

# Preparing medical students to become skilled at clinical observation

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## Abstract

**Background:** Observation is a fundamental skill for physicians and it has been the subject of a resurgent interest. Although strategies for teaching observation have been described previously, many of them linked conceptually to emerging insights in visual literacy and aesthetic development, principles of clinical observation have not been elucidated.

**Aims:** The purpose of this study was to develop a set of principles that would be useful in guiding educators teach medical students how to observe.

**Methods:** The authors conducted a comprehensive review of the literature on the history and theory of clinical observation. They then consulted a group of individuals from a highly diverse background who, based on the nature of their work, were considered to have expertise in observation.

**Results:** Informed by the literature and the group of experts, the authors developed a set of four guiding principles relating to pedagogy and eight core principles of clinical observation. In the context of curriculum renewal at the Faculty of Medicine, McGill University, these principles were then used to create specific teaching modules.

**Conclusions:** Principles that are pragmatic in nature, anchored in a theoretical framework of visual competence and applicable to medical education have been developed and successfully deployed.

Let someone say of a doctor that he really knows his physiology or anatomy, that he is dynamic – these are real compliments; but if you say he is an observer, a man who really knows how to see, this is perhaps the greatest compliment one can make.

J.M. Charcot (1889)

## Introduction

Probably no one would dispute that observation is one of the most prized and valued clinical skills. There is dispute, however, about the precise details of what constitutes clinical observation, its conceptual basis, and how it is learned or developed. This, in turn, has implications on how clinical observation is taught and how it can be assessed in medical school. So, we have created a course that teaches clinical observation to first year medical students. The purpose of this paper is to describe the development of this teaching module, outline its theoretical framework and describe some of the observation challenges.

The course was developed after, first, examining the history, theory and conceptualization of clinical observation and, second, working with experts with diverse backgrounds in observation. The theories and experiences of Bardes and Bleakley suggested a course that would address both perception and the interpretation of what is observed by students (Bardes et al. 2001; Bleakley et al. 2003). Working with experts in art appreciation, cinematography, veterinary medicine, law enforcement training, and clinicians in various branches of medicine, we identified the need for students to be

## Practice points

- Clinical observation is a fundamental skill of the clinical method that physicians must acquire in order to do their work.
- Strategies to teach observation have recently been described with many of these programs relying on visual materials from the fine arts.
- A set of eight core principles in clinical observation has been elucidated and can be used to guide curriculum development in this domain.
- One of the important observation principles in medicine is that observation occurs on several levels.
- Two important interdictions in clinical observation are: 'never-never just look at the part; always look at the whole' and 'never confuse the observation and the inference.'

able to identify or recognize observable materials, describe them and communicate their observations to patients, colleagues, the medical record and clinical or scientific literature. We then formulated eight principles to guide

course development. The final phase was to develop teaching modules, each with specific objective and learning exercises.

## History and theory of clinical observation

Historically, observation has been central to clinical practice. Indeed, physicians of the so called French school, in the early 19th century, such as Laennec, Andral and Chacot, and their contemporaries from the U.K., notably P.M. Latham, conceived of clinical data gathering as one founded on observation. A précis on clinical observation was published in the *Lancet* in 1857 (Farre 1857). Sir William Osler, too, recognized the central place of observation; in his commencement address to the 1885 class of medical and dental students at the University of Pennsylvania he stated, '[You will do well] if you bring a knowledge which is practical, senses which have been trained to exact observation, habits painstaking & careful and above all an appreciation of the value of method in work' (Osler 1885). Several years later, he went on to describe observation classes that he gave on clinical wards (Osler 1901). An emphasis on visual observation has remained a mainstay of physician training since. Currently, it is often taught under the heading of 'inspection' in courses charged with the responsibility to teach the physical examination.

Despite the enduring value placed on clinical observation, we know of no undergraduate medical program where there is a concerted and continuing effort, guided by an explicit educational blueprint, for the teaching of observation skills as core curricular content. Indeed, there have been recurring calls to do so. Engel (1973), before he became renowned for the 'biopsychosocial model', lamented the withering away of observation skills at the hands of technology; he stated, 'Regardless of what systems of medicine or concepts of disease have prevailed over the ages, the competence of the physician has been measured by his ability to make the observations required for the application of his art or science.... Medical education of today must reinstate clinical observation to its proper status as a basic medical discipline.'

The recognition and appreciation of the importance of observation, however, did not elucidate its nature, what constitutes it, how it operates, and how it is developed or honed. Only recently, has observation been subjected to analysis that has led to theory building. Bardes et al. (2001), in a pilot project to teach students observation through the analysis of museum paintings, considered observation and description to be distinct from interpretation. Bleakley et al. (2003) tackled the matter of 'superficial looking' vs. 'deep seeing', proposing a model of expertise, or connoisseurship, characterized by a keen appreciation of aesthetics enhanced by a stimulation of the imagination. It is interesting that Bardes et al. (2001) considered aesthetics 'off-limits' and cautioned against focusing on it, whereas Bleakley et al. (2003) considered aesthetics to be the primary vehicle through which one learned deep seeing. In addition, Bleakley et al. (2003) suggested that internalized images do not simply function as an 'aide-mémoire', a stimulus that releases pre-formed concepts, but rather serve to incubate and generate

distinction between 'le regard' (translated as 'gaze') and 'coup d'oeil' (translated as the 'glance'). The former may be understood as 'seeing with saying' – observation laced with interpretation – whereas the latter has generally been understood as observation unfettered by judgments or inferences. But, they challenge this interpretation and suggest that the 'glance' is also a 'saying', albeit with a metaphorical text. They also consider that perceptions – whether nascent, naïf or repeated – may not be entirely separable from inference. This, in turn, suggests that the observer has to be aware of the potential pitfalls in conflating observation with inferences.

These analyses suggest that the development or refinement of observation skills requires students to learn that perceptions are seldom only that, but rather that they carry with them or trigger inferences which one is required to apprehend. Bleakley et al. (2003) describe the role of the medical educator as, 'an art critic who illuminates, interprets and appraises the qualities that have been experienced'. In a much earlier reflection on observation, Berger (1980) proposed a hierarchy of clinical observation. The fourth level of his hierarchy consisted of the 'look inside', the self-reflection which enables one to become aware of feelings and emotions. In a sense, one could suggest that Berger recognized the need, before it became popular, for cultivating the 'art critic' within.

To pursue the discussion on this trajectory would bring the debate to a level of complexity that evokes philosophical discourse such as Hegel's 'concept before percept'. While not indifferent to philosophically grounded questions on the nature of perception, we intend, like Berger, to ground our essay in more pragmatic concerns and directions. We will propose a specific set of principles that can be made operational within the scope of most undergraduate medical education programs.

