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Indice/Table of Contents

Saggi/Essays

Fiorella Lopiccoli, <i>Osservazione e teoria nella medicina di Francesco Torti (1658-1741)</i>	9
Luciano Mecacci, <i>Herbert of Cherbury and his unorthodox theory of brain-mind relationship</i>	37

Focus: “Philosophy and Medicine”

Vera Tripodi, <i>Introduction</i>	53
Maria Cristina Amoretti, <i>The concept of mental disorder: between definitions and prototypes</i>	57
Maurizio Balistreri, <i>Hopes and limits of moral bioenhancement</i>	75
Francesca Ervas, Marcello Montibeller, Maria Grazia Rossi, Pietro Salis, <i>Expertise and metaphors in health communication</i>	91
Elisabetta Lalumera, <i>Saving the DSM-5? Descriptive conceptions and theoretical concepts of mental disorders</i>	109
Lucia Morra, <i>Raising awareness of how Asperger persons perceive their capacity to use metaphors</i>	129
Vera Tripodi, <i>Epistemic injustice and medical diagnosis</i>	147

Testimonianze/Stories

Giada Gori, Debora Tringali, Rosapia Lauro Grotto, Massimo Papini, <i>Testimonianze da un gruppo di volontari che affiancano</i>
--

i pazienti e i loro familiari in un reparto di oncoematologia pediatrica

161

- Rosapia Lauro Grotto, Elena Raveggi, Debora Tringali, Massimo Papini, *Essere volontari in un reparto di neuropsichiatria infantile: l'intervista ermeneutica per un'analisi di bisogni, risorse e criticità* 189

- Debora Tringali, Eleonora Fazzini, Giulia Borgogni, Rosapia Lauro Grotto, Massimo Papini, *Accompagnare con la propria presenza una persona anziana: un'esperienza di volontariato presso la Comunità "Le Civette" di Firenze.* 227

Recensioni e note/Reviews and Book notices

- Antoine de Baecque, *En d'atroces souffrances*, Alma, Paris 2015, 235 pp. (Corinne Doria) 249
 - Paolo Barcella (a cura di), *Un medico a Caporetto. I diari di guerra di Ugo Frizzoni*, Fondazione Pellegrini Canevascini, Sestante edizioni, Bergamo 2015, 333 pp. (Alessandro Pastore) 251
 - Fabrizio Desideri, Paolo Francesco Pieri (a cura di), *L'opacità dell'oggettuale*, numero monografico di «Atque. Materiali tra filosofia e psicoterapia», n.s., 18, Moretti & Vitali, Bergamo 2016, 270 pp. (Antonino Trizzino) 254
 - Olivier Faure, *Et Samuel Hahnemann inventa l'homéopathie*, Aubier, Paris 2015, 394 pp. (Corinne Doria) 258
 - Sylvain Sionneau, *Les Hors-la-loi de la médecine. Les médecins populaires en Maine-et-Loire au XIX^e siècle, La Crèche*, Geste éditions, 2015, 376 pp. (Corinne Doria) 261
- Autori di questo numero/Contributors to this issue 265

Expertise and metaphors in health communication

Francesca Ervas, Marcello Montibeller,
Maria Grazia Rossi, Pietro Salis

Abstract: The paper focuses on the kind of expertise required by doctors in health communication and argues that such an expertise is twofold: both epistemological and communicative competences are necessary to achieve compliance with the patient. Firstly, we introduce the specific epistemic competences that deal with diagnosis and its problems. Secondly, we focus on the communicative competences and argue that an inappropriate strategy in communicating the reasons of diagnosis and therapy can make patient compliance unworkable. Finally, we focus on the case of diabetes metaphor and propose the deliberate use of metaphors in health communication as an educational tool. On the one hand, metaphors might help doctors in explaining the disease in simpler terms and framing the experience of illness according to patient's specific needs. On the other hand, metaphors might encourage a change in patient's beliefs on their own experience of illness, and enable them to reach a shared decision making with doctors.

Keywords: Expertise, Metaphor, Health communication, Reasoning

Running head: What kind of doctors' expertise is required in health communication?

Introduction

In health communication experts need to defend the specificity of scientific knowledge/practice of their field and deal with the needs and expectations of different patients. The paper investigates the epistemological and communicative competences the experts need to address both the specificities. The objective is to clarify the role of expertise in an effective scientific communication, by considering in particular the non-literal meanings vehiculated in medical consultations. From diagnosis to therapy, professionals need an expertise going beyond the specific knowledge of their own medical specialization. Such expertise rests at the interface of two different but interrelated competences in reasoning and communica-

tion. On the one hand, doctors need to handle with diagnostic praxis: this praxis requires a kind of expertise dealing with particular types of reasoning, whose mastery, as a matter of fact, depends heavily on epistemic resources – the ability of the doctor to navigate across the potential defeaters for her/his diagnostic hypothesis. On the other, doctors need specific communicative competences in order to achieve patient compliance in illness management. In particular, in a doctor/patient relational dimension, an inappropriate communication strategy or a lack of attention to patient's interpretation could entail a delay or refusal for therapy.

In health communication, non literal meanings play an important role as they frame patient's experience of illness, (positively or negatively) influencing their perception of therapy or even of themselves as individuals. In this paper, we focus on metaphor as an educational device to help patients understand complex phenomena in simple terms. Metaphor is indeed a useful device to grasp an unknown (target) concept by using a known (source) concept, thus naming and explaining a phenomenon, i.e. illness, which otherwise would remain unintelligible, obscure. Metaphor is also able to frame the experience of illness, highlighting some of its features and hiding others, in the process of providing a specific perspective on the illness. Such perspective might be changed in specific contexts where the doctor thinks that it is required in the interaction with the patient. In such a case, the doctor might *deliberately* use a metaphor to question a system of commonplaces associated with it and to urge for a belief change in the patient. Finally, the paper considers the case of metaphors as educational tools in diabetes consultations, to understand how metaphor might be framing devices and perspective changers in medical practice.

