6
Modifying Ventilation 100%	48.9	21.6	10.4	4.2	14.9
Redesigning Work Station 100%	32.8	23.8	14.9	6.7	21.8
Purchasing New/Better PPE 100%	28.7	14.4	14.4	6.8	35.8
More Safety Training 100%	35.5	18.7	15.1	7.0	23.7
Violence Reduction 100%	37.5	20.3	11.5	6.7	24.0
Harassment Reduction 100%	37.6	23.0	10.2	6.5	22.7
Basic Housekeeping 100%	20.0	10.7	11.7	9.9	47.8

As noted above, representatives were also asked to indicate how often they were successful in gaining a change in the desired condition. Table 5 provides the percentages of representatives

who attempted and reported different levels of success in each area of change. As can be seen, reported success levels were quite high in most areas of change but, two areas in particular stand out where three quarters of the representatives reported that they were often or always successful – replacement of unsafe machinery and tools (73%) and obtaining new personal safety equipment (76%). The two areas that tend to lag in success are also the two areas where representatives are less active, workload changes and ventilation changes.

Table 5: Reported Success in Achieving Changes When Attempted

<i>Type of Change</i>	<i>Reported Levels of Success</i>				
	<i>Never</i>	<i>Rarely</i>	<i>Sometimes</i>	<i>Often/Always</i>	
<i>N</i>					
Substituting Safer Product 491	9.6	12.8	25.3	52.3	100%
Reorganizing Work Process 560	8.9	13.8	29.6	47.7	100%
Replacing Unsafe Machinery 585	3.9	7.2	16.4	72.5	100%
Altering Workload 373	27.6	23.6	21.2	27.6	100%
Modifying Ventilation 428	21.3	12.1	23.6	43.0	100%
Redesigning Work Station 557	12.2	11.0	20.8	56.0	100%
Purchasing New/Better PPE 599	3.2	5.2	15.7	76.0	100%
More Safety Training 542	10.5	10.3	23.4	55.7	100%
Violence Reduction 519	10.4	14.8	24.1	50.7	100%
Harassment Reduction 518	12.5	14.1	25.1	48.3	100%

Basic Housekeeping 678	5.6	11.7	29.1	53.7	100%
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In an attempt to determine whether specific activity levels, attempts and successes were related to overall perceived conditions and impact, representatives were asked at the end of the survey to report on their assessment of their current health and safety conditions and what their estimated impact had been in improving conditions. With respect to health and safety conditions, most representatives assessed their conditions as safe to very safe and healthy to very healthy (see Table 6) but, a significant proportion, 27% and 36% respectively, were less positive. However, very few saw their conditions as very unsafe.

Table 6: Perceived Health and Safety Conditions

	Safety	Health
Very Good	36%	30%
Good	29%	27%
Some Good/Some Poor	27%	36%
Poor	6%	5%
Very Poor	2%	2%

Somewhat reflecting their estimates of safety and health conditions, representatives were less likely to assess their impact on health as being as considerable as their impact on safety (see Table 7). At the same time, it is evident that most representatives see their impacts as being limited in at least some ways across both health and safety. Both of these estimated impacts are correlated with overall time devoted to health and safety ($r=.140$ and $r=.154$, $p<.01$), overall change attempts ($r=.122$ and $r=.117$, $p<.01$) and, most significantly, overall reported success in change attempts ($r=.594$ and $r=.644$, $p<.001$).

Table 7: Overall Perceived Representative Impact

	Safety	Health
None/Little	12.6%	19.4%
Some	40.0%	45.1%
Considerable	47.4%	35.5%

Finally, representatives were asked to provide their assessment of how responsive management was overall to their efforts to protect health and safety. A clear majority (60%) indicated that management was responsive always or often with only 9% indicating that they were never or rarely responsive. Although management responsiveness was closely related to the representatives' general perceived impact on health and safety, there were no significant correlations with reported success levels in making specific changes.

B. Qualitative Interview Sample

Fifty qualitative interviews were conducted yielding close to 100 hours in transcribed tapes providing detailed narratives on what representatives did and how they performed their role in both general terms and in specific circumstances. Interviews were coded using the qualitative analysis program NVivo. Seven broad categories of the interview content were identified within which there were 237 sub-categories or what are referred to in NVivo terms as "nodes". Each node represents particular kinds of statements or narratives which address the different aspects of representation addressed in the interview. The seven major categories of nodes were: 1) Characteristics of the Health and Safety Committee; 2) Management orientation to health and safety; 3) Characteristics of the relationships between representatives, managers and supervisors, and workers; 4) Orientations to the Representative Role; 5) Kinds and Sources of Knowledge; and, 6) Worker Representative Strategies and Tactics.

With respect to representative orientations, strategies and tactics, which has been the key focus of our coding and analysis thus far, the following examples illustrate the kinds of comments that

representatives have tended to say in response to questions about how they achieve changes in their workplace.

Building a positive reputation:

R. Well one is negotiation, trying to be honest trying to maintain an open relationship. Being known that you know when I say there's a problem there is a problem, I'm just not doing a Chicken Little the sky is falling. You know if it's a minor issue we say it's a minor issue, if we say it's a major issue it's a major issue. And having that type of work ethic and demeanor with the employers representatives I think does help you (I: okay) when you go into those types of negotiations or trying to come up with a compromise or working solution. (R#1106263)

R: Well exactly. You know and behave professionally and, if you come in knowledgeable you will command a lot more respect. And it's the same even with the MOL. I've never dealt with this inspector and I've only ever dealt with one other one. And umm you know we were talking about the certification process and what the delays are and some of the other issues and. Even the windows I said "well if there's no standard of a window in a jail, who decides?" And he goes "oh I think they sit around a coffee table and just do blah blah blah." And I'm like "really?" (R#0062)

R. Oh it is. And again for my position and my seniority is as I do carry a good chunk of clout which helps me get my stuff done. [I: Is that because they know you personally or...?] No it's personality and reputation and just winning some of those big battles before too, right. Like when you win a big battle with the Ministry and they get slapped pretty good then the next time you say, hey I'm going to call the Ministry of Labour and they say, okay what do you want. (R#1081750)

Fostering a 'give and take' Relationship with Management

R: So you can foster a little working relationship, right, okay well you give me this and I won't report you here but you're going to fix that too right, oh yeah we'll get it. Because we can't we don't have the ability to punitively hurt the company but the Ministries do (R#1081750).

Soft vs. Hard Approach to Management Relations/Being assertive but not hostile

R: I'm not there beating the table, I'm I work in a calm concerted and firm sort of approach to getting what needs to be done. Um I don't know how to, universities are different than say a steel mill. Um the steel mill workers are a lot more aggressive typically, from what I've been told and I'm told by them actually. [I. Yes I believe all the stories]. Well I'm sure you have and you know I've heard quite a few of them at various courses I've taken over the last while and conferences and such, but. Um our approach is a little bit more, I don't like the word collegial but um that doesn't always apply, but in terms of concept it we try to work with them as opposed to beating them over the head. (R#285022)

R: Um just be assertive. You know assertive doesn't mean miserable and it doesn't mean beating the table it means sticking to your guns, knowing your um where you stand in terms of the law and the Act. Um and don't brow beat people with it, you know because all that does its turn people off and then you shut down the communication. Again it's people skills I think to a certain extent. (R#1658296)

R: Uh it's a it definitely takes some time but it's also mutual respect. Uh um and for a younger person sometimes they have an issue of not getting any type of respect, just based on their age. So it again it's a bit of a give and a take, right. But you definitely have to form a working relationship because if you're knocking heads all the time you're not going to get anything done.. [I. Any other ways that you can build a better relationship with management?] Oh that's an easy one. You make them believe it's their idea. [I. How do you do that?] Ah that's where you kind of use a little bit of psychological stuff on them. [laughs] It's a bit of a practiced art but I find it works very well sometimes. (R#1081750)

Building a relationship with MOL/Judicious use of them

R: Well depending upon what it is, the importance of it, if it doesn't go anywhere then I know what I have to do. And I'll call the Ministry of Labour. [I. How frequent does that happen] R: Oh I don't know actually probably about, I would say maybe three times and they came in once. [I: Was that a good outcome?] R: Yes it was actually for us, it was a guarding issue. It doesn't help either uh I kind of got to know these uh inspectors around this area quite well too. [I: And does that, you think that's an important thing as well?] Oh big time. Because you know like it's like sugar and vinegar. It's like if you're good with these guys to work with them a little bit they'll sometimes back you up on issues and kind of help you and because I've seen it the other way. If you treat these guys the

wrong way, like otherwise get on their case or whatever, it's not a good sight.
(R#10773800)

[I. Do you go the ministry of labour?] R. All the time. And that comes down to the fact that a lot of the issues are capital costs. Which they'll put in, they can put in like a business case study, but sometimes things don't get done ...so what'll end up happening until there's an MOL complaint or a work refusal or something done to kick it off um sometimes things don't get done. A perfect example is the [worksite name] years ago, there uh was no air cooling system or proper air there was an air tempering system. And um it wasn't until a bunch of MOL complaints and orders were written that finally [the employer] came forward with the capital cost to do it. Um so that can be kind of a problem. (R#1106263)

Shielding/Standing up for your workers

[I: How do you define your role as a Health and Safety Representative?] Uh, much like a union steward I guess, representing the people I work for...More than anything it's, uh uh a lot of people I work with have a lot to say but they're afraid to approach management.
[I: Okay and so you do that on their behalf?] R: Yes I do. (R#637629)

R: So they, it's a bit different for me I'm one of the more senior people here now. And uh we've been through a lot over those years so you kind of see the ins and the outs and I kind of see what's going on right now is the company has control over their pay rates and their progressions, so if they're deemed a shit disturber or somebody that doesn't want to do anything, they'll be held back monetarily. [I: Oh I see. So workers are reluctant to raise concerns?] R: Oh now, huge. (I: really) Um we've operated under our well our old company [name of company] that there would be no discipline on accidents. Uh these guys believe that the worker is to blame and there is no hazards out there, it's all the workers fault. So we're working under a behaviour based safety system. Which is quite archaic, to say the least. We continually bring it up in our joint committee. And most of the time is, we as the reps act as a shield for the worker. So they'll come to us and we'll take the concern to management and not name names. So and they always demand names and we just tell them, we don't have to tell you but the concern. So there's a lot of that that goes on. (R#1081750)

Listening to and communicating with workers

R: Well I think the most crucial thing, quite truthfully, is listening to the workers first and then management, and then when there's a concern we deal with it right away. Because I find that a lot of times if you're not communicating to the workers about what they have to do and what their responsibilities are, then things happen. And I believe in communicating with the workers all the time, asking them questions, helping them out in any way I can, and keeping on top of stuff.[I: And do they approach you fairly frequently?] R: Yes. I make it very clear that I'm available, basically I joke with them and I say I'm available 24/7. I have people call me at home. (R#1077380)