## Methods

### Context

This program arose in the context of curricular renewal at the Faculty of Medicine, McGill University. The leitmotif of the renewed curriculum is 'physicianship'. Physicianship is based on the premise that the primary mandate of medicine is healing. Professionalism describes the manner in which the profession has been organized to deliver its services. A unique clinical method was developed to be in service of physicianship. This method comprises the following elements: clinical observation, attentive listening, communication skills, narrative competence and description, physical examination, clinical thinking and reasoning, and self-reflection (Boudreau et al. 2007).

### Learning from observer experts

Following our literature review on observation we consulted an art historian with a research interest in the depiction of the human face in Renaissance art; a veterinarian specializing in abnormal pet behavior; a teacher with responsibilities for

Police; a professor of a school of cinematography who lectures on the concept of the male and female gaze; and several clinicians in disciplines where visual inspection is particularly important (e.g. pathology, dermatology, endocrinology, rheumatology, and child psychiatry). Working with these individuals showed us ways that observation can be taught. Specifically, we learned that teaching had to be experiential with exercises that would challenge students to develop the skills inherent in perceiving, describing, interpreting and communicating their observations.

### Course development: Guiding principles

We formulated 4 principles to guide course development. In doing so, we were convinced that learning clinical observation must fit seamlessly into the curriculum. The four educational principles are:

- (1) specific learning objectives must be clearly articulated and integrated into the program's overall educational blueprint;
- (2) the program's curriculum committee must recognize clinical observation as core material, and, consequently, there should be an expectation that all students will participate in related learning activities;
- (3) the teaching strategies employed should respect the generally accepted norms for skills-teaching;
- (4) learning must occur in authentic clinical contexts.

The last two points merit further commentary.

Of primary importance in skills-teaching is the need for repetitive practice. This requirement is captured eloquently by Flexner in his landmark publication, *Medical Education in the United States and Canada* (1910) when he quotes Cabot and Locke: 'Learning medicine is not fundamentally different than learning anything else. If one had one hundred hours in which to learn how to ride a horse or to speak in public, one might profitably spend perhaps an hour (in divided doses) in being told how to do it, four hours in watching a teacher do it, and the remaining ninety-five hours in practice, at first with close supervision, later under general oversight.' There must also be performance assessments, with both formative and summative intents. Detailed feedback on performance is critically important. The process of learning observation shares many of the features of skills-learning in general.

The context of learning is currently of interest. A recently published review of programs designed to teach visual and/or media literacy to undergraduate students in the U.S.A. reveals the popularity of constructivism as a theoretical framework, as well as the widespread use of art works as a strategy; a prominent example is the organization, 'Visual Understanding in Education' (VUE), cofounded by a developmental psychologist and a museum director (Shiffrin 2008). The past five years have seen a variety of programs in medicine that have similarly relied on the fine arts. The public's imagination seems to have been captivated by the potential for collaboration between educators and curators. The following essays in the lay press are illustrative: *The Globe & Mail* (Haupt 2005) described how police officers are taught to 'see better' by taking a close look at paintings of the masters; the *New York Times* (Kennedy

the Mount Sinai School of Medicine at the Metropolitan Museum of Art. It is noteworthy that such initiatives tend to be modest in scope and, rather than being embedded in core curricula, are invariably offered as electives. The pilot project at the Frick Collection, for example, involved only eight students (Bardes et al. 2001).

There have been suggestions in the medical education literature that using representational and non-representational materials provided by museums may stimulate emotional recognition and cultivate empathy more effectively than clinical photographs (Shapiro et al. 2006). The evidence for this is, however, not compelling. We strongly advocate for the teaching of clinical observation in authentic settings and with actual clinical 'materials'. Medical students, particularly in first year, often report a desire for greater patient contact. Immersion in the clinical world generally contributes to higher levels of motivation and satisfaction. Having a preference for patient-based visual materials does not, of course, preclude the use of pictures from the arts and humanities. These can provide highly effective observation challenges; we give examples later on. It is important to emphasize however, that with the term 'patient-based' we are generally referring to pictures taken from the physician perspective. These may be quite different from 'patient-provided' materials. In a study where patients, actual and surrogate, were asked to create visual representations of aspects of various diseases (i.e. multiple sclerosis, breast cancer, heart attack), significant gaps were identified between their images and standard clinical ones (Enquist 2008). The author concludes with the following interesting challenge, 'Visual studies classes in a medical curriculum would help students and future professionals to understand the potential of visualizations. Such classes could also include the active use of images as carriers of meaning from a patient's perspective...' Indeed, adopting such a recommendation may be effective at nurturing empathy; it merits further study.

## Core principles of clinical observation

After having examined the history and theory of clinical observation, completed work with observer experts and articulated a set of prerequisites we next identified eight core principles of clinical observation:

- (1) observation has a sensory perceptive and a cognitive component;
- (2) observation is distinct from inference;
- (3) observation is made concrete through description;
- (4) observation occurs on different levels;
- (5) observation is goal oriented;
- (6) observation occurs over time;
- (7) observation is subject to powerful cultural determinants;
- (8) observation carries ethical obligations.

We now discuss each of these principles. Examples of specific materials used in our modules are included in Table 1.

1. Observation has a sensory perceptive component and a cognitive component

There is a tendency to equate observation with 'looking' and to



**Table 1.** Illustrative exercises used to teach the core principles of clinical observation.

| Principle  | Exercise  |
|--|---|
| Clinical observation has a sensory perceptive and cognitive component. | We show a series of optical illusions such as an image of the 'dragon and the lady'   |
| Clinical observation is distinct from inference.                       | We show a 6th century AD icon, the Sinai Pantocrator, to illustrate facial asymmetry and stimulate a dialogue on the issue of description vs. interpretation  |
| Clinical observation is made concrete through description.             | We show many faces of people and ask for descriptions; invariably students will infer emotional states<br>We create student-pairs. We then present the image of a person's face to one student asking him or her to describe the person to their peer so that the latter is then in a position to draw it. The student charged with drawing is entirely dependent on the quality of the verbal description  |
| Clinical observation occurs on different levels.                       | We show picture of patients and request for descriptions using the different levels   |
| Clinical observation is goal oriented.                                 | We show video-clips of physicians taken in chaotic environment, such as an emergency room, and ask students for description   |
| Clinical observation occurs over time.                                 | We ask students to describe patients in pictures taken pre and post surgery<br>We urge students to consider every-life events as an opportunity to see change; for example, in the event that one suffers blunt trauma and is bruised, we recommend repeated examinations of the ecchymosis to determine how many days it takes for it to become yellow, to acquire a greenish hue, and to fade altogether. |
| Clinical observation is subject to cultural determinants.              | We challenge students with pictures that have been reconstructed or manipulated so as to reveal hidden biases   |
| Clinical observation carries ethical obligations.                      | We create student-pairs and ask them to draw each other's face; this illustrates the need to be sensitive when 'staring' at someone else close-up   |

and neutral sensory phenomenon. This view is overly simplistic. We present the countervailing opinion i.e. that an observer brings past lived experiences, knowledge, preconceptions and 'framing' to the task of looking. This is the basis for the popular games based on optical illusions – of showing complex images that have the potential to yield different interpretations by different individuals. Such pictures illustrate that we do not necessarily see things 'as they are'; we often see the 'idea' of the thing. We see 'what we believe something to be'.

