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Johnson, MI and Hudson, M (2016) Generalizing, deleting and distorting information about the experience and communication of chronic pain. *Pain Management*, 6 (5). pp. 411-414. ISSN 1758-1869 DOI: <https://doi.org/10.2217/pmt-2016-0028>

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Title:

Generalizing, deleting and distorting information about the experience and communication of chronic pain.

Target Journal: Pain Management

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Article Type: Editorial

Keywords: Chronic Pain, Neurolinguistic programming, Frameworks of communication

Conflict of interest: None. Matt Hudson is Director of Training at Mind International Training Associates

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Funding: None. There has been no funded writing assistance in the production of this manuscript

EDITORIAL

Generalizing, deleting and distorting information about the experience and communication of chronic pain.

There is growing support for a shift in chronic pain management towards a patient-centred approach that accounts for the lived experience of the person. A review of research using interpretative phenomenological analyses of the lived experience of people with chronic pain found that they had challenges understanding their self-identity and sense of moral worth [1]. Disbelief of others that a person has chronic pain results in emotional distress, isolation and stigma that is perceived as a challenge to that person's integrity and identity [2]. A meta-ethnographic synthesis of the findings of qualitative research investigating the experience of people with chronic low back pain has found that people struggle to reconcile the self with their persistent pain revealing a need for further research on pain and social identity [3].

A person's mental map of themselves and their world, including their underlying thinking, affects their final experience of pain. This mental map is reflected in the language used by people in daily conversation, including the stories they tell (narratives) about their pain experience. In the social sciences narratives are used to study a person's experience of illness, including pain, to provide insights into the social and cultural underpinnings of their physiological reality [4]. Narratives used by people to describe their experience of living with pain help in the understanding of a person's core values and the meaning they attribute to the pain [5]. However, people rarely communicate events and experiences as they actually happen but describe the event by generalizing, deleting and distorting information. Filtering information in this way influences the person's future thinking, core values and health and wellbeing. The purpose of this Editorial is to discuss the influence of generalizing, deleting and distorting information when people describe their experience of persistent pain in relation to communicative frameworks during consultations.

"The eyes will only affirm or deny what your mind believes" Hudson [6]p 117

The concept of generalizing deleting and distorting information during communication was developed as a central tenet of the meta-model of neuro-linguistic programming (NLP). Neuro-linguistic programming was developed in the 1970s as a neurological, language and behavioural approach to communication, personal development, counselling and psychotherapy [7]. NLP practitioners seek to improve wellbeing by influencing mental (subjective) representations of experiences and to encourage them to imitate 'healthy skills'. Subjective representations of a person's experiences can be modified through introspection and are expressed through language and behaviours. NLP is popular within sporting and business environments, but is also used as an adjunct in the management of depression, phobias and habit disorders. NLP training

is informally regulated and accredited at diploma, practitioner, and master practitioner level by The International NLP Trainer's Association and by The Association of NLP in the U.K. Sturt et al. [8] reported that spend on NLP training within the National Health Service (NHS) trusts in the U.K. was modest and mostly by administrative and managerial staff. NLP-based counselling services have been developed in some NHS trusts for weight-loss, substance misuse and smoking cessation, although NLP has not been approved by the National Institute for Health and Care Excellence (NICE) because of a paucity of research on effectiveness for health-related outcomes. Sturt et al. [8] conducted a systematic review that included 10 studies on anxiety disorders, weight maintenance, morning sickness, substance misuse, and claustrophobia during MRI scanning. They concluded that there was insufficient evidence to support the allocation of resources to NLP therapy outside of research purposes. Five randomized controlled trials (RCTs) were included in the review and four of these RCTs found no significant difference between NLP and comparison groups. One study found improvements in 'psychological difficulties' compared with a waiting list control [9]. Moreover, there has been criticism of the theoretical underpinning of specific aspects of NLP leading to claims that NLP is pseudoscience [10]. For example, some proponents of NLP claim that there is a relationship between eye-movements and thought, although the paucity of experimental research that exists does not support this claim [11, 12].

