



Inciting Insight

Exploring the relationships between
insight, coaching and *clean* techniques
By Angela Dunbar

What is insight?

Most people can remember and describe at least one powerful moment of sudden insight in their lives. The experience is often described as being 'like a light bulb suddenly going on inside my head' suggesting clues to the etymology of this word, the origins of which come from middle English and literally means "sight with the eyes of the mind," (Harper 2010)

There are a number of dictionary definitions that broadly describe insight as "the capacity for deep understanding of the true nature of something" and also a general quality that an individual can possess (such as "He is an insightful person"). It also has a special meaning used within psychology which is "understanding or awareness of one's mental or emotional condition". What's curious about insight is the typical way we arrive at it, and for this reason, insight is often defined as a single, specific mental event: "A penetrating and often sudden understanding, of a complex situation or problem" (Collins English Dictionary)

With insight, our whole conceptual framework seems to shift and we become aware of new solutions, previously out of our grasp but now so obvious it seems laughable we could not see before. Commonly referred to as a 'Eureka'¹ moment, this term was supposedly named after the scientist Archimedes who famously exclaimed this word (meaning 'I've found it!') after getting in the bathtub and suddenly noticing the rising of the water level and realizing it would indicate his own body's mass – thus discovering how to measure volume and density.

Why incite it?

Any parent, teacher or people-helper professional knows the frustrating reality of trying to encourage another to understand something in a different and deeper way. Simply telling or showing is rarely enough to create an insight moment. It doesn't matter how much you tell a

¹ For more about 'The Eureka Effect' see the [Wikipedia entry](#) for a good description of insight moments in history and popular culture, plus an overview of some of the psychological neuroscience investigations into brain activity and mental processes

person what the answer is, unless it is within their frame of reference they cannot see it as you do. Anne Sullivan, the teacher of famous deafblind Helen Keller, worked tirelessly for weeks showing the young Helen the signing symbols for common objects and events around her. But for Helen, at the time she didn't even understand the most basic rule for language and communication, that is: everything has a name. Her moment of insight came as Anne held her hand under running water and signed the word WATER over and over again. Helen described the magical moment as: "...Suddenly I felt a misty consciousness as of something forgotten, a thrill of returning thought, and somehow the mystery of language was revealed to me." (RNIB, 2012).

Most coaches work from the general principle that the best way to encourage new, insightful thinking is to ask questions, to enable clients to discover the answers for themselves. Erik de Haan has researched the coaching process and reveals the importance of 'critical moments' in a coaching session (De Haan et al, 2010a), providing evidence that coaching clients are not generally aware of or concerned about the framework or model the coach is using. What clients report as most helpful from their experience of coaching are *new realizations* and *insights*. De Haan reflects that the learning for coaches in practical terms is to "*keep the focus with what clients are interested in most: realizations, emerging insight, and reflection*" (De Haan et al, 2010b)

David Rock has been influential in bringing cognitive neuroscience into the practical domain of coaching, and describes the 'Ah ha moment' (2012), explaining how people solve different kinds of problems in different ways. For linear problem solving, such as mathematical questions, we bring a small selection of relevant data into our conscious 'working memory' rather like a mental whiteboard to manipulate the pieces of the puzzle until we calculate the answer. However for non-linear problems with no standard answer, we need to enlist the help of our non-conscious mind, which is vast in comparison to our conscious limit. Rock says: "*Relatively speaking, if you think of your conscious processing capacity as the coins in your pocket, then your nonconscious processing capacity is the entire U.S. economy by comparison*". He highlights the dilemma of encouraging insight, as something that seems to be central to learning, yet can't be forced. However Rock claims that following a few simple rules can vastly increase the likelihood of having an insightful moment. Insights happen when being in a state of 'internal mind wandering', rather than directly focused on the external problem at hand. So, for people developers such as coaches, it's about creating the right space for insight, encouraging the other person to have some quiet time and a quiet mind. And, simply allowing people to reflect. In a sense, giving them permission to pay attention to their own thoughts, rather than to the coach.

Confirming the value of mental quietness, neuroscientists (Jung-Beeman et al. 2008) found an *alpha effect* (indicating the brain at rest) in the visual and auditory cortex *just before* someone has an insight. This seems to be because we temporarily tune out of watching the external world, and switch attention to fragile internal processing activity. At the very moment an insight reaches conscious awareness, there is a high frequency "gamma spike" within the brain,



thought to be produced as a new neural network pathway crystallizes into shape and an idea is born.

