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SUSTAINABLE DEVELOPMENT AND ECOLOGICAL RESOURCES – THE MEANING OF THE ADJECTIVES

Abstract

Environmentalism definitely became powerful as a movement in the last decades of the 20th century and its influence has greatly increased since then. This influence is also mirrored in dictionary entries which reflect the changes of the reality that people are aware of. The adjectives sustainable and ecological are terms that have found their place in lexicography just as they exist in the scientific fields from which they originate. Dictionaries are valuable resources because, among other things, they keep up with the latest developments in different sciences and fields and then include the new entries or correct the existing ones. The illustration of this is the development that they go through presented in this paper on the examples of the adjectives that are crucial for environmental science.

Key Words: Sustainable Development, Ecological, Environmental Science, Dictionaries, Collocations

INTRODUCTION

Experts in the field know that both terms mentioned in the title of this journal section sound somewhat strange in English – the first one, *sustainable development*, because it linguistically does not cover its real meaning in the environmental science field, and the second one, *ecological resources*, because it is a modification of the collocation *natural resources*. The change or modification to *ecological resources* carries some

meaning which should not be ignored and which should be clarified. The adjective *ecological* therefore is very important for understanding the overall meaning of the collocation. *Ecological resources* are likely to be clean or healthy resources, i.e. the resources that do not harm the environment and that do not get depleted but remain to be used in the future. In this sense they are easily associated with the adjective *sustainable* that is defined by the *Dictionary of Ecology and Environment* as the “ability of a process to leave natural resources undamaged and the environment in good order for future generations“.

The two nouns appearing in the title of this section were also brought together in the official report of the United Nations World Commission on Environment and Development entitled *Our Common Future* (or the “Brundtland Report“) which launched the collocation *sustainable development*. The report was made public in 1987 after four years of hard work on the examination of the potential conflicts between environmental protection and economic growth. The primary goal was to investigate how to reduce poverty in much of the developing world while at the same time sustain and preserve its natural resources for current and coming generations. Actually, the conflict appeared between the need of economic growth to grow further on the basis of the existing resource base and the need of the current and future generations to live on the same resource base. The idea expressed in *Our Common Future* or the Commission's “global agenda for change“ (*Our Common Future 1987, IX*) is that the whole world is characterised by the totality of “the interrelationships between people, resources, environment, and development“ (*Our Common Future 1987, IX*). For the purpose of this analysis, the four subjects mentioned here can be represented in the following figure showing the network of their interrelationships:

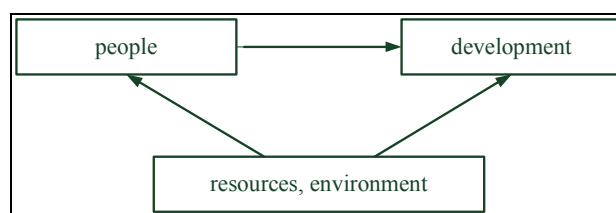


Figure 1. Interrelationships Between People, Resources, Environment and Development

Interpreting the figure, it is possible to note that the four subjects have been reduced to three subjects, resources being inseparable from the environment. Following the subjects horizontally, one can also notice that people are connected with development or they strive towards development i.e. development is acknowledged as a legitimate end existing in any human society, whereas the resources used for development cannot be

separated from the conditions necessary for man's survival and well-being. This seems to be an obvious fact. The problem, however, arises when the pace of resource depletion outgrows the natural pace of the environment re-creation. This is exactly what is happening now and what was the initial point of the United Nations commitment. They realised that a wide gap was being opened up between the present and future generations: in the present-day technology conditions, by using the finite resources existing in the global environment, the current generations seriously jeopardise the existence of both the future generations and development itself. Therefore, unless they preserve the resource base on which they live, both today's and future generations will be destined to self-destruction. Actually, economic concerns which come in when you start talking about progress, and indirectly about business, spoil the balance existing in natural environment. This is therefore a considerable challenge for all those involved in resource depletion because they seriously endanger the very existence of the world. On the other hand, if they start caring about both living and non-living world, they will have to undertake steps to change both their practices and the assumptions on which they base their lives. These goals are not easy to achieve at all, because their realisation will involve the totality of the response required by environmentalism as listed in the right-hand column of Table 1:

Table 1. Differences Between Business Aspirations and Environmentalism (Eden 1996, 16)

