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Conceptual Quartet of Security, Peace, Development and Environment

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1. Introductory Remark

The Brundtland Commission Report (WCED 1987: 290-307, chap. 11) addressed the linkages between the four concepts of the conceptual quartet of peace, security, development and the environment, arguing that “these linkages among environment, development, and conflict are complex and, in many cases poorly understood.” This Report suggested that

a comprehensive approach to international and national security must transcend the traditional emphasis on military power and armed competition. The real sources of insecurity also encompass unsustainable development, and its effects can become intertwined with traditional forms of conflict in a manner that can extend and deepen the latter (WCED 1987: 290).

In the UN Charter, ‘security’ is closely linked to ‘peace’ (Bothe 2008). The other two concepts ‘development’ and ‘environment’ were added to the national and international agenda in the 1950’s and 1970’s. With each concept a specialized programme of security studies, peace, development, and environmental research is associated. While these concepts have been widely used in the social sciences (sociology, psychology, economics, political science, international relations) systematic conceptual analyses of these four terms and their manifold linkages have been rare in international relations (Wæver 2006, 2008) and in policy-oriented research programmes.

¹ This paper is based on two abbreviated chapters by this author that were first published as chapter 1: “Introduction: Globalization and Environmental Challenges: Reconceptualizing Security in the 21st Century”, and as chapter 3: “Conceptual Quartet: Security and its Linkages with Peace, Development, and Environment”, that were originally published in: Hans Günter Brauch, Úrsula Oswald Spring, Czeslaw Mesjasz, John Grin, Pal Dunay, Navnita Chadha Behera, Béchir Chourou, Patricia Kameri-Mbote, P.H. Liotta (Eds.): *Globalization and Environmental Challenges: Reconceptualizing Security in the 21st Century*. Hexagon Series on Human and Environmental Security and Peace, vol. 3 (Berlin – Heidelberg – New York: Springer-Verlag, 2008): 27-43 (Brauch 2008) and 65-68 (Brauch 2008a). This text will be published in Turkish in summer 2008. The bibliography for this text is available at: < <http://www.springerlink.com/content/x33671/back-matter.pdf>>.

This paper first reviews the concepts of security (2.), peace (3.), development (4.) and environment (5) that constitute a conceptual quartet (6.), and then briefly sketches six dyadic relationships among these four concepts (7.) and develops four pillars of a widened security concept: the state-centred ‘security dilemma’ vs. a people-centred ‘survival dilemma’ and the notions of ‘sustainable development’ and ‘sustainable peace’ (8.) In conclusion, the paper discusses the relevance of conceptual mapping, the conceptual quartet and of the four pillars for the analysis of security in the early 21st century (9.).

2. The Concept of Security

Security is a key *concept* in the social sciences that refers to frameworks and dimensions, applies to individuals, issue areas, societal conventions, and changing historical conditions and circumstances. The security concept is closely related to peace, and is a value and goal of activity of nation states and supra and sub-state actors that require ‘extraordinary measures’. Security has been used to legitimize major public spending. As an individual or societal political value security has no independent meaning and is always related to a context and a specific individual or societal value system and its realization.

In the Western tradition the term ‘security’ was coined by Cicero and Lucretius as ‘*securitas*’ referring initially to a philosophical and psychological status of mind, and it was used since the 1st century as a key political concept in the context of ‘Pax Romana’. But there is another origin, starting with Thomas Hobbes (1651), where “‘security’ became associated with the genesis of the authoritarian ‘super state’ – Hobbes’ ‘*Leviathan*’ – committed to the prevention of civil war”, that was influenced by Thucydides. Arends (2008) argues that “the contemporary concept of ‘security’ therefore proves to be a ‘chimeric’ combination of a) the ancient Athenians’ intention to prevent the destruction of their empire, b) the religious connotations of Roman ‘*securitas*’, and c) the Hobbesian intention to prevent civil war.”

The modern security concept evolved since the 17th century with the dynastic state when internal security was distinguished from external security that became a key concept of foreign and military policy and of international law. Internal security was stressed by Hobbes and Pufendorf as the main task of the sovereign for the people. In the American constitution safety is linked to liberty. During the French Revolution the declaration of citizens’ rights declared security as one of its four basic human rights. For Wilhelm von Humboldt the state became a major actor to guarantee internal and external security while Fichte stressed the concept of mutuality where the state as the granter of security and the citizen interact. Influenced by Kant, Humboldt, and Fichte the concept of the ‘*Rechtsstaat*’ (legally based state) and

'*Rechtssicherheit*' (legal predictability of the state) became key features of the thinking on security in the early 19th century (Conze 1984).