How coaches can and do get in the way of insight

My work as a coach trainer and co-coaching organizer has meant that I have been privileged enough to listen to many hundreds of coaching sessions over the years. Although there is a huge variety of coaching approaches and models used, most coaches intend to be mostly non-directive, agreeing that people learn more effectively when they discover solutions for themselves. However, I frequently observe that although a coach *believes* they are being impartial and non-directive, their questions are not as open or bias-free as they might think.

To quote a recent example of a question: “What would happen if you assumed the other person felt really positive about your ideas and would warmly welcome them?”

Although it is an open question, it is of course also a leading question. However positive the idea may be, the coach is also making an assumption that feeling really positive means ideas are warmly welcomed. The embedded message is that it would be a good thing to assume this, presumably because the coach themselves has this assumption and it works for them. However, the coachee is different from the coach and this solution may not work for them, nor are they likely to be able to truly ‘try this idea on for size’. However, by subtly pushing the coachee’s thoughts in a certain direction, the coach may prevent them from noticing their own internal signposts leading in an entirely different way.

Much research has been done into the effects of biased questions like these, and it appears that very subtle language influencers can distort the thinking of the receiver without any conscious awareness that this is the case. Psychologist Elizabeth Loftus studies on eyewitness testimonies (Loftus and Palmer, 1974) helped highlight the *misinformation effect*, proving that a single ‘loaded’ word in a question could easily alter a person’s believed memory of a certain event. Interviewers asked people after watching a film clip of a car crash “About how fast were the cars going when they (hit/smashed/collided/bumped/contacted) each other?” Depending on which word in the bracket was used, the estimates of speed varied, from very fast for ‘smashed’ and ‘collided’, to slow for ‘bumped’ and ‘contacted’. And it is not only leading or closed questions that influence, even the use of hypothetical questions (Moore et al, 2011) exert unconscious bias.

Biased questions are stringently controlled within the legal profession and areas of research, however in other fields, without those controls bias creeps in unguarded, whether we like it or not. This can trigger a number of biased responses in the coachee, such the *observer expectancy effect* (where the coach unwitting pushes the coachee towards the answer they expect) or an *expectation bias* (coachee gives the answer they think the coach wants to hear) and *confirmation bias* (coachee searches only for information / ideas etc that match current preconceptions, both their own and those of the coach’s). The result is that the coachee’s focus

of mental attention is heavily steered by the coach's remit, which can stifle creative thinking and the emergence of truly new perspectives entirely owned by the coachee.

Even without words, we unwittingly direct attention to the areas that we deem useful and important, and our personal opinions can leak out through our voice tone and body language. Being truly impartial and non-directive as a coach applies to your unspoken intentions as well as your verbalized questions.

It is not easy to be truly present with someone and accepting them (and their thinking) just as they are, without any attempt to influence. But if achieved, it can be incredibly powerful. Psychotherapist Carl Rogers (1961) expounded the value of giving the other person what he referred to as 'unconditional positive regard' And more recently, Nancy Kline (1999) highlighted the incredible power of listening without inputting, asserting that *"giving good attention to people makes them more intelligent"*.

To improve your own ability to stay out of the way of your client's search for insight, I recommend that you learn more about the mental processes involved and the likely steps required to reach it. Armed with this information, you can have the confidence to take a different approach to coaching and be able to justify to the client why this approach is worthwhile.

The qualities of an Insight

As we have already learnt, insights have a number of recognizable qualities. They tend to be sudden, and self-generated. No one can give us an insight, we have to discover them for ourselves. What is also true is that moments of insight are often precluded by a period of stuckness, confusion or impasse, where the problem seems impossible or inescapable.

The now well known 9 dot problem is a typical example of an 'insight problem' similar to those used by researchers to investigate the mental processes involved in insight.