## 2. Observation is distinct from inference

The distinction between observation and inference is a crucial concept for students to understand. We teach that the visual apprehension – the observation – is different from the conclusions, inferences or attribution of meanings that are brought to that observation – the inference(s). This distinction may be subject to criticism, as it may imply that the first act is purely sensory while the second is entirely cognitive. A more sophisticated analysis will reveal that both are mental processes. Van Leeuwen (2001), in describing Barthian visual semiotics, emphasizes that 'one can only recognize what we already know'. Example: when we look at a tree, we see 'tree' because we already possess a mental representation of 'tree'. We could acknowledge this distinction by speaking of primary vs. secondary interpretations but this is unnecessary for the purposes at hand. We therefore subscribe to the operative definition as expressed by Barden (2001) in his statement of the goals of his observation exercises: 'They [students] are encouraged and taught to distinguish primary, observable, confirmable visual information, from secondary, derived inferences.'

Osler stated, 'This is really one of the most serious difficulties which students have to overcome in clinical work – hasty inference from imperfectly or well observed facts.' (Silverman et al. 2003) It has been called 'Osler's Error of Inference'. This has been our experience as well. Medical

obvious when they are asked to describe the human face. We believe this propensity results from a non-critical acceptance of the universality thesis of facial expression of human emotions. This thesis holds that facial expressions of basic human emotions (happiness, sadness, anger, disgust, surprise, fear, contempt) are stable across time and cultures – that experiencing a basic emotion invariably leads to a facial expression of that emotion which is universally recognizable (Russell 1994). It is noteworthy that pain is not on that list of basic emotions. While this thesis may be demonstrable under certain circumstances (e.g. when subjects of a Western culture are asked to display a selected emotion on command), it is often not valid in clinical situations – where experiences are spontaneous rather than staged. We use numerous exercises exploiting facial expressions as a means to illustrate Osler's error of inference. We also modify pictures by removing context; in doing so, we demonstrate how reliant the observer is to context in making inferences such as the attribution of specific emotion states to facial expressions. We also discuss whether or not there exists a specific facial expression of pain – clearly of major interest to physicians – and conclude that the issue remains unresolved (Wolf et al. 2005).

## 3. Observation is made concrete through description

One must be able to describe what one sees in order for the visual experience to be complete and meaningful. This is expressed by Foucault (1973) as follows: '[To describe] it is to see it and know it at the same time, because by saying what one sees, one integrates it spontaneously into knowledge; it is also to learn to see, because it means giving the key of a language that masters the visible.' We turn the popular aphorism, 'A picture is worth a thousand words', on its head with, 'A picture unaccompanied by a thousand words is stillborn'. The image does not reside on the retina of the beholder; it is constructed in the mind and given form through verbal or written description.

Students are given many pictures, initially all static and

**Table 2.** Levels of clinical observation – based on Berger's Hierarchy (1980).

|   |                                      |
|---|--------------------------------------|
| 1 | The whole person                     |
| 2 | The part                             |
| 3 | The context – personal – environment |
| 4 | Behaviours and interactions          |
| 5 | The observer – emotional – aesthetic |
| 6 | The medium                           |

detailed written descriptions to the faculty for feedback, validation and, periodically, for grading. Given the importance of this principle, it represents a significant portion of the time, energy and resources we have devoted to the observation modules. We provide students with a description lexicon (for the human face) to assist in these tasks. We also host observation exercises on a web-based platform to provide opportunities for on-going practice.

#### 4. Observation occurs on different levels

As mentioned earlier, Berger (1980) explained that in medicine, observations occur on multiple levels. We have modified his approach slightly by proposing a five-level approach: the whole person; the part (or specific feature of a person); the context; behaviours and interactions; and the observer himself or herself (see Table 2). The context includes personal (e.g. clothing, jewelry) and environmental (e.g. the room, the bedside table) aspects. The interactions can be with other individuals (i.e. interpersonal) as well as with pets and inanimate objects (i.e. relational). The fifth level, the observer's inner response, can occur on an emotional or aesthetic plane and is tightly linked to an anticipatory response on the intellectual plane i.e. the 'call to action'.

When dealing with representations of patients (e.g. a photograph), one may also wish to consider aspect of the medium. This represents an additional level of observation; it is especially germane to programs aimed at teaching visual skills and/or analysis; specific approaches have been described by Collier (2001). A recent study describing a visual literacy course, has demonstrated that concepts in the fine arts can be learned by medical students and incorporated into clinical assessments (Naghshineh 2008).

#### 5. Observation is goal oriented

We believe that, for the clinician, looking is not simply staring at something and is certainly not necessarily seeing. One tends to see more if one has a stake in the outcome (e.g. the camouflage of an animal in a forest will be much less effective when confronted by the gaze of a seasoned hunter than that of the uninitiated eye). Physicians look at patients – sometimes quickly, as in scanning a situation ('eyeballing') – at other times, more intensely and systematically, so as to take in all the details. In either circumstance, the physician will appreciate a greater number of visual cues than the non-physician, by virtue of the fact that the task is oriented to specific medically-relevant goals. One not only sees what one knows, but to

the idea that observation is not an end in itself. The products of clinical observation, in concert with attentive listening and logical thinking, serve to generate initial hypotheses. These are then subject to review and revision based on a cycle of iterative observation, listening and reasoning. Observation is thus in the service of inference, and ultimately, to diagnosis, clinical judgement and therapeutic actions.

#### 6. Observation occurs over time

We underscore that clinicians observe in a continuous fashion. Physicians are constantly comparing: appraising the effects of age, medications or exercise; in short, assessing evolution over time. We demonstrate the value of comparison by challenging students with many 'pre & post' images. We invite them to reframe every-day events, such as an inadvertent cut to their finger, so that these are considered not as singular one-time events but rather as an opportunity to 'see' change – in this instance, to be a witness to wound healing. We urge them to cultivate the physician's gaze – to see how a doctor sees.