Influenced by Kant's second definitive article in his *Eternal Peace* (1795); Woodrow Wilson based the security concept of the League of Nations (1919) on a 'collective security' concept. It was first contained in its Covenant and it was developed further in the UN Charter (1945). But during the interwar period (1919-1939) the security concept was hardly used and references to defence, national survival, national interests and sovereignty (Meinicke 1924) or power (Carr 1939) prevailed.

The concept of 'social security' gradually evolved in the 19th and 20th centuries as a key goal to advance the security of the citizens: "the security of the home, the security of the livelihood, and the security of the social insurance." The 'social security' concept became a *terminus technicus* during F.D. Roosevelt's New Deal when he addressed on 8 June 1934 as a key goal of his administration to advance the security of the citizens: "the security of the home, the security of the livelihood, and the security of the social insurance." This goal is contained in the *Atlantic Charter* of 1941 as "securing, for all, improved labour standards, economic advancement and social security." In 1948 social security became a key human right in Art. 22 of the General Declaration on Human Rights.

The 'national security' concept emerged during World War II in the United States "to explain America's relationship to the rest of the world" (Yergin 1977: 193). 'National security' became a key post war concept with the evolution of the American security system (Czempiel 1966), or the national security state (Yergin 1977). This concept was used to legitimize the major shift in the mind-set between the interwar and post-war years from a fundamental criticism of military armaments during the 1930's to support of an unprecedented military and arms build-up and militarization of the prevailing mind-set of the foreign policy elites. While the Democratic US Presidents (Roosevelt, Truman, Kennedy, Johnson) pleaded for a big state to deal with both security tasks, the Republicans in the 1940's first opposed both security agendas. At the end of the Cold War and in the post-Cold War period, US Republican presidents (Reagan, G. Bush, G.W. Bush) maintained and strengthened the big security apparatus with a strong industrial and economic base, a powerful intelligence and police force.

As a societal value (Kaufmann 1970, 1973) security is used in relation to protection, lack of risks, certainty, reliability, trust and confidence, predictability in contrast with danger, risk, disorder and fear. As a social science concept, "*security* is ambiguous and elastic in its meaning" (Art 1993: 821). Arnold Wolfers (1952, 1962: 150) pointed to two sides of the security concept: "Security, in an *objective* sense, measures the absence of threats to acquired

values, in a *subjective* sense, the absence of fear that such values will be attacked.” For Art (1993: 820-22) its subjective aspect implies: “to feel free from threats, anxiety or danger. Security is therefore a state of the mind in which an individual ... feels safe from harm by others.” Due to the anarchic nature of international relations, “a concern for survival breeds a preoccupation for security.” For a state to feel secure requires “either that it can dissuade others from attacking it or that it can successfully defend itself if attacked.” Thus, security demands sufficient military power but also many “non-military elements ... to generate effective military power.” Art noted a widening of security that involves “protection of the environment from irreversible degradation by combating among other things, acid rain, desertification, forest destruction, ozone pollution, and global warming. ... Environmental security has impelled states to find cooperative rather than competitive solutions” (Art 1993: 821).

For the constructivists, security is *intersubjective* referring to “what actors make of it” (Wendt 1992, 1999). Thus, security depends on a normative core that cannot simply be taken for granted. Political constructions of security have real world effects, because they guide action of policymakers, thereby exerting constitutive effects on political order (Wæver 2008; Baylis 2008; Hintermeier 2008).

For Wæver (1995, 1997, 2008, 2008a) security is the result of a speech act (*‘securitization’*), according to which an issue is treated as: “an existential threat to a valued referent object” to allow “urgent and exceptional measures to deal with the threat”. Thus, the “securitizing actor” points “to an existential threat” and thereby legitimizes “extraordinary measures”. With the end of the Cold War, not only the scope of *‘securitization’* has changed, but also the referent object has shifted from a sole ‘national’ also to a ‘human-centred’ security concept, both within the UN system (UNDP 1994; UNESCO 2008), and in the academic security community.