Getting Educated/Having knowledge

R: In all honesty, I believe in getting educated and your knowledge is really really important. Because I found through my experience that a lot of management are not educated when it comes to health and safety issues. And I dedicated my time, I don't mind going to courses I don't mind going all the way to or I don't mind going to get retrained or whatever, on these courses to keep me updated. And If anything comes up new for example nine times out of ten I have it way before the company even knows about it. But I'm always telling them, be prepared this is coming, you know those types of things. Not trying to pick on management, but sometimes stories get changed and when I get there and I start looking at the situation and I start realizing that whoa that's not really how it happened. And the other good thing about is I can run the equipment at this workplace, I pretty well run all of it. I've been there I was there for thirty two years, and no sweat. So because I know all the equipment they can't really, you know, I know what to look for let's just put it that way. (R#1077380)

R: We have had that in our training that we do for the members of the Committee, like we follow through a lot of that. So we've done risk assessment training, inspections of critical injuries, ergonomics, safe lifting, slips and falls. The Committee gets the training on that like Committee members we get that, it's in our Terms of Reference. So we're constantly upgrading that way and then we use that information when we do our planning of the Rep training in the Fall. And we also invite people in, we invited Ministry of Labour Inspectors to come in and explain inspections, what they're looking for you know basic things like that. We've also had the Fire Marshalls come in and talk about fire ratings and stuff like that. Last year for training we had the Electrical Association come in and talk about wiring and proper use of extension cords et cetera. (R#994841)

Doing Research

[I: Do you ever do your own research on internet or go to the library?] R: Well that, that's, that's my primary [time], uh is doing my own research. That's primarily how I (I. How much time would you say you spend doing that kind of thing?) I'd say over, at least over ten hours a week. [I: What kind of things do you tend to be looking for in terms of information?] Well research, research in um, see it's one thing to know how to, you know, know the legislation and how to administer it, but you also want uh, legal decisions, because you want to, you want to know how this will actually play out, you know is it worth your while in some cases, you know all depending on the incidents. I'll search, search uh, you know, legal decisions and sometimes I'll just uh surf and just, just look... Say I've got exposure limits, so I'll check, I'll check like exposure limits when they, when the limits change, you know when they're updated. I'll go an uh the Ministry of Labour website, uh, maybe five or six times a week, just to see what's new. (R#292023)

R: Okay, well I'm Committee Chair for the workers and the Co-worker Chair. Um so we are constantly studying, well not studying, but we I make sure we're reading through whatever new laws or bills that are coming down that affect health and safety. So we're constantly looking at what other boards are doing, what other communities are doing how they're integrating the new laws and uh ensuring the board is also keeping at par with what is expected (I: right) from the government. I speak like uh Safe Schools Act, which really doesn't fall under the Occupational Health and Safety Act yet it does in that you have children of violence acting out in schools. So I made sure that we studied and understood Bill 157 and that training was put in place for due diligence, for Principals to understand all these new laws coming down and the changes to the Occupational Health and Safety Act with 168. And things that they didn't understand were under their scope, so uh what else am I looking for? Ha I get off on a tangent it's a good thing you're recording. (R#994841)

R. So for three months guess what I did? I put together the confined space program. Sometimes you're best not to ask for certain things. [I. Did you go about putting that together, what did you do, where did you get the information?] You know the best information I found and it wasn't with Industry I was surprised, in terms of research how to lay it out and format one. It was actually the colleges and universities on the internet. They had the best layout of the confined space program and in the procedures um and that was probably the best research, I was surprised. I was actually thought Industry would be a little better and in terms of, I guess because of documentation and stuff like

that, it was the universities and colleges that had the better layouts or templates shall I say. So I took all the uh went through about twenty or thirty of them and took what was the best out of all of them and then because I'm an instructor, I was able to break it down into certain jobs and certain areas. Because I knew the work that had to be done on site. (R#1106263)

Making the Case

R: Get your facts right. It's important that when you want to get something done like a change or something of that nature. You got to do a little research and the computers are great, and you got to be able to make a presentation to management about why you want these changes, what the law say what the regulations say and all that kind of stuff. I learned that a long time ago as an instructor through the Workers Health and Safety Centre and you got to be able to prepare yourself and have the facts right. And usually you don't get it all the time, but if the laws backing it up there's not much they can say about it, and that's what I rely on. (R#1077380)

Using the Law

R: You, again you bring up the law, and you know, and also potential good, you know because you have to say, for were protecting our workers, were protecting our patients, um and then you have to bring the other side where you know if you don't provide the training records, they find out the people haven't been trained and you're, you've been made aware of it, and your legally culpable for it you're going to get written up, so they have to see the benefits and the repercussions if they don't do it (I: okay) and then brought in uh you know infection prevention and control, very adamant that yes you have to do this (I: right) and then infection prevention and control actually went on and said you know it shouldn't just be a one day training it should be multiple days (R#292023)

Educating Managers

R: Education is huge. Educating my employer I would say is thirty percent of the time I spend trying to. Read the Act read what it says, read what the standard says, look you know if you don't believe me that's fine I'm not expecting you to, but call the Ministry of Labour ask an inspector what they think...Part of that problem becomes when you're speaking about an issue or about a topic most of the time uh most of the time, some of the time they'll sit there and go, well why do we why yeah I understand your point but why do we have do that? It's the law. Well what do you mean it's the law? And you have to

pull the book out and read the Act and try to tell them how you're interpreting this and why it's this, and the way the Ministry will go and sometimes even pull out the court fines bulletins from the Ministry of Labour and slap them on the table and said here. This is what others have done and this is what they've been caught with and this is who went to jail, and that usually causes them sit up a little bit quicker. (R#641760)

Staying Grounded

It doesn't take long for people to turn on you if it looks like you're sounding like a management person or something of that nature. Um you got to keep your feet on the ground eh. Don't get yourself above them. I find that as long as I keep my head thinking I'm still a worker I'm fine. (R#1077380)

People Skills/Reading People

R: Well yeah I could say I learned some of that type of thing from the Workers' Health and Safety Centre when I went through instructor training. (I: uh huh) and there's an area in there that we dealt with basically how to deal with people and how to ask pertinent questions and that type of thing and how to work with them, which was really excellent, so I learned from that, yes. [I: Okay so really dealing with the psychology of them.] yeah it's true management you have to do the same thing. You have to learn to know how they're going to deal with issues. And you're right you almost got to be a shrink in some ways. And figure out how to get things done doing it their way but you get things done anyhow. (I: Do you have an example?) I don't know how to describe it, I just figure out how they tick, and then from that point on that's how we'll work with them. It also depends on who's who right. Some people can get, as an example eh, some people you can get really testy with them and kind of get into a nasty argument. Other people you can't do that, you got to be cool calm take it easy yes sir no sir, that type of thing. Well you figure that out, you still get the same result it's just there's different ways you learn how to deal with them. (R#1077380)

R. And uh the second piece is know your players, know who you're getting involved with. You know what I mean it's like know who you can talk to know who you can't uh who's your friend in management who's not, who you need to be weary of you know. Because like I said I recently all our admin team all our admin people we each had individual our own manager in a different department and now we're all under one manager who knows nothing about what we do. So it's been really interesting how that's been playing out so that's why I'm saying my other manager like I love her and we still

get along great but she's no longer my boss now. So the other one is the one that has to approve my time off and I'm very very leery about asking her to go to these networking meetings because even though it's been previously approved it doesn't mean that she's going to approve it....Over time, I've had and the different roles that I've played I've learned how to play ball. I've learned that if I have the right research to back me up and the facts to you know and um my due diligence piece, you know backing up what I have to say uh then that's the way I got to roll. (R#635724)

R. Well you know what some things come up and I'll say you know what I'll go and ask or explain it. See that's the other thing, sometimes you got to leave the trail of bread crumbs to get them to follow the path, to understand why you are asking. Not because you can, not because you're spoiled and not because you want, there's a reason. And sometimes when what happens is our, the management side of the health and safety committee will go "yeah they want that just because of blah blah blah." (So then I go up and go "no actually this is why and this is what happened and this is why I'm asking." And when you explain it and they understand why, it's not just a wand, it's a need and then they understand what the background is. A lot of times they're more receptive and sometimes they say "no we can't do that, or no we don't have the budget money or whatever." And okay you know what we'll put that on the back burner and we'll ask later, so we'll ask another time, so we'll try it again or okay fine. Sometimes you just have to accept that the answer is no. (R#0062)

Another key aspect of the representatives' narrative was the kinds of knowledge that they identified or used when talking about their approaches. What follows here are some key illustrations of what they said in this area.

Institutional Knowledge

I: Yes, yeah. I want to ask you, you said about having an open mind, open to what? What kinds of things should a new worker health and safety representative have an open mind about?

R: Well you can't have preconceived notions, and you just can't going running saying okay the sky is falling. You have to think it out what's going to be your plan of attack. Um you know sometimes it's better to even go talk to somebody you know senior worker that's done it for years, okay why did we do it this way? You know what happened in the past that, you know what I mean? Why did we change this policy and their trying to reinvent the wheel twenty years later. And sometimes you have to, and a lot of people

forget about those discussions, there was a reason why things changed a certain way. Um you know.

I: And so do you go back to those people who were around then or do you go back to old minutes from meetings?

R: Well you can um like I said now I'm a senior employee. And I got twenty years in, you know, and the guys with thirty years now are starting to retire. So they remember you know I had a discussion couple weeks ago with one of the older guys, okay why did we do it like, okay well that was before my time, well this is what happened somebody got stabbed. Oh okay that's why we remove all the inmates from the living area and then search, so they're not there when the search is going on. Makes sense, right, but the newer staff didn't know that. (R#1106263)

Social Skills/Knowledge

R: Well yeah I could say I learned some of that type of thing from the Workers Health and Safety Centre when I went through instructor training. (I: uh huh) and there's an area in there that we dealt with basically how to deal with people and how to ask pertinent questions and that type of thing and how to work with them, which was really excellent, so I learned from that, yes. (R#1077380)

Negotiating Skills

R.: You know pointing that out. And uh the second piece is know your players, know who you're getting involved with. You know what I mean it's like know who you can talk to know who you can't uh who's your friend in management who's not, who you need to be wary of you know. Because like I said I recently all our admin team all our admin people we each had individual our own manager in a different department and now we're all under one manager who knows nothing about what we do. So it's been really interesting how that's been playing out so that's why I'm saying my other manager like I love her and we still get along great but she's no longer my boss now. So the other one is the one that has to approve my time off and I'm very very leery about asking her to go to these networking meetings because even though it's been previously approved it doesn't mean that she's going to approve it.

I: Okay. So that's very interesting I wonder are uh would you say that your ability to sort of figure out how to read people and deal with people in a different kind of way and understand the politics of the place, is that just something you develop on your own or do

you think that do you think it would you've been getting you got some training through certification that helped with that or do you think that?

R: No no this is totally on my own.

I: So you just sort of developed it?

R: Yep over time and with the different jobs that I've had and the different roles that I've played I've learned how to play ball. I've learned that if I have the right research to back me up and the facts to you know and um my due diligence piece, you know backing up what I have to say uh then that's the way I got to roll. (R#635724)

Legal Knowledge

R: Well first of all you know as far as preparation and that you know you make sure that you're looking in the Act of course to see what sort of legislation is there that can back you up.

I: Right. And how often is that that there is something specifically there that backs you up?

