

**A Scientific view of Meditation, consistent with how
it is described in the Suttas
(regarding change during meditation, a neglected area of research)**

ABSTRACT:

This is quite a unique position. Very few studies or conceptualizations make much of 'intrusions'* that occur during meditation (be it simple breathing meditation or loving-kindness (metta) meditation). Though it makes perfect sense that you, with your quiet mind, could well-process and thoroughly process 'intrusions' making full use of an otherwise free working memory, typically only the after-effects AFTER meditation are focused on when "benefits of meditation" are considered or assessed. Yet, these studies on effects of meditation OUTSIDE the meditation process offer essentially nothing in the way of an explanation based on psychological process. The benefits to thinking (conceptualizing or active processing) that could naturally occur DURING meditation by just simply 'noting' the 'intrusions' have a very plausible psychological basis (in terms of the well-recognized psychological processes associated with working memory and long-term memory: declarative and procedural memory).

[FOOTNOTE: 'intrusions' are content (thoughts, feelings, sensations) that are other than the object of concentration (e.g. other than your breathing or loving-kindness or whatever else you have as a good object of concentration).]

This concentration on only "after-effects" seems likely a large over-sight when one is trying to do INSIGHT meditation.

During insight meditation, 'intrusions' (some quite welcome 'intrusions') can be conceptualized as making full use of working memory EVEN when one always limits one's response to simply just 'noting' the intrusions, and, in fact, the basically natural processing that may occur during just-noting 'intrusions' may well (at times) be incredibly adaptive. Just quickly, but calmly, noting intrusions is always what is recommended. Its results, too, could carry over into regular day-to-day life. **It is thought that a full-blown moral Buddhist life, and including the seeking to see 'things as they really are' (ardently striving), in regular day-to-day life is likely necessary to have any likelihood of good useful intrusions.**

How can we have faith in the role meditation may have, and the acclaimed role that just simple breathing (and sitting) meditation could have? Can a basis be found?

First, can a reasonable procedure for meditating (at least actually consistent with the suttas) be found? One book with a clear and believable (and well-founded) procedure can be found in Life is Meditation, Meditation is Life ... by Vimalaramsi .

Vimalaramsi describes (over and over, but to good effect) a procedure that does seem very useful (a simple 6-step process of returning to the object of concentration). It seems consistent with right view, right effort, and wise attention (including proper 'noting' of experience(s) and wise 'consideration'). The problem is that this book does not come even close to describing how progressively more is rightly seen and how one moves to more and better seeing of the Real, i.e. progress towards realization. BUT the key to progress through each step and onto the next seems to hinge (and rightly so) on seeing dependent origination, which would include seeing the arising and cessation of phenomenon , the impersonal nature of phenomenon (not self) and APPROPRIATELY seeing (actual seeing) the impermanence FOR REAL, in its actual context and not merely an article of faith or imagined. The problem is that the 6 phase 'returning to the object' procedure, the same procedure outlined for both breathing meditation and loving-kindness meditation, does not indicate what is permitted to be noted (nor all the places [in the steps] associated with useful 'intrusions').

The procedure, though, for sure is “out to” represent appropriate dealing with all 'intrusions' AND , so dealing [with them] provides the needed process for progress towards realization at all stages. Given the simplicity of breathing meditation (as described by the Buddha), the procedure described seems perfectly appropriate.

But:

To get all the needed content ('intrusions') for all realizations needed for progress toward, and achievement of, realization is not sufficiently specified to be imagined. It is clear that the likelihood of good (useful) 'intrusions' would occur ONLY with a full-blown real-life (outside life); a life outside of the meditation (whether meditation be simple breathing meditation or focusing on loving kindness) would be necessary to make useful 'intrusions' at each level at all possible (probable(?)).

Thus, I will take a full-blown real-world practice of being moral AND ardently striving to 'see things as they really are' going on. From that I will speculate, based on the nature of working memory (aka short term memory) and the nature of long-term memory processes, HOW the objects of wise consideration which arise ('intrude') during meditation can be experienced as such and attended to wisely for progress to occur. I do understand that the wise attention and the processing of content should all occur through JUST 'noting' and , otherwise, just naturally processed, once 'seen'.

A principle of working memory is that we can actively process (i.e. consciously process) [(NOTE: conscious does NOT mean 'deliberate.')] only 7 plus or minus 2 mental objects at a time. The mental objects must come up wisely to see further the associations between them (or between them and/or other things imagined). This 'coming up wisely' would be 'intrusions' that come up naturally and thus may be present in mind [adaptively] for some degree of processing or other. From the faithful description of the meditation process by Vimalaramsi, one can only conclude that the **processing** ALSO largely and basically occurs naturally during his 6-part 'returning-to-the-object-of-concentration' AFTER some useful 'intrusion' -- thus consciously or rather purposefully one is ONLY concentrating ON the object of concentration (the breath or loving kindness) and basically ONLY using the meditation process he describes to do so and responding to and returning from 'intrusions' as he describes. OTHER conscious or unconscious mental processing will not occur purposefully, but will occur basically only because of clearness of mind and resulting clear(er) comprehension OCCURRING NATURALLY. “Occurring naturally”, though, also may include processes built up during regular daily life FROM processing done then: these become the declarative (automatic, perceptual) process built up (likely with the help of language, but not necessarily) AND the procedural processes (automatic mental actions) likewise are based largely on (but not exclusively) 'real life', and developed during one's regular moral and contemplative (outside)

life. I do believe that with this perspective the simple 6-part 'returning-to-the-object-of-concentration' process USED FOR EVERYTHING will suffice (as all you need to know). This simple process must be outlined because it itself will be composed of processes and sub-processes at each stage -- very easily using the full capacity of working memory, depending on the 'intrusion'.