Expertise in diagnostic reasoning

A prominent aspect of medical expertise deals with diagnostic praxis. Diagnosis is usually regarded as one of the aspects that make medical profession thorny: in particular, diagnostic practice is exposed to certain amount of risks. In order to highlight these risky features, it would be useful to approach it from a particular external perspective. Diagnosis, in a nutshell, can be understood as a peculiar type of reasoning: from a given set of premises, for example the patient's symptoms, results of medical checkups and further specialist analysis, the doctor can conclude, after a careful double-check, that the patient suffers from a certain pathology. It would appear, at least *prima facie*, that this is a simple or regular form of

reasoning: given certain premises, the doctor draws certain conclusions. Things are not that simple: to understand diagnosis, and diagnostic praxis, in these terms, would be a terrible mistake.

The relation between the starting premises of diagnostic reasoning and the conclusions that can be drawn on their basis, is rather different from the typical schemes of classical logic. The usual deductive account of inference, in fact, establishes a kind of logical necessity that is in play: given certain premises, a particular conclusion necessarily follows. If “Fido is a cat”, and if “cats are mammals”, it necessarily follows that “Fido is a mammal”.

Diagnostic reasoning cannot be understood according to this general ‘deductive’ model. It is, in fact, a kind of *nonmonotonic*, i.e., multi-premise and defeasible, reasoning. A particular reasoning is nonmonotonic when the presence or the absence of a particular premise is liable to crucially alter its conclusion. It means that the conclusion does not necessarily follow from certain premises¹. The necessity of the conclusion is thus “bound to certain conditions”. For example, the inference from p to q can be perfectly legitimate, while that from $p \ \& \ r \ \& \ s$ to q may be not, especially because of the presence of r and s . Certain premises deal with certain conclusions as playing the role of *defeasors*: they are liable to make the conclusion a bad one and/or to make the other premises bad (in order to draw certain conclusions). So, their presence can undermine the relation that usually holds between a premise (or a set of premises) p and a conclusion q . For example, consider the following reasoning: “mammals (usually) do not fly; Batty is a mammal; hence, Batty does not fly”. While at first it appears to be a typical deductive scheme of inference, it is, in fact, a nonmonotonic one. Few further premises are sufficient, actually, to dismiss the conclusion “Batty does not fly”. We can add to our reasoning, for example, the following premises: “bats are mammals; bats fly; Batty is a bat”². Very intuitively, these premises revolutionize the previous reasoning, decisively altering its conclusion. The complete reasoning, in fact,

¹ An account that generalizes this conception of inference over the classical deductive model can be found, under the general heading ‘material inference’, in Robert Brandom, *Articulating Reasons. An Introduction to Inferentialism*, Harvard University Press, Cambridge, MA 2000, pp. 87-90; Id., *Between Saying and Doing. Towards an Analytic Pragmatism*, Oxford University Press, Oxford 2008, pp. 106-109. For an approach that establishes a general connection between defeasible reasoning and scientific reasoning, especially dealing with lawful inferences, see Nancy Cartwright, *How the Laws of Physics Lie*, Clarendon Press, Oxford 1983. Her account is almost entirely focused on *ceteris paribus* ‘laws’ and *ceteris paribus* ‘inferences’ in physical explanation.

² This example is a slight modification of one present in Aldo Antonelli, *Grounded Consequence for Defeasible Logic*, Cambridge University Press, Cambridge, MA 2005, pp. 5-6. For similar examples see also Marcello Frixione, *Come ragioniamo*, Laterza, Roma-Bari 2007, pp. 102-111.

would be now a different series of steps: “mammals (usually) do not fly; Batty is a mammal; bats are mammals; bats fly; Batty is a bat; hence, Batty does not fly”. The new facts, that Batty is a bat, that bats are mammals, and that bats fly, alter substantially the basic set of premises, to the point of reverting the conclusion that we felt entitled to draw³.

Before focusing on medical examples, it should be clearly stated that, in order to grasp these matters, we must not merely be concerned with problems of reasoning. In fact, as we shall see discussing examples from actual diagnosis, these deal with *epistemic* matters. Diagnosis is a kind of epistemic reasoning and medical expertise in this context has to be understood as an ability to deal with ‘special’ epistemic facts⁴. The doctor is capable to know and anticipate potential defeasors on the basis of symptoms: in particular, the meeting with the patient is devoted to ask her/him about the potential defeasors compatible with the symptoms that s/he shows. The features that make these facts (defeasors for symptoms) special is the same that makes diagnostic reasoning nonmonotonic. Therefore, there is a connection between the logical structure of these inferences and the special role played by certain facts displayed there as premises. Let’s see how all this works in examples directly taken from the medical field. These examples are devoted to show how medical expertise can manage epistemic and methodological resources to meet the challenges presented by this kind of reasoning.

Imagine a guy, Calogero, who tells the doctor that he does not pee very often (in any case quite less than before). This is a premise that allows for different set of diagnoses depending on the different premises combined with it. For example, the doctor can ask about the amount of water Calogero consumes; if Calogero does not drink enough water, maybe there are no reasons to worry (he does not pee because he does not drink enough water). The doctor can also ask Calogero if he plays any intensive sport and expels a lot of water through sweating; if Calogero does play an intensive sport and sweats practicing, then there might be no cause for concern (he does not pee because he engages in intensive sporting activity)⁵.