#### 7. Observation is subject to powerful cultural determinants

This phenomenon is particularly important in physiognomy. The face is part of our shared culture and is an aspect of our common language. Facial expressions, even in the context of catastrophic events, may not reflect the 'real' individual. This is reflected in the oft-heard phrase, 'putting on a face of [...]'. We teach that parts of the body that are less culturally influenced, less constrained by cultural display rules and under less voluntary control, also need to be a target of physicians' observations.

#### 8. Observation carries ethical obligations

These can be manifest in different fashion. Certain behaviors are expected of the observer vis-a-vis the observee. For example, one must learn to observe a face without staring or ogling. There may be legal as well as cultural considerations when pictures are taken or modified. One must be keenly aware of the potential for bias in observations and descriptions. Although an observation may elicit emotions (elation, repulsion, physical attraction, irritation, etc.) physicians are generally restrained from demonstrating these outwardly. Finally, what is not seen by the observer may be as important as what is seen and is subject to identical considerations. The entire field of visual competence as a terrain for the display of power or influence, as in for example 'image-making', while fascinating, is beyond the scope of this essay.

### Lessons learned: Successes and challenges

We have developed principle-based teaching modules in clinical observation. They are highly interactive and should be conducive to active learning. The teaching of clinical observa-

ultimate goal is to equip students with the skills to focus on the individual with illness as opposed to a narrower focus on disease. In shifting the gaze thus, we aim to cultivate the attitude of the healer. We discuss the pernicious effects of neglecting to look at the whole person. Whereas there has been a propensity for clinicians to focus on the abnormal or dysfunctional part (the 'physical sign'), the whole person must never be forgotten. We have labeled this the 'part-whole problem'. We declare that there are two 'never-never do's' in clinical observation; the first is: 'never-never just look at the part; always look at the whole'. The second 'never-never do' is: 'never confuse the observation and the inference'. The latter interdiction is equally applicable to other skills in the clinical method such as attentive listening.

We have found the scatter diagram to be a useful metaphor for underlining the importance of observation and situating it in the context of modern-day medicine. We show a scatter diagram and ask students to draw a best-fit line through the points. We explain that the scientific approach is symbolized by the best-fit line and emphasize its importance for the work of doctoring. But, we caution that the physician also has the obligation to 'see' the individual points since these represent unique individuals. Close, methodical, purposeful and ethical observation will ensure that the physician will not lose sight of the individual points.

The new course has been well received by students. Enthusiasm, however, tells us little about the efficacy of the module in developing observational skills in medical students. That requires a rigorous assessment method, as yet undeveloped. Consequently, the module remains a work-in-progress, until all of its components can be evaluated in a larger assessment of proficiency in clinical observation. Lacking valid ways to reliably assess clinical observation is, perhaps, our greatest challenge in further developing this module. In the meantime, students in the program will continue to be challenged to become increasingly observant. Hopefully, the greatest success of this work will be that students will become aware, and remain vigilant, of their perceptions and their inferences about what they perceive.

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# Preparing medical students to become attentive listeners

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## Abstract

**Background:** The ability to listen is critically important to many human endeavors and is the object of scholarly inquiry by a large variety of disciplines. While the characteristics of active listening skills in clinical practice have been elucidated previously, a cohesive set of principles to frame the teaching of these skills at the undergraduate medical level has not been described.

**Aims:** The purpose of this study was to identify the principles that underlie the teaching of listening to medical students. We term this capacity, attentive listening.

**Methods:** The authors relied extensively on prior work that clarified how language works in encounters between patients and physicians. They also conducted a review of the applicable medical literature and consulted with experts in applied linguistics and narrative theory.

**Results:** They developed a set of eight core principles of attentive listening. These were then used to design specific teaching modules in the context of curriculum renewal at the Faculty of Medicine, McGill University.

**Conclusions:** Principles that are pragmatic in nature and applicable to medical education have been developed and successfully deployed in an undergraduate medical curriculum.

The individual patient should be able to expect a doctor as an attentive listener, a careful observer, a sensitive communicator, and an effective clinician; ...

Edinburgh Declaration, 1988

## Introduction

This essay is the second in a series on preparing medical students to become observant, attentive and thoughtful physicians. The first focused on the teaching of visual observation. We now turn our attention to listening. The quote above is extracted from the report of a 1988 conference held in Edinburgh under the auspices of the World Federation for Medical Education and co-sponsored by the World Health Organization; the meeting focused on making the training of physicians more responsive to the health needs of communities. It is appropriate in setting the context for this essay as it underlines the central role that listening has in clinical practice. Furthermore, the specification of listening as a skill distinct from communication provides additional motivation for the explicit teaching of listening skills.

The major complaint that patients have about their encounters with physicians is that doctors do not listen – the evidence is legion (Golman 1991; Chisholm et al. 2006; Boudreau 2008). Unfortunately, the importance that patients attribute to listening has not led to a curricular emphasis on proficiency in listening skills, nor to its recognition as a

## Practice points

- Although attentive listening is critical for effective physician communication with patients, it is often neglected in specific guides to the teaching of communication skills.
- A set of eight core principles of attentive listening can guide the development of specific teaching activities and tasks.
- A basic understanding of language use, especially how it is used to reflect and create meanings, is important for attentive listening.
- A crucially important principle is the necessity to develop an awareness of the inferences generated by the listener during attentive listening.
- The teaching of attentive listening can benefit from the use of audio editing programs which can graphically present the acoustic features of human language viz., paralinguage.

personal education goal amongst physicians. The experience of not being listened to and hence, not being heard, is a major source of patient dissatisfaction and failures in communication are often cited as an underlying motive by patients for lawsuits (Vincent et al. 1994; Levinson et al. 1997). Such observations have served as a strong impetus for the teaching of communication skills in undergraduate medical education.

Excellent and comprehensive textbooks on the nature of communications in the health professions now exist (Lipkin et al. 1995). Several strategies for teaching communication skills have been validated and have resulted in the dissemination of a series of detailed handbooks such as the Calgary–Cambridge Guide (Silverman et al. 2005), the Bayer–Fetzer Approach (Duffy et al. 2004) and the SEGUE Framework (Makoul 2001). The acceptance by medical educators of the need to make communication skills a feature of core curriculum has been salutary. However, most of the teacher and learner manuals make scant mention of the skill of listening. It seems that authors of such materials assume that listening is an innate skill, present early in development and hardly in need of special attention. However, this stance ignores the complexities of listening and misses the special features that characterize attentive listening.

