ON WHY WE CANNOT ESCAPE HIGHER ORDER VAGUENESS

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Vagueness is usually characterized by the presence of borderline region, i.e. the extension of the predicates apparently lacking sharp boundaries. This lack of boundary is explained by the presence of borderline or penumbral cases for the predicate in question. However it has been pointed out that this very twilight zone itself lacks clear-cut boundaries. This phenomenon known as higher order vagueness (HOV for short) is said to manifest *unclear boundaries between the definite regions and the borderline region.*

Philosophers have argued that in order to resolve the issue of HOV it is imperative to first show how boundaries of a vague expression can be determined. In this paper we have attempted to show that due to epistemological, semantic and ontological reasons the demand of the philosophers cannot be met and hence we have to put up with problems such as HOV. The underlying contention of our paper is that since vagueness itself is ineradicable problems such as HOV are consequently inescapable.

Russell's[1] paper on 'Vagueness', and papers following his, recognizes the fact that borderline cases of vague predicates are themselves not sharply bounded, thus implying that there is a *hierarchy of borderline cases.* According to Russell vague terms can be divided into the three regions:

1. Region of definite application

2. Region of definite non-application and

3. The penumbral region wherein the term neither definitely applies nor fails to apply.

This exposition of the nature of vagueness typifies what is known as the traditional concept of vagueness[2], portraying vagueness as a semantic phenomenon of natural language. Due to obvious constraint of time and space we are compelled to avoid the debate over the sources of vagueness for the time being.

The most common example illustrating HOV is that of the color spectrum beginning with the color red on the left-hand side but gradually terminating on the right hand side with the color yellow. This smooth and gradual transition is however perceptually undetectable, for as we descent from left to right, from patches satisfying P towards patches satisfying its negation there is one patch, the first patch, which we are unable to locate that clearly distinguishes P from not -P.

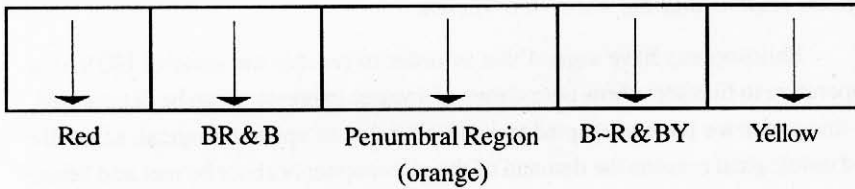| Red | BR & B | Penumbral Region (orange) | B~R & BY | Yellow |

Fig.1

*R = Red *B = Borderline *~R = not-red *Y = Yellow

The above (fig.1) is a diagrammatic depiction of HOV, showing how borderline cases themselves not being sharply bounded. The figure shows that there is a lack of a sharp boundary between the positive extension of Red (R) and the penumbral region and again between the penumbral region and the negative extension or not red. Thus the three-fold classification into positive, negative and penumbral cases of vague terms does not sustain and instead we witness a hierarchy of borderline cases. Keefe and Smith have meritoriously stated this idea:

> The lack of sharp boundaries between the Fs and not-Fs shows that there are values of x for which it is indeterminate whether x is F and equally indeterminate whether it is not-F. So similarly the lack of sharp boundary between the clear Fs and borderline Fs must imply that there are borderline

borderline cases-values of x for which it is indeterminate whether Fx borderline. Hence the characteristic lack of sharp boundaries to the borderline commits us to second-order borderline cases.[3]

Sainsbury raises a similar point by distinguishing between two kinds of vagueness$_1$ and vagueness$_2$. The former consists of a three-fold classification; classifications effecting a division of categorically appropriate objects into three sets: the positive cases of application, the negative cases and the borderline cases. He however cautions us about how this seemingly convincing tripartite division does not sustain for long and soon we find a new kind of borderline case for example, things, which seem intermediate between being definite cases of children and being borderline case of children. What happens on encountering such a situation is that

> We decline to accept that there can be any sharp boundary here. If there were it would remain true that there would be such a thing as the last heartbeat of my childhood, or at any rate the last heartbeat of my definite childhood and that seems as crazy as the idea that the predicate child divides the universe into a set and its complement within the universal set. Hence we allow for the more than theoretical possibility of higher order vagueness.....[4]

This he calls vagueness$_2$ - consisting of five-fold division into the definite positive cases for the predicate, the definite borderlines and the definite negative cases together with the cases which are borderline between being definite positive cases and definite borderlines and those borderline between being definite borderlines and definite negative cases. This five-fold classification of a term's application does not bring us to the end of the hierarchy of borderline cases, but rather one can continue increasing this classification endlessly thus running into a never-ending series.

