VALUING RESPECT

BY Shift

Viewing the Valuing Respect Project through

the Lagging v. Leading Indicator Lens

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About Valuing Respect

Valuing Respect is a global collaborative platform, led by Shift, to research and co-create better ways of evaluating business respect for human rights. Our aim is to develop tools and insights that can help both companies and their stakeholders focus their resources on actions that effectively improve outcomes for people.

Learn more: valuingrespect.org

About Shift

Shift is the leading center of expertise on the UN Guiding Principles on Business and Human Rights. Shift's global team facilitates dialogue, builds capacity and develops new approaches with companies, government, civil society organizations and international institutions to bring about a world in which business gets done with respect for people's fundamental welfare and dignity. Shift is a non-profit, mission-driven organization.

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Introduction

This think piece is intended to start a conversation about using lagging and leading indicators to track business respect for human rights. It is a contribution to the Valuing Respect Project, which aims to develop better ways to evaluate business respect for human rights. The focus of the project is on outcomes for people. It therefore concerns both evidence of actual outcomes, as well as indicators of likely outcomes for people, that can be used to support good, and prevent bad, outcomes.

Organizations should use both lagging and leading indicators: lagging indicators to measure or prevent harm, and leading indicators to predict it. The concept of leading vs. lagging indicators comes from economics, but it has been used in other fields as well. In recent decades, experts in the field of Occupational Health and Safety (OHS) have emphasized the need for greater appreciation of the value of leading indicators to predict workplace injuries.

In an earlier paper, Shift looked at the relevance of OHS experience to the question of embedding the corporate responsibility to respect human rights within company culture.[1] It noted, among other things:

> "With respect to human rights, social audit findings on excessive working hours in a garment factory reflect adverse human rights impacts that have already occurred – hence, they are considered lagging indicators. Yet, tailored guidelines developed in consultation with procurement staff can be translated into leading indicators to predict future working hour violations. For example, procurement staff purchasing from suppliers in a high-risk market may acknowledge that orders with especially high quantities and short lead times can contribute to adverse impacts. Accordingly, one interviewee described the practice of collecting statistics on supplier capacity to use as a red flag for adverse impacts associated with sub-contracting and forced overtime. By constantly monitoring supplier capacity, the company can anticipate purchasing practices that risk contributing to adverse human rights impacts.
>
> Leading indicators focus peoples' attention on the consequences of their own functional decisions and practices. The shift in attention from outcomes to behavior minimizes the likelihood that personnel in high-risk functions perceive the risk of adverse impacts as either highly improbable or entirely out of their control."

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[1] https://www.shiftproject.org/media/resources/docs/Shift_EmbeddingUNGPs_2014.pdf

This note revisits the field of OHS for potential lessons on leading and lagging indicators when considering how to evaluate business respect for human rights. It suggests that the following questions may be useful to explore:

- If incidents of human rights harms are lagging indicators, what are the leading indicators to avoid harm?

- What do we need to know about human rights policy commitments, human rights due diligence, and company participation in remediation, in order to be confident that they are leading indicators of avoiding harm?

- What are the challenges in applying the framework of leading and lagging indicators to situations where, unlike in the OHS field, adverse impacts include events that occur outside the four corners of the business's operations, for example in supply chains?

- Can the OHS discipline of root cause analysis of lagging indicators be applied in the business and human rights context to help us identify leading indicators?

- Is root cause analysis currently used effectively to analyze severe human rights abuses that have occurred, in order to better identify causes?

- Does data already exist from supply chain audits that could be combed to better predict the likelihood of human rights abuses in supply chains?

- How can the perceptions, experiences and insights from potentially affected stakeholder be used as a leading indicator of harm?

- How do we avoid some of the common pitfalls that the OHS field has encountered over the years such as: over-reliance on quantitative leading indicators alone, proliferation of externally developed indicators that do not help companies manage what they need to, and gaming of indicators used for regulation and external benchmarking?

