

A challenge to objective perception in hearing and seeing in counselling psychology.

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Structured Abstract

Purpose:

Mainstream counselling psychology with its Western epistemology implies several assumptions about the therapeutic conversation. One assumption is the ability of the therapist to hear and see accurately during the therapy session. Apart from language difficulties and multi-cultural awareness, training in psychological counselling does not adequately address aspects of hearing and seeing as cognitive processors that are observer dependent and circular in nature. This paper addresses this missing link by providing a single document addressing errors in hearing and seeing, which can then be used for training new therapists.

Design:

Using a Western epistemology, an argument based on multidisciplinary research findings is used to challenge the ideas of objective hearing and seeing in the therapeutic conversation of the counselling activity.

Findings:

Research findings show that the act of hearing and seeing are personal and subjective. This would be in keeping with a cybernetic epistemology; however, cybernetic psychology is not well known nor widely accepted in mainstream institutions. Teaching counsellors who have a Western epistemology poses challenges when attempting to negate the objective reality of the trainees. Training counsellors to incorporate a cybernetic ethic of participation has obstacles, especially when the training has time constraints. Using Western positivistic research findings as a basis for providing an argument for subjectivity in perception may be a quicker method to achieve at least partial observer dependent thinking for counsellors in a short time space during training sessions.

Research Implications:

This paper presents a concentration of multidisciplinary research that can be used as part of counsellor training for the purposes of providing a basis for the error and filtering that take place in human perception of sound and vision.

Originality:

The modalities of hearing and seeing are not readily addressed in counselling psychology praxis. The errors in human sense perception are integral in framing the therapeutic conversation as one of subjective co-construction between observers, moving closer to an empathetic position. This paper provides a research based argument in denying objectivity in human perception during the therapeutic conversation.

Keywords

Hearing, seeing, counselling, cybernetics, objectivity, empathy, training

1. Counselling Psychology

Counselling psychology stretches over several domains including education and career development, therapy, supervision and training. This paper is specifically focussed on the therapeutic relationship in terms of counselling psychology. The therapeutic conversation rests on several underlying principles including the idea that the counsellor is trained and skilled in assisting people who are experiencing mental discomfort. According to Norcross (2000), counselling psychology does not generally deal with clients who are severely disturbed, rather people who have problems with living, or who are experiencing developmental crises. However, this does not preclude clients with severe mental problems, it is just not common. Thus, the practice of counselling psychology rests significantly on conversations between actors with the hope that the conversation may create new meanings and new ways of dealing with life events. The epistemology of the therapist plays an important role in the counselling relationship. The most downloaded paper from the Journal of Counseling Psychology (impact factor 2.95) is titled "Counselor characteristics and effective communication in counselling". In this popular paper, Brams (1961:25) states:

It is an accepted fact amongst most counselling and clinical psychologists that effective counselling is due to more than the objective methods and techniques the therapist employs in the counselling interview. Counseling is thought of as a dynamic process built on the relationship existing between counsellor and client...

Psychiatrist Mike Shooter tells of a story between him and his son (2005:239):

[Son speaks first] 'But do you mind if I ask you a daft question?' he said, as we sat in a pub at the end of the day. 'What is it that you *do*?' Trying hard not to be offended, I asked him what he thought I did. 'Just listening I suppose...'

'Just listening', I told him, was the most difficult skill he would ever learn and the easier it looked the more skilful it would be...Listening with his ears. No problem there... Listening with his eyes. More difficult. Finally... Listening with his heart. Very difficult indeed.

Shooter alludes to the challenge of empathetic listening - the catch word in most counselling courses. However, is it possible to teach empathy? Without opening this up in too much detail, it is known that some people have an empathetic ability without having had any training as a counsellor, yet some qualified counsellors battle to actively experience an empathetic position in their sessions. Empathy is accepted as a major personal trait for successful counselling - attempting to see and experience the world through the eyes and ears of the other, acknowledging the perceptions of the other, while also being aware of one's own limitations in the here and now. It can be a humbling experience to work in subjectivity, sidelining ideas of objective perceptions. An awareness of one's own self and what one brings into the therapy room is crucial. Cybernetic psychology is one epistemology that strives for this goal.

1.1 A Cybernetic Perspective

Therapists are both part of the therapeutic system as well as co-directors in its change. The therapist is not independent from the client. There is a responsibility on the therapist for creating an atmosphere of curiosity, openness and respect. Curiosity manifests itself in an environment of seeking an understanding. The therapist takes the stance of realising that she does not have exact answers as to how the behaviours of the client needs to be, or how the family members need to be (family therapy session). An awareness of one's own ego and arrogance in that the therapist cannot know for sure how to solve the problem. Curiosity is lost by a therapist who is a "know it all". The therapist is seen as a conversational architect who has extensive experience in the art of creating a domain for and facilitating a dialogical conversation (Anderson & Goolishian, 1992). The therapist uses therapeutic questions as her primary tool to facilitate the conversational domain and the process of dialogue. Cyberneticians note that a dualistic usage of