HOV then seems to result from the failure of vague terms to draw any apparent sharp boundaries within their range of significance. The only way to remedy this problem according to Sainsbury is by characterizing vague expressions as boundaryless. But of what help can boundaryless expression be? Sainsbury

asks us to consider the color spectrum, which contains bands but no boundaries. Though the different colors stand out clearly, as distinct and exclusive, yet close inspection shows that there is no boundary between them. The spectrum provides a paradigm of classification yet it is boundaryless.[5] He further insists that we must shift from the classical perspective and abandon the idea of "providing a system of pigeon-holes,... placing a grid over reality", thus doing away with talk of boundaries altogether and instead vague expressions must be thought of as

> magnetic poles around which some objects cluster more or less closely and
> from which other are more or less repelled, some fall between a number of
> poles, drawn by more than one but especially close to none[6]

The above characterization of vague expression as boundaryless, which allows for borderline cases, inevitably associates vagueness with the classical tripartite division. This, thus, bring us back to our initial problem of having vague expression without unmarked extension. Burgess however clearly states that

> "The regress into which we are driven only highlights the problem, which
> gave rise to the initial paradox: we have as yet had no answer to the
> question what, if anything determines the boundaries of vague concepts'.[7]

Thus in order to get rid of HOV we need to tackle the very basis of the issue by attempting to answer what determines the boundaries of a vague expression. In the following pages we have however tried to examine not what determines the boundaries to vague expression but rather the various reasons responsible for making the exercise of delineation of boundaries for vague expressions an impossible one, thus rendering HOV to be irremediable. The impossibility of having clear cut boundaries for a vague expression stems from the fact that

1.   Sometimes certain semantic rules for the application of a term are not clearly spelt out.

2.   At other times though the semantic rules are clearly spelt out the indecision is due to the language user's ignorance of the necessary and sufficient conditions of application of a term.

3.   It could also be the case that the reality itself gives no clue of precision and hence the language in which it is represented may seem to be vague.

Although these factors are instrumental in impeding any kind of delineation of boundaries for a vague expression it is not the case that all of them affect our delineation at the same time. Rather either of the reasons could be dominating than the other in a given situation.

· The notion of a *boundary* usually connotes something that is spatio-temporally tangible. But while talking about them with regards to terms they are construed as *the range of application of a term in the actual as well as the possible cases of its use*. Boundaries for terms thus mean the limits for a term's application. The peculiarity of vague expression is that their application can be either extended or circumscribed in a given situation and as such they are said to be elastic nature. But of what use could these *extensionally moldable* expressions be? Such expressions are useful in non-philosophical contexts as peace negotiations where a common formula like *free elections to take place within a reasonable period*, is found to which both parties can agree sometimes thereby averting more radical disagreement. Attempts to make things precise in the situation just mentioned is bound to lead to further disagreement and hence it may be justified in letting the matter being less rigorous.

Again where no other word is readily available, where time and/or space are short and a characterization of something is called for the use of a vague expression seems justified. For practically it would not only be pointless to have new terms for small variations, say of heights, but it is also not possible. Even if we grant that new words can be introduced for small variation is practically possible, it is objectionable that if the old words cannot be right then neither can the new ones, since the old ones must explain the new ones. The circularity is unavoidable. Thus, elimination of vague expressions by introducing new words is like a tailor trying to satisfy a customer who complains that the old fabric is no good by spinning a new fabric from the old threads.