Listening is a complex phenomenon that is part and parcel of day to day life. It is also addressed by many disciplines, the most obvious being music, but also linguistics, communication studies, sociology, education, philosophy and business, to name a few. These disciplines will, to varying degrees, explore many situations where listening is considered significant (e.g. conflict resolution, semiotics, discourse analysis, language development and rhetoric). This situation has led to an impressive array of approaches, each with its favored audience. Examples include: active listening (in the health professions); effective listening (in business and management); analytic listening (in music); empathic listening (in psychotherapy); and dialogic listening (in linguistics). The definition and scope of listening are therefore likely to be highly contextual. Nevertheless, a few key features appear common to all. Listening is dependent upon the physiological process of audition and implies the presence of at least two persons – one of whom is a recipient, a hearer or listener. The Oxford English Dictionary (2008) definition of the transitive verb, 'listen' is: 'to hear attentively; to give ear to; to pay attention to (a person speaking or what is said)'.

Given the cardinal place of listening in the clinical encounter, we set out to develop a set of principles for understanding and teaching listening in clinical medicine. We follow with specific suggestions as to how these skills may be inculcated in medical students.

## Background and context

Our motivation for teaching listening arose in the context of curricular renewal at McGill University. In 2005, our Faculty of Medicine introduced a new curricular component entitled physicianship (Boudreau 2007). Physicianship is not a term in common usage and merits definition; it is a noun, and like the word 'friendship', refers to a state wherein one possesses the knowledge and skills necessary for the function and office of physicians. In this context, the term office refers to an obligation. As understood at McGill, physicianship also speaks to the dual roles of the physician: as healer and professional. Our underlying premise is that the primary mandate of medicine is the care of sick persons and relief of their suffering: this is the focus of the healer role. Professionalism

deliver its services (Cruess 1997). Physicianship is enacted through a clinical method, the toolbox of skills necessary for the physician to accomplish the clinician's mandate. It comprises the following skills: observation; listening; communication skills; narrative competence and description; physical examination; clinical thinking and reasoning; and self-reflection. In this article, we focus on listening.

In developing the modules on listening we were guided primarily by the previous work of one of the authors of this paper, Eric Cassell. In the early 1970s, he audiotaped conversations that took place within 800 patient-doctor dyads, many of them over recurrent visits. The transcribed conversations were analyzed and resulted in an enriched understanding of how language works and how it can be used in the clinical setting (Cassell 1985). We were also informed by a review of the medical education literature and enlisted the help of experts in linguistics and narrative theory.

## Course development: guiding principles

As described in the companion paper on clinical observation, we argue for the adoption of four principles in guiding course development for the teaching of clinical skills. These are as follows.

- (1) A curricular blueprint must accept that each element of the clinical method (e.g. listening) is a fundamental and necessary core clinical skill. Consequently, it must be integrated in core curricula, with the requirement that all students will participate in related activities.
- (2) Specific learning objectives must be clearly specified.
- (3) The teaching strategies employed should respect the generally accepted norms for skills teaching, an important aspect of which is the need for repetitive practice. There must also be performance assessments, with both formative and summative intents. Detailed and prompt feedback on performance (in this instance, listening performance), is critically important.
- (4) Medical educators must not lose sight of the fact that they are teaching medicine; in this instance, the focus is on listening and language use, not linguistics. In this spirit, we consider that learning should, in the ideal situation, take place in clinically meaningful contexts.

## Core principles of listening in the clinical context

We have identified eight core principles in what we have labeled 'attentive' listening.

- (1) Attentive listening is a perceptual, cognitive and social act.
- (2) Attentive listening is an active process.
- (3) Attentive listening is triadic: the speaker, the utterance, and the listener.
- (4) Listening attentively involves focusing on word choice.



- (5) Listening attentively requires: receptiveness; an understanding of how spoken language works; and an ability to move between open-mindedness and an awareness of inference.
- (6) Attentive listening can accomplish the following: reveal the personhood and concerns of the speaker (i.e. the patient); produce diagnostically relevant data; assist in healing.
- (7) Attentive listening is not a neutral act – it can have positive and negative impact on the patient, physician and their relationship.
- (8) Attentive listening necessitates the formation of new habits.

We now discuss each of these principles in turn.

#### Attentive listening is a perceptual, cognitive and social act

There is a tendency to confuse listening with hearing. The ability to hear, to activate appropriate neurosensory pathways, is a necessary but insufficient requirement for listening. Listening is a perceptual and cognitive act that includes interpretation. A listener processes and thinks about what is heard – even if steps or elements occur below awareness. There is an anatomico-physiological correlate to this. There are actually many more axons running from primary sensory areas in the cerebral cortex to the thalamus than vice versa. There are a greater number of efferent compared to afferent fibres and some of these descending fibres go all the way to the cochlea. Although much remains unknown about the role and functional properties of this efferent system, the implication is that the cortex does not simply passively receive sensory input but that it actively modulates it. The cortex may hear/see/feel what is of interest or relevant at a given moment.

The duality of 'hear/listen' is raised in an intriguing paper on medical phenomenology. Published in the *Annals of Internal Medicine*, Baron introduces the concept of hermeneutics to the discourse of internal medicine (Baron 1985). He begins the article by describing a patient encounter where he is auscultating (sic) a patient's thorax. When the patient starts to ask a question, the physician's response is, 'Quiet, I can't hear you while I'm listening.' This juxtaposition of listening and hearing is purposeful, calling attention to the object of listening. The import of his article is that physicians must actively choose what to listen to – in the previous clinical scenario, not simply to adventitious lung sounds but also to the person in context.

#### Attentive listening is an active process

Listening implies work; it is not a passive phenomenon. In the patient-doctor setting, where goal-oriented interaction is the rule, the listener is engaged in many tasks, often attended to concurrently. Depending on the circumstances and context, the doctor may be listening to ascertain if life or limb are at risk; to indicate to the patient that confidences are welcome and will be respected; to seek information that will help in

concerns, expectations and sense of illness; to gather clues to the patient's insight and capacity to collaborate in care.

#### Attentive listening is triadic: the speaker, the utterance, and the listener

A listener will hear and apprehend an utterance. The utterance is the basic unit of spoken language. It is generally felt to be a natural unit of speech bounded by breaths and pauses. It is where the being of language resides. But, these utterances are not neutral or inert – the equivalent of 'bare unadulterated facts'. They are imbued with meanings and the meanings they carry always belong to persons. They will depend on the persons who are uttering them and hearing them. Therefore, the process occurs on three levels: the spoken word, the perspectives (sensory, emotive, cognitive and cultural) of the speaker and those same perspectives in the hearer. Listening is thus a triadic process. Aristotle used a similar framework to describe rhetoric: 'For of the three elements in speech-making – speaker, subject, and person addressed – it is the last one, the hearer, that determines the speech's end and object.' (Aristotle 1959).

