

A Reflection on Covid-19: Transdisciplinary Education and Zeug (Heidegger)

Charito J. Pizarro, PhD
University of San Carlos
charito.pizarro@gmail.com

Abstract

Transdisciplinarity requires a cultural shift in education, both in subject content and teaching strategies. Although both multidisciplinary and interdisciplinarity involve a collaboration between two or more disciplines, a transdisciplinary viewpoint in education requires not only such a collaboration but an opening-up to an overarching outcome that is surely much more than the disciplinary outcomes prescribed in OBE and OBTL. A way to concretize the idea of transdisciplinary education is to frame it in Martin Heidegger's distinctive philosophical vocabulary. This paper is an entry into a discourse on how Heidegger's twofold notion of the Zeug substantiates a transdisciplinary education aligned with this philosopher's hope of saving humanity.

Keywords: transdisciplinarity, interdisciplinarity, Dasein, Zeug

Introduction

Transdisciplinarity requires a cultural shift in education, both in subject content and pedagogy, andragogy or heutagogy. As in multidisciplinary and interdisciplinarity, a collaboration between two or more disciplines is demonstrated in transdisciplinarity. In the first two mentioned types of study, the

disciplines, as academic and professional specializations, are made to relate to each other as branches of knowledge to help in resolving the mounting complex of crises in the contemporary world – without affecting the conceptual frameworks which the respective disciplines have developed through the years of their application as individual knowledge systems.

But what exactly is transdisciplinarity? We can start explaining what transdisciplinarity is by saying what it is not.

Multidisciplinarity is not Transdisciplinarity. Multidisciplinarity approaches a topic from the perspective of a number of different disciplines.¹ From the Latin *multus*, “much, many,” multidisciplinarity is additive. That is, a root discipline may involve other disciplines where participants exchange knowledge and compare results. For example, a research is multidisciplinary, and not transdisciplinary, when the research topic is studied in several disciplines at the same time, as when an artwork is studied not only in its own discipline of art history, but in different other contexts such as religion and geometry.² The learner gains appreciation and understanding of the artwork through the information coming in from the many disciplines, but data or information integration in the transdisciplinary sense is not attempted. Thus, although a multidisciplinary research project may overflow disciplinary boundaries, it is not considered transdisciplinary when it has a goal that remains limited to the framework and format of disciplinary research. Each discipline is engaged in providing a perspective without interacting with the framework, especially conceptual, of each of the other disciplines.

Interdisciplinarity is also not transdisciplinarity. In interdisciplinarity, the methods of one discipline are used in another discipline. Nicolescu distinguishes three degrees of interdisciplinarity: a) degree of application, e.g., when the methods of nuclear physics are used in medicine, leading to new

¹ A. Montuori, Foreword. In B. Nicolescu (Ed.), *Transdisciplinarity – Theory and Practice* (pp. ixvii). Cresskill (NJ: Hampton Press, 2008).

² B. Nicolescu. *Transdisciplinarity – Theory and Practice*. Cresskill (NJ: Hampton Press, 2008).

possible treatments of cancer; b) epistemological degree, e.g., using methods of formal logic in the area of general law, generating new analyses of the epistemology of law; c) degree of generation of new disciplines, e.g., when methods from mathematics are applied in physics. From interdisciplinary work arises new disciplines, e.g., biophysics, mathematical physics. Interdisciplinarity in information systems and biomedical research has given rise to the field of bioinformatics.

Thus, the exchange of knowledge in both multidisciplinary and interdisciplinarity transpires within disciplinary constrictions. The participants in the exchange of knowledge stop short of integrating their disciplinary contributions. The respective disciplines do not budge from their respective 'positions,' for 'positions' indeed could be the term to describe their epistemological stances on the reality of the world.

What Transdisciplinarity is

Transdisciplinarity is a new teaching and research paradigm which requires a drastic shift in education culture. It has a farther-reaching aim than either multidisciplinary and interdisciplinarity; it is usually described as that in which the disciplines go "across, over and beyond" their borders.

Following the track of most of the thoughts which have become the signature of philosophers like Hans Georg Gadamer and Martin Heidegger helps inform what is meant by "going across, over and beyond" disciplines.