Since the late 1970’s, an expanded security concept has been discussed in academia (Krell 1981; Buzan 1983; Møller 2001, 2003). In the policy debate, the ‘security concept’ has gradually widened since the late 1980’s.² Ullman (1983), Mathews (1989) and Myers (1989, 1994) put environmental concerns on the US national security agenda. Since the early 1990’s, many European governments adopted an extended security concept. Based thereon, Buzan, Wæver and de Wilde (1998) have distinguished between the *wideners*³ that included an

² See Krell 1981; Jahn/Lemaitre/Wæver 1987; Wæver/Lemaitre/Tromer 1989; Buzan/Wæver/de Wilde 1995, 1998; Wæver/Buzan/de Wilde 2008; Albrecht/Brauch 2008 [below in this issue].

³ Proponents of a widened security concept are: Ullman 1983; Jahn/Lemaitre/Wæver 1987; Nye/Lynn-Jones, 1988; Mathews 1989, 1991, 1992, 1997; N. Brown 1989, 2001; Nye 1989, Haftendorn 1991, Buzan 1983, 1987, 1991, 1997; Tickner 1992.

economic⁴ and environmental dimension and the *traditionalists* focusing on the primacy of a narrow military security concept (Walt 1991; Chipman 1992; Gray 1992, 1994; Dorff 1994).

The Copenhagen School (Buzan/Wæver 1997; Wæver 1997; Buzan/Wæver/de Wilde 1998; Wæver/Buzan/de Wilde 2008), distinguished five dimensions (*widening*: military, political, economic, societal and environmental), and five referent objects ('whose security?') or levels of interaction or analysis (*deepening*: international, regional, national, domestic groups, individual). But they did not review the *sectorialization* of security from the perspective of *national* (international, regional) and *human security* (table 1).

They also distinguished five levels of analysis of: *international systems*, *international subsystems*, *units*, *subunits*, and *individuals*. Others referred to five vertical levels (Møller 2003) of security analysis: a) global or planetary (Steinbruner 2000), b) regional (Mouritzen 1995, 1997; Buzan/Wæver 2003), c) national (Tickner 1995), d) societal (Møller 2003) and e) human security (UNDP 1994; Newman 2001, CHS 2003). Some suggested to expand the human security discourse to the environmental dimension, especially to interactions between the individual and humankind as the cause and victim of global environmental change (Bogardi/Brauch 2005; Brauch 2003, 2005, 2005a, 2008d).

Table 1: Vertical Levels and Horizontal Dimensions of Security in North and South

<u>Security dimension</u> ⇒ Level of interaction ↓ (referent objects)	Military	Political	Economic	Environmental ↓	Societal
Human →			Social, energy, food, health, livelihood threats, challenges and risks may pose a <i>survival dilemma</i> in areas with high vulnerability		
Village/Community/Society				↓↑	
National	"Security dilemma of competing states" (<i>National Security Concept</i>)		"Securing energy, food, health, livelihood etc." (<i>Human Security Concept</i>) combining all levels of analysis & interaction		
International/Regional				↓↑	
Global/Planetary →					

'Security in an objective sense' refers to specific *security dangers*, i.e. to 'threats, challenges, vulnerabilities and risks' (Brauch 2005a) to specific *security dimensions* and *referent objectives* (international, national, human) as well as *sectors* (social, energy, food, water), while 'security in a subjective sense' refers to *security concerns* that are expressed by government officials (civil servants, military officers), media representatives, scientists or 'the

⁴ Economic security issues were discussed by Gilpin 1981; Luciani 1989; Crawford 1993, 1995; Gowa 1994; Mansfield 1994.

people' in a speech act or in written statements by those who securitize 'dangers' as security 'concerns' being existential for the survival of the referent object and that require and legitimize extraordinary measures and means to face and cope with these dangers and concerns. Thus, *security concepts* have always been the product of orally articulated or written statements by those who use them as tools to analyse, interpret, and assess past actions or to request or legitimize present or future activities in meeting specific security dangers.

The *perception* of security threats, challenges, vulnerabilities, and risks depends on the worldviews or traditions of the analyst and on the mind-set of policy-makers. The English School (Bull 1977, Wight 1991) distinguished three approaches to security where the *realist* (Thucydides, Machiavelli, Hobbes, Morgenthau) points to the interests and power of his own state, while the *rationalist* or *pragmatist* (Grotius) points to an international society where the subjects are states as the decisive units that by cooperation can build institutions, norms, diplomacy and international law, and thus build "a society of states, an international society". The *idealist* (e.g. Kant) believes that the "ultimate solutions only exist when we get the states and their state system off the scene and allow for the unfolding of dynamics based on individuals and a community of mankind, world society (where the subjects in contrast to international society are individuals, not states)."