#### Listening attentively involves focusing on word choice, paralinguistic and non-verbal cues and signs

The choices that patients make in selecting words, and the way they put them together, reveal two things: (1) they describe what the speaker is referring to or trying to tell the listener and (2) they describe the speaker himself or herself. Bakhtin, in his influential essay, 'Discourse in the novel', says:

[in language], ...there are no 'neutral' words and forms – words and forms that can belong to 'no one'; language has been completely taken over, shot through with intentions and accents.... All words have the 'taste' of the profession, a genre, a tendency, a party, a particular work, a particular person, a generation, an age group, the day and hour. Each word tastes of the context and contexts in which it has lived its socially charged life; all words are populated by intentions (Bakhtin 1981).

The next quote, from a clinical setting, illustrates Bakhtin's theory about language. When a patient says, 'I had a stomach upset for the first time in months; I went to a party, stupidly forgot and ate all sorts of ridiculous things.' the adverb 'stupidly' does not simply describe the forgetting; it may also suggest that the speaker has another intention, that is, to label the 'forgetter' as being stupid.

In addition to the words themselves are the non-word features of spoken language, referred to as paralinguistic. Paralinguistic includes the prosodic quality and acoustic shape of human speech and includes aspects such as voice quality, volume, speech rate, rhythm and pauses. These data provide important clues on the emotional and affective states of the speaker and are particularly crucial in the clinical setting.

Non-verbal communication, on the other hand, resides in

needs to pay close attention to movements of the eyes and lips, facial expressions, body position and stance, voluntary movements (especially of the hands) as well as any involuntary movements, for example, tics or tremors.

Some commentators have described the 'what' of listening in other terms. For example, Mishler has proposed that a clinical encounter involves two archetypally different voices, (linguists referring to voices as speaking personalities): the voice of medicine and the voice of lifeworld (Mishler et al. 1989). Bub suggests that medical doctors and psychologists often listen to laments; the lament is 'something universal and specific that patients want heard and understood.' (Bub 2004). These authors point to what can be properly appreciated by a skilled clinical listener and underscore the need to provide a foundational understanding of spoken language in educating medical students.

The reader might be interested in knowing that communication scholars have designed questionnaire-based inventories, similar to those developed for personality profiles, to identify the 'listening styles' of individuals. One framework describes four listening style preferences: people listening, action listening, content listening and time listening (Weaver et al. 1996). Another has examined the evolution of medical students' preferences for specific styles as they proceed through the early part of an undergraduate medical program (Watson et al. 1999). While it is useful for learners and teachers alike to understand that the approach to listening may vary based on context, and presumably that access to a range of styles may be helpful, this realization does not, at the outset, assist educators in teaching listening skills. It must also be noted that certain experts in communication studies have denied that listening abilities can be improved through training (Petrie 1964). We respectfully disagree with them.

Listening attentively requires: receptiveness, an understanding of how spoken language works, and an ability to move between open-mindedness and an awareness of inference

Receptiveness refers to the quality of 'being-ness' in which the listener finds himself or herself at a particular time, in a particular place and context, and in the presence of a particular speaker. It can be encapsulated with the term 'a frame of mind'. It is interesting that in English, the phrase 'to listen' is an active process, a verb – a doing of something. In contrast, in French, the equivalent expression is 'être à l'écoute' – this is best translated as 'being in a state of listening'. This linguistic distinction underlines that both aspects should be operative in clinical settings: being receptive and being engaged in an actual performance.

To understand how language works one must appreciate its importance in creating reality. It is often said that humans do not understand meaning except through language. Cassell states, 'By means of language we not only describe reality, we actually appropriate it, that is 'we make it real' to ourselves. This appropriation may be – and usually is – highly individual' (Cassell 1985). Bakhtin has described the act of speech as a 'literary-verbal performance' (Bakhtin 1981). As Cassell

he illustrates with an example, 'Whereas one sibling may think of her mother as being a cripple, another may think of her as having a slight limp... language can, not only describe reality, it can create it' (Cassell, 1985). The use of metaphors in medicine has been recognized to have particularly important transformative powers over patients – the power to heal as well as the power to do violence (Fleishman 1999; Bedell et al. 2004).

The untrained listener may, when faced with a series of seemingly unrelated utterances in a conversation, conclude that the speaker is nonsensical and therefore dismiss the speaker as illogical and not to be heeded. We believe, however, that all non-psychotic human conversations are logical. Not conforming to a simple definition of logic, that is, connecting a series of premises to arrive at a conclusion, does not mean that the speaker lacks an underlying belief system or explanatory model – they are for the attentive listener to discover.

The concept of open-mindedness implies that the listener is attempting to bring to awareness, and to hold in check, his or her own perceptual, cognitive and emotional filters. It is an attempt, admittedly difficult and likely unachievable in full, to create an opportunity whereby the speaker's utterances can be heard and apprehended in an unedited and untarnished manner. This is immediately balanced by the need to be actively self-reflective: that is, to be aware of the waves of meanings that are generated and embedded in any clinical encounter and to be poised to respond and adjust to them. This accommodation, between being a recipient of information and a fully engaged dialogic partner, is a crucial aspect of attentive listening. The thoughts and emotions that are formed in the listener may be referred to as the 'inner voice'. The attentive listener must be able to swing from the external voice (i.e. speaker) to that inner voice – from one pole to the other (Jackson 1992). The responsive interlocutor will become aware of the inferences that flood in and out of the inner voice and will attempt to direct the conversation so that it is in service of healing. Kleinman describes some of the qualities of the inner voice as a 'healer's voice' (Kleinman 1988). In describing the apparatus necessary to accomplish this balancing act, the psychoanalyst Theodor Reik borrowed Nietzsche's concept of the 'third ear' – the ear that can receive those inaudible things that are recursive to and from patients. It is also important to underline that to move appropriately from outer to inner voice is not as simple as giving each equal 'air time', viz. each taking a turn.

Fleishman describes another aspect of the internally directed speech that is an inherent part of listening and of dialogue:

In every verbal interaction we unconsciously create a model of the knowledge state of our addressee(s). Cooperative communication involves 'recipient-designing' what we say in order to accommodate that knowledge state. By 'recipient-designing' I mean tailoring what we say and how we say it to match what we assume to be the level of understanding or sophistication of our addressee(s) with regard to the

Interpretation cannot be purged from listening; on the contrary, we consider that the student must be guided to recognize it for what it is, in other words, to understand 'reflective inference'. The inclusion of 'self-aware interpretation' as an essential aspect of listening has been captured with the term 'auding' – it has been defined as 'the process of hearing, listening to, recognizing, and interpreting the spoken language' (Toussaint 1960). The term is, however, not commonly used.