Coming back to our discussion, marking the limits of an expression requires that the rule of application and non-application of a term be clearly stated. Thus

given a particular situation in which a term's application is called for, the rule for the term's application or its non-application should be clearly stated to avoid any kind of indecision. However it is impossible, either in principle or practice, to exhaust all the possible means for the application of a term because such terms have an open texture according to Waismann, because of which

> We can never exclude altogether the possibility of some unforeseen situation arising in which we shall have to modify our definition.[8]

But the question arises as to what engenders these modifications? The purpose at hand says Waismann is what spurs us, for instance we define gold in contrast to some other metals such as alloys. This suffices our present needs and we do not probe farther. We tend to overlook the fact that there are always other directions in which the concept has not been defined. And if we could easily imagine conditions, which would necessitate new limitations. His notion of open texture rules out all possibility of trying to define any concept with absolute precision because 'there is no way in which every nook and cranny can be blocked against entry of doubt.'[0]

Waismann seems to be making a very strong point here. Unpredicted and unanticipated situations demand that the boundary of a term either be extended or circumscribed keeping in mind the given situation and the purpose. Thus even though one may wish to construct a robust set of rules stating a term's application and non-application one cannot rule out the possibility of never ever modifying it in deviant cases. Again having a rule determining the use of a term leaves nothing to the discretion of the language user - the language user would then need another rule to determine the application of this rule and so ad infinitum.[10] We are thus caught in the 'third man' regress for the mediator can only be another rule. In other words, in order to know how to use a term we would be resorting to some over rule to tell us how to use that term and then another rule to tell us how to use the first rule and so on.

However there are situations in which though a general set of rules for a term's application are spelt out language users are nevertheless hesitant in applying the terms in a given situation owing to their *ignorance of the necessary and*

sufficient conditions under which their application is admissible. Alston's example of the term 'religion' is a classic example of what is being claimed here. The kind of vagueness Alston is mentioning is the one that stems from an *indeterminacy as to just what combination of conditions is sufficient or necessary for the application of a term.* This kind of vagueness is known as *combinatory vagueness.*

The issue is serious since very often there is a plurality of relevant conditions determining the application of a term. He lists nine characteristic features of 'religion', conditions that are necessary but may or may not be sufficient for the application of the term 'religion'. [11] To list a few of them:

1.   Beliefs in supernatural beings (gods)

2.   A distinction between sacred and profane objects

3.   Ritual acts focused around sacred objects

4.   A moral code believed to be sanctioned by the gods

5.   Prayer and other forms of communication with gods.

Hence numerous conditions make it difficult for the language user to decide whether to lay emphasis for instance, on faith or rituals while applying the expression 'religion'. Thus expressions manifesting multifarious criteria[12] for their application demand the basis on which language users give priority to certain conditions. In such cases a language user classifies with respect to the features that are central and peripheral to him, reflecting Rosh's[13] Prototype theory of categorization. Certain religious activities such as worshipping the deity and chanting mantras may be central to a language user while going to the temple or fasting on certain days may be peripheral. On the basis the features such as idol worship central to a language user he may classify Hinduism and Christianity as religions but no Buddhism. However the choice of features is subjectively determined and hence the decision of application of a vague expression in a given situation is arbitrary - not fixed by convention.

According to Alston, the uncertainty of application engenders when these expressions like religion applied to certain *paradigm* cases like Hinduism, gets extended to other cases that do not differ from the paradigm in too many respects. However it is impossible to say exactly how many respects are too many? This manifests that the language user is not just ignorant about the necessary and

sufficient conditions required to apply a term in a situation but also the required degree of each of the conditions. Thus Alston opines

> even if we could say exactly which or how many of the various characteristics a cultural entity has to have... we would be unable to say with respect of a given characteristic exactly what degree of it we must have in order to apply the term"[14]

From the above discussion it follows that it is impossible to delineate boundaries of a vague expressions for semantic and epistemological reasons. We now see why it is also ontologically impossible to delineate the boundaries of a vague expression according to the ontological thesis vagueness engenders from the fact that objects lack specific Spatio-temporal boundaries. Mount Everest is vague object of some molecules are definitely inside Mount Everest and some molecules are definitely out side. However there are some molecules that are there is no determinate fact of the matter about whether they are inside or outside, Mount Everest is thus vague[15]

It may then seem that since the world is vague language users are unable to comprehend the reality with stringent boundaries. The conjecture seems tenable for vague terms apparently seem to capture the dynamic nature of reality such as a child growing into an adult, a seed into a tree, a tadpole into a frog and so on. The possibility of vagueness engendering from reality itself can be asserted from the failure of the classical theory to segregate things into classes by providing a system of pigeonholes. The classical theory insisted on identifying clear-cut, necessary and sufficient criteria for including instances of objects in a given category. The classical theory however failed to account for degree predicates that captured the dynamic nature of reality and the flexibility with which humans could categorize new inputs. To accomplish this task of the three laws of thought too seem to fail.