The fusion of horizons, *Horizontverschmelzung*, is named by Gadamer as the goal in the dialogue where varied, often conflicting, viewpoints are being presented. In order to provide a conciliatory direction, that kind of dialogue which is structured according to the historical backgrounds of the individual participants needs '*Wirkungsgeschichtlichesbewusstsein*.' It is Gadamer's term for a consciousness that would be effective in bridging the anticipated gaps in the historical process – gaps that are intimated by the fundamental asynchronicity of the participants' cultural affinities. According to Gadamer's ethic of

the dialogue, the question must take central position and at no time be abandoned or forgotten for the sake of preference and prejudice. This ethic has to be noted and observed in an education that purports to be transdisciplinary.

Heidegger's Concept of the *Dasein*

Martin Heidegger has become a philosopher's mouthpiece for his word innovation, '*Dasein*.'

Using the phrase 'reality of the world' is requisite for describing Heidegger's pose on the notion and object of '*Dasein*,' which is a keyword in Heidegger's inventive terminology expounding on the ontological circumstances of human action and position in the world. Succinctly, Heidegger's philosophy may be described as follows: Man is "thrown" into the 'reality of the world,' a world which could be described as 'where *Dasein* is involved in the activity of *alétheia* through the *Zeug*.'

A brief description of *Dasein* entails explaining its morphology based on the German words "*da*" and "*sein*." The first one directly means "there" in English. Using the word, however, also has the following ramifications. First, it would mean a presence. Where? In Heideggerian language, "where" is '*wo man sich befindet*,' or, where man finds himself. This would be the earth at large, when geographical restrictions are momentarily set aside. Second, insinuated in the expression "*Man befindet sich*" is a certain lack of control of circumstances which suggests the more fitted English translation, "one (happens) to find himself." Third, it would also mean that "*da*" as literally "there" in English presupposes an opposite "*hier*" in German or "here" in English. Somewhere opposed to 'here' is where the '*da*' is construed to be. Fourth, "*da*" is tantamount, in German, to "*es gibt*" which brings the literal translation to the English "there is" which leaves no doubt, at least for the one who is stating it, that "There is!" Or, "there exists, and I know this to be true."

Sein, on the other hand, is more straight-forward. It is the basic form of the verb in English which is the infinitive form of being, i.e. "to be." This, when inflected according to grammar

rule becomes “finitized” into first person singular, “am” and plural “are,” second person singular and plural “are,” third person singular, “is,” and plural “are.” This basic fact in linguistics suggests a path to a simple discourse on individuality, on the uniqueness of the person, and the uniqueness of the culture of a community of persons, which outright explains why there are so many views that have to be reconciled, in the Gadamerian fusion of horizons, where *Dasein* is.

Heidegger’s notion of the *Dasein* is available for the exploration of the options and the rationale for a transition from the present educational system to transdisciplinary education. In general, Heidegger’s philosophical vocabulary can be used to elucidate the idea of transdisciplinarity. Two principal notions other than the *Dasein* are *alétheia* and *Zeug*. On his reconstruction of the concept of the Greek *alétheia*, English, ‘truth,’ Heidegger founded ‘truth’ on the premise that there is ‘Being’ that ‘shows itself.’ The capital ‘B’ accentuates the difference of this ‘being’ in that Being is conceived by Heidegger to be in constant readiness to ‘disclose’ or ‘unconceal’ itself. According to his etymological analysis of the Greek word *alétheia*, Heidegger drew his understanding of ‘truth’ as ‘self-disclosure of Being.’

Applied to the accumulation of knowledge and understanding as its desired consequence, the acquisition of knowledge by humans and the growth of understanding can be seen as the activity of the unconcealment of *Dasein*.

Heidegger, Plato and Transdisciplinarity

Heidegger’s vision of the acquisition of understanding is of allowing ever newer aspects of self-showing *Being* to come forth. In an interpretation of Plato’s allegory of the cave, Heidegger argued that Plato errs in the manner he assimilated truth to light. This is an error, asserts Heidegger, because light, as it is alluded to in the allegory, is the light assumed to be outside the cave and thus coming from the sun, with the capacity to show things that can be perceived except inside the cave. Like the ‘reality of the world,’ the light outside the cave has the constancy

of the sun. Indeed, the natural light that emanates from the sun's rays is "there all the time." It is not in our repertoire of natural capacities to switch it on or off (nor would it be to our advantage, considering that any one man in a powerful nation could order the destruction of other countries through nuclear weapons or that any one man could design a 'virus' for the extermination of fellow human beings and a 'vaccine' ostensibly against it but meant to finish the sinister job).