Business	Environmentalism
Primary divergences	
Profit is priority	Environment is priority
Continual growth	Low or no growth
Expanding or changing consumption	Reducing and changing consumption
Growth as end or objective	Growth as means to other ends
Secondary divergences	
Short time frame	Long time frame
Technical modification	Social, structural, lifestyle modification
Pricing under present system	Restructuring pricing
Information confidential	Open access to information

The items listed in the left-hand column represent some sort of criticism or self-criticism of the business concerns. The attempts to reconcile these two columns are, among other things, reflected in linguistic concoctions, *sustainable development*, for example. In other words, the formation of this term, and *ecological resources* as well, is an obvious result of getting the strikingly irreconcilable extremes from the table closer. These terms are therefore artificial in some way and because of that, both essentially and linguistically, debatable. The illustration of this fact are

Gro Harlem Brundtland's¹ words, spoken eight years after the formation of the collocation *sustainable development*, that the concept of sustainable development needs further explanation (Nath et al. 1996, 5), or in Mr Nath's words that "the actual meaning of SD is diminished, and even distorted when it is translated from English into many of the world's languages." (B. Nath et al, 1996, 36). He also adds that "nowadays the phrase Sustainable Development appears to have become fashionable and is gradually acquiring the status of a desirable "label", or a *genre*, which is often used, increasingly it seems, to describe situations that accord little with the classical definition of *SD*. The original meaning of *SD* is thus at risk of being corrupted." (Nath et al, 1996, 37-8). Or simply changed.

SUSTAINABLE DEVELOPMENT AND ECOLOGICAL RESOURCES – ORIGIN AND DEVELOPMENT

The emergence of the term *sustainable development* can be traced back because it originates from the World Commission on Environment and Development report published in 1987. The Commission devised a new „buzz phrase“ (Porritt - Winner, 1988, 229) *sustainable development*. *Sustainable*, however, refers to development only and it says nothing of the resource and environment preservation. Linguistically or semantically it does not say that, although the whole collocation was formed with the intention of reconciliation of the „two conflicting trends, the inherent tendency of economic development to grow and the tendency of the nature preservation principle to let nature and natural processes run their course and consequently slow down any economically forced or man-driven development“ (Tošić 2006, 518). What cannot be denied, however, is that the maintenance of development, or to be more specific, economic development, is stated as a legitimate goal of mankind. On the other hand, in order to persist, it ought to be changed inwardly, i.e. its "quality" (Porritt - Winner, 1988, 229) should be changed. Instead of being destructive, as it is today, it should become its opposite, or in the Commission's formulation *sustainable, sustainable* meaning the opposite of *destructive*. Indeed, the intentions of the UN Commission do not appear to be two-faced. In their report, they spoke of the interrelationships between the environment on the one hand, and human actions, ambitions and needs, on the other. They stated that thinking and acting contrary to that gives the word *environment* a connotation of naivety (*Our Common Future* 1987, XI) among decision-makers and politicians. To complicate the situation further, the term *sustainable development* also carries a note of naivety. Linguists have joined environmentalists in disclosing the true meaning (or even absence of meaning) of this collocation. To illustrate

¹ Gro Harlem Brundtland was Chairman of the UN World Commission on Environment and Development.

this statement, there is Richard Sandbrook's report from the International Institute for Environment and Development that was made part of the Brundtland report and that could also be observed in the context of the paradoxical nature of the phrase *sustainable development*. Namely, they admitted that “it has not been too difficult to push the environment lobby of the North and the development lobby of the South together“ (*Our Common Future* 1987, 63). The paradox lies in the crude fact that the real present-day situation reverses the interests: the North is really interested in development and the environment concerns only serve to justify these goals, whereas the South is really craving to be vitally preserved because their development is a cover for their resource depletion that the rich countries of the North are pursuing nowadays.

However, it must be admitted that the UN Commission used the formulation: “growth that is forceful and at the same time **socially and environmentally sustainable**”² (*Our Common Future* 1987, XII). They realised that *sustainable development* is a lexical combination that calls for clarification if it is to correspond to their intention of denoting the long-term and comprehensive thinking about the most urgent global and prospective issues. So, they did not deny development as a desirable end, they rather added a modifier, *socially and environmentally*, to denote the sustainability aspect of development. They did exactly what some newer dictionaries do when they have the entry *sustainable development*. The quality of development is quite clear when they say *environmentally sustainable development* or *ecologically sustainable development* – the development that saves the environment or its ecological balance.