A. Lagging v Leading Indicators Compared

As a starting point, ICMM's 2012 Report, *Overview of leading indicators for occupational health and safety in mining*,[2] provides a useful comparison of the two types of indicators, and can be distilled as follows:
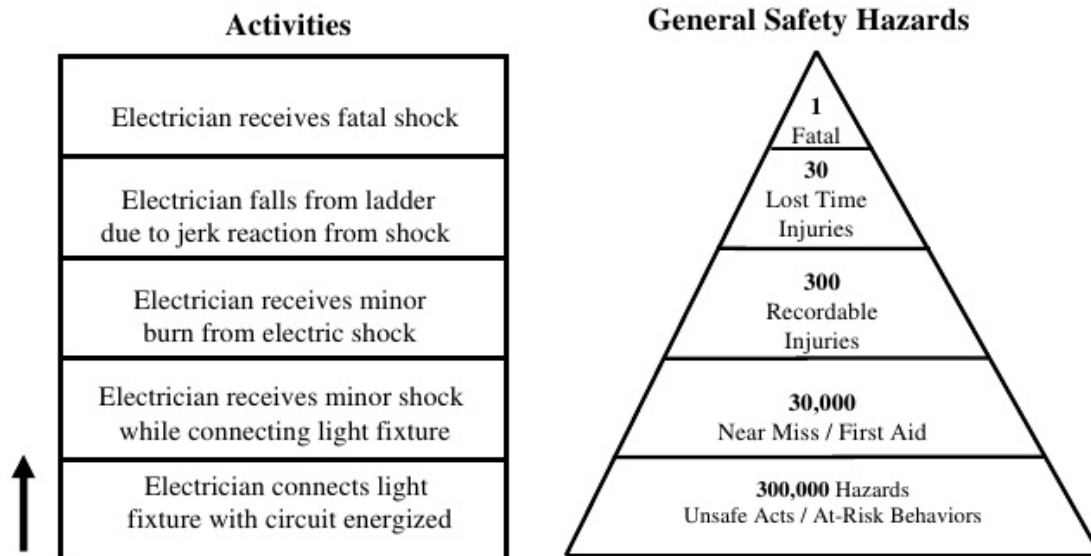
	Lagging indicators	Leading Indicator
What do they measure?	They measure adverse outcomes–what went wrong after the fact.	They are the 'canaries in the coal mine' that predict harm.
How are they used?	They can be analyzed to determine the root causes of harm.	They enable companies to fix the causes of harm before it happens.
What are their key characteristics?	They are static, relatively easy to identify, and measure. In OHS, they are widely used by regulators and other stakeholders to benchmark and compare the performance of different organizations. Since they are widely used as benchmarks by regulators and others, some are often gamed (e.g., companies sometimes put injured employees on light duty to avoid a lost time accident report.)	They evolve over time with the nature of the company's business, how it's organized, its operating context, and the type of harm that the indicators are supposed to predict. They are seen as more useful and likely to be tracked accurately if they are: - integrated with the company's overall goals, strategy and operations, - based on a reasonable, accurate and easily understood causal connection between the leading indicator and the harm, - limited in number to the key indicators that management can reasonably pay attention to, and - within the power of the organization or individuals to respond to effectively.

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[2] Available at https://www.icmm.com/en-gb/publications/health-and-safety/overview-of-leading-indicators-for-occupational-health-and-safety-in-mining .

B. The Safety Pyramid or Triangle

In the OHS field, the insurance industry developed a widely-used 'safety pyramid' or triangle in the 1930s based on a book by H.W. Heinrich for the Insurance Industry of North America, drawn from empirical analyses of work-related safety accident data. It assumes that for every serious work-related accident or fatality, there are many precursors, listed in decreasing frequency and number, including hazards, unsafe acts and at risk behaviors, near misses, recordable injuries, and lost time injuries. Here is one simple example, which predicts an electrical contact injury at work[3]:

HEINRICH THEORY

Activities	General Safety Hazards
Electrician receives fatal shock	**1** Fatal
Electrician falls from ladder due to jerk reaction from shock	**30** Lost Time Injuries
Electrician receives minor burn from electric shock	**300** Recordable Injuries
Electrician receives minor shock while connecting light fixture	**30,000** Near Miss / First Aid
Electrician connects light fixture with circuit energized	**300,000** Hazards Unsafe Acts / At-Risk Behaviors

An illustration of Heinrich's Theory - Safety Pyramid [1]

November 2006
IES Aviation Committee

BPR

According to Mr. Heinrich and his successors, recording the large number of 'near misses' and 'at risk behaviors' enables analysts to comb a database for precursors to serious accidents and

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3   See, *The Safety Triangle Explained*, Safety 101 (2012), available at http://crsp-safety101.blogspot.com/2012/07/the-safety-triangle-explained.html .

deaths. Carefully analyzing the data behind a large number of unsafe conditions and near misses may help to detect patterns that will predict the likelihood of the proportionately fewer catastrophic accidents. In other words, they act as leading indicators of more serious accidents.

As a result, companies are urged to 'attack the base'; that is, to eliminate the many more instances of at-risk behavior that will ultimately lead to fatalities. This requires a systematic and standardized process to formalize and report on information in order to capture and analyze the data.