³ See, for a general introduction, Robert Koons, *Defeasible Reasoning*, in Edward N. Zalta (ed.) “The Stanford Encyclopedia of Philosophy”, 2013, url: <http://plato.stanford.edu/entries/reasoning-defeasible/> See also, for recent developments in nonmonotonic logic, Christian Straßer, Aldo Antonelli, *Non-monotonic Logic*, in Edward N. Zalta (ed.) “The Stanford Encyclopedia of Philosophy”, 2016, url: <http://plato.stanford.edu/entries/logic-nonmonotonic/>

⁴ See, for the epistemic relevance of defeasible reasoning, John Pollock, *The structure of epistemic justification*, “American Philosophical Quarterly” (Monograph Series), IV, 1970, pp. 62-78; Id., *Knowledge and Justification*, Princeton University Press, Princeton 1974.

⁵ Cf. Per-Olof Åstrand et al., *Textbook of Work Physiology*, X, Human Kinetics, Champaign (IL) 2003.

Alternately, if Calogero tells the doctor that he feels he does not pee enough, even though he consumes a lot of water and, in addition, does not engage in intense physical activity, the situation calls for some concern. With this new information in hand the doctor now needs to call for new examination dealing with urine analysis. First, the actual amount of urine during 24 hours will be measured: if its volume is less than 400 ml, Calogero would be diagnosed with a condition called 'oliguria'. But, if the medical reports demonstrate that Calogero's urine is abnormally rich in blood, the diagnosis changes: Calogero does not pee enough, the exams show his urine to be abnormally rich in blood, the doctor changes her/his diagnostic hypothesis (taking the new information into account) to suggest that Calogero may have a post-renal cause of oliguria, like a tumor of the lower urinary tract, for instance. Following this reading, the doctor would be required to consider additional signs and symptoms to evaluate the compatibility of Calogero's clinical condition with this suspicion, and possibly perform further tests (ultrasound, CT, etc.) to confirm or disprove it.

If the exams show, for example, that Calogero's urine is abnormally rich in proteins and lipids, the diagnosis will change again: Calogero does not pee enough, the exams showed his urine to be abnormally rich in proteins and lipids, the doctor is allowed, now, to change her/his diagnostic hypothesis to suggest that Calogero may have a renal cause of oliguria, as a nephrotic syndrome, for instance⁶. Even in this case the doctor would be required to consider additional signs and symptoms and perform further tests to evaluate the compatibility of Calogero's clinical conditions with her/his own diagnostic hypothesis.

Therefore, our first premise "Calogero does not pee enough" can be a basis to infer different things, depending on the collateral premises that are taken into account. So, for example, "he does not consume enough water", and "he practices intensive cycling", are collateral premises that can rule out alarming diagnosis (the conclusion of the diagnostic reasoning is: "he pees less than before because he does not consume sufficient water and does intense cycling"). On the contrary, assertions such as "he consumes sufficient water", and "he does not play any intensive sport" are alarming enough to request for urine analysis. This collateral premise can lead our diagnostic reasoning in different directions, depending on the results: if the urine is rich in blood, then Calogero could arguably

⁶ Cf. Vinay Kumar, Abul K. Abbas, Jon C. Aster (eds.), *Robbins and Cotran Pathological Basis of Disease*, XX, Elsevier, Philadelphia 2005.

have a post-renal cause of oliguria; if the urine is rich in proteins and contains lipids, then Calogero could arguably have a renal cause of oliguria.

The expertise of the doctor, within diagnostic praxis, consists of the ability to identify the right connections between symptoms and analytic data, and in ruling out the potential defeasors, for her/his diagnostic hypotheses. Diagnostic expertise is an ensemble of abilities dealing with symptoms and examination results: the meeting with the patient permits the doctor, with specific questions, to *anticipate* (by training and experience) the possible defeasors for the symptomatology; and the analytic data, together with the registered symptoms, permit the doctor to rule out the diagnoses for which actually they are defeasors (and also to recognize a probable diagnosis allowed by ruling the recognized defeasors out).

Medical communication and patient compliance in illness management

Diagnostic reasoning is only one of the many challenging aspects of medical profession: for instance, once a diagnosis is achieved, the physician still has to choose an appropriate therapy. Therapeutic choice is also not free from difficulties: a large debate in philosophy of medicine has pointed out conceptual and methodological issues in connecting the best available evidence on treatments' effectiveness (provided by means of randomized clinical trials) to the needs of the single, concrete patient (accessible to knowledge by integrating individual clinical data of the patient and doctor's scientific expertise in clinical reasoning). Still, therapeutic prescription is not the final task of medical practice: if its final task is to take care of the patients and treat (or prevent) their diseases, then doctors would not only need to perform correct clinical reasoning but also patients would need to adhere doctors' prescriptions and take a proactive position in illnesses management.

In the last few years the problem of adherence has been a major issue, and its significance has been gradually increasing, in the medical debate, particularly in connection with cancer prevention and chronic illness treatment and also due to its enormous social and economic impact. On one hand, chronic illnesses will comprise of 60% of all diseases and would be the cause of three-fourth of the deaths by 2020⁷: the social impact of

⁷ Cf. World Health Organization, *Status report on noncommunicable diseases*, WHO, Geneva 2011.

these conditions will be devastating if costs are further amplified by clinical complications or adverse events due to inadequate adherence to therapies; on the other hand, considering the danger of cancer for individuals and the costs of new anti-neoplastic therapies for society, prevention and early diagnosis seem to be the best strategies available to reduce individual and social impacts.