R: Well, usually there's quite a bit of different things in the Act that you know you can use to your advantage or you can use to point out you know that hey this is a problem and this is why it's a problem and all of that. Um yeah research is the key but uh you know preparation you know you go and talk to employees about what it is they're doing a lot of times you try to get feedback from them as far as you know how they think that things could be made better or safer, and you brings these in you know. (R#0252)

Technical/Process Knowledge

R. Knowledge of the and that again that all comes from education and training and all the good things that you need to continually do to stay up to speed. In our world, in my world and here it's even a little bit stranger again because being a steel mill we fall under the industrial regulations, we fall under the mining regulations, we have nine of the eleven designated substances in the province present here, so we have different committees who are involved with everything from cyanide to it just goes on and on and on. So here there's a huge requirement it's not that we're working in a bakery where we got some bread and some dough and a few machines. It's a very complex organization as far as safety wise, the various things that you need to be responsible and educated on. (R#940924)

Hazard Related Knowledge

R: Yeah I think for me it is one, to educated myself on the types of activities that go on in the area that I'm responsible for. Uh in some areas for example I look after the esthetician area, is one of the areas so I have to have a better idea of what kinds of chemicals they use and what the requirements are uh for labeling that sort of thing, so that was something different then in a regular classroom. So I find I have to a lot of educating in order to keep myself up to date on the different types of areas in my inspection area. And really keep my eyes and ears open in a different way. Like I find I have to look up, look down, look sideways, look at things from where people are sitting, just really have a heightened awareness. And then think about what work is being done there from the health and safety point of view. I think about how people can exit, I think about how people can move around efficiently if there was an emergency and what types of emergencies might happen in that particular area (R#760497)

In preparation for understanding the analysis that follows in the next section, it is also useful to get some illustration of how different representatives understand their role as representatives. When asked the question, some common types of responses were as follows:

Expert Role

R: Um, I define it as I'm an advocate for improved safety conditions for the staff. Um also, I uh policy I guess, I've become uh somewhat of a policy expert. Um there's a knowledge problem in our department about health and safety issues. (#R637922)

Broad Prevention Role

R: Uh good question. Um I am specifically focused on any issues that are of concern to the health and safety of the workers in the workplace. And it's my role to bring those forward to management through the Health and Safety Committee and any other channels that we might have. Um I will, I see myself as uh having that heightened awareness and actually actively looking for and seeking out feedback uh information from my colleagues that sort of thing to ensure that I'm covering all the bases (#R760497)

Narrow Enforcement Role

R: Um I would define my role as um a enforcement tool. My job is to enforce the legislation of the land, pretty much, in regards to health and safety in the plant. And um educate um because it's constantly educating our members so between the enforcement and education that pretty much sums up what we do. (R#1109768)

Resolving Worker Complaints/Concerns with management

R: Um just um bring any health and safety concerns forward to the management and sit down with them and um represent the worker that's brought that concern forth and get a resolve (R#1394909)

Prevention not Dispute Resolution

I think what I told them uh I'm just trying to recall now that uh because I sat them all down uh we had morning coffee there one time and I explained to them what their role on the committee was and it was um they were there to represent the workers and were not there to uh, like in accident investigations, we're not there to point blame. We're there to uh to look at ways we can prevent an accident in the future, that's the big difference between uh the health and safety rep and a steward. If there's blame to be assessed you know what that's the job of the steward to represent the workers, we're only there in discussions uh how do we prevent this accident in the future. That's a big point I made to them. (R#1381032)

Changing worker behaviour/culture

Yeah you don't want to bankrupt the company but safety um but you have to make to sure that the place is safe and so whatever they and basically if we get to an agreement a certain process has to be dealt with a certain way and here's the safety procedures we're implementing then the company's done their part to the best of their ability now you have to make the worker use it properly so once step ones done then you got to go to step two and make sure the workers following the policies and procedures. ..You try to make sure that these things are being used. You know so you know you got some older guys you know you got the old culture that dammit I've done it this way for thirty years why do I need this now? You got to get that idea changed. (R#1381470)

Protecting Workers

R: Um yeah um a lot of the associates don't want to report things because they are afraid that they'll be seen as a bad employee, especially new employees. And um we have now implemented a new hire training so within the first two weeks of them being here I have them for five hours. And I teach them on the, I do an ergonomic set up with up them like

all our basic policies and training that they need. And I take them through our reporting and complaint process, and I explain to them it's not a blame game that we want to find out what happened so we can fix it so it doesn't happen again, and it's not used in your reviews or anything else like that. So being able to tell all the new people that are coming in up front has helped. (R#1446615)

And finally, it is also interesting to listen to what representative say about what they need in order to be more effective. The more common type of comments were as follows:

Decision-making Power

R: You know what, and this is why I wanted to be part of this interview with you okay. We're not there yet, health and safety representatives do not have the political power and authority to create the change that they want. They're in a very very bad position, they recognize the hazard, they they are often tremendously passionate about trying to make a better workplace but they do not have the decision making power to make that change. So it's a very very difficult place to be in. And my brother who's in management in another organization, you know he rolls his eyes about people talking about health and safety, and he's a very open minded person. Because it's not so much the message it's the messenger and how he's delivering that message. You know people get tired of other people always identifying problems in the workplace but that's the basic premise of Joint Health and Safety Committee members. So if we're going to succeed there has to be something written to empower the Health and Safety Representative more than what they are. You know they had an opportunity with Bill 160 when they changed the Act to address the psychosocial hazards and so on. So I mean that's good, but we're not there yet and in fact pay attention to the other provinces in Canada. And Worksafe BC seems to do very very well and um you know. Alberta and if you look if you pay attention to what's going on in the industry now you never you don't see much health and safety activities opportunities in Ontario but you see an awful lot of opportunities in BC or Alberta, because I think they're starting to get it. (R#642464)

Better Trained Health and Safety Managers/Supervisors

R: Well it's set up in the uh in the program and the program's set up saying you know we need to have two uh certified worker members one from the uh one from one department and one from another one from the agricultural side and one from the hospitality side and likewise have two managers. Also I like to see all the members of the committee have level one training so I mean that's a certain expense uh well with that which gets me once again to this concept of you know having a designated health and safety coordinator

because what is that? You know it's written there in the legislation but there's no criteria set forth in legislation that what's the training required to be a health and safety coordinator. Which would be really useful if there's a standard set for uh committee members why isn't there a standard set to have as a health and safety coordinator (R#636737).

Management Transparency/cooperation

R: Oh I have to use the Act, yes I have to know it, almost like my Bible. It's crazy because you know I don't figure I should have to fight to that extent. It's there, any testing, we do rodent we have rodent traps outside the building um do I have to be present when he checks to see? It wouldn't hurt me to be present but you know again I had to ask to see the results of the guys sends in the report right. I had to ask to see the results, like it's just everything seems to be a fight. Everything, they want to keep everything management wants to keep everything a secret. Alright, instead of being transparent it's like well we don't have to, if we don't show them than there's not going to be a problem. But if there's not a problem, show us.(I: exactly) So and it's like this is all breaking down, like if they're going to be tearing this building down and we're going to there there is going to be black mold all over the place, I'm assuming. And I'm very curious to see, and it's not going to be in the building because there's a fire wall they're taking it to the firewall, but it's going to be in the air (I: yeah for sure) so if it's in the air are all windows being closed with the air conditioners running for that period of time? (R#1034404)

More Paid Time

R: Yeah because it's it's uh, I mean the, the Act basically speaks on your time, for doing primary functions, which is, and you determine the time. I mean it's uh it's uh like meeting time and inspection time, it takes as long as it takes and usually you have a set time for the meeting, it could be two hours it could be three hours, it could be four hours. Uh prep time is at least one hour, we use, we're supposed to use, use in our committee one and a half, but if we get half an hour we're lucky. With all the other stuff you, you can't just walk into a meeting and be ready for it, like with one hour prep time. You're going to have to do research. You're going to have to spend time to do training um, and lots of it. I mean I've spent, in the past seven years five or six hours in training, probably more because I've been doing WSIB training. (R#292023)

[I. Is there anything that you feel would make your job much easier and much more effective?]
R: Definitely more time...I find it's hard to schedule with the nature of my

full-time job it's really hard to allocate that four hours that I really want to apply to health and safety, doing my assessments. (R#940433)

II. Analysis

In a previous paper (Hall, A., A. Forrest, A. Sears and N. Carlan, “*Making a Difference Knowledge Activism and Worker Representation in Joint OHS Committees*”, *RI/IR*, 2006, vol. 61, no 3, p.408-436), one of the investigators in this study identified three types or forms of representation among interviewed unionized health and safety representatives, namely: technical-legal representation (TL), politically-active representation (PA), and knowledge activists (KA) (see Appendix 1 for Chart outlining the details of each form of representation). One of the objectives of this investigation was to attempt to confirm whether or not these categories could be replicated in a larger survey sample of worker health and safety representatives. The previous study was a qualitative investigation based on interviews of 31 union health and safety representatives, whereas this attempt to confirm the categories is based on quantitative questionnaire data collected from both union and non-union worker representatives. While there are some important differences in the groupings identified in this study, a cluster analysis confirmed that representatives can be distinguished into different groups based on the amount of time that representatives devote to certain representative activities or tasks. We then used both the survey and interview data to examine whether these different clusters could be understood within the same typology, whether the different types of representation were related to different kinds of outcomes or impacts, and whether we could identify any factors which help to explain the development of these different forms of representation.

A. Cluster Analysis of the Survey: Can Representatives be distinguished by their activities?

The method used to categorize the respondents to the survey was the SPSS “Two Step Cluster” analysis procedure as available in SPSS version 11.5.0. The variables used to categorize the respondents were based on the responses to the questions about the amount

of time spent performing eight specific representation tasks. The scale used to quantify the amount of time spent on each task was roughly equivalent to the number of hours per week dedicated to the task. Since the total time available per week to allot to such tasks varied significantly between representatives, it was decided to sum the total time spent and calculate the proportion of time spent rather than the absolute value. This conversion has the effect of standardizing each respondent's task times by representing them as a proportion of the total time spent on Health and Safety activities. Table 8 shows the proportion of total Health & Safety activity time spent on various representation tasks:-

Table 8: Average Proportion of Time Spent on Specific Representation Tasks

Health and Safety representation tasks:	Average percentage of time spent on task
attending JH&SC & other H&S meetings	14.2%
doing inspections , investigating accidents and incidents	13.2%
dealing with workers about problems or issues	12.7%
dealing with managers and supervisors about problems or issues	11.1%
preparing for JH&SC & other H&S meetings	10.2%
doing your own searches for information through the web or libraries or by contacting outside help	10.1%
reviewing or writing reports	8.8%
building and organizing worker support for health and safety	7.4%
getting more training for yourself	7.4%
delivering or providing specific health and safety training to workers	4.2%

Note: Table 7 represents the averages for only the worker representatives who answered the survey (n=888) subtracting those who did not answer the questions regarding time spent on representation tasks (n=31, leaving 858 respondents for the analysis).