The safety pyramid approach might cause managers and executives to place too much emphasis on combing through quantitative data (which can be more readily measured), at the expense of overlooking more qualitative predictors that may be harder to identify, but may have significant predictive power. As a result, some OHS consultants put qualitative factors, such as lack of operational discipline and leadership focus, at the base of the pyramid, and urge companies to "attack the base". Here is a mockup of the earlier graph to show how these qualitative factors might fit into the pyramid:

"ATTACK THE BASE"

Death

Lost time injuries

Recordable injuries

Near misses/first aid

Hazards, unsafe acts, at-risk behavior

Gaps in organizational discipline

Lack of leadership focus

C. Root Cause Analysis

In order to identify leading safety indicators, the company should not only look "up" the pyramid to see what kind of events and incidents might predict serious accidents, but "down" the pyramid by using root cause analysis to determine what is behind the most serious incidents of human rights harm.

The predictive power of the leading indicators in the safety pyramid may be enhanced by the quality of root cause analysis of harm. The root cause analysis of a bad outcome looks at several factors: people (including leadership, behavior, and ownership), organization (including leadership and culture), systems, administrative processes (technical and administrative), and physical equipment and plant. These are all potential leading indicators, and a root cause analysis of the harm can narrow them down.

An iconic OHS case in the US is the 2005 BP Texas Oil Refinery explosion, where an oil refinery exploded upon restarting from routine maintenance, resulting in 15 deaths and more than 180 injuries. It was the worst US workplace injury in 20 years, and resulted in the largest fine to date by the US Occupational Safety and Health Administration.

The accident has been the subject of many root cause analyses. Chief among them are the 2007 report of an independent, blue ribbon panel (the so-called Baker Commission) appointed by the company's Board, and the report of the US Chemical Safety Board (a US government agency). Both concluded that the company's corporate safety culture, its safety management systems, its corporate oversight (at the board and senior executive level), and its safety metrics, had been ineffective.

In particular, the reports focused on the company's use of misleading safety indicators. The company, according to the CSB report, used personal safety metrics to drive safety performance, but did not focus on metrics for chemical process safety. Personal safety metrics, it concluded, are important to track low-consequence, high probability incidents, but lost time accidents are not a leading indicator of chemical process safety. They are lagging indicators, and relying on them exclusively is like driving down the road using the rearview mirror only. To quote the report:

> Leading indicators provide a check of system functioning—whether needed actions have been taken, such as equipment inspections completed by the target date or PSM [Process Safety Management] action item closure. Lagging indicators, such as near-misses, provide evidence that a key outcome has failed or not met its objective. "Active monitoring" of both leading and lagging indicators is important to the health of process safety systems.[4]

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[4] CSB Report, n. 1 above.

The company also appears to have paid insufficient attention to other, non-technical leading indicators. For example, a survey of about 1,000 Texas City Refinery employees prior to the explosion found an extraordinary amount of employee safety concern.[5] A follow up examination of the reasons for these survey results might have pointed towards why the employees were so scared for their safety. The surveys were critical stakeholder perspectives that the company should have listened to and acted on, digging into the reasons for the employees' fear. They were, in other words, important leading indicators that management should have listened to closely.

D. CHOOSING THE RIGHT LEADING INDICATOR

The Texas City Refinery disaster focused companies in many different sectors on the perils of using misleading safety indicators, and the need to use more accurate leading indicators, in order to predict and prevent accidents. Identifying the causal link between a leading indicator and harm may be difficult because multiple factors can combine to contribute to harm. As BP discovered

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[5] Here are some of the survey findings, as reported in the CSB report:

- "Production pressures impact managers "where it appears as though they must compromise safety."
- "Production and budget compliance gets recognized and rewarded before anything else at Texas City."
- "The pressure for production, time pressure, and understaffing are the major causes of accidents at Texas City."
- "The quantity and quality of training at Texas City is inadequate...compromising other protection-critical competence."
- "Many [people] reported errors due to a lack of time for job analysis, lack of adequate staffing, a lack of supervisor staffing, or a lack of resident knowledge of the unit in the supervisory staff."
- Many employees also reported "feeling blamed when they had gotten hurt or they felt investigations were too quick to stop at operator error as the root cause." There was a "culture of casual compliance."
- "Serious hazards in the operating units from a number of mechanical integrity issues: "There is an exceptional degree of fear of catastrophic incidents at Texas City."
- "Leadership turnover and organizational transition; the creation and dismantling of the South Houston site 'made management of protection very difficult.'"
- "The strong safety commitment by the Business Unit Leader 'is undermined by the lack of resources to address severe hazards that persist,' and 'for most people, there are many unsafe conditions that prove cost cutting and production are more important than protection. Poor equipment conditions are made worse in the view of many people by a lack of resources for inspection, auditing, training, and staffing for anything besides normal operating conditions.'"
- Texas City was at a "high risk" for the "check the box" mentality. This included going through the motions of checking boxes and inattention to the risk after the check-off. "Critical events, (breaches, failures or breakdowns of a critical control measure) are generally not attended to."

after the explosion, it did not assess the process risk of a plant explosion, but focused on indicators relating to individual safety. To oversimplify, it faced multiple safety risks, but did not assess the most important one.