Nevertheless, the degree of adherence to therapy or prevention and the participation in illness management of the patients are frequently not sufficient; a lot of research has been done in order to improve the level of patients' compliance. Cancer screening is a good example to clarify this issue. Nowadays, screening is considered to be one of the best strategies available for cancer prevention; screening strategy does not demonstrate impact on mortality reduction for all types of cancer but its impact has been solidly proved to be very strong on some of the most common forms of tumor, like cervical cancer (PAP-smear), breast cancer (mammography), colo-rectal cancer (occult blood and immunochemical testing, endoscopy) and, very recently, also lung cancer (low dose helical CT).

Even if reduction in mortality is significant in the above mentioned cases, and therefore many public health-systems provide free screening for population, the problem of screening itself impacts non-ill subjects with medical (frequently displeasing) procedures: many individuals feel a violation of their privacy without any concrete or immediate reason. So, adherence to a screening strategy often demands concrete efforts from the doctors in order to persuade the patients; these efforts need to be supported by a well structured communication strategy. Systematic review of the literature⁸ shows that there is a positive impact of doctors' persuasion on patients in terms of adherence to screening strategies; nevertheless, studies also show that persuasion effort is not significantly associated to screening adherence when it lacks methods of communication based on shared decision making (SDM) models. At the same time, at least one study⁹ shows that some components of SDM could also be negatively correlated to adherence in certain conditions; it suggests the need for further research to adapt SDM to different communication contexts in order to achieve best effectiveness.

Thus a crucial aspect is to find strategies that can change an authoritative method of medical education of patients into a clear and focused in-

⁸ Cf. Emily B. Peterson et al., *Impact of provider-patient communication on cancer screening adherence: A systematic review*, "Preventive Medicine", 2016, pp. 96-105.

⁹ Cf. Bruce S. Ling et al., *Informed decision-making and colorectal cancer screening: is it occurring in primary care?*, "Medical Care", 2008, pp. 23-29.

formation transfer in the context of a shared decision making, in which the patient can feel to deliberate and adhere to a medical procedure. Furthermore, as some scholars have already pointed out¹⁰, an inappropriate strategy of communication can determine patient reactance and the effort to obtain patients' adherence to therapy could fail and even cause their oppositional behavior if they feel that the medical prescription is a limitation of their freedom instead of seeing it as a shared strategy.

A very interesting field of application of SDM (probably even more than in cancer screening) is represented by chronic diseases. An interesting study on therapeutic adherence in patients affected by haemophilia¹¹ postulates three dimensions in approaching patient-physician communication:

- relational dimension: whether the relationship is cure-oriented or care-oriented and so on;
- structural dimension: what kind of differences there are in terms of social position, responsibility, freedom in decision-making;
- linguistic dimension: whether there are cultural differences that can lead the doctors and the patients to attribute different meanings to the same terms.

Any of these dimensions needs to be faced while establishing a therapeutic communication; the study emphasizes the role of attentive listening in the relational dimension and shows how it improves the proactive attitude of the patients and therefore their adherence to therapy. In considering the linguistic dimension some important aspects need to be stressed.

First, if the relational dimension has something to do with the patients' affects and emotions, the linguistic dimension concerns their rational expectations: the physician has to transfer, to the patient, a set of information that justify, on a rational basis, decisions that will impact patients' everyday life¹²; that patients might have to change their behavior and habits based on the medical prescriptions is an interference in their personal freedom. Furthermore, also information-transfer is, in itself, a big issue in medical prac-

¹⁰ Cf. Sarah Bigi, *Communication Skills for Patient Engagement: Argumentation Competencies As means to Prevent or Limit Reactance Arousal, with an Example from the Italian Healthcare System*, "Frontiers in Psychology", VII, 2016, 1472.

¹¹ Cf. Ana-Belen del Rio-Lanza et al., *Information provision and attentive listening as determinants of patient perceptions of shared decision making around chronic illnesses*, "SpringerPlus", V, 2016, 1386.

¹² Several studies show that relational dimension, self-consciousness and story telling may not be enough to determine adherence in lack of adequate information transfer; see, for example, Michael J. Miller et al., *Evaluating the effectiveness of a patient storytelling DVD intervention to encourage physician-patient communication about nonsteroidal anti-inflammatory drug (NSAID) use*, "Patient Education and Counseling", 2016, pp. 1837-1944.

tice. When a physician thinks about a pathological condition or about a therapeutic rationale, s/he would probably think, for instance, about the therapeutic interference of a certain medication on some biochemical pathways that characterize some physiopathological phenomena in patient's body. Usually the patient has no idea of those phenomena and only thinks about the impact that prescriptions will have on her/his life.

Thus, a good physician would have to show the reasons of therapeutic suggestion to the patient, giving intelligible information, explore pros and cons, negotiate with her/his actual expectations, values and way of life. Unfortunately the patients and the physicians usually do not share a common language about the human body or the human health; even the most common anatomic visual metaphors that a doctor has learnt in her/his university would be incomprehensible to most of patients: almost nobody would understand that adrenal is a 'Phrygian cap' or what a 'scrotal tongue' might be. So, in order to perform intelligible communication, a physician should create, with the patient, a common language game in which information, explanation, metaphors and images allow for a true interaction.

Metaphor as framing device and perspective changer in health communication

Recent studies in figurative language comprehension have shown that implicit communicated content has a strong influence in doctor/patient interaction¹³. In particular, metaphors have proved to be powerful devices for patient education¹⁴. Since Aristotle, metaphor has been considered proper to learning and understanding because it allows a transfer of knowledge from different domains, generally from a more concrete and easily accessible domain (*source*) to a more abstract and difficult one (*target*)¹⁵. In

¹³ See, for an introduction to the problem of health communication, Teresa L. Thompson, Roxanne Parrott, Jon F. Nussbaum (eds.), *The Routledge handbook of health communication*, Routledge, New York 2011; Sarah Bigi, *Communicating (with) care. A linguistic approach to the study of interactions in chronic care settings*, IOS Press, Amsterdam 2016.