The 10 variables describing the proportion of time respondents spent at the various representation tasks (activities) were then entered into the SPSS Two Step Cluster

procedure as continuous variables. Log-likelihood was selected as the means of calculating the distance in the algorithm. Schwarz’s Bayesian Information Criterion (BIC) was specified as the clustering criterion. The maximum branches (per leaf node) was set at 14 and the maximum tree depth (levels) was set at 5 (for a maximum number of 579,195 possible nodes). Three clusters were identified:

Table 9: Two Step Cluster Analysis Results

		n=	% of Combined
Cluster	1	233	27.2%
	2	156	18.2%
	3	468	54.6%
	Combined	857	100.0%
Excluded Cases		31	
Total		888	

Note: The relative numbers of respondents and resultant percentages cannot be generalized to populations outside this survey sample since it is not a representative sample of worker health and safety representatives but rather a volunteer sample.

Table 10 illustrates the differences in the percentage of time spent on the 10 representation tasks for each of the three clusters which were used to identify the 3 clusters (percentages greater than 10% time spent are bolded). The differences formed the basis of the clustering results.

Table 10: Cluster Breakdown of Average Percentage Time at Representation Tasks

Health and Safety representation tasks:	cluster #1	cluster #2	cluster #3
attending JH&SC & other H&S meetings	16.9%	20.6%	10.7%
doing inspections , investigating accidents and incidents	18.8%	13.4%	10.4%
dealing with workers about problems or issues	11.2%	12.9%	13.4%
preparing for JH&SC & other H&S meetings	12.7%	10.3%	9.0%

dealing with managers and supervisors about problems or issues	10.1%	9.7%	12.0%
doing your own searches for information through the web or libraries or by contacting outside help	7.0%	9.2%	12.0%
reviewing or writing reports	12.9%	1.4%	9.3%
getting more training for yourself	6.4%	10.0%	6.9%
building and organizing worker support for health and safety	2.6%	5.1%	10.5%
delivering or providing specific health and safety training to workers	1.4%	4.0%	5.7%

While Table 10 is based on the comparison of the *proportion* of the total time spent at various activities, Table 11 focuses on the *actual* amount of time dedicated to each activity. It was considered that the threshold for spending a meaningful amount of time at any particular activity would be spending one or more hours per week doing that particular task. Table 11 lists the percentage of respondents who reported spending at least one hour per month at the various activities.

Table 11: Percentage of Respondents Who Report Spending 1 or More Hours per Week on Specified Activities

Health and Safety representation tasks:	cluster #1	cluster #2	cluster #3
dealing with workers about problems or issues	27.6%	30.4%	59.7%
dealing with managers and supervisors about problems or issues	20.5%	23.7%	53.8%
doing your own searches for information through the web or libraries or by contacting outside help	11.4%	18.0%	50.5%
doing inspections , investigating accidents and incidents	29.4%	11.7%	29.7%
reviewing or writing reports	20.6%	6.2%	33.2%
building and organizing worker support for health and safety	4.7%	13.4%	41.7%
attending JH&SC & other H&S meetings	16.4%	12.2%	25.2%

preparing for JH&SC & other H&S meetings	12.8%	13.5%	22.5%
getting more training for yourself	3.4%	10.4%	15.8%
delivering or providing specific health and safety training to workers	0.5%	8.7%	18.3%

As the analysis demonstrates, the three clusters differed in the amount of total time that they spent on health and safety representation overall and, most importantly, on the relative amount of time that they spent on each activity. Cluster 1, representing 27% of the sample, spent less time overall than the other two groups and, proportionately, more of their time on doing inspections, writing reports, and preparing for joint committee meetings as compared to the other two groups. Cluster 2, representing 18% of the total number of representatives surveyed, was similar to Cluster 1 in the sense that they too spent proportionately much of their time preparing for meetings but, where they differ from Cluster 1 (and Cluster 3) most noticeably, is the greater amount of time they spend proportionately in meetings and in getting training or education for themselves while, at the same time, relatively little time spent doing inspections and reports. Cluster 3, which represents the largest proportion of the representatives in the survey (55%), was much more distinctive and uniform than the other two groups, spending proportionately much less time on meetings, preparations for meetings, and inspections, and much more time proportionately on addressing worker complaints, interacting with managers outside of meetings, doing independent research, and organizing and building worker support. However, in absolute terms, there is also a clear difference between Cluster 3 and the other two clusters in all of the categories which are statistically significant, with greater proportions of their respondents spending more than 1 hour per week organizing workers, doing information searches, training workers, dealing with workers and management, attending and preparing for meetings. In other words, along with distributing their time differently in many areas, Cluster 3 representatives tended to devote more total time to each specific activity, indicating that they were more active in general. At the same time, it noteworthy that Cluster 1 had the lowest percentage of respondents spending more than an hour per week on virtually every activity with the exception of inspections

which was essentially the same as Cluster 1. Cluster 2 respondents were generally in between Cluster 1 and 3 for most tasks (except for the proportions of respondents spending more than 1 hour per week doing inspections/investigations and reviewing/writing reports – for which it was the lowest of the three clusters).

B. Interpretive Analysis: Do these different Clusters reflect distinct orientations to the role and practice of worker representation?

As noted previously, when we began this research, we had a model based on a previous study done by one of our team members in 2006 which differentiated types of worker representation². In that research, which was grounded in a relatively small number of interviews with worker representatives in auto part plants (N=36), three types of representation were identified. One was called ‘knowledge activism’ because the representatives actively and consciously collected and used scientific, legal and experience based knowledge to persuade and pressure employers to address not only **traditional** issues such as housekeeping or personal protection equipment, but also, **complex** ones such as ventilation systems, engineering and work process changes. The second type of representation was called ‘political activism’ because the representative approached the role somewhat like the traditional adversarial steward model, where the central task was seen as aggressively advocating on the workers’ behalf in response to complaints. More often than not, this was done outside the joint committee and, in contrast to the knowledge activist, without the reliance on knowledge and research to make the case. The representatives’ power to affect change tended to revolve around their ability to mobilize the workers. The third type of representation was characterized as ‘technical-legal’ representation where the central emphasis of the representative was to insure that the letter of the law and regulations were obeyed, using the joint committee and inspection reports as the sole or core means through which internal responsibility was

² Hall et al, “Making a Difference: Knowledge Activism and Worker Representation in Joint OHS Committees,” 2006 61:3 *Industrial Relations* 408

exercised. These representatives relied on the law, regulations, procedures and policies as their central tools in achieving change.

While we recognized that in practice most representatives were somewhere in between these three ideal types and, that the workplace context was important in shaping the form of representation (i.e. it was not just a feature of the representative as an individual), a key objective in this study was to determine whether similar forms could be identified and differentiated using a much a larger sample of representatives across a variety of different workplaces. We wanted to do this because our previous research suggested that these three approaches had different impacts, with the knowledge activist having the greatest and widest impact. In this section of the report, we use both the survey and the qualitative interview data to isolate some key differences between representatives in their conceptions of their roles and the practices and strategies which define their orientations. We'll look at differences in impact in the subsequent section.

Although the three clusters identified in the survey do not perfectly match the three types that we had in mind, there are some important consistencies which serve to reinforce our original argument that representatives can be distinguished by their practices and orientations. Both the configuration of activities revealed in the cluster analysis and the qualitative accounts of their orientation and practices, suggests to us that Cluster 3 is largely consistent with what we called "knowledge activism". One of the first indicators is that these representatives tend to distribute more of their time outside of committee meetings building relationships and trust with managers, organizing and interacting with workers around health and safety issues and doing research in order to make the best possible arguments when they interact with managers in either context. But our data also suggests something that was not entirely evident in the first study - that it is not just the focus on certain areas of activity that distinguish knowledge activist representatives, but also, the balance or distribution across a range of activities. Knowledge activists don't dismiss the importance of committee meetings, inspections or reports as vehicles for getting changes and, they have a keen appreciation of the importance of formal policies, procedures and regulations. However, they also recognize the importance of engaging in other activities so that they can be convincing and effective within the committee

contexts. At the same time, and this seems to partly depend on the corporate and workplace context, they also often realize that changes can be or must be achieved outside the committee context. Building relationships within the workplaces (and sometimes with the MOL and other external supports) and building their knowledge are two key elements of their approach which are evident in their activities but also in their description of their activities and approaches:

Knowledge forms the core of how these representatives achieve changes but what is also distinctive is the range of types of knowledge that representatives express and use in their intervention activities— a knowledge of procedures and policies, knowledge of the law, knowledge of the workplace and work processes, scientific, medical and engineering knowledge and, knowledge of the social and political dynamics of the workplace. As one worker representative described it:

You come armed in essence when you're dealing with management so that you have the answers. If you don't have the answers, the other thing is saying "you know what, I need to go away and research this for ten minutes I'll come back." Don't try and fly by the seat of your pants, because that's where you dig yourself a big hole and then, you look foolish with the MOL or with management. The big thing is if you know the policies you can discuss the policies or why we need to do what we do, and how we need to do it a certain way. The other is to persevere. It is thankless because staff aren't sometimes going to like the answer, sometimes management isn't going like the answer or the response. A lot of it is social skills, and education. It's great to go on the courses and learn some of the stuff, but the other thing is sharing that knowledge and teaching your peers as you go along (R#0082)

It is this latter insight which is particularly distinctive in Cluster 3 because knowing how to deal with people and the politics of the work situation are especially important in helping these representatives to be more effective. The same worker representative continued:

It's how you ask and how you sell it. Sometimes I tell people the biggest thing is don't go to management with your problem. Go to management with a concern and then a possible solution. If you have the answer, most people will take the path of least resistance. Or you thought this is what I want the end result to be, so I'm coming up with a

solution or a possible solution to the problem. So it's not just a bitch with a problem... I mean you need to understand what, if you're dealing with our management you need to understand your policies, but you need to understand where they're coming from, and what they need. Sometimes it's not them saying no. There is a structure that they have to work within... they have bosses (R#0082).

Other worker representatives told us:

Dealing with people is important. And how you deal with workers, that's really important as well because it doesn't take long for people to turn on you if it looks like you're sounding like a management person or something of that nature. You got to keep your feet on the ground. Don't get yourself above them. I find that as long as I keep my head thinking I'm still a worker I'm fine (R#1077380).

and

Well there's like when you say you're giving a person an option, right. Is the colour of this apple red or green? Usually your first suggestion is going to be their first answer. Alright, so there is a bit psychological but it's you more or less bring them through the process to let them finish and complete the idea. And when they complete the idea they believe it's theirs. So you don't go at it directly you kind of sprinkle a couple of seeds here and there and go around a little bit, not directly at it, and let them come up with their own conclusion... Wouldn't be a bad topic to teach is how to (do this), because ...the worker reps usually don't get that type of training (R#1081750).

Knowledge activism is also based on the representative's ability to collect and use hazard-related knowledge and information in purposeful or strategic ways. This is where research comes into play, in as much as knowledge activists are more likely to independently seek information which they can use to make their case to management, the ministry of labour and even workers. A worker representative recommended:

Get your facts right. It's important that when you want to get something done like a change or something of that nature. You got to do a little research and the computers are great, and you got to be able to make a presentation to management about why you want these changes, what the law say what the regulations say and all that kind of stuff. I learned that a long time ago as an instructor through the Workers Health and

Safety Center and you got to be able to prepare yourself and have the facts right. And usually you don't get it all the time, but if the laws backing it up there's not much they can say about it, and that's what I rely on (R#1077380).