The law of identity (that everything is identical to itself) fails for it is unclear whether the red patch is really a red patch. For had it been clear that something is x or red as in our case, then our hesitancy in applying x to a given thing would not have risen at all in the first place.

A discussion by McGill and Parry claim that 'in concrete continuum there is a stretch where something is both A and ~A. There is a sense in which the ranges of application of red and non-red (in so far as red is vague) overlap, and the law of non-contradiction does not holed'[16]. Thus the law of non-contradiction (that no thing having a given quality also has the negative of that quality e.g., no even number is non-even) too fails for vague expressions inherently casts the idea that something is both, x as well as not-x.

The indecision as to whether x or not-x applies to something is a clear case of the failure or the law of excluded (that everything either has a given quality or has the negative of that quality e.g., every number is either even or not even). Vague expressions fail to neatly classify into either red or not-red objects. The color spectrum beginning with the color red and eventually fading into not-red, manifests a penumbral region, a region about which we cannot clearly state whether it is definitely red or not red. The penumbral is thus said to exhibit the failure of the law of excluded middle, for the region is neither clearly red nor not clearly not red.

The reason for the failure of these laws in the face of vague expression can be said to be on par with the classical theory, since it stems from their failure to *take into account differences by degrees*. That is, the two processes of classification seem to assume that reality can be understood by water-tight compartments, but things in nature are of the evolving kind, for instance childhood does not evaporates into adulthood suddenly, but rather takes place gradually. This evolving nature of reality highlights the idea that it is with respect to natural things that the problem of vagueness seems to engender, it is for this reason that it is impossible to apply the term childhood without hesitation. Natural kind terms such as childhood signifies an evolving stage and as such their boundaries are inherently open and impossible to delineate.

Boundaries of non-natural kinds like table lamp, cups, books, tables, etc. are not inherently open-ended, for these objects do not evolve, their boundaries are challenged or may be, by a designer. The various forms of a book or the different kinds of lamps are all ideas generated and implemented by a designer but these objects by them selves do not have the capacity to bring a change in them

selves, the way a natural things bring about.

Since natural kinds are forever evolving they manifest the 'quantity-turn-quality'[17] kind of an idea, i.e., small changes in quantity brings about a difference in kind. Non-natural kinds on the other hand do not manifest stages of evolution, to study its 'evolution' or structure change we could probably trace of it chronologically via some historical or literature survey on it. To this extent one can unhesitatingly claim, unlike natural kinds, that at such-and-such time x was P and at such-and-such time x turned into R and so on. Thus natural kinds cannot be classified with stringent norms of classification, norms that can be applied to classify *differences by kinds*, but not *differences by degrees*.

However irrespective of the fact that a term is a natural kind or a non-natural kind when a language user is uncertain he assesses the situation by asking certain questions or at least in principle asks 'Ought I to use (x) here?' or 'Is this use of (x) warranted?' These questions arise only because there is nothing objective to which a language user can appeal to, to settle his dilemma of application. Any decision thus is arbitrarily fixed vis-à-vis the situation in which the language user is in.

Summary and Conclusion

In viewing vagueness as an issue of indeterminate extension and indecision of application we have seen how the problem of HOV arises. A straightforward remedy would then be to show how boundaries of a vague expression could be fixed which would then invariably lead to the solution to the problem of HOV. However the epistemological, semantic and the ontological arguments show that it is impossible that a boundary for a vague expression can ever be drawn. On the basis of this it can be concluded that unless the boundaries of a vague expressions are clearly edged the problem of HOV remains unresolved. Thus unless and until there is some answer to the issue of vagueness itself it is not possible to have any solution to problem engendering due to the issue of boundarylessness of a vague expression and this we have seen above is not possible.

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