¹⁴ Cf. Elena Semino, Zsófia Demjén, Jane E. Demmen, *An integrated approach to metaphor and framing in cognition, discourse and practice, with an application to metaphors for cancer*, "Applied Linguistics", 2016, pp. 1-22; Maria G. Rossi, *Metaphors for patient education: a pragmatic-argumentative approach applying to the case of diabetes care*, "Rivista italiana di filosofia del linguaggio", forthcoming.

¹⁵ See, for a general introduction to metaphor, Francesca Ervas, Elisabetta Gola, *Che cos'è una metafora*, Carocci, Roma 2016; Zoltán Kövecses, *Metaphor: A practical introduction*, Oxford University Press, New York 2002.

George Lakoff and Mark Johnson's theory of conceptual metaphor (1980), metaphors are the linguistic surface of deeper conceptual (embodied) structures¹⁶ we use to think about every aspect of our everyday life. However, before them, the cognitive power of metaphor had been reconsidered through Max Black's interactive theory of metaphor (1954)¹⁷, which focused on the role of imagination in the language of science.

Black argued that metaphors result from the interaction among source and target domains, which restructures the domains themselves, by selecting, emphasizing, suppressing, and organizing their features. Such a process is responsible for metaphor's *framing effect*, i.e. the effect of presenting a subject to people in a way that influences their interpretation. As pointed out, through metaphors "we regard one thing in terms of another, and in so doing our understanding of the first is modified in light of perspective gained by the second"¹⁸. Frames provide meaning through a selective process, which filters people's perceptions and concepts, providing a specific perspective¹⁹. Such a process is not necessarily conscious. Nevertheless it is inescapable and never 'neutral': in health communication it provides a specific perspective to interpret the disease and its development. As Robert Entman wrote: "*to frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described*"²⁰.

This does not mean that all metaphors necessarily involve a belief change or a persuasive effect in communication. Most metaphors are *conventional*, or 'dead', and do not attract people's attention, because their frequent use has brought them to a status similar to literal terms²¹. People directly and unconsciously activate their associated frames, without the intention to provoke a belief change in others, but rather to tacitly share an implicit back-

¹⁶ Cf. George Lakoff, Mark Johnson, *Metaphors We Live By*, University of Chicago Press, Chicago 1980.

¹⁷ Cf. Max Black, *Metaphor*, "Proceedings of the Aristotelian Society", LV, 1954, pp. 273-294.

¹⁸ Eva F. Kittay, *The creation of similarity: A discussion of metaphor in light of Tversky's theory of similarity*, in *Proceedings of the Biennial Meeting of the Philosophy of Science Association*, University of Chicago Press, Chicago 1982, pp. 394-405, p. 394.

¹⁹ Cf. Charles J. Fillmore, *Frame semantics*, in Linguistics Society of Korea (ed.), *Linguistics in the Morning Calm*, Hanshin, Seoul 1982, pp. 111-138.

²⁰ Robert M. Entman, *Framing: Toward clarification of a fractured paradigm*, in "Journal of Communication", XLIII(4), 1993, pp. 51-58, p. 52, emphasis in original.

²¹ Cf. Francesca Ervas, (Becoming) *Experts in meaning ambiguities*, "Humana.Mente", XX-VIII, 2015, pp. 225-243.

ground of stereotypical commonplaces which make understanding possible. Whereas dead metaphors are often not recognisable as metaphors, *creative* or 'live' metaphors involve a completely new use of language and often need more demanding efforts to be interpreted according to the context²².

In health communication, conventional metaphors are quite widespread: their framing effects tacitly influence the way patient looks at her/his disease and may reinforce the way s/he experiences the illness, with potential bearing on the patient's sense of self. For example, the experience of cancer has been described as a 'fight' or a 'journey', as reported by Elena Semino and colleagues²³:

Ask your chemo nurses or your specialist if your looking for anything that might be of help in your *fight* against cancer.

There are certain points in the cancer *journey* where the plan has to change.

These two metaphors entail different framings of the experience of cancer: in the first one, cancer tends to be seen as an enemy/aggressor, whilst, in the second, as a road to travel. From the perspective of practice in healthcare²⁴, the 'fight metaphor' has been strongly criticised as it imposes, on the patient, the aggressive role of a fighter who might not be able to recover with defeat after a violent battle²⁵. The negative communicative effects of such a metaphor might be overcome by using another metaphor that is able to provide another perspective on the disease. For instance, it has been argued that the 'journey metaphor' suggests the possibility of different 'pathways' of care and, above all, it does not involve the idea that not recovering is a patient's failure²⁶. However, in the practice-based perspective, metaphors do not always work in the same way for all patients, and so even the 'fight metaphor' can be motivating for someone, as if the 'battle' were a source of pride, incentive, and reinforces a positive sense of the self²⁷. On

²² Cf. Vicky T. Lai, Tim Curran, Lise Menn, *Comprehending Conventional and Novel Metaphors: An ERP Study*, "Brain Research", MCCLXXXIV, 2009, pp. 145-155.

²³ Elena Semino, Zsofia Demjen, Jane E. Demmen, *An integrated approach to metaphor and framing in cognition, discourse and practice, with an application to metaphors for cancer*, cit., p. 1.