The Nine Dot Problem

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Connect all the dots by drawing four straight, continuous lines that pass through each of the nine dots, without lifting the pencil from the paper

If you do not know the answer, it is surprisingly difficult to come up with. Due to the way the dots are presented, we naturally look for an answer that fits within the confines of the dots themselves. This is a very literal example of all non-linear problem solving: we create a mental 'space' to hold the parameters of whatever is puzzling us. Often we reach a state of impasse when we appear to have exhausted all possible ideas and we are literally bound by the edges of the problem space as we perceive it, in this case the imagined square we can see around the edges of the dots. The answer comes, when by accident or design, we allow ourselves to think outside of our own self-imposed (but unconscious) limits and we start drawing (and thinking) *outside the box*².

The process of insight

As the process of insight happens mostly at an unconscious level, it is not easy to pinpoint exactly what is happening. For many years cognitive psychologists have been interested in researching the exact thinking processes that lead to a moment of insight. Although some aspects of the process remain mysterious and/or disputed, some key stages seem quite certain.

The stages of human problem solving (Newell and Simon, 1972) can be summed up in three steps:

- 1) We perceive the problem. We know that perception is not an exact replication and always involves interpretation, and the mind uses prior experience to filter what kind of problem it sees. Perception is the end result of a series of layered processing units which take sensory input and step by step, distil it into a coherent whole.
- 2) We then retrieve information (unconsciously) from our long term memory, filtering for whatever seems most useful to the problem at hand. Because of the limited capacity of working memory, it is only the strongest connections that get made, based on the already biased perception of the problem. We fill our minds eye with all the possible pieces of information that we think could be useful, and keep out everything else. Psychologists call this the 'problem space', to describe the mental construction of a network of possibilities, necessarily constrained to provide an area of focus and direction to aim for.
- 3) Finally, we search for a solution (consciously), mentally rehearsing in our minds eye possible strategies using the information already selected within the problem space.

Within the framework of this model, it is relatively commonplace for people to make a 'false start' and begin with certain assumptions about a problem which may not be useful or even true, as in the 'nine dot problem'. Our exploration is then restricted by those unhelpful assumptions and we cannot escape them, hence the impasse. The problem solver is trapped within a circle

² If you still cannot solve the puzzle, try [Wikipedia](#) again for 'Thinking outside the Box' - for not only the answer but some interesting background information on where the puzzle originally came from



of their own thinking, constrained by the very mechanisms that perceived and explored the problem in the first place.

The Paradox of Insight

Stellan Ohlsson, in his book “Deep Learning: How the Mind Overrides Experience” (2011) summarises everything that psychologists know – and don’t know – about how insight works. The puzzle, he argues, is why we often get to a moment of *impasse* before an insight comes to mind. It is like the mind has to give up before finding a new way of seeing the problem, and therefore the solution.

He sees that the paradox of insight is its unpredictability. If we are trapped within the box of our own preconceptions, how is it that some people manage to break out? And if some people can, why doesn’t it happen to them all the time?

Ohlsson reframes our perception of cognitive mental systems. He explains that until quite recently, Newtonian science had led us to believe that we live in a “Clockwork” universe, such as the classical cognitive psychology comparison of ‘information processing’ in the mind mirroring that of a computer. But the brain is messier than this and represents a natural system that has evolved over time. Ohlsson reflects on the question: What if the mind is more like a different kind of system, namely the weather?

Ohlsson (2011, p104) points out that *‘in a turbulent and unknown world, there is no guarantee that the biases laid down in the course of experience are predictive of which knowledge elements are most useful for solving a problem’*.

The Redistribution Theory

Ohlsson argues that, at least some of the time, and under the right conditions, the impasse can become the trigger to discovering insight. Ohlsson calls this the “Redistribution Theory”, and says that repeated, failed attempts to solve a problem can eventually cause the problem space to disintegrate. The building blocks on which the perception of the problem is based start to fall down. Each building block represents a layer of processing activated during the initial perception. With progressive failure, each layer receives negative feedback from the layer above, decreasing its level of activation until it switches itself off. As Ohlsson (2011, p109) summarises: *“Turning off a choice point relaxes whatever constraints it imposed on the alternatives to the options it represents”*. The reason the impact is often sudden is due to the nature of thresholds, As one doorway of thinking is closed, it enables another to be opened. For the problem solver, their entire representation of the problem and potential solutions has been transformed as a single change at one layer changes the coherent whole that the mind created from the sum of all the processing layer’s outputs. The new problem representation starts a new retrieval process, suddenly a whole new set of information pieces become available, from our

vast store of long-term memory, previously inhibited by the constraints of the original problem space.

