

## **Accidents or injuries: A plea for unanimity to enhance workplace injury prevention**

*“If language is not correct, then what is said is not what is meant; if what is said is not what is meant, then what must be done remains undone if this remains undone, morals and art will deteriorate; if justice goes astray, the people will stand about in helpless confusion. Hence there must be no arbitrariness in what is said. This matters above everything”.*

***Confucius***

### **The “accident” conundrum**

To address a specific problem within a scientific framework, it first needs to be clearly delineated. In the field of workplace injury prevention, accidents and injuries are terms that are often used synonymously. This is problematic. One issue of contention is the ambiguity of the term *accident* because of its numerous meanings and connotations, and another, more pressing issue is the common fallacy of equating an accident with an injury.

The term *accident* has a connotation that associates it with the supernatural, irrational explanations, fate, destiny, misfortune, chance, and luck (1-3). Andersson’s study of Swedish workers indicated a strong tendency of victims to attribute the principal cause of an accident in the workplace to supernatural, irrational explanations or blaming themselves (4). According to Loimer, because of its Biblical connotation (i.e., an act of God), “The word accident often obstructs the study of injury prevention” (1).

### **Etymological origins**

The term *accident* is derived from late Middle English to mean an event in a general sense, but it also comes from the Latin word *accidere*, to fall (5, 6). An “accident”, simply put, is an event, series of events, or social phenomenon that is unintentional in its nature and precedes an injury (7). The term *injury* is derived from the Latin *injuria*, a wrong (6). An injury is an observable physical manifestation of an event at work (7). If the event that results in an injury is intentional in its nature, then it is no longer an accident (e.g., injuries caused by acts of violence in the

workplace). Moreover, although an accident may result in an injury, it can also lead to environmental or material damage without causing any injuries or casualties to personnel.

### **Is it necessary to discern?**

The necessity of discerning these two terms accidents and injuries can be exemplified by examining a work-related amputation. A work-related amputation is not necessarily an inexplicable event resigned to fate. Rather, the amputation plausibly resulted from the hazardous nature of the machine, work pressures, or lack of training, leading to the transfer of mechanical energy from the machine to a body part. The chain of events that preceded the amputation can be reconstructed by the injured worker, co-workers, the foreman, managers, and other witnesses. The various narrative reconstructions of the events that led to the amputation provided by the victim and witnesses may or may not be congruent.

Training in machine safety will certainly contribute to the creation of barriers by raising worker awareness of the hazards associated with operating the machine and thus may prevent the events that lead to an amputation. However, the most effective way to prevent amputations (injuries) is to adequately safeguard the hazardous parts of the machine. The comprehension of this nuanced distinction between accident and injury is vital when designing injury prevention interventions and regulatory policies to protect the workers. The reason for differentiating an accident from an injury, therefore, seems obvious.

### **This is a pedantic quibble or is it?**

Health-related disciplines have generally subscribed to this distinction and in fact discourage the use of the word *accident* in the injury prevention lexicon (8-11). Davis, Langley, and Doege advocated purging the term *accident* from the injury prevention lexicon because of its several meanings and connotations that hinder prevention (8, 12, and 13). Workplace injury prevention has been well-funded field in the US compared to Europe. In particular, occupational injury epidemiology and surveillance seems to have made significant contribution in the field of workplace injury prevention through the conscientious efforts of CDC, NIOSH. Some safety experts in Europe have confided in me that the American academia is creating hegemony of sorts and attempting to impose the term injury on the field of *accident prevention*. The contention of

these experts is that injury is a medical term to describe a consequence, and is of little interest for purposes prevention. This is somewhat correct, but the counter-argument could be equally potent as there are umpteen examples meticulously studying the injury – has helped developed effective preventive interventions (Roll over Protections on Tractors or Seat Belts or Air-bags).