Since Plato's allegory of the cave is cited worldwide as an educational tool with 'light' used as metaphor for 'knowledge,' Heidegger scores a big point about Plato's "error." It is an error because it makes us miss, even lose, cognizance of the fact that light outside the cave is there all the time and, in that sense, has a constant 'openness' to our seeing. Even "behind the clouds," as the folk saying goes, "the sun is still shining." Heidegger thus points out that light outside the cave is light 'unconcealing' outside but concealed inside the cave. The light (metaphor for 'knowledge') is always 'open' outside the cave since it is, like the 'reality of the world,' the given (natural) light of the sun. It is the fact of 'imprisonment' inside the cave that 'conceals' the light which actually does not cease to exist outside the cave. The 'unconcealing' light outside-the-cave could serve as an analogy to elucidate the concept of the *Dasein* with regards to *alétheia*. The unconcealing of Being 'is there' all the time; those 'inside the cave' just have to go out of the cave to 'avail' of it.

Alétheia was originally the basic feature of *phusis* (roughly, 'nature') and thus 'essentially rejects any question about its relation to something such as thinking.' In Plato, however, it 'comes under the yoke of the idea'.³ Idea, from the Greek *idein*, 'to see,' refers, on Heidegger's account, to the visual 'aspect' (*Aussehen*, i.e. outward appearance), of entities. Heidegger's account connects with the etymology of *phenomenon* as 'appearance,' or as phenomena 'appearing to be' from their *Aussehen*. Thus seen, the prisoners going out of the cave would

³ M. Heidegger, *Platons Lehre von der Wahrheit* (Bern: Verlag A. Francke A.G., 1932), p. 228.

undergo probable 'correction' of their imagination of things conceived inside or within the darkness of the cave.

Outside the cave

The erstwhile dwellers of Plato's 'cave' would be immediately exposed to *Aussehen*. If blindness is not an issue, they would first see a land-skyscape, perhaps including a seascape, on their exit. That would be 'the world' that greets them. The observations that they make in time will constitute details about their 'new world' - a horizon that is 'natural.' These will provide explanations such as are necessary for them to learn about their habitat outside the darkness of the cave, surrounded by the expanse which seems to be everywhere they look and which, they will observe, gradually turns darker until, perhaps lighted only by the flickering objects in them, the darkness will approximate the lightless-ness of their former world. They will call the light 'day' and the darkness 'night' and the surrounding expanse 'sky' and the flickering objects in it 'stars.' Gradually, they discover many other things and these constitute the 'correction' of their former imagination (not 'vision,' except when 'imagination' is included in the concept of 'vision'; the word 'vision' seems inapplicable because it is a word which is associated with optics and light). They will observe, and conclude, how it is, or how things are, in the 'world outside.' At any rate, 'naming' or giving names comes after the discoveries.

The disciplines that have emerged historically have been carrying on the quest for discovery and explanation of the 'reality in/of the world' and thus are acting as agents of the said 'correction' process. The search and research the disciplines do to obtain information from their respective areas of exploration and inquiry and the subsequent and consequent attempts at explanation of the given information would bring more and more 'enlightenment' to those 'coming out of Plato's cave.' Historically, the information provided or supplied by these disciplines itself gets 'corrected' as more information arrives at the data pool of the disciplines.

The disciplines are really epistemological systems that discover facts about a world that has opened up to the persons exiting the cave, the cave being a symbol of the 'natural darkness' they lived in before leaving the cave. The explication and description of these facts are verily the statements of 'scientific facticity.' They are products of empirical, qualitative or quantitative investigation plus the perception and cognition that attend to the inferences made on the investigation. They correspond to 'reality' in that the researchers describe 'reality' as they find it. They are truthful (or believed to be truthful) statements which describe facts of the world according to the category of truth as correspondence.

Heidegger's Notion of *Zeug*

Heidegger's focus on 'unconcealment,' however, is on the elucidation of how an ontological "world" is disclosed, or opened up, in such a mode or manner that things are made intelligible for human beings as part of a holistically structured background of meaning. How do we regard our epistemological systems, the disciplines, as modes of such an order of sense-making or intelligibility?