Ohlsson also says that a person *“trapped in an impasse is not in the same mental state as someone who has disengaged from problem solving”* (2011, p113). The thinker is deeply absorbed in the problem, and the unconscious mind is busy sending inhibitory feedback down the processing layers.

So what are the conditions for insight? According to Ohlsson, one factor seems to be perseverance, consistently failing enough times for the building blocks of the problem space to start falling down. Another is spending sufficient time re-evaluating the initial problem, so that different layers of processing begin to be activated, ready to enter our conscious thought space when an existing layer gets deactivated.

The relationship between cognitive ‘processing units’ and neurons?

It is also interesting to note that although we are talking about processing units as functional descriptions of mental activity, as neuroscience continues to advance and powerful brain imaging techniques allow us to see more clearly the biological activity of the brain, the similarity between physical neurons and functional processing units is becoming increasingly apparent.

Neurons or nerve cells are the building blocks to all our experience, both of perceiving the outside world and conceiving our inner world of memories, knowledge and abstract ideas. They are clustered in complex networks, and activate each other through a spider web of connections and associative links formed and strengthened through life experience. Like miniature batteries, once activated they let off a burst of electrical activity that have the power to stimulate other neurons that they are connected to. Neurons get switched on or off dependant on reaching a certain ‘firing threshold’ of electrical activity. We know that most of our cognitive thinking, perception and ‘higher brain’ activity takes place within the cerebral cortex, the very outermost layer of the brain, in evolutionary terms thought to be the most highly advanced. Within the cerebral cortex there is a highly layered structure to the neurons, no less and no more that 6 layers of neurons, each responsible for increasingly filtering and shaping our sensory inputs into a single percept of experience. Neurons not only work in a chain reaction upwards and downwards through the layers but also across each layer horizontally, making connections with associated neurons and when stimulated enough, accumulating and increasing firing rates until a tipping point is reached and the exact pattern of firing neurons activates neurons at the next layer up.

There clearly is a relationship between cognitive problem solving processes and what we can observe from neuronal activity, however a clear bridge between biological structures of the brain and the higher cognitive processes of the mind has still to be crossed. The increasing collaboration between cognitive and neuroscience research make this an exciting possibility for the future.



Clean Approaches to Inciting Insight

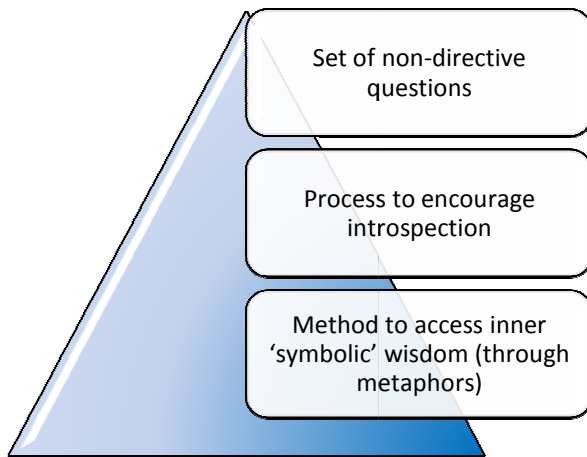
David Grove, New Zealand psychologist and psychotherapist, developed a unique way of communicating with another person (Grove and Panzer, 1989) that limited the typical two-way information flow of a conversation, and instead enabled the client to pay much greater attention to their own experience, including their inner mental processing. The approach was coined 'Clean' as like a surgeon who scrubs up before an operation, the questioner prevents any 'contamination' of bias by asking only questions that have been cleansed of any and all words that might lead or influence. The questions are phrased in a specific and exact word sequence as the way the questions are heard and the order in which the words land with the receiver also affect their mental processing of the question. With no distractions, the questions land deep and tend to quickly generate an introspective state in the other person. This state is exactly the kind of quiet, reflective mental space that is required for an insight moment to happen.