### **Accident is certainly an applicable concept**

Accident and injury prevention must be acknowledged as an interdisciplinary field that includes professional disciplines beyond public health and medicine. Engineers, social scientists, and psychologists continue to make valuable contributions to the field of accident and injury prevention. Many of these professionals continue to embrace the term *accident* and assert that such a term is not a hindrance to injury prevention (14). Among other things, advocates of the term *accident* suggest that it incorporates a wider spectrum of harm, including, but not limited to, human health (14). The contention is that such an approach accounts for social, political, and organizational perspectives to prevent accidents and injuries (14). Additionally, some experts assert that we do not have a better term than *accident* to signify multiple injuries that occur from a single human environmental interaction (event). Furthermore, the complexity of the events is not completely captured by the term injury (15).

Norwegian injury epidemiologist Johan Lund, in an attempt to resolve this argument, proposed the term “accidental injury.” He claimed that, unlike the English language, the term *accident* in Nordic languages (e.g., Norwegian/Danish = *ulykke*; Swedish = *olycka*) does not have connotations that ascribe it to the supernatural or destiny (16). However, Norwegian, Danish, and Swedish language dictionaries offer *chance*, *misfortune*, and *destiny*, together with *serious injuries* and *catastrophes*, as several meanings of the word *accident* (2, 17-18).

### **The Girasek acknowledgement:**

In a telephone survey of the general public in the United States ( $n = 943$ ), Girasek found that 83% of the respondents associated the term *accident* with preventability (19). However, 71% of her sample reported that accidents could not be predicted (19). Girasek concluded that although she does not advocate for increased use of the term *accident* in the field of injury prevention, calls for the elimination of the term *accident* are not empirically founded (19). Nevertheless, she

acknowledged that missing the distinction between an injury and accident may result in missed opportunities to prevent injuries (19).

**Discerning is not just necessary, but critical.**

The term accident should certainly be used to describe events preceding the injury. Giraseks acknowledgment of missing the distinction between accidents and injuries should not be forgotten rather should be recurrently reiterated. This acknowledgement is an often unnoticed and understated, inference in the discourse on the terms *accident* and *injury*.

The intuitive benefits of using the term *accident* are negated if it is used as a synonym for *injury*. However, general agreement appears to exist among the proponents of the term *accident* that an accident is an event, whereas an injury is a consequence (7, 16, 19-21). Moreover, those who support the term *accident* have failed to forcefully communicate this distinction to the general public, media, and bureaucracy. Subsequently, using the term *accident* as a synonym for *injury* prevails in both the media and regulatory authorities, including the academia.

The naive and ingenuous application of the term, in fact, has research, policy, and practice implications in the field of workplace injury prevention (22). For example, In Norway the tenuous nature of epidemiological injury data can be partially ascribed to the overt focus of regulatory authorities (e.g., NLIA in Norway) on “accidents”, in which traditional accident investigations focus on the technical aspects of the event, and the conscientious collection of injury data appears to be subordinate, consequently compromising the availability of epidemiological data (22). In fact there is an overt focus on “accident prevention” with an emphasis on safety engineering while unintentionally neglecting the role of injury epidemiology? Furthermore, the lack of injury data has conclusively hindered fostering epidemiological research on workplace injury prevention in Norway. Research on epidemiology and surveillance of workplace injuries emanating from Norway is frugal at best.

**An inclusive conclusion:**

Regardless of the somewhat non-conciliatory discourse of those who vouch by their “accidents” and others who advocate for “injuries” there is a possibility of an amicable and acceptable resolution. Samant and Wergeland revisited this issue at the World Working on Safety

Conference in 2010 and suggested a more modest and inclusive view (25). Samant and Wergeland appreciate the value of using the term *accident* in injury prevention, but make an earnest plea for stringent application of the term “accident” only to describe the event or events that precede the injury (25, 26). Accordingly, we propose a cogent distinction between the terms *injury* and *accident* as it is applied in the field of workplace injury prevention.

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