language may lead to dismemberment of whole systems (Keeney, Sprenkle, 1992), and thus the choice of words and mechanism of speaking too are important in the therapy process. The therapist's conversational framework is that of 'not knowing'. She is not looking for specific answers as she has no preconceived ideas or diagnostic definitions that require a method for therapy. The therapist needs to include herself in the description of the client's system (Haley, 1973). The client is conceptualised to the therapist within the therapist's own framework, which is a product of her past lived experience as well as the characteristics of her nervous system. This brings into question the ethics and responsibilities of providing diagnosis to clients within the therapy domain. The reverse of this is that the systems that are being treated are also effecting the therapist (Keeney, 1983). Heisenberg's uncertainty principle fits well into a cybernetic approach, which states that the observer constantly alters what he observes by the obtrusive act of observation (Keeney, 1983:129).

Another important aspect of many cybernetic approaches is the awareness of the influence of bodily states for conversation. Bodily states that show care, trust, sharing and active listening promote reflection as a process of meaning reconstruction (Griffith, Griffith & Slovik, 1992). The therapist should be aware of the bodily states of the family members, as well as her own state as having an influence on the dialogue. An awareness of facial expression, posture, breathing, tone of voice, eye-contact and direction of gaze help to improve one's understanding of what is manifesting in the therapy. An awareness of incongruent bodily states helps to understand the relationship between the verbal and analogue information. Therapeutic dialogue must make way for alternative solutions, new meanings, reconstructions and reinterpretations. Curiosity, openness and respect are manifested in a joint manner by the people present but it is the responsibility of the therapist to enter the therapy room with an emotional posture that invites these factors to evolve.

1.2 Changing Lanes

There is an increasing need for therapeutic psychology as a profession to demonstrate that its interventions yield tangible and measurable results to clients and their families, as well as to human rights groups in light of inhumane practices of some psychiatric institutions, or abusive traditional healing practices in some low to middle-income countries (Kagee & Lund, 2012, p. 103; WHO, 2011). Cybernetic psychology could be seen as the most ethically orientated intervention, owing to the following factors: the importance of the conversation, the relationship, and how the actors observe each other in therapy; the awareness of systems, observation, circularity, feedback, ethics and communication – including Pask and colleagues' Conversation Theory. However, there are not many cybernetic counsellors and most who do know of cybernetics think of it as something that was once popular in the 1970's, while others have not heard of it at all (Baron, 2014; Scott, 2011). The counsellors who do aspire to a cybernetic epistemology do not readily fall within mainstream universities or training institutions, as the majority of counselling psychology courses are imbedded in a Western epistemology. One reason for this is the difficulty in teaching a cybernetic epistemology as well as its challenges to positivistic research methodologies (Baron, 2014).

Having spent time working with psychology students who were trying to learn a cybernetic approach, I realised that there are extensive challenges faced when attempting to exemplify a cybernetic approach to counselling. One major problem is that people tend to modularise information. Attempting to set cybernetics as a model in the same way as the mainstream psychology curriculum sets out the different models - psychodynamic model, the cognitive model, person-centred model and so forth – creates

obstacles to acting and understanding cybernetics, as the moment cybernetics is modelled, it is no longer cybernetics.

Learning cybernetics is challenging on many levels and takes considerable time for not only the principles to be understood, but also the added challenge of both thinking *and* acting cybernetically. This is especially difficult for people who have a Western sense of objectivity, reality and causality. It is my end goal to create a cybernetic approach to training in counselling psychology, but in certain circumstances it is not appropriate or useful to attempt this approach. When one is a guest presenter for the day at a university, or a trainer of volunteers, one may not find it possible to start a cybernetic approach to a group who will only be seen on one or two occasions. To achieve an understanding that during counselling the counsellor needs to take responsibility for their perceptions, beliefs and observations - including any labels/diagnosis they may attach to their clients-, as well as an understanding of circular causality, much time is needed for an exploration in cybernetics. Thus, this is not an easy task in a severely time constrained training, where one does not want to risk creating confusion. In such situations, I adopted a different approach, while still having a goal of challenging the group's sense of objectivity. Instead of introducing the principles of cybernetics, I used the same Western epistemology to negate the core assumptions of the trainees in terms of objective sense perception. Thus, by using an epistemology that was already understood by the group, I was able to generate a similar outcome in terms of the responsibility and ethic of the therapist in the therapeutic conversation. This paper now proposes a technical argument against objectivism in terms of two overlooked acts in the counselling process: the act of seeing and hearing.

I challenge these two assumptions¹:

1. I can hear you with my ears.
2. I see you with my eyes.

The purpose of this paper is to provide an argument based on research findings, which can be used for training new counsellors in an attempt to challenge a traditional Western objective view of hearing and seeing, to one that is closer to a cybernetic approach: one of observer dependent sense perception and questionable objectivity.