To answer this, we have the Heideggerian notion of the two-fold definition of *Zeug* to clarify the function of disciplines. To the first definition, we can ascribe the results of disciplinary research as statements of 'epistemological truth' - fragments and snips of the 'whole' truth of the intelligible world open to man's piecemeal discovery. 'Piecemeal' because, primarily, it is historically phased. For example, Democritus around 460 BC said that the atom is the smallest unit of matter and that it is indivisible. The 'correction' of this came piecemeal in history, in the form of the discovery of subatomic particles: in 1897 the discovery of the first subatomic particle, the electron, by J.J. Thomson; in 1911 the discovery of the nucleus by Rutherford; in 1930 the prediction of the neutrino; in 1934 its existence firmly established in theory; in 1956 its actual detection. Events such as these underscore the fact that the results of empirical observations, reasonable inference, disciplinary search and

research are statements of facts about the world, but these are fundamentally historical. They get revised, edited, and modified as new facts are added, likewise historically. Such 'truthful facts' constitute 'epistemological truth' which Heidegger philosophically distinguished from 'originary' truth. He said 'epistemological truth' has transitioned, or has been derived, from 'originary truth.'

Heidegger introduced the term '*Zeug*' in connection with 'unconcealment' and the *Dasein*. The German term *Zeug*, translatable literally to the English 'tool' but usually translated as 'equipment' by Heidegger's interpreters, can be applied to describe the disciplines engaging themselves with 'entities of the world' as they make their individual factual statements about them. At the outset, or initially, they behave vis-à-vis these entities as 'tools' or 'equipment' in the conventional, surface or lexical meaning of this word. Thus, do they participate in the process of 'unconcealment' or 'disclosure.' The following are examples: Chemistry states what molecules are, how they bind and combine to form Hydrogen and Oxygen to result in H_2O ; Geology informs about the plate tectonics from which subduction zones could be deciphered, which in turn explain the structural configurations that give rise to volcanoes and enable the prediction and interpretation of the signs that require the evacuation of people near them; Quantum Physics comes up with theories applying mathematics resulting in the cyber realities of the present historical era.

The kind of objectives which the methodologies of the disciplines fulfill is under the category of what Heidegger calls 'for-the-sake-of' objectives. To this category of objectives would belong academic goals or national goals or those goals conventional in performing professional duties or personal ambitions, etc. Heidegger's double definitions of *Zeug* underscore the *double entendre* that draws closer together Heidegger's two notions of *Zeug* and *Vorhandensein* (ready availability) within the frame of transdisciplinarity.

The epistemological systems of disciplines allowing the growth of knowledge are aligned with Heidegger's *alétheia*, i.e. 'unconcealment,' and such growth would depend on the

pouring-in of insights from the numerous disciplines that serve as epistemological sources. These insights are then applied in sustaining human life in terms of satisfying physical and material needs so that the world becomes more comfortable to live in, more delightful to see, hear, touch; or in general, to give us more pleasures and to make our tasks less cumbersome and our daily lives more convenient. If we follow Heidegger's argument, however, the customary and traditional purpose of disciplines as we know them with their specific methodologies fulfills their 'for-the-sake-of' usefulness, but the disciplines do not (at least as yet) justify what Heidegger claims is supposed to be their grounding in 'fundamental ontology' from which all ontologies are founded. He defines "*fundamental ontology*" as that "*from which all other ontologies can take their rise.*" According to Heidegger, this "*fundamental ontology...must be sought in the existential analytic of Dasein.*"⁴

In the *Beiträge, Ereignis*, Heidegger speaks of the difference between the two terms, 'regional ontology' and 'fundamental ontology,' when he expands the meaning of *Vorhandensein* (as 'ready availability'). 'Regional ontologies' are particular domains with "for-the-sake-of" academic and such objectives, e.g. zoology, botany, chemistry, geology, physics, psychology, law, etc. In the first instance, they are themselves *Zeug*, but the facts they bring in are likewise *Zeug* in the first definition of *Zeug* as useful tools or equipment.

Heidegger says, however, that *Zeug* is more than equipment for the sake of whatever 'usefulness.' It is to Heidegger's notion of *Zeug* in the *Beiträge, Ereignis*, that we turn to the second definition of *Zeug* in order to seek the ground that makes the 'entities in the world' as more than merely useful to us. This second definition of *Zeug* concurs with the term, i.e. 'fundamental ontology,' in that it carries the potential to carry the *Zeug* (e.g., a discipline) beyond mere usefulness and enables it to 'reconnect' with the 'a priori.' The concept of the 'a priori'

⁴ M. Heidegger. *Being and Time*, J. Mcquarrie & E. Robinson, Trans. (Oxford, England: Basil Blackwell Publisher, 1962), p. 34.

varies with different philosophers. For Heidegger, the 'a priori' refers to the transcendental conditions that render possible (at all) those particular regional ontologies. Thus, he says, all ontologies "rise" from fundamental ontology, or the a priori.