Skepticism of the theoretical underpinning techniques adopted by NLP practitioners coupled with a lack of evidence for clinical effectiveness has resulted in NLP being ignored by mainstream medicine. Pain practitioners use various psychological approaches to help people manage persistent pain, with cognitive behavior therapy the foundation of most practice. Cognitive behavioral therapy is delivered over a series of sessions to develop adaptive cognitive and behavioral pain coping skills, including restructuring of maladaptive cognitions, appropriate goal setting stress management through relaxation, breathing and visual imagery, and effective use of social reinforcement. Recently, however, there has been renewed interest in the use of NLP in primary care settings as part of communication frameworks used to influence thinking and behaviour [8, 13]. We are interested in the use of NLP to explore a person's mental map of themselves and their world. By exploring how underlying thinking affects the mental map it may provide a novel approach to aid a person's reconceptualization of pain. The foundation of NLP is a pragmatic communications model (the meta-model) suggesting that we do not communicate our experiences faithfully. Rather, communication and thinking is modified through filters that generalise, delete and distort information providing people with 'short-cuts' when analysing incoming information enabling them to survive in the information overload of modern society. However, these filters can limit the view of oneself and the world in which we live.

Persistent pain and suffering affects a person's sense of self and personal identity by interfering with cognitive, affective and behavioral processes threatening the identity of the person [14]. Self is not a single

entity but rather a construction of a variety of aspects of self, including for example, self in the past, present and future; actual and ideal self; and how others see oneself. This sense of self develops over time from beliefs and values of oneself and others. Persistent pain and the self become enmeshed to create a self-identity of 'pain patient'. Morley [14] provides evidence that people with persistent pain may be susceptible to preferentially respond to certain types of information (cognitive biases) because pain and the self were intertwined. Thus, diagnoses and pain management solutions, especially in relation to life-style changes, offered by practitioners may be misinterpreted by pain patients as judgements on their beliefs, values and sense of self. These cognitive biases are associated with generalization, deletion and distortion of information related to events and experiences.

Generalization is the process of making general conclusions about an event by attributing the experience of one event to the entire category of which the experience was an example. Generalisation is useful because it enables individuals to apply overarching principles to single events and enables rapid adaptation to novel situations. For example, from an early age we know how to open doors because we generalise the outcome of the experience of ourselves and others using doors. Generalisation helps to generate beliefs and therefore they may be dangerous in certain contexts. For example, the act of one person from a particular group can be generalised to represent the act of all people from that group as seen in racism, sexism or nationalism. Generalisation may hamper positive self-beliefs and positive emotional states by establishing rules that are detrimental to health and well-being. For example, generalisation may reinforce maladaptive behaviours such as fear-avoidance of movement because of the generalisation that moving causes pain which causes harm. This generalisation is beneficial immediately following a traumatic injury because it will prevent further tissue damage and promote tissue healing. However, the generalisation can be disadvantageous for long-term non-specific chronic musculoskeletal pain where the drivers for pain are not strongly coupled to damage in peripheral tissue. Hence, generalisations may manifest as phobias.

Deletion is the process of filtering out information by omitting details from events through selective attention of certain aspects of an experience. Deletion enables people to focus on the critical aspects of our experiences and to ignore the vast amount of less important information encountered in daily life. However, there is a danger of deleting (ignoring) information that is considered meaningless when it is not and this may impact negatively on the precision and accuracy of information conveyed to oneself and to others. Distortion is the process of misrepresenting incoming sensory information and modifying the meaning, interpretation and description of events and experiences. Distortion is mediated by cognitive biases where people fail to adequately assess their capabilities, resulting in illusory inferiority or superiority (i.e. Dunning–Kruger effect). The process of distortion influences a person's self-image where people interpret experiences confirm pre-existing beliefs, even if these beliefs are not necessarily representative of reality. People often have a distorted self-image of themselves and this can reinforce illness and hinder

well-being. People with long-standing unresolved pain often have a negative self-image of themselves. Thus, cognitive biases associated with generalisation, deletion and distortion affect an individual's sense of self and may contribute to self-sabotage whereby thoughts, attitudes and behaviours prevent individuals achieving their desired goals.

Systematic reviews show that interactions between patients and practitioners during consultations are critical for positive health-related outcomes [15]. Pain practitioners are more likely to establish what pain means to a person if they are able to understand the person's experience and the context within which it is situated. The development of communication frameworks with a patient-centered focus, such as Ideas, Concerns and Expectations (ICE) [16], are more likely to result in accurate diagnosis of factors influencing pain and disability resulting in pain management solutions tailored to the specific needs and viewpoint of the patient. To date, little attention has been given in research literature to frameworks of communication adopted by NLP practitioners such as cognitive processes that generalize, delete and distort the communication of experiences of pain patients and how this affects the mental map of themselves and their world. We hope that this Editorial will catalyze interest in this field.

"Thought defines who you are today and can sabotage who you can be tomorrow" Hudson [6] p. ix.

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Conflict of interest:

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Funding:

None. There has been no funded writing assistance in the production of this manuscript