2. Biological filtering: Counselling Psychology as a Science

It is uncommon to find mathematical formulae, biology or engineering science in counselling text books. Students who study cognitive and neuro- psychology would have a head start in understanding the processes involved in the modalities of seeing and hearing as a form of perception. However, even in these tracts, one does not find how hearing and seeing relate to counselling. As conversation rests on listening and seeing, these two items are central aspects of a therapy session. Sitting with a client in therapy, the counsellor spends most of the time observing and listening. The counsellor acts on the information they perceive, both visual and auditory, but just how accurate are these modalities?

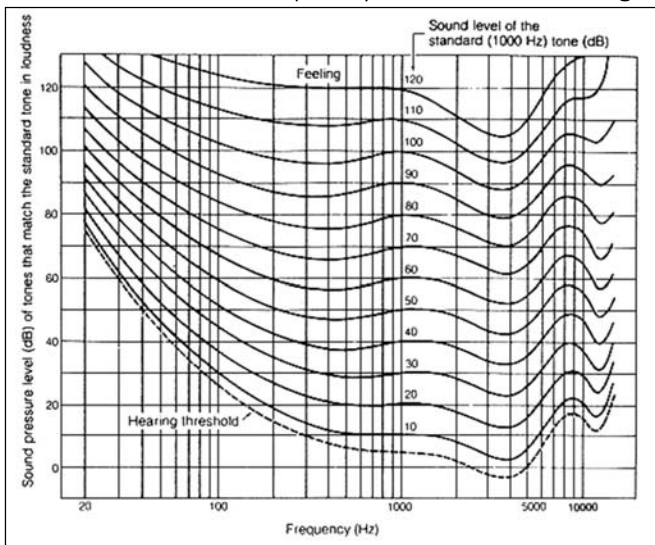
2.1 Hearing

It is thought that sound is mainly associated with the ear and that sound can be explained in terms of physics. While the process of hearing can be narrowed down to mechanics, hearing is more complex than the dynamics of the ear system. The human ear can hear from 0dBs to over 130dBs, with the latter being the pain threshold. The subjective perception of sound level does not show complete linearity with that of power radiated from a sound source. One reason is that the human ear has differing sensitivities across

¹ In the case with disabled counsellors, either deaf or blind, this would only partially apply.

the frequency range. A further complicating factor is that for each frequency, our ears do not always perceive consistent Sound Pressure Level (SPL) increments that are applicable to another frequency's SPL increase. In particular, the low frequency range has an uneven distribution of perceived loudness when compared to the same SPL of higher frequencies. For example, generally, a young person's ears should be able to hear a 1kHz sound at an SPL of 25dB, but would only be able to hear a low frequency sound of say 60Hz if the SPL is increased by a further 30dBs. From Figure 1.1, the perceived loudness of each contour exhibits both a non-linear shape along the frequency axis, as well as each contour tracing a slightly different pattern. Another complicating factor relates to the time duration of the signal. There is a difference on the perceived loudness for steady state versus impulse sounds. Generally the shorter the sound impulse (less than 70ms), the lower its loudness is perceived to be (Brüel & Kjær, 1984:8).

Figure 1.1: Equal loudness contours (Robinson & Dadson, 1956). This figure shows the frequency response of the human ear – frequency versus sound level given in dBs.



The interesting item in this discussion is that not all acousticians agree on the equal loudness curves. There are at least 17 equal loudness contour graphs to choose from, based on different sample groups used to generate the curves. While the first popularised contour mapping was presented by Fletcher and Munson in 1933, it was later found that it was not completely accurate. In 1956, Robinson and Dadson presented their contour map, which has been used extensively with the ISO226:1987 standard being based on this loudness contour map. Further research has shown that this too was not entirely correct. A newer standard has been set out namely, ISO226:2003 [or TC43], which seeks to portray a more accurate loudness contour map based on 12 studies starting in 1983 (Suzuki & Takeshima, 2004; ISO, 2009). This means that for more than 65 years of acoustic research, equal loudness curves have been in dispute. This in a field where technological advancements and computing in playing and measuring sound have already met the industry requirements 30 years ago. This means that for each study conducted on a different target group, a different sound distribution was realised, illuminating the point that hearing sensitivities are not a uniform experience for all people. There are individual differences. This is not surprising as the range of sensitivity in the human senses are not equal for all people and adds to the uniqueness of each person, yet people too often assume we should all hear the same sounds in the same manner. Concert hall music conductors work with the response of the concert hall in order to obtain the sound they like by adapting to the hall's strengths and weaknesses. For example, conductors may ask the musicians to stretch out the endings of notes to enable a reverberant effect, or in one noted case, ask the violinists to

play out of unison when the hall's response was dry (Beranek, 2004:3). Few people could quantify and act on such auditory information as conductors do as part of their normal work.