Aside from the mentioned differences that distinguish 'fundamental ontology' and 'regional ontology,' there are two different kinds of enquiry involved in the distinction. Heidegger calls them the 'ontical' and the 'ontological. The difference between ontical and ontological enquiry is that the former is concerned with facts about entities and the latter is concerned with the meaning of being and how entities are intelligible as entities.' 'Ontical enquiry' would correspond to the engagement of the disciplines which are concerned with their 'regional ontology' domains, i.e. gathering facts about entities. According to this nomenclature, 'ontical enquiry' would be the nature of the research and scientific investigation that the disciplines are working at since they are 'regional ontologies,' concerned with ontic knowledge from the domains of the regional-ontological. Disciplinary fact-gathering results in 'ontic knowledge,' and has no teleological implications. To Heidegger, "*an ontic knowledge can never alone direct itself 'to' the objects, because without the ontological...it can have no possible Whereto.*"⁵

Heidegger's hope for 'unconcealment,' however, harps on the possibility of ontological knowledge (finally) prevailing over ontic knowledge as the means of disclosure needed to provide the Whereto. This means turning 'facts of the entities of the world' - ontic knowledge derived from the 'regional ontologies' of the disciplines - into ontological knowledge. The facts about entities in the world gathered by the disciplines constitute ontic knowledge. They are the results of ontical enquiry in which the disciplines used *Zeug* in its role of mere usefulness. Heidegger calls for intelligibility greater than what ontical enquiry

⁵ Søren Overgaard. "Heidegger's Concept of Truth Revisited". in *Martin Heidegger* (The Stanford Encyclopedia of Philosophy, 2002) p. 76, no. 7.

provides. This is what is meant by turning ontic knowledge to ontological knowledge.

Striving for such intelligibility requires management of the accumulated facts beyond and above the goals of regional ontology. The facts of the entities discovered by the disciplines would thus need 'going across, over and beyond' disciplines, which is what defines the transdisciplinary motto.

However, getting the disciplines to aim at transdisciplinarity is difficult in the existing educational split into bi-cultural pools of knowledge. At present, the disciplines have remained at the level of 'ontical enquiry' and have not entered 'ontological enquiry' because they have not discovered the 'fundamental ontological,' although they "rise" from it, or are founded on it. The scientific statements that arise from ontic enquiry are propositional truths. They stress the assertion of Heidegger that scientific facts are products of discoveries at historical intervals. As he correctly assesses, "*Every factual science is manifestly in the grip of historicizing.*"⁶

The multi-disciplines have not arrived at the integration necessary to create a shared knowledge of what Heidegger would call "*the ontological...*[without which there is] *no possible Whereto.*" The question is: How can the ontic knowledge of the disciplines be 'turned into' or become ontological?

There are essentially two answers to this question. The first is that "*the grip of historicizing*" must be loosened; that is, the disciplines have to reach for the 'transhistorical.' The second is that our knowledge pool must be converted from its basically bi-cultural structure to a unified fund.

To date, the disciplines are epistemological systems clustered into the two cultures which are designated as 'scientific' and 'artistic.' The separation of knowledge into 'the sciences' and the 'humanities' has been the norm in categorizing subjects and courses in educational institutions. This has

⁶ M. Heidegger. *Being and Time*, J. Mcquarrie & E. Robinson, Trans. (Oxford, England: Basil Blackwell Publisher, 1962).

resulted in a long-standing division into two databases of knowledge. That is, the results of research in the sciences go into the database of the sciences. Those from the arts and humanities go into the database of the arts and humanities. There is a trajectory of 'progress' in acquiring knowledge in the sciences. There is another measure of development in the arts and the humanities. These 'separated' clusters have flourished as isolated modes of accumulation of knowledge. The humanities and the sciences are essentially unable to communicate with each other. Not only do the two cultures persist as separate modes of knowledge, but further subdivisions under them have emerged.

Because of the prevailing culture of segregation of knowledge, the great problem is finding out how to make knowledge intelligible irrespective of whether the expertise is from any of the sciences or any of the humanities. At present, this is not possible. The experts in the sciences literally do not see eye-to-eye with the experts in the humanities, simply because the mutual respect is insufficient to disallow hegemony and the Humanities and the Natural and Physical Sciences professors do not 'use the same language.'