In addition, the ICMM report notes that the utility of specific leading indicators may change over time as the company's safety management system matures, and the nature of its risks change. As a result, a company should regularly test whether its leading indicators are still working to predict and prevent the risks of harm that it faces.

The ability to comb through a large database of bad outcomes offers an opportunity for companies to spot trends and patterns that may identify good leading indicators of harm. For example, the Facility Analysis Reporting System of the U.S. Department of Transportation (FARS) is a public database of all fatal injuries suffered in motor vehicle crashes went into operation in 1975. Its purpose is to provide a database of information to reduce the number of motor vehicle crashes and deaths. It collects information on over 100 coded data elements that characterize the crash, the vehicle and the people involved. Data is collected by the investigating local police officer on a standard form, and submitted to Washington DC for analysis of trends, issued quarterly. Anyone can use the FARS database, including motor vehicle companies seeking information about the safety design and performance of their vehicles. Automobile crash deaths in the US have declined dramatically in the last 50 years, in part due to the data available through FARS[6].

Are there potential analogs of FARS in the human rights field? The existence of a large number of past audits of suppliers might create similar opportunities for trend and pattern spotting.

E. Exploring Lessons for Business and Human Rights Generally

How then, might lagging and leading indicators relate to company tracking of their human rights performance, outside of the OHS field? Here are some preliminary questions and reflections.

First, is the failure to adequately promulgate and embed a human rights policy into a company's organization and culture, and adequately conduct human rights due diligence, a prime leading indicator of human rights harm? If so, what is it about the way in which a policy is embedded and due diligence carried out, that is most significant in reducing human rights risks and impacts?

Second, if the lessons are properly learned and disseminated, can root cause analyses of adverse human rights outcomes (i.e., lagging indicators) help to provide critical information on a company-

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[6]   The FARS database is accessible at https://www.nhtsa.gov/research-data/fatality-analysis-reporting-system-fars .
See also, Fatality Analysis Reporting System, Wikipedia, available at
https://en.wikipedia.org/wiki/Fatality_Analysis_Reporting_System accessed on May 9, 2018, and Roman Mars,
The Nut Behind the Wheel, 99% Invisible Podcast, Episode 287, available at
https://99percentinvisible.org/episode/nut-behind-wheel/.

by-company basis for the development of good leading indicators. Will this help where the outcome hasn't yet occurred, or where they are extremely rare events? And to what extent do legal concerns and a closed company culture limit root cause analyses and the dissemination of lessons learned from harm that has occurred?

Third, what opportunities exist or can be created to comb data regarding past human rights incidents to detect trends and patterns that can identify leading indicators? What are the challenges in creating such databases (e.g., commercial confidentiality) and how might they be overcome?

Fourth, to what extent is the development of leading indicators in the OHS field (where accidents tends to occur within the four walls of an organization) relevant to other contexts, where a company may not have clear sight into many of the variables (e.g., social practices, government corruption, enforcement gaps, etc.), and may regard them as outside its control? This may frequently be the case in its relationships with other business partners, suppliers or other third parties that may contribute to harm. Therefore, it may be more challenging outside the OHS context to identify leading indicators that have a causal connection, and can be used by managers to prevent harm.

Fifth, to what extent should businesses be cautious about relying too much on quantitative leading indicators that are easy to identify and used by regulators and external stakeholders as a means of predicting human rights performance; e.g., the existence of a human rights policy on paper, the number of human rights training sessions held, the number of supply contracts with human rights language, the number of supply chain audits conducted, etc.? This data may be predictive to some degree, but may not be sufficient by itself to predict harm.

Sixth, does the use of such quantitative data by regulators and other stakeholders tempt managers to play to these external targets rather than substantive improvements in performance, thereby elevating form over substance?

Seventh, to what extent does listening to the concerns of potentially affected stakeholders help to identify leading indicators of human rights harm? What kinds of questions are more likely to surface information and insights that will predict outcomes?