One fascinating research challenged the idea of there being a fixed upper frequency limit of 20kHz to human hearing. Tsutomu and colleagues (1991) set up a listening experiment where they played back a recording that had active frequencies up to 60kHz. They set up a speaker system and included an independently powered tweeter that was to excite frequencies above 26kHz. The tweeter was switchable to be on or off during the test. An EEG (electroencephalogram) was incorporated as part of the listener's response data. The finding was that the subjective evaluation of the music played was altered by whether the high-frequency tweeter was turned on or off, as well as changes to the EEG were noticed (Tsutomu, Emi, Norie, Yoshitaka, & Hiroshi, 1991). While most music is designed for our hearing range of 20Hz-20kHz, many musical instruments have a large portion of their vibration energy well above our hearing range; such as the cymbal instrument, which has $\pm 40\%$ of its energy between the range of 20kHz and 100kHz (Boyk, 2000). This means that for many people, they will choose to hear sound sources that offer the sound frequency range that is several times higher than the human ear's threshold frequency of 20kHz, without knowing why they do that. Science has no answer for this situation as physics has already accepted 20kHz as the upper hearing limit. In terms of everyday appliances, certain noisy electronics are designed to have their oscillation noise above 20kHz so that they do not annoy us. The switched mode power supply, which is commonplace in many electronic devices, is one example. If the frequency of the oscillating driver circuit is reduced to 8kHz it can be most unfavourable for the nearby person's auditory system. This raises interesting questions as to the effects of sounds that are not "heard" but are still at play in our consciousness. The harmonics that are present several ranges above the assumed human hearing threshold of 20kHz, even for human voices are at play in determining if we enjoy what we hear. When a person speaks and is recorded and played back, even on a high definition sound system, the sound of the live versus the recorded are not the same. The measured sound distribution may be almost identical, yet the experience of the sounds completely different. Similarly, hearing one's own voice on a music system is quite different from what we hear when we speak live. Having a conversation in a reverberant room may irk some people, while others are just as bothered by a dry almost anechoic room. Glanville (2001:46) recounts a life-changing auditory experience:

On a recent visit I joined in a piece of his (and his partner Marian Zazeela), "Dream House", that has been being played continuously for over seven years. The musical element consists of a complex chord made of frequencies that are defined by prime numbers. This extraordinary chord is generated on a computer, and has, it is claimed, not been changed in all the time the piece has been playing. The piece is played in an apartment on the third floor of a building in TriBeCa. As you walk around the space, the sound you hear changes, although the generated sound is said not to. The explanation science gives us is that this is due to standing waves, and also to the effect we have on the sound environment as both reflectors and absorbers. It is also due to the interaction of the sound waves, producing beat frequencies—that is, pitches that are not generated by the computer acting as a sound source, but rather at each particular point in space. However, I found that, even when I lay on the floor, as still as could be, without breathing, and with no one else present to change the sound, what I heard kept changing. I discovered I could even adjust what I heard by focusing my concentration and listening the pitches up or down.

Yet all the time, I was told, the computer was (at least assumed to be) giving out the same instructions leading to the production of the same frequencies of air pressure waves (which I choose to call sound). The question that inescapably persisted in my mind was what did I hear? What is the basis for believing that the sound was unchanging? How can I know the computer did not change the sound? What was I hearing? What was it when it changed? ...

What I call the pressures which made sounds was all my construction. There was nothing I experienced that was not my experience for which I was responsible.

The experience of listening and attitude change is a large field of enquiry, with music appreciation including concert hall design part science and part art. Designing concert halls – even with the latest state of the art acoustic mapping software and equipment – does not always translate to end user praise. Often experienced acousticians are still needed to “fix” the sound properties of the hall when on paper the hall did actually meet the required acoustic footprint or design specification (Baron, 2009).

Different sounds mean different things to different people. Often it is one’s attitude to the sound that can determine if one would call it noise. The sound of a loud engine exhaust may be music to the ears of the drag racer but noise to his/her neighbours. Unwanted sounds do not have to be loud before they annoy us. The loud crash of thunder can be as annoying as a creaking floor that is only a fraction of the sound level. Psychoacoustics forms a critical part of sound perception. Auditory responses are not uniform across groups of people. Some adults and children exhibit defensive behaviours to auditory stimulation. These symptoms occur in the apparent absence of accompanying disorders, and there is relatively little research exploring the correlates and antecedents of sensory defensiveness (Goldsmith, et.al., 2006). Counselling a client who has a tone of voice that is bothersome for the counsellor will surely impact the therapist’s behaviour, whether conscious or unconscious. A buzzing air conditioner in the room may offset one’s concentration. Counsellors need to be aware that what they are hearing are sound vibrations that are filtered by their own auditory system and interpreted by their own nervous system. They are not hearing what the client says; rather, they are hearing what their auditory system allows them to perceive along with their unconscious attachments that they add to the linguistic information. In every relationship there are instances when one says “I heard you say xyz”, while the other party maintains they never did. This is often followed by “I wish had recorded you”. Analysing this further, if a recording was available, all this would prove is that one party made an auditory processing error. Another approach would be to discern what each party understands by the communication, rather than attempting to pin someone to an error. Objective hearing is a myth.