Transdisciplinarity is a superior stage to interdisciplinarity

Arriving at the intelligibility of a holistically structured background of meaning, which is at the heart of Heidegger's notion of *alétheia*, is the goal of transdisciplinarity. The term 'transdisciplinarity' was coined by Jean Piaget in 1970 at Nice, where he gave the first noted description of transdisciplinarity:

Finally, we hope to see **succeeding** to the stage of interdisciplinary relations a **superior stage**, which should be 'transdisciplinary,' i.e. which will not be limited to recognize the interactions and or reciprocities between the specialized researches, but

which will locate these links inside a total system without stable boundaries between the disciplines.⁷

Transdisciplinarity is, as Piaget emphasized, a superior stage which should follow the stage of interdisciplinarity. At this point we ask what makes it a “superior stage” after interdisciplinarity. If transdisciplinarity is what Piaget says it is, we wonder why it is not taken seriously as a goal of education. We also wonder why the various stakeholders of education remain practically deaf to the reasoned appeal of many thinkers, who, after Piaget’s pronouncement, have acknowledged transdisciplinarity as a viable prospect of a solution, through educational means, to the present horrendously critical problems of humanity. Even though Piaget’s statement was made several decades ago, and in spite of its author’s prestige and renown in the field of education, transdisciplinarity is far from being familiar whether as a term or as a concept to teachers and students alike, and to stakeholders of education in general. It is also often more likely to be confused with multidisciplinary or interdisciplinarity.

Adopting a transdisciplinary orientation no doubt implies some reconstitution of syllabi and curricula in educational institutions. That appears to be as formidable as the replacement of spelling conventions although these conventions are acknowledged to be problematic, e.g., in both the English and German languages. Transformative moves in orthography are barely successful. Thus, only little and almost insignificant changes in the spelling rules in these two languages have been implemented in spite of the efforts towards orthographic innovation. For example, due to various reasons, most of them practical and justifiable, “busy” has been retained instead of the suggested and proposed “bizzy,” which accords more with the accustomed pronunciation in English. Also, the aversion to “Filosof” as a more phonologically pliable substitute for the

⁷ B. Nicolescu. *Transdisciplinarity – Theory and Practice* (Cresskill, NJ: Hampton Press, 2008).

admittedly more elegant “Philosoph” has prevailed in German taste.

The Question at the center of the Gadamerian dialogue

There is a trajectory of competition among the disciplines which has to be replaced by their willingness to share the results of their investigations of ‘Reality’. Gadamer’s idea of *Horizontverschmelzung*, ‘melting of horizons,’ takes a significant application when the disciplines start to act as horizons of knowledge focused on a question projected across millennia. The question is a transhistorical riddle: What is the purpose of human life? This got to be answered out of the knowledge from melted horizons, through a medium come to be trusted by all the epistemological systems: ‘scientific facticity.’ Since such facticity has been moving at distanced temporal intervals, thus in phases along the notion of *alétheia*, it would necessitate what Heidegger spoke of and proposed: to seek the opening to the *Whereto* in the fundamental-ontological, from which the ontic knowledge of the disciplines actually rose.

First of all, integration of knowledge means removing the boundaries that have been fixed between the two databases getting nourishment separately as ‘Humanities’ and ‘Natural and Physical Sciences.’ The next step in the necessary steps to integrate knowledge is to foster the continuity of the nourishment by putting the results of ontical enquiry in a ‘data pool’ open to dialogue in interpretation, perhaps of a kind of hermeneutics. The disciplines individually provide information about our universe that opens up to contributions from all the disciplines, with an eye to getting at the “primordial meaning” that *Zeug* is meant to “disclose.” C.P. Snow, British scientist and novelist, regarded the division of intellectual culture into the sciences and the humanities as a tragedy. Transdisciplinarity will bring together a community of researchers and academia to collaborate and cooperate in the endeavour to override the tragic divisions which elide moral and ethical solutions to the disasters of humanity, including the Covid-19 pandemic. Transdisciplinarity emerges from cognitive acts that nurture

optimism when pursuing the quest for truth through the disciplines as *Zeug* in the first and second definitions of Heidegger.