Clean Language

Grove used a core set of questions within a broad approach that he described as Clean Language. He noticed that when exclusively using these questions in a clinical setting with trauma victims, when they became sufficiently introspective they naturally began to describe their internal thinking, using metaphors and analogues. By simply helping the client pay attention to those metaphors, the symbols and characters within the imaginary world began to take on a life of their own and transform, moving towards a more satisfactory and stable structure. When this happened, the trauma victims would get better, their symptoms resolved without ever having to directly confront the real life problem memories, risking re-traumatizing the patient.

UK NLP Psychotherapists Penny Tompkins and James Lawley (2000) studied Grove's approach and developed it into a more systemic approach for people change outside of a therapeutic relationship, suitable and useful for all.

Clean Language is a way of communicating that is very different from other forms of communication. You can define it in at least three ways, with each definition offering a different way to use it, from a more conversational and casual way to a purer, more structured process of deep exploration into the mind and meaning of another person.



First off, as a simple set of non-directive questions. The actual, exact wording of the question is important, as the language used has been stripped of all the assumptions that can get embedded within our conversation without us even noticing. Rather like a set of tools within a toolbox, each question has its own unique use, that you can use individually as and when required. In this way you can reduce the level of influence from any unconscious bias in your questioning. The answer you get is more likely to reflect accurately what the other person really thinks / knows / wants and/or feels. For a summary of the questions, see Dunbar (2005).

Secondly, by putting a selection of these questions together in a structured way, you have a process of working with someone whereby you encourage introspection and mindfulness. This often leads to a kind of meditative state of awareness focused on inner experience and our deeper thought structures rather than the external world and surface-level reactions and responses.

The third level is deepest of all, where you continually ask Clean Language questions over a period of time, focusing attention on the metaphors that the other person is naturally and unconsciously using in response. This gradually takes the person into a state of altered consciousness, where - almost in a dream-like state - the symbols and characters within their metaphors take on a tangible shape, form and location and 'come to life' within the person's imagination, revealing a deeper understanding of their situation and what needs to happen.

Another benefit of using Clean Language is that as you practice the process, you are training yourself to be more non-directive in your thoughts and intentions too. By asking Clean Language questions you will become more mindful of your own opinions and biases as they crop up and be more conscious of your potential influence. This helps you to develop a cleaner mindset and avoid biased questions in general, whenever you communicate.

Emergent Knowledge

In the later years of his life, Grove began to look beyond language and towards other constructs such as space and numbers as a way of accessing a client's inner reality. His 'Emergent Knowledge' theory describes a layered approach to problem solving that has similarities to Ohlsson's redistribution theory.

Grove studied the science of emergence and networking principles and as a result, suggested that there are **six** steps or levels to insight. The significance of the number six is based around observable principles of networking, which follow the same rules regardless to whether the network is man-made, a social network or a natural network. Research (Milgram, 1967) has shown that it only takes a series of six interconnections between hubs on a network for any one part of the network to connect to any other part, however complex. This principle was popularised by the 'small world' phenomenon that you can connect any person on the planet (of 6 billion people) to any other person with an average of only six socially associated people. So, the first degree of separation includes everyone you know directly, the second, everyone that each of them knows, and so on. The value of close but also distant, weaker associations in expanding the available network is important to brain/mind networks and well as social ones. In fact Beeman et al (2008) suggest *"...variables that improve the ability to detect weak associations may improve insight solving"*

Grove developed a questioning process that works in a similar way to that of Internet search engines that apply an iterative approach to finding the most relevant information within a complex and chaotic network such as the World Wide Web. Iteration is when the same command or process is repeated over and over again with each answer becoming the stimulus for the next process, generating a series of feedback loops which gradually improve the initial 'approximate' solutions until the target answer is reached.

The questions are cleaner than clean language, stripped even further of possible influence and asked in an iterative sequence. Simply put, the same question is repeatedly asked of the answer given to the previous question. Each repetition of the question takes the coachee to another layer of thinking.

Grove suggested that the most crucial of steps is number four, which he termed 'the wobble'. Rather like Ohlsson's description of an impasse, this is where Grove says everything that the problems solver thinks they know about the problem starts to unravel. The current 'small world' system of networked information hubs has reached a level of complexity that it has become overloaded and begins to deactivate.

The process begins with a initial 'set up' called the Clean Start , which enables the client to re-evaluate the problem and use the real-life space around them as a metaphor for the conceptual 'problem space' that they have constructed. The repetition of the same or very similar questions helps the client keep their current thinking channels open and encourage greater and greater connectivity to available information. As feedback loops of thinking are created, the



unproductive elements eventually reach a limit, where they begin passing back negative, inhibitory feedback and eventually switch off.