2.2 Vision

It's not what you look at that matters, it's what you see.

— Henry David Thoreau (2006:102)

With the normal retina of the human eye containing at least one million rod cells – activated during low illumination - and seven million cone cells – activated during high illumination, there exists several different anomalies that relate to different colour perceptions (Neitz & Neitz, 2011). Colour vision defects do not necessarily all fall into an inherited class. Acquired vision problems could arise from industrial or environmental chemicals, accidents and medications. For individuals with colour blindness, reliance on environmental cues becomes important for daily functioning. For example, the placement of the traffic signals – red, yellow and green – are often standardized, allowing enough information to construct meaning. Even within a group of normal sighted people, individual perceptions of colour differ. Asking each person to differentiate the boundary between green and blue colours quickly shows the differing personal colour interpretations. Reversible colour perception abnormalities following medication is not uncommon and can occur for medicines including erectile dysfunction agents, iron, antibiotics, anti-tuberculosis drugs, high blood pressure and nervous disorder medications (Fraunfelder, 2005; Santaella & Fraunfelder, 2007; Hallberg & Ryttinger & Solvell, 1966; Yee et.al, 2003; Jäggle, et.al., 2004). What is more interesting is the prevalence of the nocebo effect in human visual sensitivities. This is a situation where a group of people in a medication study are given an inert substance, yet present with negative visual disturbances. The converse of this is a placebo where people in the group also taking the inert substance report improvements. Both these outcomes are thought to be based on psychogenic factors

as the substance administered to both groups are inert. The placebo is a real problematic and costly problem in the medical profession and is poorly understood (Barsky et.al, 2002).

An experiment first described by Otto von Guericke in 1672 and later by Maturana and Varela (1998) illustrates an interesting phenomenon about the experience of colour perception. To perform this experiment one needs two nearby white light sources set up to shine onto a common spot on a white surface, with one light source having red cellophane wrapped around the globe. The globes should be directional or have a directional shade allowing each globe to shine only in the shared space on the surface below. The light reflecting from the spot to one's eyes is called additive mixing because it contains the colours from both lights. Inserting one's hand under the globes to create shadows, an interesting situation occurs where bluish-green colour shadows appear. Measuring the light with a wavelength meter does not agree with the colour perception that a human experiences. For example, people experience green and blue, yet when measuring the light there is no predominance of green or blue, but only the distribution proper to white light (Maturana & Varela, 1998). One would predict pink or combinations of shades of red would be predominant, not blue and/or green, as the source was a white and red light. Maturana and Varela believe that our experience of the world of coloured objects is independent of the wavelength composition of the light emitted from any scene (1998:22):

The experience of a colour corresponds to a specific pattern of states of activity in the nervous system which its structure determines... What states of neuronal activity are triggered by the different perturbations is determined in each person by his or her individual structure and not by the features of the pertaining agent... our experience is moored to our structure in a binding way. We do not see the "colours" of the world; we live our chromatic space.

There is an array of visual disturbances including various hemianopsias (decreased vision in half of the visual field of one or both eyes). These disturbances are mainly related to tumour, stroke or trauma. Damage to different areas of the brain relate to different types of hemianopsias. However, even in people who have not suffered physiological injury, there exists conditions that disturb vision. For example, people suffering from migraines also report visual loss. What is interesting is that the visual disturbances are different for different people. These include visual auras that are blind spot like, "kaleidoscope" effects, flashing lights and a shimmering zig-zag. Some people may have migraines yet never have any associated visual disturbances, while others have to get to a safe place immediately, as they will have reversible visual blindness for the early stage of their headache. Actual blind spots are a reality for every human being, as we all have a scotoma (blind spot) within our eye's visual field. There is a lack of light-detecting photoreceptor cells on the optic disc of the retina where the retinal ganglion cell axons of the optic nerve exit the retina². The brain fills in the gaps for us by use of the other eye's visual field. Thus, the missing piece in our vision is constructed by our self for our self. This has serious implications when driving a vehicle for example.

The optic nerve travels through various structures until it arrives at the visual cortex situated at the back of the head. The visual cortex is generally accepted as the part of the brain responsible for visual information processing. According to Banich (2004), large amounts of the neural stimulus that are interpreted by the visual cortex as visual information has originated from the structures that the optic nerve travels through. From Figure 1.2, one can view the neural pathways for visual data and how the pathway travels through various structures along the route to the visual cortex. Maturana and Varela (1987) note that for each neuron on the retina projected to our visual cortex that travel via the Lateral Geniculate Nucleus (LGN), hundreds of neurons from other areas within the nervous system too project at the LGN. The LGN acts not only as a relay station, but also as a convergence point. The visual

² There are also pathological scotomas which also effect the visual field.