It is also distinctive how hard Cluster 3 representatives work to try to find solutions to problems, with the attitude that extremely complex issues have to be addressed even if there are no simple solutions. Here is an example given by one Cluster 3 representative.

WR: Well yeah, because I mean we're like you, you can see where we're using blocker pads that the public doesn't really care for but, it's one of those things that we're using to protect our workers. I mean they're still getting hurt, so we don't know what another avenue is.

I: It's about finding that solution, right? I think what's interesting is that you don't see that as something that's impossible to change, you just don't know how to change it, is that correct? Okay, cause that's my next question actually, are there things that you just think are impossible to change so you don't touch them, you don't consider going after them?

WR: We keep try working at it, but see I'm a machinist by trade, so, like in a machine shop, okay there you guard it this way. I can, I can see a way to put a guard on, to make it safer, but how to deal with an autistic child to protect themselves from themselves and protect our workers. I'm at my wits end on this kind of stuff. (R#0086)

There is also a more proactive and expansive aspect to knowledge activism in that the representatives do not limit their interventions to the narrow technical or legal definitions of safety and health and, indeed, as we shall see in the next section, are more likely to take on larger scale issues and health issues and seek longer term and permanent solutions.

Although accounts from representatives in all three groups describe some of their employers and managers as reacting quite aggressively when they try to press their concerns, including threats of firing and others reprisal actions, knowledge activists are more likely to persist in challenging management. Our evidence suggests that this is at least partly because they feel that their

knowledge, their union and co-worker support protects them. Here is how it was described to us.

R: You get accused of threatening the manager. I just tell him I'm not threatening you. I'm telling you what the consequences are if you continue to do this. Well you're threatening me, no I'm not. That will get documented that I was threatening a foreman. Right, so if you get enough of those and somebody gets a bugaboo in their ear and they go aha let's see what we got here. So you got to kind of pick and choose your battles too.

I: Do you think even your job could be at risk?

R: Oh yeah that's how they got the other guy above me.

I: Really?

R: I've been warned that I was on the same path.

I: So how have you avoided it to this point?

R: Make sure you don't step out of line. Make sure everything's covered off. You're making sure you don't give them any opening to say you did this wrong and now we got you. (R#1081750).

How do the other two groups that we identified from the survey data fit into our original framework? To begin with, neither cluster fits the 'Political Activist' profile that we were expecting from our previous research. While some of our interviews suggest aspects of the political activist in as much representatives see the need to put political pressure on managers and their employers by mobilizing workers, their union and the Ministry of Labour, none of the interviewed representatives relied principally on collective worker support to push issues and, in the final analysis, were more properly classified as knowledge activists. It is difficult to know from the current data why this profile was not evident in this study but it is worth noting that the political activist was the smallest group in the previous research (Hall et al. 2006). Moreover, many of the representatives identified in the first round of interviews were no longer representatives or no longer employed when follow-up interviews were done one year later. It may be that direct confrontation based on worker mobilization is simply too difficult to manage, especially given the increased insecurity of employment that most workers are experiencing.

If we look exclusively at the survey data in this study, the representatives from Cluster 1 and Cluster 2 seem to exhibit different elements of what we were calling a technical-legal form of representation. Cluster 1 spends proportionately much more of their time on inspections and related to that, on writing reports, while Cluster 2 spends proportionately much more of their time in committee meetings. What these two groups most clearly share is that they are nowhere close to the knowledge activist Cluster 3 in terms of the amount of proportional and absolute time that they devote to research, interacting with managers outside committee meetings, organizing and interacting with workers. In other words, representatives from both groups are tending to rely on committees and inspections as their principle means through which they fulfil their role as representatives. Here is an example from our interviews:

Being on a committee, a joint committee or whatever, is probably the biggest thing, where you would want to spend most of your time doing what you need to do to ensure that the rules are followed, that if there's things going on in the workplace that are not up to snuff you have the opportunity to talk about and make sure they get done (#0252, Cluster 1).

Some of the differences around time spent on inspections vs. meetings between Clusters 1 and 2 may relate to the fact that more of the Cluster 1 representatives are co-chairs with more years of experience than the representatives in Cluster 2, since our findings suggest that experienced co-chairs tend to spend more time in inspections than less experienced representatives. What is also interesting is that Cluster 2 representatives are more likely to spend more time on research and on interacting with workers than Cluster 1 representatives. While not close to the activity levels of most knowledge activists, there is still this tendency.

Given that the Cluster 1 representatives are more established longer term representatives, it seems to us that Cluster 1 more clearly reflects an established technical-legal orientation to representation, while Group 2 appears to be more mixed, perhaps in part because they tend to be newer at representation and are less likely to be co-chairs, but also, because some of these representatives exhibit characteristics and practices which fit somewhere between technical-legal representation and knowledge activism.

The fact that many of the representatives in Cluster 2 are relative newcomers to the role may also help to explain why Cluster 2 devote more time to their own personal health and safety education and training since more of them are just getting their basic level I and II training. The greater tendency of representatives in Cluster 2 to report spending more time on research may also simply reflect their lack of experience and their efforts to get up to speed. A key question in terms of their future development is whether they continue to see education and research as an ongoing requirement for their role as representatives, something that distinguishes the knowledge activists who see training, research and education as an ongoing requirement regardless of how long they have been a representative.

It is quite possible then that some of the Cluster 2 representatives may eventually join the ranks of Cluster 1 over time and become in a sense full-fledged technically-oriented representatives by becoming permanently immersed in the inspection and report writing aspects of the role. Alternatively, it could mean that at least some of the Cluster 2 representatives are possible knowledge activists in training and, with more experience, education and support, will adopt a conscious and strategic use of knowledge as a permanent aspect of their approach. However, since some Cluster 2 representatives are not inexperienced or new to their role, another possible interpretation is that at least some of these representatives reflect what is essentially a middle road between technical representation and knowledge activism.

Our examination of the interviews with Group 2 representatives supports this notion that there is substantial variation within Group 2. Some of the representatives are relatively new and are just developing their orientation and practices. For example, one representative notes that he has only been a representative for two years but sees the need to become more active as he gains confidence and a stronger position on the joint committee. However, it is not just inexperience that is shaping his activity level, it is also his employment context. One of the challenges he has is that his health and safety committee is made up of several different unions and, as the junior person on the committee, it is difficult to assert himself. He is also limited by his current employment position which is temporary and by the group of contract staff that he represents. What

may be key to his future development is that he clearly sees the representative position in political rather than technical terms and, is aware of the importance of knowledge in being able to achieve changes but, feels constrained by both his position on the committee and by his employment situation.

Another Group 2 representative is similar with only one year as a representative and co-chair. He is spending most of his time on the joint committee which is almost entirely new, including the management but, he clearly sees the need to be more proactive with workers and in doing research, in part because of recent training he received from the Workers' Health and Safety Centre.

I: Was it the Workers Health and Safety Centre that did level two for you I guess?

WR: Yes, they came to the mine, but yeah it was Workplace Health and Safety Centre out of [name of city].

I: Okay great and what was your sense of the training?

WR: It was excellent. There was a whole whack of, actually we did it in four and half days, a whack of information over a short period of time. We had a meeting on the last day of it. A real sense of direction for us there. Gave us a real sense there's so much more we can be doing and be proactive (R#0192).

In this representative's case, a key constraint on his activity level was that his workplace was not unionized which meant less protection for paid representation time and less protection in general for him and workers. Still, reflecting an emerging knowledge activist orientation, he believed that with the more strategic use of information, he could have a greater impact.

WR. Well yeah I have as far as the committee, the last place I worked at I was an alternate so I worked a little bit on the committee but as you know with unionized places you negotiate things into your joint health and safety committee. So yeah there's a bit of a difference there. I know they have a lot more clout the unionized atmosphere than they do in non, so...

I: So in your sense that difference in clout, how does that affect you? What does it mean for you in terms of what you can do?

WR: I yeah I think so, yeah for sure for sure.

I: Does that mean you're a little more cautious in terms of whether (R: absolutely) or how fast you can push things?

WR: Well that's well put. I find I tread lightly in certain issues there and certain things. I wouldn't say tread lightly but maneuver slightly different (R#0192).

As he reported, this included an emerging effort to build a relationship with the Ministry of Labour, the local occupational health clinic (OHCOW) and the workers.

Other representatives in Cluster 2 reflect on what may be a more permanent approach that they've developed over time, one which fits somewhere in between the technical and knowledge activist approach. One of these representatives, similar to the knowledge activists, reports that he spends more time interacting with workers and managers in an ongoing informal way and in meeting with his management counterpart (in lieu of committee meetings) but, unlike knowledge activists, very little time on research insisting that he is able to deal with most things that come up with little or no resistance from management. The employment situation may have been an important factor in as much as this was a small workplace with only ten workers. In this context, most of the issues were what he called minor ones. Significantly, he characterized his relationship with management in very positive terms in explaining his relative lack of activity in inspections and research.

I: Well, it just sounds to me like you do most of your job by building rapport with workers?

WR: Yes I do. I told you it's only a small group. There's only like 10 of us there right? So that makes a big difference. If I was in a factory of a hundred or 200 people, now you're running into major problems because, you got 200 people coming to you with different kinds of problems. (laughs) I've been doing this, for what? Five years now. So I guess I've got five more to go before I retire (laughs). That's about it really. Everything is going pretty good I must say (R#363).

As another Cluster 2 representative put it when asked whether he has a strategy for presenting issues to management:

WR: We don't need a strategy. When we do our inspections we come up with a recommendation and we send an inspection form to the supervisors involved in the areas we inspected with the

recommendation and say, this is the hazard we found here's what we recommend what you do about it, please respond. And they have twenty-ones days to respond and this is all legislated in the Occupation Health and Safety Act.(R#0133)

The perception of a very cooperative management can be quite critical in explaining the kinds of activities and the overall amount of time that representatives spend on their representation. From their perspective, they don't need to do research or strategize because things are going extremely well without any conflict. Indeed, some were quite puzzled by our question about how they strategize in political terms.

I: Could you give me a more specific idea how you go about the process of preparing and presenting a case for change. You say that generally speaking everybody's on the same page so it's not a big concern and problem for you, but are there certain things you think though are pretty essential in order to at least fulfill the requirements or expectations of the committee in terms of a legitimate claim or concern.

R: When I talk about consensus it's on within the committee, there's four of us on the committee, and there's *never* any discord, I would use that word, within the members of the committee because the four of us have different experiences and knowledge and expertise. If there's a situation in the lab then we all understand that that one member that is the lab technician would know more than I would about it and if she says I think that we need to recommend this and here's why, well chances are I'm going to say yeah that makes sense to me you know what you're talking about let's recommend that.

I: Right. Do you have pre meetings with other worker reps before you meet with management?

R: No, I'm not quite sure what you're looking for or what you think we do but we only normally have the one meeting a month and that's with the committee.

I: Well some worker representative as a matter of course meet to discuss issues among the workers and then come up with sort of a common presentation. Now obviously that tends to be in a workplace where it may be a bit more challenging to get management to buy into what you're saying.