Attentive listening can accomplish the following:  
reveal the personhood and concerns of the speaker (i.e. patient); produce diagnostically relevant data;  
assist in healing

Listening is a skill unmatched in the capacity to elicit relevant clinical information. The attentive physician can better decipher and understand the point of the patient's story or narrative and thence, generate tentative hypotheses regarding what ails the patient. Their joint interpretation will point the way to future action. Listening can be effective in revealing the personhood of the patient, particularly if the listener is attentive to word choice and paralanguage. This specific clinical skill can lead to an understanding of a patient's concept of health and illness; his or her explanations for a particular sickness; and his or her priorities, values, hopes and fears. Many patients have declared that being listened to is part of the healing process. In a recent study conducted during the development phase of the physicianship curriculum and aimed at elucidating patients' perspectives on physician roles, one interviewed patient noted, '...sometimes listening to a person will cure half of [one's] problems.' (Boudreau et al. 2008).

Attentive listening is not a neutral act – it can have positive and negative impact on the patient, the physician and their relationship

As noted above, listening can be harnessed for and channeled to treatment. If done poorly, however, the consequences can be pernicious and result in wounding. 'Half-listening' can disenfranchise the patient. 'Distracted listening' can result in false leads for the physician and can reflect an imperviousness to patient concerns, at least, it may be so interpreted by the patient. 'Selective listening' can infantilize or frustrate the patient. Any of these can damage the therapeutic alliance.

Attentive listening requires the formation of new habits

In normal conversation there is a tendency to consider listening as automatic. In 'naïve' listening, people hear what is spoken and immediately project on the utterance their own meanings. This is a common 'road block' to attentive listening. Since there is much resistance to attentive listening, medical teachers often comment that, 'it [active listening] is characterized more by what is not done than by what is done'

aware of and attempt to overcome bad habits; these include things such as interruptions, hasty reassurances and premature advising, insufficient use of open-ended questions, and discomfort with silence or long pauses.

## Illustrating the principles

We now provide a sample of activities and tasks designed to teach these core principles to first year medical students.

The fact that attentive listening is not merely sensory is illustrated using a musical analogy. We show students a musical score of a piano sonata by Domenico Scarlatti (e.g. K 380. L 23) while listening to two different recorded interpretations. The leap, from a language apprehended visually on the page to one received aurally, evokes the rich tapestry symbolizing the richness and communicative weight of the active performance compared with the written text. It becomes obvious to students that, though the written notes are identical, the performers' (alias speakers) expressions are uniquely theirs. The pianists make the piece their own through their choice of instrument, their own lived experience and the personal meanings with which the notes become coloured. This permits a useful lesson to the importance of paralanguage and patient's personhood expressed through the clinical narrative. In the case of a musical performance, just as in any communicative act, the listener's interpretation and judgment are an inherent part of the phenomenon.

Another exercise used in our teaching modules asks students to read a transcript of a patient's narrative and then to try to represent the voice of that patient. The student who is assigned the task of doing the role play is given guidance as to which features to evoke. The following are examples of directions given to 'student-speakers': 'Speak slowly and softly using regular pauses that seem deliberate and considered.' 'In a section, that is left blank, the patient needs to describe the cough and sputum; fill in that blank with a few sentences using a language that is evocative, affected and picturesque.' 'When you speak as if you were this patient, do so as if you were an uneducated and/or impoverished person.' 'In your speech, show that you are perplexed, unsure and worried.' Since students are required to complete these tasks in teams, several versions of the patient's speech are produced; the 'student-listeners' are required to describe and compare these. Tentative inferences are sought. Finally, an audio of the patient's voice – the authentic one – is played. Through such exercises, the importance of the listener in the triad of speaker/utterance/listener is made apparent.

Listening attentively to utterance involves focusing on word choice and paralanguage. It is tackled through extensive use of recordings of actual patient-doctor encounters. In the introductory sessions, we purposely use only the audio portion of the interviews because we believe that seeing the speaker distracts from the task at hand – listening attentively. Although this approach results in a loss of contextual information, we feel that it invests the spoken language with



The importance of word choice and its potential to reveal the speaker's relationship to the illness is seen in the following text:

It seems like, ah, they feel that people that have leukemia have been tired all their life or suffering with anemia or something similar, which was not the case whatsoever. I seemed healthy for four-four and a half-years and, ah, I would say that this is another thing no one seems to know – whether you have this long before it shows up, or whether you just got it and, ah, it shows.

One wonders how the patient could be speaking about her own fatal disease in what seems like a casual manner. She uses the first person pronoun when speaking about health but changes to the third person when referring to ill-health. This distancing mechanism is called the pronoun shift. It is used frequently by patients and, if recognized, can reveal significant information about the speaker. In the example above, the more distant stance indicates a kind of denial.

With respect to teaching paralanguage we have found it useful to equip students with a framework and a glossary of descriptive terms. A simplified version of it is presented in Table 1. We have experimented with making selected features of paralanguage, namely pause to speech ratio and variability in volume, graphically visible to students. We created speech waveforms using an audio editing software program (Sound Forge 9, Professional Digital Audio Production, Sony) and

have found these be effective teaching aids. An example is presented in Figure 1; it demonstrates the variation in the evolution in the acoustic shape of the speech of a patient with clinical depression.

We illustrate the fact that all non-psychotic human conversation is logical by providing examples of apparently chaotic utterances (i.e. where the premises are presented in a seemingly random manner). The following excerpt from a patient interview has been used to teach this point:

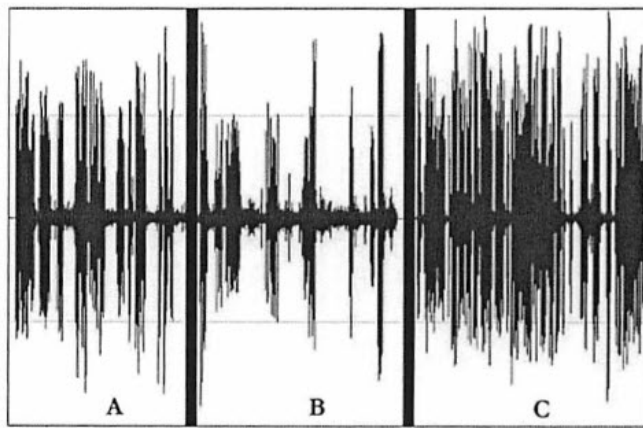
Uh, I want to try and sort – I think I have to – I am separated from my husband and have been for about three years and I've got four kids to raise, three – three are now at [name of school]. I haven't been to an internist or a general practitioner in I can't remember how many years. When the kids are sick, I go and see [name of physician]. When we have emergencies, we go to various specialists. Uh, I think I have to go into therapy. Um, probably... I have mixed feelings about it. Um, but I'd like to sort out, if I possibly can, um, how much of it is physical. Um, I checked with my mother, for instance, you know, – I'm forty-five. My mother has had – gone through a ne – nervous breakdown in her thirties. My father was in [specific business] and there was – you know, etcetera, etcetera. Um, I'm an only child, um... my father died when I was twelve, um... But, I – I checked with her about, uh, what, when and how she went through menopause. I've been – I've been through, you know. I got – I got my check-ups. I think the last time I went was about four months ago. I thought they routinely took an estrogen level thing. Um, I had regular periods, every four weeks. Um, but I've been going for the last – since late last spring.