Unlike *sustainable development*, the term *ecological resources* has not emerged as part of any organised attempt to frame some natural phenomenon. To go back to our remark after Table 1. about its formation, we can add that natural resources are, of course, *ecological* in both dictionary meanings and because of that there is really no need to stress that fact³. As a matter of fact, the term *ecological resources* has been formed by gradual coupling of two lexemes that have not been totally merged to form a recognisable collocation so far. They are still experienced as two separate units that together contribute to the overall meaning of the phrase. The adjective *ecological* obviously does not refer to ecology as a science, which was this word's original meaning. However, being fastidious about the methodological exactness of the operative concepts and sticking to the original meaning of the term, numerous experts, professionals and scientists are still reluctant to accept the fact that both the noun *ecology* and the adjective *ecological* (or its abbreviated form *eco-*) have already acquired a broader scope.

² Emphasized by the author of this paper.

³ If you, in spite of that, do that, this implicitly means that in your opinion something is missing from the original phrase *natural resources*.

WHAT DO THE ADJECTIVES SAY?

Dictionaries are useful tools that direct and educate the reader, on the one hand, and that reflect the contemporary state of knowledge, on the other. Therefore, how certain words or terms have developed can be followed by comparing the meanings that different dictionaries published at different times offer. For the purpose of this analysis, we used five dictionaries that were published beginning from 1987, the year when the term *sustainable development* appeared. It was too early⁴ for the first dictionary of general English used in this analysis to include the *sustainable* entry in this context - it actually, did not contain it at all. The only adjective having this root was *sustained*. Table 2. shows the meanings of *sustainable* in the dictionaries we used.

Table 2. Dictionary Meanings of "Sustainable"

Dictionary	Meaning	Examples
Collins Cobuild English Language Dictionary (1987)	/	/
Oxford Advanced Learner's Dictionary of Current English (1995)	that can be kept going or maintained	<i>sustainable economic growth</i>
Longman Dictionary of Contemporary English (2001)	an action or process that is sustainable can continue or last for a long time	<i>sustainable economic growth</i> <i>sustained economic development – that continues for a long time</i>
Macmillan English Dictionary for Advanced Learners (2002)	1. capable of continuing for a long time at the same level 2. using methods that do not harm the environment	<i>sustainable economic growth</i> <i>sustainable agriculture</i> <i>sustained economic development – continuing at the same level or rate for a long time</i>

⁴ Even the specialized dictionaries published in English did not have this entry with this meaning before 1996. That year the *Dictionary of Environment and Sustainable Development*, in line with the booming expansion of environmentalism, even used the term in its title.

Longman Exams Dictionary (2006)	<p>1. able to continue without causing damage to the environment</p> <p>2. able to continue for a long time</p>	<p><i>sustainable agriculture</i> <i>sustainable use of rainforest sources</i> <i>sustainable form of transport</i></p> <p><i>sustainable economic growth</i></p> <p><i>sustainable development – industrial development that provides enough of what people need now and will continue to provide enough in the future, without causing damage to the environment, plants, animals etc.</i></p> <p><i>sustained economic development – continuing for a long time</i></p>
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Without being particularly familiar with environmental science concerns and ecology, the lexicographers did their job and interpreted the meaning of *sustainable* in the way that is actually allowable by its derivation from the verb *sustain* and by analysing the context. *Sustainable* means *maintainable* or *durable*. On the other hand, the new meaning referring to the field of environmental protection appeared in 2002, in *Macmillan English Dictionary for Advanced Learners*, and it is also present in the *Longman Exams Dictionary* (2006). These two dictionaries give two meanings each for this entry but their order is indicative of their prevalence- the 2002 dictionary gives the environmental meaning as its second meaning, whereas the 2006 dictionary has reversed the order, the environmental meaning comes first. As for the examples illustrating the meanings, it is interesting that all the dictionaries interpret *sustainable economic growth* as growth that lasts or is capable of continuing for a long time. On the other hand, *sustainable agriculture* is the illustration of the fact that it is the agriculture that does not harm the environment. *Longman Exams Dictionary* shows great knowledge about this term: first, one meaning is explained both in terms of the durability of the supposed phenomenon and its harmlessness to the environment, and second, it gives the ready-made and by then widely accepted term and entry *sustainable development* explaining it fully, almost repeating the meaning contained in the UN World Commission on Environment and Development report.