R: Yeah, we don't have that challenge. Management's bought into health and safety already (R#0133)

Whether things are as positive and as smooth as this representative thinks is an important question but, we also have to recognize again that management's

approach to health and safety is likely a significant factor in shaping the practices of representatives and their overall activity levels. Certainly, knowledge activists are less likely to perceive their management in this very positive way. Some will express the view that management is responsive and often cooperative and, they will make clear distinctions between better and worse safety management. Critically, however, they tend to see their practices and their strategies as making vital contributions to change and, often, as shaping management's continued responsiveness. In other words, the knowledge activists tend to understand that power and interests are always at play in health and safety practice in a workplace, even when management is relatively committed to health and safety. Here is how one Group 3 representative put it,

You have to follow the money, because the power is usually where the money is, so. (I: indeed) it's not always at the table that is there with you. So if it you find out, usually I'd like to find out is how much jack the people I'm dealing with have and if there is somebody in the room that has a lot of clout I will certainly seek them and try to give everything to them and find out who they have to get the answers for and anything I can do to make those answers come to him a little quicker, I'll help them with it. But it's following where the money goes after that I think is the key (R#1126879).

The results from the interviews have also forced us to think a little differently about why representatives in Clusters 1 and 2 may take a more limited formal approach to their representation. Our theory when we began this research was that these representatives would tend to see their role in less political terms. As long as the employer was abiding by the basic requirements of the law in terms of procedures for committees and inspections and, was correcting at least some of the basic housekeeping or maintenance problems revealed in inspections, the question of power and the perceived need to strategize about the politics of change would not arise. Some representatives in Cluster 1 and 2 tend to reflect this tendency and so, we expected based on the previous Hall et al. (2006) study, that they would be satisfied as long as the basic housekeeping matters and personal protective equipment were maintained. However, our interview data in this study suggests that even when employers are following the strict letter of the law in terms

of committees and inspections, representatives in Clusters 1 and 2 can still be quite aware of the limitations of these formal processes and quite critical of the employer's actual commitment to health and safety. Here is one example from an exchange with a Cluster 2 representative:

WR: I don't personally don't feel that way. I don't think they [management] do. There might be some who will but on majority I feel like they, they don't really care. Or perceive they don't, I'm not saying they don't care but it's perceived that way.

I: So it's not a big priority for them?

WR: Yeah.

I: Are they actually hostile when health and safety is raised?

WR: No, not hostile, no.

I: Are they resistant to efforts to try to improve things?

WR: They'll just sweet talk around it.

I: And do they delay, do you feel that they intentionally delay or try to limit the process as much as they can - you know give lots of excuses, that kind of thing?

WR: Yeah. (R#1079353)

Many of the interviewed representatives in Clusters 1 and 2 were very aware of their lack of power. In the final analysis, then, what mainly distinguished representatives in Group 1 and, at least some in Group 2, from the Group 3 knowledge activist representatives is that the former two groups had no strategy regarding how to overcome their sense of powerlessness. In one context described below, which was non-union, it was quite clear that the representative and his fellow representatives were fearful of the potential employment consequences if he pushed health and safety issues, even a critical one such as the discovery of asbestos.

We're kind of struggling with what we should do with it [asbestos in a building], where we should go with it, should we bring it to management and tell them this is an issue we need it rectified? It's one of those things where you know you want to bring it up [but] we'll

worry what happens when we bring it up. I mean what's going to happen to the person who brings it up you know. That's one of the problems we're having is, with the way things are and obviously money being tight everywhere that could be a major issue that could cost a lot of money to fix and it's like do we you know want to rattle that chain (R#0408).

In other cases, it was the worker representatives' lack of understanding about how to overcome management delay tactics and lip service to health and safety. These representatives realized that their inspection and committee activities were often ineffective but they were unable to figure out how to move things forward. It is impossible to know with our data whether the strategic use of knowledge and information would have made the difference in these particular work contexts.

As this analysis suggests, there are important distinctions to make between what different representatives think they should be doing, what they feel they can do given the limitations of their workplace and employment situation, and what, in the final analysis, they actually do to address particular issues and circumstances. At the same time, the results as a whole suggest that more effective representation practices are not confined to certain kinds of workplaces or employment contexts. Although there are some variations related to the workplace context which will be examined more directly in a later analysis, knowledge activists can be found in small and large workplaces, union and non-union workplaces, a range of industries such as manufacturing, mining, construction, healthcare and education, construction and offices, in workplaces with cooperative and uncooperative managers, and in secure and insecure employment situations. There are different challenges in these various contexts, as well as some differences in impact but, certain effective common practices and orientations can emerge across the broad spectrum of work situations. The evidence suggests that worker representatives develop these orientations, skills, knowledge and practices over time and experience and, at least as expressed by several knowledge activists, through effective formal education and training programs such as those offered by the Workers Health and Safety Centre and technical expertise from Occupational Health Clinics for Ontario Workers (OHCOW).

C. Do These Different Orientations Yield Different Outcomes in Working Conditions?

One of the major questions the study was attempting to answer was whether different types of representation would be more or less effective in producing successes in improving the workplace environment. One key issue is whether representatives would differ in the kinds of issues and problems that they would try to address. Accordingly, questions were asked about how frequently attempts were made to make 11 types of workplace improvements (e.g. housekeeping, substituting/replacing hazardous substances/processes/machinery, ergonomic changes, harassment/violence policies, etc.) and how they rated the success of their attempts. Some of these issues were intended to be distinguishable by their complexity and potential cost, with house-keeping and personal protective equipment being the easiest and least complex form of intervention to the more complex and challenging involving designing of the engineering aspects of ventilation or work processes.

Table 12 provides the percentage of respondents from each cluster who attempted at least one intervention in each issue area:

Table 12: Percentage of Respondents Who Attempted Interventions

interventions	cluster #1	cluster #2	cluster #3
make improvements in basic housekeeping	76.2%	65.1%	87.1%
have management purchase new personal safety equipment or replaced old/worn safety equipment	60.5%	60.1%	80.7%
replace or retire unsafe tool or piece of machinery, equipment, or furniture	62.1%	54.8%	76.9%
expansion or redesign of a specific work space/ work station to address health and safety issues	55.6%	53.8%	78.1%

significant reorganization of a work process or method on health and safety grounds	57.0%	46.2%	78.4%
the delivery of a new training program for workers	51.8%	49.7%	76.8%
make changes to minimize or prevent violence in your workplace	52.4%	52.8%	71.3%
make changes to minimize or prevent harassment in your workplace	52.7%	50.3%	72.1%
other types of significant changes	52.5%	41.4%	78.1%
substitute an important product, practice or chemical used in the workplace that you believed was hazardous	50.0%	43.2%	67.3%
introduction or major modification of an air quality or ventilation system	42.9%	38.4%	59.8%
change the number of employees in order to address workload or safety issues including resisting management cuts to the number of workers	35.5%	27.4%	54.9%

Consistently, across all 11 types of workplace interventions, respondents from cluster 3, the knowledge activists, reported a higher percentage of respondents reporting attempting interventions (all statistically significant). Cluster 1, the technically oriented representatives, had statistically significantly lower percentages of respondents who attempted substitutions, process changes, housekeeping and “other” interventions. As in other things, and reflecting perhaps the earlier interpretation that representatives in this group were either new or more restricted by their management, Cluster 2 was between the other two clusters in attempt frequencies for all the categories of interventions.

Questions were also asked about the degree of success experience with the intervention attempts. Average impact score were calculated for each area of change for each cluster. For four of the interventions (see Table 13), there was no statistically significant difference between the three clusters in their average impact scores (violence & harassment prevention, improvements to workstations and air quality interventions). Generally, cluster #3 respondents reported the highest average impact scores with statistically significantly higher average scores for making recommendations about PPE,

replacing unsafe equipment/tools, housekeeping improvements, making substitutions, and reorganizing work processes. Cluster #1 respondents had significantly lower average impact scores for workload interventions.

Table 13: Average Impact Score

impact scores	cluster #1	cluster #2	cluster #3
have management purchase new personal safety equipment or replaced old/worn safety equipment	10.9	10.6	12.8
make improvements in basic housekeeping	10.4	10.4	11.7
replace or retire unsafe tool or piece of machinery, equipment, or furniture	9.3	9.5	11.3
the delivery of a new training program for workers	7.8	8.8	9.6
other types of significant changes	8.4	7.3	9.9
make changes to minimize or prevent violence in your workplace	7.7	8.3	8.8
substitute an important product, practice or chemical used in the workplace that you believed was hazardous	7.9	7.0	9.1
expansion or redesign of a specific work space/ work station to address health and safety issues	7.5	7.1	8.6
significant reorganization of a work process or method on health and safety grounds	7.0	6.8	9.1
make changes to minimize or prevent harassment in your workplace	7.2	7.1	8.3
change the number of employees in order to address workload or safety issues including resisting management cuts to the number of workers	5.8	7.2	7.6
introduction or major modification of an air quality or ventilation system	6.7	6.2	6.4

As noted earlier, the survey also asked respondents to rate management’s responsiveness to health and safety in the workplace, and the overall safety of the workplace and to rate health conditions in the workplace. Respondents also rated their impact on improving overall safety and health conditions in the workplace. Tables 14 and 15 contrast these appraisals by cluster:

Table 14: Appraisals* of Management Responsiveness and Workplace Safety and Health

	cluster #1	cluster #2	cluster #3
Rating management responsiveness to H&S	2.2	2.3	2.3
Overall, how safe is your workplace?	1.9	2.1	2.3
Overall, how healthy is your workplace?	2.1	2.3	2.5

* lower numbers are better

Table 15: Impact on Workplace Safety and Health**

	cluster #1	cluster #2	cluster #3
What impact have you had on improving safety?	2.3	2.2	2.6
What impact have you had on improving health conditions?	2.1	2.0	2.3

** higher numbers are better

The difference between the clusters in rating management’s responsiveness to H&S was not statistically significantly different. Interestingly, however, cluster 3 respondents had a significantly more pessimistic appraisal of both the safety and healthiness of their respective workplaces, suggesting perhaps that they had higher expectations or standards. At the same time, however, cluster 3’s appraisals of their impact on both health and safety were statistically significantly higher on average which is consistent with their specific impact assessments (Table 13).

D. Are these differences in practices and impacts related to characteristics of the employment context, with particular reference to unionization, job security and management orientation to health and safety?

If knowledge activists, cluster 3, are more likely to attempt a full range of changes *and* are more successful in those efforts, then a key final question is whether we can identify the factors that shape or explain these different approaches. As noted earlier, we did get some basic demographic information about the workplace (*firm size, industry, unionization, job security, perceived management responsiveness to health and safety, perceived health and safety conditions*) and the worker representatives and joint committees (*length of representatives employment and length of tenure as a representative and/or co-chair, size of committee, amount of paid representation time, whether elected or appointed, gender*). As such, the main question in this section is whether any of these variables help to explain differences between the clusters and differences more generally in terms of impact. A more detailed analysis of our qualitative data is still in process as part of this effort but, at the point, we rely largely on the quantitative data.

The analysis of the cluster distributions (see Table 16) shows that as compared to the other two groups, Cluster 3 representatives are significantly more likely to be elected to their position, have been with their employer longer, and tend to be *more* concerned about employment security than representatives in the other groups. They are more likely to be co-chairs than just representatives, and are more likely to be longer serving representatives or co-chairs than the representatives in the other two groups. Cluster 3 have more paid time to perform their duties, while also tending to spend more unpaid time on health and safety. Cluster 2 representatives are less likely to have a joint committee and, where there is a joint committee, they are more likely to be in smaller

committees with fewer management and worker representatives. They also tend to be less experienced with 65% reporting less than 3 years' experience as a representative.