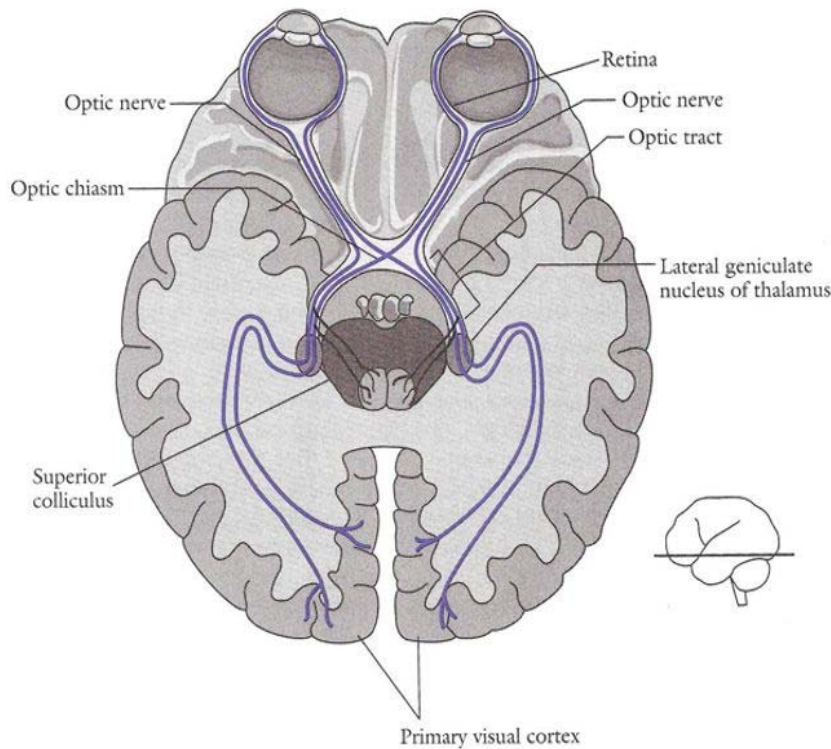
information undergoes some processing before being interpreted by the visual cortex of the brain, known by positron emission tomography studies. The visual cortex thus uses information that was sensed on the retina as well as further information that was generated by various structures of the brain. For example, when one is hungry, one's perception becomes more attuned to noticing items in the environment that will bring about equilibrium/homeostasis in the body.

The awareness of our world is constructed from parts to give us the picture to which we use for our decision making. We do not have the ability to observe our environment perfectly as we are limited by our biological structures and functions. Maturana and Varela (1987) performed a radical experiment whereby they surgically rotated the eye of a newt (amphibian of the Salamandridae family) by 180 degrees. The newt thus had one eye at its normal position while the other eye was 180 degrees out of phase. When covering the rotated eye, the newt was able to catch its prey by projecting its tongue correctly in the direction of the food (fly). When covering the normal eye and exposing the rotated eye, the newt was unable to obtain its food as it kept extending its tongue 180 degrees away from the direction of where the food was. The newt was never able to get its food. Maturana and Varela (1987) concluded with the following statement:

This experiment reveals in a very dramatic way that, for the animal, there is no such thing as up and down, front and back, in reference to an outside world, as it appears to the observer doing the study. There is only internal correlation between the place where the retina receives a given perturbation and the muscular contractions that move the tongue, the mouth, the neck... The operation of the nervous system is an expression of its connectivity or structure of connections and that behaviour arises because of the nervous system's internal relations of activity (p125-126).

In sum Maturana and Varela (1987:242) expressed it well: "We do not see what we do not see, and what we do not see does not exist."

Figure 1.2: Pathway from the visual receptors in the retina to the brain (Extracted from Banich, 2004:24).



Visual processing is divided into discrete segments in the brain. Damage to some parts of the brain may not stop people from perceiving all aspects of vision. A condition called Blindsight (Riddock Phenomenon) refers to an ability to detect shape, colour, or motion in the area of an otherwise complete hemianopsia (blindness). This has challenged the common belief that perceptions must enter consciousness to affect our behaviour (Carlson, 2013). People with Blindsight do not consciously see in their lost visual field in the manner we all experience vision, but on forced-choice tests demonstrate they can detect forms, colours or motion. However, these people do not report it as vision, but rather as a non-visual sensation or “feeling” of a shape, colour or motion. This has important implications for the philosophy of mind (Kentridge & Heywood, 1999).

In the popular book “A Man Who Mistook His Wife for a Hat and Other Clinical Tales” (Sacks, 1998), there is a case about a woman who suffered a stroke which affected the back portions of her right cerebral hemisphere. Her intelligence was intact including a good sense of humour; however, she often complained that her food portions were too small. She only ate from the right half of her plate as it did not occur to her that there is a left half as well. She would put make-up on only the right side of her face, leaving the left completely neglected. Sacks (1998) stated it is almost impossible to treat these symptoms as her attention cannot be drawn to them yet she does understand it intellectually and can even laugh about it, but impossible for her to directly know it. She cannot turn herself left and if she needs to see something on the left, she turns herself right until it eventually comes in view from the right (Sacks, 1998:78). The woman had no problem with her eyes; it was the brain's processing of the visual information that had become problematic. This book as the title suggests, tells of several cases whereby people have disturbances in their cognitive processing.