1. Recognize [(may be 2 pt)]
2. Release [(may be 3 pt)]
3. Relax (this and/or Release is associated with mind expanding)
4. Re-Smile
5. Return
6. Repeat

This is THE meditation procedure and represents responding to the intrusion (not including perceiving the basic 'intrusion' in the first place). Given the 7 + or - rule of working memory (where ALL conscious and conscious-purposeful processing occurs) this 6-or-so part procedure CAN USE ALL OF THAT. All that will differ is the nature of the 'intrusion', intimately related to your level of progress toward realizing thing(s) (things YOU have chosen) as **they really are**.

The Recognize phase of 'returning-to-the-object-of-concentration' can be seen to sometimes be 2 part and the release phase can be seen to have up to 3 parts. ALL these 'parts' are SIMPLY 'NOTING' (or 'notings'). Step 6 of course does NOT count, because the whole process is described in 1 through 5. Also, step 5 does not count in the process occurring to the 'intrusion' but rather is moving away from all that back to the object-of-concentration. PROCESSES occurring with the 'intrusion' are Steps 1-4 (and are very largely automatic; simply other than wise attention/ wise consideration they are the automatic processing associated with declarative and procedural [long-term] memory). Voila , what is left (one through four) is a procedure that may involve 7 bits (and you ARE supposed to keep ALL that in mind as what you 'see') and this will well-use working memory.

Reflecting on the 6 steps used with different intrusions and how they should be wisely dealt with: **Recognition** may have 2 steps (e.g. 'seeing' an emotion AND recognizing it quality: positive, negative, neutral AND/OR seeing the nature of its arising).

[Note: what is 2 or more objects in working memory may (WILL), with development

and “chunking”, become ONE.] **Release** will involve noting the cessation (of the noting process OF 'seeing' the intrusion object); AND it will include noting **Relaxing** associated bodily responses and their cessation (separately). From the beginning of step one through step 3 one will most certainly want all THAT in mind. Then (also good to keep in mind WITH THOSE, since it is (in effect) taking a new perspective on the intrusion object): **Re-smile**.

All else you really have to realize when reflecting on this process and what occurs is: (1) you build up adaptive 'categories' for 'seeing' the object which occurs automatically (this is called declarative knowledge and is part of long-term memory) AND: (2) there is procedural knowledge -- automatic ways of actively processing the object-of-intrusion. Obviously both of these exist and become automatic, as just described. This is VERY consistent with the scientific understanding of working memory and types of long-term memory (in fact , if so, would describe an instance of it working). Also recall (based on science and recognized by common sense) we do re-”chunking' (re-categorization, re-unification, OR further discrimination(s)) as we develop and come to understand the object(s). This results in subsequently using less (or, in cases, more) of the 7 bits of short-term, working memory we have.

Hopefully, you can see that, in time, any type of intrusion related to the REALITY of an 'intruding' object can be a mental object ('it' can become as abstract AS IT IS TRUE). This is NOT really conceptualization (purposeful, or something more and more delusionally applied) but a sort of BETTER (more adaptive) conceptualization that is just something needed on the “road to” full realization (and liberation).

Hopefully, you can also imagine how the impersonal nature of things could be well-recognized during such meditation, how you could better see how something arises (dependent origination), and how your present view is unsatisfactory -- precisely what is to be realized as you move toward Enlightenment. ['Emptiness' can be experienced as the letting go of the unnecessary use of 'mind space' (now empty) as you 'see' better (and re-conceptualize).] Please realize (or do not forget) that the 'NOW' of Buddhism actually is being fully with/on the 'object' one is contemplating or attending to wisely (closely) or concentrating on -- that is really all it could be.

Now, we need to relate the good in what this is about to the types of mental objects Buddhists deal with. This is well-done by looking at the foundations of mindfulness:

(1) coming to see “body in body” (i.e. seeing body better and more truly)

(2) feeling in feeling ...

(3) mind in mind ...

and (4) phenomenon (i.e. phenomenon as the really are)

Some of this seems (and likely is) more simple: body in body, for example. Clearly harder are mind in mind and phenomenon in phenomenon.

Such things ARE to be objects of concentration, according to the Buddha. Obviously, since some are easier than others (and others harder) it makes sense that there be some sequencing BUT, I assert, NO strict sequencing. What occurs and when things occur is individual and appropriate latitude of what to 'note' and when to 'note it' must take large individual differences into account.

Therefore, I believe it is just best to help individuals (and ourselves) better recognize what these four things can mean (AND WHAT THEY CAN MEAN FOR US). These are the blessed 'intrusions'!!

A lot comes under “phenomenon in phenomenon” for a Buddhist and some of this is well-outlined by the Buddha, e.g. the 5 Hindrances, ignorance, the 3 roots of wrong view, the nature of emotions (positive, negative, or neutral), the 7 factors of Enlightenment. Other aspects of what comes under “phenomenon in phenomenon”, I believe, are not well-described : the 5 aggregates; the working of the senses. I believe the Buddha would not mind if we looked at these in a way more meaningful in modern culture.

Regarding phenomenon-in-phenomenon, in terms of the 7 factors of Enlightenment: I think that it is quite noteworthy (no pun intended(?)) that only one of them seems to be directly related to concrete things: that is: the Discrimination of Phenomenon enlightenment factor, ALSO known as the investigation factor -- both 'versions' very significant because the action in consciousness that betters our comprehension can be well-seen as either (one or the other) (at least at one point in time).

Finally, if we “cover the ground” of the four foundations of mindfulness, we are really “covering all the ground” (at least in a major sense). The 4 foundations lead to the 7 Factors of Enlightenment, which leads to full 'seeing' and understanding of the 4 Noble Truths AND the 2 characteristics of Enlightenment: true knowledge and liberation!