Table 16: Demographics by Cluster

	cluster #1	cluster #2	cluster #3
member of a union	87.1%	85.3%	91.4%
average number of workers	606	733	720
level of concern regarding layoffs (lower more concern)	2.7	2.6	2.4
more than 10% temporary workers	35.0%	38.3%	39.1%
more than 50% temporary workers	6.2%	8.7%	7.2%
average years with current employer	8.5	9.0	10.1
elected by workers	37.8%	36.4%	45.7%
appointed by union	39.9%	36.4%	40.4%
member of a JH&SC	97.4%	79.5%	92.9%
worker/union co-chair	34.2%	28.0%	45.7%
worker/union rep	65.8%	72.0%	52.5%
more than 3 yrs of JH&SC experience	48.9%	35.6%	58.4%
more than 3 yrs experience as JH&SC Co-chair	32.6%	23.0%	50.4%
average number of worker representatives on the JH&SC	5.5	4.7	5.3
average number of management representatives on the JH&SC	4.0	3.3	3.9
more than 5 paid hrs per week working on H&S	14.9%	10.4%	27.9%
more than 20 paid hrs per week working on H&S	7.2%	6.9%	12.5%
more than 5 <u>un</u> paid hrs per week working on H&S	12.8%	5.8%	23.8%
female	46.3%	44.1%	40.5%
filled out survey online	68.2%	57.7%	62.0%

While the proportion of unionized respondents in cluster 3 was slightly higher than the other two clusters, the difference was not statistically significant ($p < 0.0167$ with the Bonferroni correction applied for multiple (3) comparisons). The size of the workforce was also not a significant factor distinguishing the clusters, and there were no significant gender differences by gender.

As Table 17 indicates, Cluster 1 had the highest percentage of respondents from the healthcare, education and the utilities sectors and the lowest in the social service sector, manufacturing, construction, and transportation sectors from the social service sector. Cluster 2 had the highest proportions of respondents from the transportation and food/restaurant sectors, while Cluster 3 had a significantly higher proportion of respondents from the manufacturing, construction and security sectors.

Table 17: Cluster Breakdown by Economic Sector

	cluster #1	cluster #2	cluster #3
healthcare	21.5%	18.3%	15.2%
education	21.5%	18.3%	12.0%
social service	10.5%	16.3%	16.1%
manufacturing	9.6%	11.8%	16.5%
utilities	10.1%	4.6%	7.6%
retail	6.1%	6.5%	5.2%
transportation	4.4%	7.2%	6.3%
mining	4.8%	4.6%	4.1%
security/police/correctional	3.1%	3.3%	5.7%
construction	1.3%	2.0%	3.9%
food or restaurant	2.6%	3.3%	1.1%
accommodation/tourism	1.8%	0.7%	1.5%

Multiple Regression Analyses

To determine which of these factors predict to cluster membership, we also conducted a multi-nomial logistic regression using all the variables examined above. We used SPSS 11.5 Multinomial Logistic Regression procedure to identify a set of predictor variables that would classify respondents into the three clusters. Since the time spent on H&S activities was used in the original cluster analysis, these variables could not be included in the model. The variables used were:

ONLINE: 1 = filled survey out online, 2 = survey not filled out online

UNION: 1 = yes; 2 = no

NUMEMP = number people working in your workplace

LAYOFF = level of concern about layoff (0 = extremely concerned ... 4 = not concerned at all)

NUMTEMPS = percentage of temporary workers (0 = less than 10% ... 10 = 100%)

TENURE = length of time with current employer (in years)

ELECTED: 1 = elected by workers; 2 = appointed by union; 3 = appointed by employer; 4 = other

JHSCCARR = currently a member of JH&SC: 0 = yes; 1 = no

POSITION: [1 = mgmt. co-chair; 2 = mgmt. rep]; 3 = worker/union co-chair; 4 = worker/union rep; 5 = other

JHSCEXP = time spent on JH&SC

COCHAIRX = time spent as co-chair of JH&SC

NUMWORKE = number of worker reps on JH&SC

NUMMGMT = number of mgmt. reps on JH&SC

PAIDTIME = amount of paid time per week spent on H&S activities

UNPAIDTI = amount of unpaid time per week spent on H&S activities

MANAGE = rating of management responsiveness: 1 = always respond positively ... 5 = never respond positively

GENDER: 0 = female; 1 = male

We used backward stepwise selection which involved removing those variables whose chi-square statistic of the difference in -2 log-likelihoods between the final model and a reduced model had a p-value of more than 0.05. Using group 3 as the reference group, the statistically significant variables which determined cluster membership were (Table 18):

Table 18: Regression Predictors of Clusters

	B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
						(Odds Ratio)	Lower Bound	Upper Bound
Group 1 – compared to Group 3								
Intercept	-0.73184	0.24702	8.77737	1	0.003049915			
ONLINE	0.48696	0.18579	6.86986	1	0.008766139	1.63	1.13	2.34
ELECTED	0.2016	0.08878	5.15571	1	0.023170034	1.22	1.03	1.46
JHSCCURRE	-2.00136	1.04804	3.64667	1	0.056181287	0.14	0.02	1.05
COCHAIRX	-0.11635	0.04321	7.25096	1	0.007086324	0.89	0.82	0.97
PAIDTIME	-0.2218	0.0733	9.15548	1	0.002479746	0.80	0.69	0.92
UNPAIDTI	-0.36913	0.1279	8.32951	1	0.003900615	0.69	0.54	0.89
Group 2 – compared to Group 3								
Intercept	-0.8129	0.29141	7.78169	1	0.005277828			
ONLINE	0.29477	0.22752	1.6786	1	0.195110759	1.34	0.86	2.10
ELECTED	0.17917	0.10439	2.94606	1	0.086086969	1.20	0.97	1.47
JHSCCURRE	0.91735	0.43958	4.35511	1	0.036898178	2.50	1.06	5.92
COCHAIRX	-0.22105	0.06226	12.608	1	0.000384096	0.80	0.71	0.91
PAIDTIME	-0.50993	0.12402	16.9072	1	0.000039253	0.60	0.47	0.77
UNPAIDTI	-0.53959	0.19032	8.03802	1	0.004580569	0.58	0.40	0.85

Unfortunately because of the nature of logistic regression (estimating the odds of being placed into one of two groups as compared to being placed in the reference group), the strict interpretation is somewhat unwieldy due to the fact that statements need to be constructed in a double negative format.

However, stated in a more colloquial manner, the final model shows that for participants to have been classified into Cluster 3 as Knowledge activists, they are:

- less likely to have filled out the questionnaire online
- somewhat more likely to have been elected as opposed to appointed
- somewhat more likely to have been currently a member of the JH&SC
- more likely to have spent a longer period of time as the co-chair of the JH&SC
- more likely to spend more hours/week (paid and unpaid) doing H&S work

Interestingly, as we shall see below, most of these variables are also associated with the multiple linear regression results for predicting which variables were associated with higher overall impact scores (impact scores being the cross product of attempts at workplace intervention and the rating of the success of those attempts).

The greater likelihood that Cluster 3 representatives completed the hard copy version may reflect the earlier observation that Cluster 1 representatives were spending very little time on self-training or education relative to the other two groups since the hard copy completion took place within the context of training programs. The amount of paid and unpaid time was also a significant predictor of Cluster 3 membership with Cluster 3 spending significantly more time than Clusters 1 or 2. This is consistent with the argument that knowledge activists are more active overall than the other clusters of representatives but, since paid time is often a function of either collective agreement protections and/or management acceptance of the worker role in health and safety, this may also reflect differences in power and labour-management relations. On the other hand, neither unionization nor management responsiveness were significant variables in the regression equation. Although overall experience as a representative was not a predictor of cluster membership, which is somewhat surprising given the differences that were evident in Table 16 (see also discussion below), the amount of experience as a co-chair was a predictor; that is, knowledge activists tended to be co-chairs with more experience on average than the co-chairs in Clusters 1 and 2. As we'll see later, when we look at regression models that predict to success, without reference to cluster membership, both overall experience and the position of co-chair are significant independent predictors of impact. Since more of the Cluster 3 representatives tend to be co-chairs, this may be why the relationship is expressed somewhat differently in the

cluster equation but, in combination, the findings suggest that experience and time in the role is important (see below for more discussion on this point).

However, having a joint committee was also a distinguishing factor in predicting membership with Cluster 3, while Cluster 2 were somewhat less likely. This speaks again to context which may help to explain why cluster representatives fit somewhere in between the two other clusters. Without a committee, representatives maybe less able to engage in the full range of activities and exert less ongoing influence given the lack of a clear structure.

Being an elected representative was also a good predictor of being in cluster 3. It is difficult to know what to make of this difference in part because we did not ask representative specifically about their views on being appointed or elected. Some representatives did comment that being elected was important in establishing their relationship with the workers, and their independence from management and the union leadership. There is some evidence from the previous Hall et al (2006) study that technically oriented representatives tend to feel that they are less subject to union politics and popularity contests when they are not subject to elections and, therefore, are more able to take stands on issues (Hall et al, 2006) but, just as clearly, representatives who are appointed have to answer to the people who appoint them (i.e. the local leadership) rather than the workers. Again, this is an issue which will warrant addition in further analysis of the qualitative data.

In an effort to get a better understanding of the factors which predict outcomes, we conducted a further analysis of the survey data using multi-level linear regression nested by economic sectors as well as using the activity variables as predictors. We used the Mixed Model Analysis (linear) procedure in SPSS 11.5 using backward stepwise elimination of variables whose fixed effects estimates were not statistically significant ($p < 0.05$). We performed factor analysis (not shown) on the impact scores related to the 12 types of interventions and found that they all factored together except for interventions related to prevent violence and harassment. Given this observation we decided to create a single variable summing all the impact scores of all the interventions. The method used to apportion the variance between the individual and group (economic sectors) level of

analysis are described in Snijders, T. and Bosker, R. (1999). The model tested and the results are as follows in Table 18 was as follows:

Table 18: Predicting Success

Impact = Demographic Variables (15) + Activity Variables (10) + Management Responsiveness (1)

Sum_Imp.* =	27.2450
	3.3917* Length of Time on Joint Committee
	1.4310* Amount of Time Devoted to Training Workers
	5.9413* Amount of Paid Time Devoted to Representation
	2.3082* Representative is the co-chair
	-5.2992* Management Responsiveness to Health and Safety

Significant B Weights + Impact = R squared (within economic sectors) =38%

R squared (between economic sectors) = 61%

*Note: Impact was calculated as the sum of all twelve impact variables (success if attempted)

As this regression analysis shows, a key predictor here is the amount of experience that the representatives have in the committee context, suggesting that representatives get better at what they do over time, likely due to a combination of accumulated experience, relationship-building, and skill and knowledge. As suggested in the discussion of knowledge activism, skill and knowledge cover not only basic technical and legal knowledge but also social and political insights and social and communication skills which can be critical in helping representatives to work out issues with workers, supervisors and managers. It is also evident from the accounts of many cluster 3 representatives that persistence is a key hallmark, suggesting it often takes a long term

approach to develop a reputation, to develop trust and to melt even the hardest management hearts. Here is one example:

Yeah. Now we do, okay. It took a long time for us to get there but we did. We just kept going, we never gave up and we kept on pushing and pushing. For example we never used to have at our shift meetings any safety information being brought up. The whole thing what we're trying to say is everyday safety should be on your mind, and finally got them convinced that this would work, and it does work. You just have to be going around with them all the time, making them think about it. Safety is an issue safety we have to deal with (R#1077380)

Two important questions that we need to consider for further research with respect to the role of experience are what contributes to whether representatives stay long enough in their position to develop their skills and knowledge and, what is the role of various support and training in helping representatives to develop. It may also be the case that longevity is partly a function of a knowledge activist orientation, in the sense that representatives stay with it because they are more effective and successful.