Table 1a. Verbal-paralanguage.

| Feature                    | Examples of descriptive terms   |
|----------------------------|---|
| Speech rate                | slow, leisurely, hurried, deliberate, indolent, rapid, etc.   |
| Pause to speech rate ratio | rhythmic, staccato, stuttering, flowing, halting, babbling, etc.  |
| Tone of voice quality      | nasal, flat, monotone, piercing, unctuous, gruff, mechanical, musical, infantile, emphatic, strained, choked, husky, etc. |
| Pitch                      | high, medium, low   |
| Volume                     | loud, soft, quiet, even, variable   |
| Articulation               | precise, slurred, suggestive of specific dialects   |

Table 1b. Verbal-word.

| Feature               | Examples of descriptive terms  |
|-----------------------|--|
| Choice of words       | precise, meticulous, pedantic, deliberate, intellectual, poetic, exaggerated, theatrical, formal, colorful, chaotic, laborious, etc.   |
| Sentence construction | elaborate, simple, pedantic, awkward, etc.   |
| Logic                 | orderly, consistent, complicated (i.e. containing multiple premises in a single utterance), contradictory (i.e. containing premises that preclude each other), ambivalent, magical, etc. |



**Figure 1.** Example of a waveform generated by Sound Forge. The x-axis represents time and the y-axis represents sound volume. In segment A, the patient was clinically depressed; the speech slow and monotone i.e. marked by little variation in volume and with pauses that were longer than normal. In segment B, the patient was extremely depressed; the pause to speech ratio was very pronounced and the volume of utterances often barely audible. Following treatment, the patient's speech became very animated; the volume was

| Premises   |  | Patient's utterances  |
|------------|--|---|
| #1         | The problem is hormonal, metabolic or menopausal.      | <ul style="list-style-type: none"> <li>I lost fifty pounds last spring – I've got another twenty-five to go. Something changed in my metabolism, though. Um, I'm not able to absolutely control my eating. I find that I can't drink very much.</li> <li>... but I'm going hot and cold all the time.</li> <li>Um, I checked with my mother. But I – I checked with her about, ah, what, when, and how she went through menopause.</li> <li>Um, I had regular periods, every four weeks.</li> <li>I thought they routinely took an estrogen level thing.</li> </ul> |
| #2         | This is why I am here now, there is no regular doctor. | <ul style="list-style-type: none"> <li>I haven't been to an internist or general practitioner in – I can't remember how many years. When the kids are sick, we go and see [name of physician]. When we have emergencies, we go to various specialists.</li> </ul>   |
| #3         | The problem is emotional.                              | <ul style="list-style-type: none"> <li>I've been – I've been through, you know.</li> <li>My mother has had – gone through a ne – nervous breakdown in her thirties. My father was in [specific business] and there was – you know, etcetera, etcetera.</li> <li>Um, my father died when I was twelve</li> <li>Um, I'm an only child</li> <li>I am separated from my husband and have been for about three years – and I've got four kids to raise, three – three are now at [name of school].</li> <li>Um... I have tried Valium.</li> </ul>                        |
| Conclusion |  | <ul style="list-style-type: none"> <li>I think I have to go into therapy, um, probably... and I'm trying – I have mixed feelings about it. Um, but I'd like to sort out, if I possibly can, um, how much of it is physical.</li> </ul>  |

**Figure 2.** Text of a patient's speech, with utterances rearranged, in order to reveal premises and logic.

I lost fifty pounds last spring; I've got another twenty-five to go. Something changed in my metabolism though. Uh, I'm not able to absolutely control my eating; I find that I can't drink very much. Um, I have tried Valium but I'm going hot and cold all the time.

Students are asked to identify the premises and rearrange them so the patient's flow of logic emerges. In diminishing the apparent chaos, (often interpreted as 'nuttiness' by the untrained listener), we help understand the story and bolster a sense of respect for the patient. Our response to the above task is presented in Figure 2.

The teaching strategies described above can all be deployed in amphitheaters or small group rooms, that is, in pre-clinical contexts. It is important to emphasize, however, that all of the principles, particularly those that relate to the impact on patients, are best taught, role-modeled and assessed during actual patient encounters.

## Conclusion

We have identified a set of core principles that describe attentive listening and have applied these to the design of specific strategies for its teaching. The preparation of medical students to be attentive listeners, as well as keen observers, has been motivated by two complementary aims. The first is a desire to equip students with the skills of a clinical method deemed to be suitable in advancing the basic goal of physicianship, that is, redirection of the physician's gaze from disease to the sick person. Acquiring an ability to see closely and discerningly and to listen fully and authentically, is a requisite in achieving this objective. The second is to contribute to the transformation which students experience in medical school. Much has been written in critical pedagogies about the transformative processes. A recently conducted study on the education of American clergy states: 'At the center of this pedagogy is the idea of formation: the recognition that teaching and learning are about much

in the formative sense is a process by which the student becomes a certain kind of thinking, feeling and acting being' (Foster et al. 2006). This description is entirely applicable to medicine, and we adapt it as follows: 'Learning in the formative sense is a process by which the student becomes a certain kind of thinking, feeling, seeing, listening and acting being.' It became evident to us, in developing these principles and examples, that attentive listening in the clinical domain has such unique features that it may warrant the specific term, 'clinical listening'.

The new course in teaching attentive listening has been well received by students although we cannot yet provide evidence as to its efficacy since we need to develop validated tools with which to reliably assess performance. Learner feedback has provided us with a critique that we find particularly fascinating. Some students have argued that it would be more effective to teach listening after they have been taught the medical interview and specific techniques in communication skills. Our initial response to this was to consider it akin to 'putting the cart before the horse.' Nevertheless, the issue of sequencing is undoubtedly important. Clinical educators generally believe (even if erroneously so in certain instances) that skills teaching must follow a certain order and that the acquisition of simple skills should precede the complex. While we assumed that learning how to listen would be easier than learning to conduct a complete medical interview with patients, it may actually be the reverse. We may need to reinforce these skills, developed in the first year, with a complementary approach later during clinical rotations, by identifying errors in listening during observed medical interviews and then exploring these errors with the students.

As with modules on teaching clinical observation, teaching listening remains a work-in-progress. We are currently focused on narrative understanding as a necessary complement to attentive listening. We expect that students, by understanding language and narrative structure, will become more attuned to patient needs, and increasingly proud of their gradual

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