In the therapeutic conversation, the interpretation of the client is based on how and what one perceives. The therapist needs to take responsibility for their observations, as it is within the therapist's

own neurology that visual information is quantified and interpreted. Each therapist will observe a different view of the same client, and in a way is creating the client in each instant. This raises ethical implications.

2.3 Questionable Reality – closer to empathy

Challenging objectivity provides a basis for an empathetic position in the therapy setting. This technical argument provides an alternative training resource to providing a challenge to objective sense perception and a challenge to linear causality. As Keeney (1983:129-130) states “All of this is old hat to the cybernetic epistemologist who knows that the map is always in the territory, the observer in the observed, the therapist in the system being treated”. However, there are challenges faced by psychology students learning a cybernetic perspective (Baron, 2014). Further, understanding cybernetic psychology does not guarantee an empathetic posture in counselling - albeit it should provide a strong basis for one.

Using a traditional linear approach to challenge objectivity has been found to be a viable method for a “quick fix” in time constrained training. This paper presents a basis for further study in methods of training counsellors where the goal is a challenge to objective confident attitudes in counselling. This is also applicable in multi-cultural settings where the therapist is faced with language challenges.

3. Conclusion

Two often overlooked biopsychosocial processes are seeing and hearing. The term biopsychosocial was used to signify the biological, psychological as well as social aspects of the modalities of seeing and hearing. The idea of objective seeing and hearing are disproved based on accepted studies on human physiology to remind the actors in the counselling process that sense perception is an ongoing filtering process. Our understandings of our observations rests on our ability to perceive correctly. With our sense perception error prone, so too are our understandings of our observations, which are based on the sensory information. Western approaches do not readily teach a subjective interpretive circular view of reality. The counselling practitioner is reminded that accuracy in hearing and seeing are based on their own physiology, and individual differences are common. When the accuracy of one’s perceptions are challenged, a new way of being evolves in the therapy process - one of meaning construction, personal responsibility and an ethic of co-creation of shared/negotiated reality, which is closer to the goal of a cybernetic epistemology. Actors in the therapeutic conversation are not only responsible for their interpretations of the information, but also for the sensing and the associated filtering of the sensed information. Heinz von Foerster reminds us: “It’s the listener, not the speaker, who determines the meaning of an utterance” (Glaserfeld, 2007). This can be extended to: It’s the observer who determines what was *seen and heard*. Bearing this in mind, I can no longer rely on my senses for the Truth. The two assumptions of seeing and hearing should be reframed from:

1. I hear you with my ears – to become, *I receive sound energy not meaning*.
2. I see you with my eyes – to become, *I receive light energy not meaning*.

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References:

- Anderson, H., & Goolishian, H. (1992). The client is the expert: A not-knowing approach to therapy. In McName, S., & Gergen, K.J. (Eds.) *Therapy as social construction* (pp25-39). London: Sage.
- Norcross, J. C. (2000). Clinical psychology vs. counseling psychology: What’s the diff? *Eye on Psi Chi*, 5(1), 20-22.
- Banich, M.T. (2004) *Cognitive neuroscience and neuropsychology*. (2nd) Houghton Mifflin Company. Boston. USA