Related to the length of time on the committee but, still showing independent effects on impact, is the role of the co-chair. Representatives are much more likely to report success if they are the co-chairs. There may be a number of factors operating here but this may indicate that co-chairs have greater influence given their position to successfully initiate change efforts than representatives without those positions. Although we did not ask any direct questions on this point, we need to direct our future qualitative analysis towards determining whether co-chairs tend to see themselves as having more power or influence than representatives.

Similar to the regression analysis on the clusters, a key factor predicting higher impact was the amount of *paid* time that representatives had to devote to health and safety. Representatives were able to achieve more when they had more time to dedicate to health and safety. This was reflected clearly in a number of interviews where time was raised as a critical issue either enabling or constraining their capacities to affect change. Here is one example from our interviews:

I: Are there any things that you think would be helpful to make your job easier or more effective?

WR: More paid time to work on joint health and safety business.

I: And if you had that more paid time what would you do with it?

WR: I would do more reading of things relevant to my industry, that's the first thing I would do. I'm presented with article that are pertinent to the mining industry, I've got one on my desk right now I would love to read it I can't find the time to do it.

I: And I guess that means you don't have much time to actually do research either?

R: No, no. Next to none... Also, we scramble just to keep the file cabinet current. Make sure the last minutes are printed put up on the five bulletin boards around the building and have copies put in the filing cabinet, scrambling to get that done. I would like more time. I would personally like a full day a month for joint health and safety (R#0313).

However, again, this factor may reflect more than just the amount of time itself. The availability of more paid time results from possible influences, including the strength of the collective bargaining agreement and the quality of the labour-management relationship around health and safety.

While we have no clear data on the collective agreement issue, another significant predictor of success does speak to the question of the employer's commitment to health and safety. Representatives are significantly less likely to report a positive impact on conditions if they also see management as uncooperative and uncommitted to health and safety. What this statistical relationship does not tell us is whether the management commitment was a function of the representatives' efforts or something that came from the employer end but, accounts from our interviews suggest that both influences are often operative, frequently in different proportions. It is clear from representatives' accounts that some employers and managers come in with particular attitudes from the outset which make it easier or harder on the representatives, while other accounts suggest a process of relationship and reputation building in which the representative alters the way in which the employer or managers respond to health and safety. As these two worker representatives describe,

R. I find we've recently had a change in our human resource department. I find it very interesting our new director of human

resources has a very thorough knowledge of health and safety and her background is very intense in health and safety and she believes strongly you can tell how strongly she believes in about health and welfare of the staff. And there are some who in the HR department that are not as receptive to the ideas that she has and actually I find that management currently in our human resource department are actually somewhat conflicted. For instance I recently brought up in our joint health and safety meeting about stress, how I felt that stress was absolutely a health and safety issue especially in the works that we do. And that basically they the director said that they were absolutely believing that stress was a health and safety issue, but yet another HR member of health and safety said it was not at all a health and safety issue (R#1109768).

R: Oh big time. Because you know like it's like sugar and vinegar. It's like if you're good with these guys to work with them a little bit they'll sometimes back you up on issues and kind of help you and because I've seen it the other way. If you treat these guys the wrong way, like otherwise get on their case or whatever, it's not a good sight (R#1077380).

However, many representatives report that management orientation is often out of their control, subject to sudden shifts as different employers take over and managers are rotated in and out. This can often mean that representatives have to 'start from scratch' in building a new relationship with these managers.

The interviews suggest that the financial and employment contexts may also critical to whether employer and management attitudes and commitments remain as solid as they once were and whether representatives are able to wield the same influence through persuasion and evidence, particularly as situations shift or change where the employer begins to report more and more cost and competitive pressures or, where the labour market moves decidedly to the employer's advantage. This happens in slightly different ways in public and private sector workplaces but, the thrust is very similar in as much as employers become less and less willing to incur even the most minimal costs for health and safety.

I. Are there times when management concern about cost savings conflicts with worker health and safety in your workplace? Like are they concerned about what it would cost to make the workplace safer? And does that become a barrier or to what extent is it a barrier?

WR: Of course, in this day and age you'd be silly to say anything else. No, it's definitely a barrier (R#103404).

Another key predictor of success is the amount of time that representatives spend in training and educating other workers and representatives. This may speak to the higher level of commitment that some representatives have to education or it may reflect the learning that these representatives gain through their efforts to educate other workers. This point was raised several times from representatives in the interviews. Here is one example from an exchange between a worker representative (WR) and the interviewer (I).

WR: Take as much training as you can. (I: Okay) Because I mean even though I'm an instructor for the worker's health and safety centre and I do a lot of training for our union through them. I'm still learning. I've been on health and safety 8 years now.

I: Okay, so always be willing to learn more?

WR. Yes (R#0086).

It is interesting to note that, in particular, representatives who were worker centre instructors sometimes claimed that they learned quite a bit from listening to workers when they were instructing, both in terms of what to do and what not to do to get management cooperation.

Conclusions: Limitations, Dissemination and Implications for Occupational Health and Safety

The findings from this study support the argument that there are different forms of representation which yield different levels of intervention and success in terms of improvements in health and safety conditions. In particular, what we've identified is further evidence that what Hall et al. (2006) identified as "knowledge activism" represents an identifiable form of representation which seems to have a number of common features and strengths leading to greater activity levels and impacts. On the positive side, one of the implications is that even within relatively challenging work and

employment situations, workers can achieve effective representation if they employ certain strategies and mobilize certain knowledge resources. The research also demonstrates that there are numerous challenges to achieving effective representation which go well beyond simple knowledge of technical and legal aspects of health and safety. It is also clear in many of the accounts from successful representatives that their efforts require substantial dedication and quite frequently sacrifice in terms of energy, time and stress. At the same time, the findings show that there are many representatives who are relatively inactive and less than impactful. It is impossible to say with this data what proportion of representatives are stronger or weaker but, it is quite likely that the more successful active representatives were over-represented in this study given the self-selection process and the challenges of reaching representatives.

Still, one of the strengths of this study relative to the Hall et al. (2006) research on forms of representation is that a large cross section of representatives was examined in a wide range of different industries, workplaces, and workplace sizes demonstrating that these different forms of representation and their impacts are similarly operative in many different kinds of workplaces. This is important in as much as it suggests that a generalized approach to representative education and training can yield benefits across the spectrum of work situations. Our plan to develop a Guide for Representatives will be based on this idea that the same basic principles and conditions apply to representatives across a broad spectrum of contexts.

On the other hand, the failure to reach a larger number of non-unionized representatives, and, more than likely, the most precarious employment locations, raises a question about the applicability of knowledge activism to these contexts. It may be somewhat comforting to note that our data suggests that job security, whether measured in terms of unionization, use of temporary employment or prospects for layoffs or closure, was not a key factor in determining activity level nor success; nor was security effective in predicting under which cluster representatives were operating. However, given that most of the non-unionized workers did not express strong concerns about security and/or did not identify large numbers of temporary workers, we were clearly not successful in reaching workplaces where employment is the most precarious. This limitation is an

important goal for future research but, just as clearly, it will take a much more intensive effort to reach those workplaces than we were able to do within the limits of this project.

Another key limitation of this study is that we rely entirely on the representatives' self-assessment of impact and success. This is largely unavoidable given the limitations of the project funding and our need to have a large sample of representatives across the province, but future research should consider an effort to include a management assessment of impact and/or perhaps a collection of retroactive record based evidence using joint committee minutes and other reports. An ethnographic approach which proactively traces the activities of representatives over time and which includes other more independent measures of impact would be especially helpful in testing our argument that knowledge activism involves a distinct set of strategies, skill set and knowledge, practices and impacts.

Ethnographic research can also be vital to developing our understanding of how these different forms of representation develop. Our data indicates that representatives are more likely to develop a knowledge activist orientation over time but, it is also quite clear that many long term representatives and co-chairs have not developed the same orientation, at least not to the level exhibited by the cluster 3 representatives. We have suggested that our interview data provides some insights into the significance of employment context and, again, we have much more analysis to do here but, it is important to stress that the quantitative variables such as job security, the size of the workplace or management responsiveness to health and safety, were not significant predictors of any particular orientation, nor were they predictive of overall level of success. While industry sector seemed to have some relationship in as much as some of the clusters were more concentrated in some sectors than others, in the final analysis, the economic sectors also did not predict to cluster membership or to success.

While more research is vital, we argue that we now have enough evidence to engage more directly with worker representatives in crafting education and training opportunities which reinforce and strengthen the kinds of skills and knowledge identified in this study as more characteristic of knowledge activism and successful representation. This means, in particular, that along with technical and legal competence, we stress the importance of

research, political, negotiation and social skills, a range of practices which include active research, continuous training, and relationship building and, qualities which include persistence, patience and control.

While we recognize that the more extreme forms of precarity such as migrant labour, temporary agency and short time frame contracts and other critical aspects such as a very hostile management, may undermine a capacity for knowledge activism, we suggest tentatively based on our results that effective knowledge representation can be established in a wide range of workplaces with varying levels of size, types of work, types of issues, security levels and types of management. Our efforts to develop a Guide in the next several months will be informed by this conclusion in as much as we seek to develop, in concert with the representatives in our study, a series of broadly applicable practice principles and recommendations. Once complete, we hope to circulate widely to representatives across the province. LOARC also hopes to use the Guide and the study results to initiate discussions around education and training initiatives with the Workers' Health and Safety Centre and other interested institutions and groups.

Our dissemination plans will begin with the distribution of a detailed report to all participants and all research partners including participating unions and health and safety organizations. As noted, we are currently working on a Guide which will identify a number of guiding principles and best practices for successful representation and problem solving, premised on what we have identified in this study and previous research. We plan to publish a minimum of three journal articles, two of which are in preparation currently. One will focus on the cluster analysis and an elaboration of the findings on knowledge activism as presented in this paper (Section IIA). A second will focus on the qualitative data emphasizing the insights provided by representatives on the challenges and difficulties that they face when trying to achieve changes and the strategies that they use. A third paper will concentrate on our analysis of the factors which influence the different forms of representation, using both our regression analyses (Section IID) and our qualitative data. We plan to publish both in the occupational health and safety literature as well as the more general sociology of health literature.

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APPENDIX 1: Three Forms of Representation (Hall et. al, 2006;
Hall, 2011) Attached