Similarly to Table 2., Table 3. contains the meanings of the other adjective analysed in this paper, *eco-* or *ecological*, as it appears in the same dictionaries:

Table 3. Dictionary Meanings of “Eco-“ or “Ecological”

Dictionary	Meaning	Examples
Collins Cobuild English Language Dictionary (1987)	<i>ecological</i> – 1. <i>Ecological</i> means involved with or concerning the pattern and balance of relationships between plants, animals, people, and their environment. 2. <i>Ecological</i> groups, movements and people are concerned with the preservation of the environment and natural resources and improving the quality of life.	<i>ecological balance</i> <i>ecological impact</i> <i>ecological groups</i>
Oxford Advanced Learner's Dictionary of Current English (1995)	<i>eco-</i> – of or relating to ecology or the environment <i>ecological</i> – / NOTE – Sometimes <i>ecological</i> and <i>environmental</i> are used with the same nouns.	<i>ecosystem</i> <i>ecofriendly</i> <i>ecological catastrophe / disaster</i> <i>ecological balance</i> <i>ecological disaster/environmental disaster</i>
Longman Dictionary of Contemporary English (2001)	<i>eco-</i> – concerned with the environment <i>ecological</i> – 1. connected with the way plants, animals and people are related to each other and to their environment 2. interested in preserving the environment	<i>eco-warriors (people who try to stop damage to the environment)</i> <i>eco-friendly (not harmful to the environment): eco-friendly products</i> <i>ecological disaster</i> <i>ecological groups</i>

Macmillan English Dictionary for Advanced Learners (2002)	<p><i>eco-</i> – relating to the environment</p> <p><i>ecological</i> – 1. relating to the environment and the way plants, animals and humans live together and affect each other 2. working to protect the environment</p>	<p><i>eco-sensitive management</i> <i>eco-disaster</i> <i>eco-friendly engine</i></p> <p><i>ecological changes</i> <i>ecological disaster</i> <i>ecological groups</i></p>
Longman Exams Dictionary (2006)	<p><i>eco-</i> – relating to the environment</p> <p><i>ecological</i> – 1. connected with the way plants, animals and people are related to each other and to their environment= <i>environmental</i> 2. interested in preserving the environment</p>	<p><i>eco-warriors (people who try to stop damage in the environment)</i> <i>eco-friendly products</i> <i>ecocide = ecological genocide</i> <i>ecological disaster</i></p> <p><i>ecological groups</i></p>

The adjective *eco-* or *ecological* is explained as referring to ecology and as referring to the environment or its preservation as well. Some things about these explanations deserve to be particularly emphasised: the fact that the *Collins Cobuild English Language Dictionary* mentions *natural resources* without which there is no development at all and that it connects them with the “preservation of the environment“ and the “improved quality of life“ thus mentioning some other terms that are very important in environmental science. The *Oxford Advanced Learner's Dictionary of Current English* has also a special note with this entry which is both essentially and linguistically very important because it equates the meanings of adjectives *ecological* and *environmental* which is often happening in their use nowadays. And finally, what this table shows is that dictionaries simply cannot ignore the new fact that *ecological* refers to the preservation of the environment as well. That is why biologists should also become aware of this fact and stop insisting on the original meaning of the terms *ecology* and *ecological* pronouncing all the other meanings as false. In line with the changes in modern industrial world and language use, it has become possible to talk about *ecological resources* meaning the resources that do not become harmful in their industrial processing and use.

WHAT DO THE ADVERBS DO?

Adverbs were not the primary aim of this analysis but they must not be left out. Table 4 lists the contexts in which different adjectives are modified by adverbs *ecologically* and *environmentally*. The reason why the adverb *environmentally* is included here is the practise of confusing it with the adverb *ecologically* which is mentioned in the note in *Oxford Advanced Learner's Dictionary of Current English*⁵. This is linguistically very important because it represents a step further towards the formation of world-wide practice of using them interchangeably (not just confusing them). By analogy, *ecological* can be replaced by *environmental* as, ultimately, *ecology* and *environment* are inseparable even in their earliest meanings: the environment is characterised by some ecological balance between people, animals and plants – if you disturb the environment, you actually disturb its ecological balance. In this way *ecological* has come to be equated with *environmental*.

Table 4. Adverbs “Ecologically” and “Environmentally” in Dictionaries

Dictionary	Meaning	Examples
Collins Cobuild English Language Dictionary (1987)	/	<i>ecologically sound system</i> <i>environmentally unacceptable use of pesticides</i>
Oxford Advanced Learner's Dictionary of Current English (1995)	NOTE – The adverbs <i>ecologically</i> and <i>environmentally</i> are also often confused but they do not have the same meaning <i>ecologically sustainable</i> (i.e. keeping with the natural balance of plants, animals and people) <i>environmentally sound products</i> (i.e. products which help keep the world around us in good condition)	<i>ecologically sustainable</i> <i>environmentally sustainable policies</i> <i>environmentally sound policy</i> <i>environmentally sound products</i> <i>environmentally sensitive area</i> <i>environmentally-friendly products</i>

⁵ Illustrative examples can be found in *Macmillan English Dictionary for Advanced Learners* where both variations are offered with the same noun with no visible difference: *ecologically sensitive areas* and *environmentally sensitive area*.