- Beranek, L. L. (2004). *Concert halls and opera houses: music, acoustics and architecture*. (2nd ed). Springer-Verlag. New York
- Baron. P. (2014). *Overcoming obstacles in learning cybernetic psychology*. *Kybernetes*, Vol. 43 Iss: 9/10, pp.1301 – 1309
- Baron. P. (2009). *Acoustic reverberation: a basis for sound recording in moderately anechoic rooms*. (Masters dissertation). Retrieved from <http://uidigispace.ui.ac.za/handle/10210/22/>
- Barsky AJ, Saintfort R, Rogers MP, Borus JF. Nonspecific Medication Side Effects and the Nocebo Phenomenon. *JAMA*. 2002;287(5):622-627. doi:10.1001/jama.287.5.622.
- Boyk, J. (2000). *There's life above 20 kilohertz! a survey of musical instrument spectra to 102.4 kHz*. retrieved from <http://www.cco.caltech.edu/boyk/spectra/spectra.htm> on 10 July 2009.
- Brams, J. M. (1961). Counselor characteristics and effective communication in counseling. *Journal Of Counseling Psychology*, 8(1), 25-30. doi:10.1037/h0047997
- Brüel & Kjær. (1984). *Measuring Sound*. (Rev. ed). BR0047-13. Brüel & Kjær. 2850 Nærum. Denmark
- Carlson, Neil (2013). *Physiology of Behavior, 11th edition*. University of Massachusetts, Amherst: Pearson Education, Inc
- Fraunfelder, F. W. (2005). Visual side effects associated with erectile dysfunction agents. *American journal of ophthalmology*, 140(4), 723-724.
- Glanville, R. (2001). An Observing Science. *Foundations of Science, special issue on "The Impact of Radical Constructivism on Science"*, edited by A. Riegler, 2001, vol. 6, no. 1–3: 45–75.
- Glaserfeld, E. (2007). The Constructivist View of Communication In A. Müller & K. H. Müller (Eds.), *An unfinished revolution?* (pp. 351-360). Vienna: Echoraum
- Goldsmith, H., Hulle, C., Arneson, C., Schreiber, J., & Gernsbacher, M. (2006). A Population-Based Twin Study of Parentally Reported Tactile and Auditory Defensiveness in Young Children. *Journal Of Abnormal Child Psychology*, 34(3), 378-392.
- Griffith, J.L., Griffith, M.E & Slovik, I.S. (1992). Owning one's epistemological stance in therapy. *Dulwich Centre Newsletter*, 1, 5-11
- Haley, J. (1973). *Uncommon therapy*. New York: Norton.
- Hallberg, L., Ryttinger, L., & Sölvell, L. (1966). Side-Effects of Oral Iron Therapy A double-blind study of different iron compounds in tablet form. *Acta Medica Scandinavica*, 180(S459), 3-10.
- Jägle, H., Jägle, C., Sérey, L., Yu, A., Rilk, A., Sadowski, B., ... & Sharpe, L. T. (2004). Visual short-term effects of Viagra: double-blind study in healthy young subjects. *American journal of ophthalmology*, 137(5), 842-849.
- Kagee, A. and Lund, C. (2012), "Psychology training directors' reflections on evidence-based practice in South Africa", *South African Journal of Psychology*, Vol. 42 No. 1, pp. 103-113.
- Keeney, B. P., & Sprenkle, D. H. (1992). Ecosystemic epistemology: Critical implications for the aesthetics and pragmatics of family therapy. In R. B. Miller, R. B. Miller (Eds.) , *The restoration of dialogue: Readings in the philosophy of clinical psychology* (pp. 477-495). Washington, DC, US: American Psychological Association. doi:10.1037/10112-041
- Keeney, B. P. (1983). *Aesthetics of change*. Guilford Press. New York. NY
- Kentridge, R. W., & Heywood, C. A. (1999). The status of blindsight: near-threshold vision, islands of cortex and the Riddoch phenomenon. *Journal of consciousness studies*, 6(5), 3-11.
- Maturana, H.R., & Varela, F.R. (1987) *The Tree of Knowledge. The biological roots of human understanding*. (Revised Ed). Shambhala Publications. Boston. MA.
- Neitz, J. & Neitz, M. (2011). The genetics of normal and defective color vision. *Vis Res*, 51, 633-651.
- Robinson, D. W., and Dadson, R. S, (1956). A Re-Determination of the Equal-Loudness Relations for Pure Tones. *British Journal of Applied Physics*. 7, No 5 166-181
- Sacks, O. (1998). *The man who mistook his wife for a hat: And other clinical tales*. Simon and Schuster. New York, NY
- Santaella, R. M., & Fraunfelder, F. W. (2007). Ocular adverse effects associated with systemic medications. *Drugs*, 67(1), 75-93.
- Scott, B. (2011), *Explorations in second order cybernetics*. Edition Echoraum, Vienna
- Shooter, M. (2005). The soul of caring. *Advances in Psychiatric Treatment*, 11(4), 239-240.
- Suzuki, Y., & Takeshima, H. (2004). Equal-loudness-level contours for pure tones. *Journal of the Acoustical Society of America*. Vol 116 (2), pp918-933
- Thoreau, H. D. (2006). *Walden*. Yale University Press. USA
- Tsutomu, O., Emi, N., Norie, K., Yoshitaka, F. & Hiroshi, I. (1991). High-Frequency Sound Above the Audible Range Affects Brain Electric Activity and Sound Perception. *Audio Engineering Society*. AES Convention:91 (October) Paper Number:3207
- Valiquette, C., Pelletier, M., Parisien, I., Rocher, I., & Menzies, D. (2003). Incidence of serious side effects from first-line antituberculosis drugs among patients treated for active tuberculosis. *American journal of respiratory and critical care medicine*, 167(11), 1472-1477.
- WHO (2011), "Chain free initiative", available at: www.emro.who.int/mental-health/chain-freeinitiative/ (accessed 30 December 2013).

Yee, D., Valiquette, C., Pelletier, M., Parisien, I., Rocher, I., & Menzies, D. (2003). Incidence of serious side effects from first-line antituberculosis drugs among patients treated for active tuberculosis. *American Journal of Respiratory and Critical Care Medicine*, 167(11), 1472-1477.