²⁴ Cf. Robert S. Miller, *Speak up: 8 words and phrases to ban in oncology!*, "Oncology Times", XXXII (12), 2010, p. 20; Gary Reisfield, George Wilson, *Use of metaphor in the discourse on cancer*, "Journal of Clinical Oncology", XXII(19), 2004, pp. 4024-4027.

²⁵ Cf. Susan Sontag, *Illness as Metaphor*, Allen Lane, London 1979.

²⁶ Cf. Kate Granger, *Having cancer is not a fight or a battle*, "The Guardian", April 25, 2014, available online at: <https://www.theguardian.com/society/2014/apr/25/having-cancer-not-fight-or-battle>. Accessed October 2016.

²⁷ Cf. Elena Semino et al., *The online use of violence and journey metaphors by patients with cancer, as compared with health professionals: A mixed methods study*, "BMJ Supportive and Palliative Care", 2015, 28(1), pp. 10-15.

the contrary, the ‘journey metaphor’ might not always reinforce feelings of purpose and companionship; it might entail driving on an unknown road punctuated with a lack of control and with feelings of being lost.

Dead metaphors in health communication involve tacitly shared systems of beliefs which might have negative effects on patients’ experience of illness. Professionals might use a live (or a revitalised) metaphor to overcome such possible negative effects, thus provoking a change of belief/perspective on the specific patient. Can live metaphors entail a belief change or are they ‘simple’ framing strategies as all other conventional metaphors? An interesting answer comes from Gerard Steen’s three-dimensional model of metaphor in language use (2008)²⁸. He argues that metaphors have three specific functions: 1) the linguistic function: to give a name to experiences which are not literally definable (*naming*); 2) the conceptual function: to provide a frame for interpretation (*framing*); 3) the communicative function: to offer an alternative perspective on the target of the metaphor (*perspective changing*). In his view, framing should not be conflated with perspective changing: framing is involved in every beliefs structure created by metaphor, while perspective changing occurs when the speaker wants to achieve a specific rhetorical effect. In such a case, the speaker *deliberately* uses a metaphor – no matter whether dead or live – to change the addressee’s perspective. Live metaphors can serve this function relatively easily because they force people to look at the target “from a different conceptual domain or space, which functions as a conceptual source”²⁹.

However, the use of deliberate metaphors in communication can *revitalise* dead metaphors³⁰; this latter case is particularly interesting in health communication. A doctor might use a deliberate metaphor to highlight a system of commonplaces, associated with a metaphor, which has been consolidated in patient’s mind. A deliberate metaphor achieves its purpose in health communication when it highlights the target (the illness) by putting it in a new light. A deliberate metaphor is indeed a *perspective*

ative Care”, Online first, March 5, 2015, available online at: <http://spcare.bmjjournals.org/content/early/2015/03/05/bmjspcare-2014-000785.full.pdf+html>. Accessed October 2016.

²⁸ Cf. Gerard J. Steen, *The paradox of metaphor: Why we need a three-dimensional model for metaphor*, “Metaphor and Symbol”, XXIII(4), 2008, pp. 213-241.

²⁹ Id., *The paradox of metaphor: Why we need a three-dimensional model for metaphor*, cit., p. 222.

³⁰ Cf. Id., *When is metaphor deliberate?*, in Nils-Lennart Johannesson, Christina Alm-Arvius, David C. Minugh (eds.), *Selected papers from the 2006 and 2007 Stockholm Metaphor Festivals*, University of Stockholm, Stockholm 2010, pp. 109-127.

changer and, in this sense, it encourages critical thinking, by questioning previously, tacit, accepted frames and systems of commonplaces³¹. The underlying framing strategy is thereby ‘revealed’ to the patients and becomes active in their minds (not necessarily conscious)³². The purpose is to urge for a belief change and a change in attitudes towards the illness which would instead be lost in a literal, more direct explanation, as it would not have the same cognitive and communicative power.

Educating patients towards diabetes understanding and self-management by using metaphors

Theoretical perspectives on figurative framing have led scholars to consider metaphors as reasoning devices useful in defining, understanding and decision³³. Figurative framing, and therefore metaphorical frames, are very effective within educational contexts³⁴. From a theoretical point of view, a figurative framing has a high educational value because it offers a particular problem description and evaluation that can be used as a kind of frame building while talking about new, abstract, and complex topics³⁵. That is the case of patient-provider encounters in chronic care, where health care providers need to talk about new and (often) complex topics to explain the relevant features of functioning and management of chronic diseases. Indeed, patient education to facilitate self-care is a primary therapeutic goal in chronic care; education has an important role in helping patients become responsible self-managers³⁶. In this context, a

³¹ Cf. Francesca Ervas, *Another metaphor is possible. Challenging social stereotypes in figurative language comprehension*, “Reti, Saperi, Linguaggi”, il Mulino, Bologna, forthcoming.

³² Cf. Gerard J. Steen, *Deliberate metaphor affords conscious metaphorical cognition*, “Journal of Cognitive Semiotics”, V(1-2), 2013, pp. 179-197; Id., *Developing, testing and interpreting Deliberate Metaphor Theory*, “Journal of Pragmatics”, XC, 2015, pp. 67-72.

³³ Cf. Christian Burgers, Elly A. Konijn, Gerard J. Steen, *Figurative Framing: Shaping Public Discourse Through Metaphor, Hyperbole, and Irony*, “Communication Theory”, 2016, pp. 1-21; Maria G. Rossi, *Metaphors for patient education: a pragmatic-argumentative approach applying to the case of diabetes care*, cit.

³⁴ Cf. Andrew Ortony, *Why Metaphors Are Necessary and Not Just Nice*, “Educational theory”, XXV(1), 1975, pp. 45-53; Lynne Cameron, *Metaphor in Educational Discourse*, Continuum, London 2003.