Longman Dictionary of Contemporary English (2001)	/	<i>eco-friendly products</i> <i>ecologically sound production</i> <i>environmentally friendly soaps, containers etc.</i>
Macmillan English Dictionary for Advanced Learners (2002)	/	<i>eco-sensitive management</i> <i>eco-friendly engine</i> <i>ecologically sound product</i> <i>ecologically sensitive areas</i> <i>environmentally – in a way that affects the environment or is related to it</i> <i>environmentally friendly</i> <i>environmentally sensitive area</i> <i>environmentally responsible way</i> <i>environmentally damaging scheme</i>
Longman Exams Dictionary (2006)	/	<i>ecologically sound production</i> <i>environmentally damaging projects</i> <i>environmentally sustainable development</i> <i>environmentally friendly products = eco-friendly products</i>

An example in this table is important for the desirable improvement of the collocation *sustainable development* that has caused a lot of confusion: **environmentally sustainable development**. The addition of the adverb certainly avoids the confusion about its meaning thus meeting the afore-mentioned urge of Gro Harlem Brundtland for its improvement⁶.

CONCLUSION

Environmentalism definitely became powerful as a movement in the last decades of the 20th century and its influence has greatly increased since then. This influence is also mirrored in dictionary entries which re-

⁶ This formulation was also present in the very beginning, in the introduction to *Our Common Future* (as has already been said in this paper). Another solution, following the comments about Table 3, might be **ecologically sustainable development**.

flect the changes of the reality that people are aware of. The adjectives *sustainable* and *ecological* are terms that have found their place in lexicography just as they exist in the scientific fields from which they originate. Dictionaries are valuable resources because, among other things, they keep up with the latest developments in different sciences and fields and then include the new entries or correct the existing ones. The illustration of this is the development that they go through presented in this paper on the examples of the adjectives that are crucial for environmental science.

Language is to a very high degree an exact instrument which functions according to the equilisation principle in the semantic sense. Although there is some scope for deviating from this, there is mostly an equality principle between the lexeme and its meaning. In spite of that, language use is a powerful force recognised by sociolinguistics. That is why words are created, used, and changed. The adjectives *sustainable* and *ecological* are particularly illustrative of this. *Sustainable* was found to be unsatisfactory even at the source, the UN World Commission on Environment and Development. Translating it into other languages has likewise become problematic:

“The actual meaning of SD is diminished, and even distorted, when it is translated from English into many of the world’s languages. In Bulgarian and some Slavonic languages, for example, there is no direct equivalent to convey the same meaning of SD as in its original English sense.” (Nath 1996, 36)

The problem, however, has proved to be much greater because it is not that the Slavonic languages are somewhat “deficient“. The very term in English calls for improvement.

As regards the adjective *ecological*, it seems to have already stopped being connected with *ecology* in the narrowest possible sense. Its association with the environment is reflected in interchangeability of *ecological* and *environmental* in many cases⁷. Yet many experts and laymen are still uncomfortable about how to use them, just as they are about using *sustainable*. It is to be hoped that some new dictionaries will be more helpful in that respect.

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⁷ Serbian is the example of this interchangeability for one more reason: translation of the adjective *environmental* calls for a relative clause, which is, for reasons of being economical about language use, often shortened to *ekološki*.

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ОДРЖИВИ РАЗВОЈ И ЕКОЛОШКИ РЕСУРСИ – ЗНАЧЕЊЕ ПРИДЕВА

Апстракт

Покрет за заштиту животне средине сигурно је постао моћан као покрет последњих деценија 20. века и његов утицај се јако повећао од тада. Тај утицај је, такође, видљив и у одредницама у речницима које одражавају промене стварности које су људи свесни. Придеви одржив и еколошки су термини који су нашли своје место у лексикографији баш као што постоје и у научним областима из којих потичу. Речници су драгоцен извор информација зато што, између осталог, иду у корак са најновијим достигнућима у различитим наукама и областима и укључују нове одреднице или коригују већ постојеће. Илустрација за ово је развој кроз који они пролазе што би овај рад требало да покаже на примеру придева који су суштински важни за науке о животној средини.

Кључне речи: одрживи развој, еколошки, науке о животној средини, речници, колокације.