The Clean Coaching facilitator's role is to hold the space for the person long enough for the building blocks to fall down, so a brand new representation of the problem and solution can emerge. Although this cannot be guaranteed to happen 100% of the time, EK seems a very useful way of encouraging the right conditions for insightful solutions to emerge.

Given that insight can only emerge after an impasse, it is extremely important to effectively contract with the coachee in the first instance, so that expectations are set and the process holds no surprise (although the outcome may well do).

There is another ingredient to the process that is well worth appreciating, and that is the importance of both coach and client having trust, in each other and in the process. With trust comes the perseverance to hold your nerve and keep the mind quietly attentive on the impasse or 'wobble' until an insight begins to emerge.

Take part in the research

To discover more about the conditions for insight, I am conducting some research into the effects of clean and role of space / metaphor. Initially the research will investigate what metaphors of insight may reveal about unconscious processing. Eventually it may be part of a wider and more ambitious research project around the whole area of insight.

Please email angeladunbar@cleancoaching.com to find out more and participate in the research.

Want to learn how to be clean?

At the Clean Coaching Centre, we provide a range of learning resources to help you learn Clean Language and Emergent Knowledge. From free webinars and recorded demonstrations to short online courses all the way up to an ILM endorsed accreditation process.

Visit us at www.cleancoaching.com and have a look at what we offer. Register for our newsletter and we will send you regular topical and news and views from the world of clean.

References:

De Haan, E., Bertie, C., Day, A. & Sills, C. (2010a). Critical moments of clients of coaching: Towards a 'client model' of executive Coaching. *Academy of Management Learning & Education*, 9.4

De Haan, E Bertie, C., Day, A. & Sills, C. (2010b) Critical moments of clients and coaches: A direct-comparison study. *International Coaching Psychology Review* 5 (2): 109-128



Dunbar, A (2005) Using Metaphors in Coaching in *Association for Coaching Bulletin*, Sept 05. Available at: <http://www.cleancoaching.com/#/clean-coaching-free-articles/4514711939>

Grove D.J. and Panzer B.I. (1989) *Resolving traumatic memories: Metaphors and symbols in psychotherapy* New York: Irvington Publishers, Inc.

Harper, Douglas (2010) Insight. Dictionary.com. *Online Etymology Dictionary*. <http://dictionary.reference.com/browse/insight> (accessed: February 19, 2013)

Jung-Beeman, M., Collier, A., & Kounios, J. (2008). How insight happens: learning from the brain. *NeuroLeadership Journal*, 1, 20-25.

Kline, N (1999), *Time to Think*, London. Ward Lock

Lawley, J & Tompkins, P (2000), *Metaphors in Mind*, The Developing Company Press, 2000.

Loftus, E.F. & Palmer, J.C. (1974). Reconstruction of auto-mobile destruction: An example of the interaction between language and memory. *Journal of Verbal Learning and Verbal Behaviour*, 13, 585 -589

Milgram, S (1967) The Small World Problem in *Psychology Today* 1(1), pp 60 – 67

Moore S G, Neal D T, Fitzsimons G J, Shiv. B (2011) Wolves in sheep's clothing: How and when hypothetical questions influence behavior. In *Organizational Behaviour and Human Decision Processes* doi:10.1016/j.obhdp.2011.08.003

Newell, A. and Simon, H. A. (1972). *Human Problem Solving*. Prentice-Hall, Englewood Cliffs, NJ.

Ohlsson S (2011) *Deep Learning: How the Mind Overrides Experience*, Cambridge University Press

Rock, David 2011, *The Ah ha moment* in Training and Development, February 2011. Available at <http://www.inspiration.com.au/wp-content/uploads/2011/05/TheAhaMomentASTD20111.pdf> (accessed December 5 2012)

Rogers, Carl. 1961 *On Becoming a Person*, pages 283-84. Boston: Houghton Mifflin.

Royal National Institution for the Blind (2013) *Helen Keller*. Available at <http://www.rnib.org.uk/aboutus/aboutsightloss/famous/pages/helenkeller.aspx> (accessed 22nd February 2013):