³⁵ Cf. Dietram Scheufele, *Framing as a theory of media effects*, “Journal of Communication”, XVIX(1), 1999, pp. 103-122.

³⁶ Cf. Edward H. Wagner, Brian T. Austin, Michael Von Knorff, *Organizing care for patients with chronic illness*, “The Milbank Quarterly”, 1996, pp. 511-544; Susa L. Norris et al., *Self-Management education for adults with type 2 Diabetes A meta-analysis of the effect on glycemic control*,

good patient-provider collaboration, constructed by means of communication, has a strong relevance: the active participation of the patient is a constitutive part of care. Therefore, communication can be considered as an indirect mediator of therapeutic adherence³⁷, a way to promote health literacy and support patients' motivation and commitment towards behavior change. Since good self-management can potentially prevent complications (e.g., heart attack, stroke, blindness, kidney failure and lower limb amputation) and premature death, educative interventions to promote people's compliance with recommendations and treatment become essential priority to meet the challenges of chronic care³⁸.

The above theoretical and clinical reasons on the linking between metaphor, framing, and education justify our interest in a more careful examination of the use of metaphors by healthcare providers for patient education. This is especially important since there is a lack of evidence in chronic care and diabetes care in this regard. To the best of our knowledge, just a few scientific articles have explored the educational role of metaphors with a view to recommend diabetes metaphors as useful instruments for patient education. An exception to this is an article by Naik et al. (2011)³⁹. Naik and his collaborators have proposed an intervention for patients with a diagnosis of type 2 diabetes mellitus in order to test an active-learning and teaching for empowerment approach. The authors have proposed two educational innovations to patients; one of them involves a conceptual metaphor to foster patient understanding. In this study, the expert teaches relevant information about the diabetes ABCs (hemoglobin A₁C, systolic Blood pressure, and low density lipoprotein (LDL) Cholesterol) by using a weather metaphor. Naik et al. illustrate this part of their intervention in the following words:

In the intervention session, we introduced the concept of diabetes ABCs by mapping it to a weather prediction concept, presenting various levels of A₁C, sys-

"Diabetes care", XXV(7), 2002, pp. 1159-1171; Judith H. Hibbard, Jessica Greene, Martin Tuслer, *Improving the outcomes of disease management by tailoring care to the patient's level of activation*, "The American Journal of Managed Care", XV(6), 2009, pp. 353-360.

³⁷ Cf. Richard L. Street et al., *How does communication heal? Pathways linking clinician-patient communication to health outcomes*, "Patient Education and Counseling", 2009, LXXIV(3), pp. 295-301.

³⁸ Cf. Sarah Bigi, *Communicating (with) care. A linguistic approach to the study of interactions in chronic care settings*, cit.; Maria G. Rossi, *Metaphors for patient education: a pragmatic-argumentative approach applying to the case of diabetes care*, cit.

³⁹ Cf. Aanand D. Naik et al., *Knowing the ABCs: A comparative effectiveness study of two methods of diabetes education*, "Patient Education and Counseling", LXXXV(3), 2011, pp. 383-389.

tolic blood pressure, and LDL cholesterol as being consistent with a ‘sunny’, ‘partly cloudy’, or ‘stormy’ diabetes ‘forecast’. We used the weather metaphor along with universally understood weather icons as a method of translating the ABCs into predictors of future health consequences⁴⁰.

Given that previous studies have shown a positive correlation between a better understanding of diabetes’ ABC goals and a better self-management and glycemic control⁴¹, here the hypothesis was that the weather metaphor will help patients to understand the complex knowledge behind the diabetes ABC concepts better. Preliminary positive results obtained from this intervention will encourage further investigations, even within the context of patient-provider encounters.

Since we do not have a clear idea about whether, how, and what metaphors are used by healthcare providers within diabetes encounters, Rossi, Macagno and Bigi have started to collect diabetes metaphors. Using the theoretical framework developed within a broader interdisciplinary project in the context of diabetes care⁴², they have collected metaphors from a corpus of 53 videos of follow-up consultations recorded during a monocentric study conducted in the North of Italy, containing over 190.000 words⁴³. Rossi, Macagno and Bigi have been using two main criteria to classify metaphors⁴⁴: by using a linguistic criterion, they are distinguishing between conventional vs. creative metaphors; by analyzing the communicative contexts in which metaphors occur, they are also distinguishing between three main communicative functions of a metaphor – information giving, decision-making, and rapport-building.

⁴⁰ Aanand D. Naik et al., *Knowing the ABCs: A comparative effectiveness study of two methods of diabetes education*, cit., p. 385.

⁴¹ Cf. Michelle Heisler et al., *The relationship between knowledge of recent HbA1c values and diabetes care understanding and self-management*, “Diabetes Care”, 2005, pp. 816-822; Padmalatha Berikai et al., *Gain in patients’ knowledge of diabetes management targets is associated with better glycemic control*, “Diabetes Care”, 2007, pp. 1587-1589.

⁴² The project is titled “Healthy Reasoning. Strategies and Mechanisms of Persuasion in Chronic Care” and is based at the Catholic University of the Sacred Heart in Milano (P.I. Sarah Bigi): www.unicatt.it/healthyreasoning-eng

⁴³ Cf. Sarah Bigi, *Healthy Reasoning: The Role of Effective Argumentation for Enhancing Elderly Patients’ Self-Management Abilities in Chronic Care*, “Studies in Health Technology and Informatics”, CCIII, 2014, pp. 193-203.