Conclusion

The disciplines in education are epistemological systems that constitute the ontical enquiry which is the mode of delivery of truth as 'scientific facticity' of entities in the world. In the meaning and sense of Heidegger's *alétheia* as 'unconcealment' of Truth, we ought to consider these discipline-derived facts as the preliminary academic mode of delivery of truth about the world. Elevating the ontical to the ontological level would require a transhistorical approach that would solve the lack of connectivity in the information acquired through statements of scientific facticity marked by temporally distant events of discovery and inference. Transdisciplinarity will provide this transhistorical bridging. It would be the approach to a pedagogy, andragogy or heutagogy where 'reality' is seen as the totality of the present data we have of the world, contributed by all the disciplines from the beginning of scientific enquiry. The said data pool will be contributed by the disciplines without the humanities being marginalized and without the natural and physical sciences being granted hegemony over them. Thereby, will the idea of progress in the accumulation of knowledge differ from the prevailing idea of progress in terms of the exercise of power and domination. Transdisciplinarity will enable the disciplines to shed the inclination to follow the tracks of the drive for domination that has brought about, and continues to bring about, all the horrendous crimes committed by humanity to itself. Disciplinary divisions echo the divisions of the world according to 'boundaries' motivated more by the competition for power and domination than by sharing, which is a demonstrated fact that has been exacerbated by the urgent necessity of sharing the earth in the reality of the Covid-19 pandemic. As Jean Piaget, author of the word 'transdisciplinarity,' says, transdisciplines will be "links inside a total system without stable boundaries between the disciplines." Transdisciplinarity arising from the

first definition of Heidegger's *Zeug* will bring about the elucidation from disciplines in his second definition of *Zeug*. This second definition will be the literal equipment that will eventually salvage *philosophia perennis* from its rhetorical status⁸ to the reality of the disclosure through research of an ontological horizon, in order to put the transmillennial riddle at its rightful place, i.e. at the center of the Gadamerian dialogue. Being will be made intelligible for thinking and for the reflection of inquiring human beings exited out of Plato's cave.⁹ The alliance of seekers after truth as Heidegger's *alétheia* will have to transcend the confines and boundaries of disciplines, as part of the search for a holistically structured background of meaning, guided by the arrow of the Heideggerian 'Where-to.'

References

- Burnett, R. "Is Transdisciplinarity a New Learning Paradigm for the Digital Age?" In B. Nicolescu (Ed.), *Transdisciplinarity - Theory and Practice*. Cresskill, NJ: Hampton Press, 2008.
- Camus, M. "The Hidden Hand Between Poetry and Science". In B. Nicolescu (Ed.), *Transdisciplinarity - Theory and Practice* (pp. 53-65). Cresskill, NJ: Hampton Press, 2008.
- Gadamer, H. G. *Wahrheit und Methode*. Tübingen: J.C.B. Mohr (Paul Siebeck), 1990.
- Heidegger, M. "Letter on Humanism". In D. F. Krell (Ed.), *Basic Writings* (revised and expanded edition). San Francisco, Calif.: Harper Collins Publishers, 1993.
- _____. *Being and Time* (J. Mcquarrie & E. Robinson, Trans.). Oxford, England: Basil Blackwell Publisher, 1962.
- _____. *Platons Lehre von der Wahrheit*. Bern: Verlag A. Francke A.G., 1932.

⁸ M. Camus, "The Hidden Hand Between Poetry and Science". In B. Nicolescu (Ed.), *Transdisciplinarity - Theory and Practice* (Cresskill, NJ: Hampton Press, 2008), pp. 53-65.

⁹ Charito, Pizarro. *The Symbolic Foundation of Human History* (Cebu: Jader Publishing House, 2016).

Montuori, A. Foreword. In B. Nicolescu (Ed.), *Transdisciplinarity – Theory and Practice* (pp. ix xvii). Cresskill, NJ: Hampton Press, 2008.

Nicolescu, B. *Transdisciplinarity – Theory and Practice*. Cresskill, NJ: Hampton Press, 2008.

Overgaard, Søren. Heidegger's Concept of Truth Revisited. *Martin Heidegger. The Stanford Encyclopedia of Philosophy*, 2002.

Pizarro, Charito. *The Symbolic Foundation of Human History*. Cebu: Jader Publishing House, 2016.

Wheeler, M. Martin Heidegger. *The Stanford Encyclopedia of Philosophy*, 2011, October, <https://plato.stanford.edu/entries/heidegger/>