⁴⁴ Maria G. Rossi, Fabrizio Macagno, Sarah Bigi, *Metaphors for diabetes: A method of analysis and classification*, Talk presented at 11th International RaAM Conference “Metaphor in the Arts, Media and Communication”, Freie Universität, Berlin, Germany, 1-4/07/2016; Maria G. Rossi, Fabrizio Macagno, Sarah Bigi, *The Role of Metaphors in Understanding and Reasoning in Medical Encounters*, Talk presented at the 14th International Conference on Communication in Healthcare, The University Conference Centre, Heidelberg, 7-10/09/2016.

While the communicative context – the main communicative function – remains unchanged, the following educative metaphors illustrate two prototypical examples of conventional and creative metaphors⁴⁵.

Case 1 – Type of metaphor: creative metaphor; Main communicative function: information giving

Dialogical context: The doctor is explaining the relationship between glycaemia and glycated hemoglobin, two of the most important concepts to understand diabetes functioning and management.

Text: The blood is like a river with polluting substances, which we need to keep under control. The glycaemia during the day tells me how I am doing at that specific moment. The glycated hemoglobin tells me the global trend of diabetes. If I go to buy a dress, the glycated hemoglobin is the size, and glycaemia is the model. The size tells me my condition; I can then customize the model.

Case 2 – Type of metaphor: conventional metaphor; Main communicative function: information giving

Dialogical context: The doctor is explaining the treatment options available for that patient and, depending on the patient's needs, she is pressing for a change in diet and/or physical exercise.

Text: Let's say, the three *levers* of diabetes care are physical exercise, diet, and medications. I am already switching up the medications lever, so it would be better to agree on a strategy to improve the other two levers. Just one, or both, partly one and partly the other one, it is up to you to come up with suggestions or ideas. For instance: what is your plan?

Case 1 and 2 show two different educational uses of metaphors from healthcare providers in diabetes encounters. In case 1, the doctor deliberately makes use of more than one metaphor. While the figurative expression seems easy to understand – it is an attempt to build a correspondence between the level of glycaemia in the blood and the level of polluting

⁴⁵ Following the Metaphor Identification procedure, metaphorical expressions include similes and other figurative comparisons, cf. Pragglejaz Group, MIP: *A method for identifying metaphorically used words in discourse*, "Metaphor and Symbol", XXII(1), 2007, pp. 1-39; Gerard J. Steen et al., *A Method for Linguistic Metaphor Identification: From MIP to MIPVU*, John Benjamins, Amsterdam 2010.

substances in a river; metaphors within the final part of the text are much more complex (and not completely correct)⁴⁶. Moreover, it is not obvious that they are readily understandable to patients. In case 2, the term lever ('braccio') has the conventional figurative meaning of branch ('ramo'), even if it is used in a new context – the context of care – it entails a narrowing of the semantic context⁴⁷.

However, in both cases, doctors use metaphorical expressions to explain diabetes functioning and self-management. While it is clear that their main function in such a context is to explain diabetes and its treatment options better, there is still a lot that we do not know about the metaphors' communicative effectiveness: for example, there is no data concerning the misunderstanding due to the use of metaphors in the context of diabetes consultation. How can an appropriate use of metaphors contribute to inform and support the shared decision-making within diabetes encounters? In answering this question, we must collect and test diabetes metaphors; only then can we propose them as evidence-based instruments to providers for patient education.

Conclusion

Doctor/patient interaction is not secondary or accessory in the identification of illness and subsequent therapy. On the one hand, medical reasoning needs patients' description of symptoms in the phase of diagnosis and feedbacks on the ongoing therapy. As has been pointed out, diagnostic reasoning is nonmonotonic and therefore liable to change according to the information emerging from the consultation. On the other hand, patients need to understand their illness as well as their therapy and doctors are quite often forced to abandon their specialist and sectorial language to explain the reasons of a diagnosis or a therapy, to ensure compliance with the patient. As we pointed out, a failure in communication strategy might entail a missed or failed compliance, with negative consequences for patient care.

In the perspective of shared decision making, we argued that metaphors might be a linguistic tool doctors resort to, in order to clarify, to the

⁴⁶ The relationship between size and model does not sound as the same as for the relationship between glycated hemoglobin and glycaemia.

⁴⁷ The original text in Italian is the following: "se i tre bracci della cura sono l'attività fisica la dieta e il farmaco, io sul farmaco sto già ad un livello molto elevato. quindi ci conviene interagire su questi due livelli. uno solo, tutti e due, un po' di qua un po' di là, me lo deve dire lei. come: come pensa di riuscire ad organizzarsi".

patient, complex entities (diseases) and processes (diagnosis/therapies) by resorting to simple terms, known entities, and processes. Thus, for instance, in order to ensure understanding, blood might be imagined as a river (with polluting substances in case of disease) or therapy might be seen as a road. In this communicative process, the experience of illness is framed and seen under a specific perspective which might turn out to be positive or negative for patients' perception of their disease and feelings of themselves. However, we argued that deliberate metaphors, in the context of health communication, might act as perspective changers to achieve patient compliance. Doctors might indeed use a deliberate metaphor to urge a patient for a belief change, thus revealing her/his previous structure of beliefs on her/his disease and approach to therapy.

Particularly, in the case of chronic diseases such as diabetes, deliberate metaphors might help patients to understand the reasons for a specific treatment and educate themselves towards self-management. Metaphor as a framing device is indeed able to shed light on the disease in a way that it becomes understandable to the patient. Metaphor as perspective changer might then not only support patient's motivation to undertake and continue the therapy, but also give them another angle from which to approach their disease. In the new perspective achieved, in the interaction with the doctor, metaphors might change (or at least solicit for a change) patients' experience of illness, as well as their self-perception.

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