These three European traditions stand for three 'ideal type' approaches to international relations and security that also exist in non-Western cultures and philosophies (Oswald 2008). Booth (1979, 1987: 39-66) argued that old mind-sets often have distorted the assessment of new challenges, and that they "freeze international relations into crude images, portray its processes as mechanistic responses of power and characterize other nations as stereotypes" (1987: 44). The perception of security is a key concept of a) *war, military, strategic* or *security studies* from a Hobbesian perspective, and b) *peace and conflict research* from a Grotian or Kantian view that has focused on war prevention or positive peace (Albrecht/Brauch 2008).

Since the 1990's, in European security debates, an 'extended' security concept has been used by governments and in scientific debates. Møller (2001, 2003) distinguished a 'national' and three expanded security concepts of 'societal, human, and environmental security'. Oswald (2001, 2007, 2009) introduced a combined 'human, gender and environmental' (HUGE) security concept (table 2).

Within the UN, NATO and the EU different security concepts co-exist, a state-centred political and military concept, and an extended security concept with economic, societal, and environmental dimensions. A widening and deepening of the security concept prevailed in

OECD countries, while some countries adhered to a narrow national security concept that emphasizes the military dimension (Aydin 2003; Selim 2003; Kam 2008).

Table 2: Expanded Concepts of Security (Møller 2001, 2003; Oswald 2001)

Concepts of security	Reference object (security of whom?)	Value at risk (security of what?)	Source(s) of threat (security from whom/ what?)
National Security [political, military dimension]	The state	Sovereignty, territorial integrity	Other states, terrorism (substate actors)
Societal security [dimension]	Nations, societal groups	National unity, identity	(States) Nations, migrants, alien cultures
Human security	Individuals humankind	Survival, quality of life	State, globalization, GEC, nature, terrorism
Environmental security [dimension]	Ecosystem	Sustainability	Humankind
Gender security	Gender relations, indigenous people, minorities	Equality, identity, solidarity	Patriarchy, totalitarian institutions (governments, religions, elites, culture), intolerance

While since the 19th century the key ‘actor’ has been the state, it has not necessarily been a major ‘referent object’ of security which is often referred to as ‘the people’ or ‘our people’ whose survival is at stake. A major debate (Wiberg 1987: 340, 1988; Walker 1990, 1993; Shaw 1994) has evolved since the late 1980’s whether the state as the key referent object (‘national security’) should be extended to the people (individuals and humankind as ‘human security’). Walker (1988) pointed to the complexity of a non-state centred redefinition of security towards ‘individual’ or ‘global peoples’ security while Buzan (1991) following Waltz’s (1959, 2001) man, state and war, distinguished between the international, state and individual level of analysis and the inherent tension among the latter two, but he remained critical of the human security approach (Buzan 2004a).

From 1947 to 1989 national and military security issues became a matter of means (armaments), instruments (intelligence) and strategies (deterrence). Whether a threat, challenge, vulnerability, and risk becomes an ‘objective security danger’ or a ‘subjective security concern’ also depends on the political context. Müller (2002: 369) argued that the traditional understanding of security “as the absence of existential threats to the state emerging from another state” (Baldwin 1995; Betts 1997; Gray 1992; Kolodziej 1992, 2005; Prins 1998; Walt 1991) was challenged both with regard to the key subject (the state), and carrier of security needs, and its exclusive focus on the “physical – or political – dimension of security of territorial entities” that are behind the suggestions for a horizontal and vertical (Suhrke 1999; Klare 1994, 1996; Klare/Thomas 1991, 1994, 1998) widening and deepening of the security concept. The meaning of security was also interpreted as a reaction to globalization (Cha 2000; Mesjasz 2003). Müller (2002) opted for a “conventional understanding of security: security between states, and related mainly to the organized instruments for applying force – the military in the first instance (Betts 1997; Buzan 1987).”

The security concept also combines its domestic roots and politics (lobbies, strategic doctrines) with international affairs (Gourevitch 2002: 315). Security is examined for security 'communities' (Deutsch 1957; Herrmann 2002: 131-132.), 'regimes' (Rittberger/Mayer 1993), 'cultures' (Katzenstein 1996; Müller 2002: 381-382) or 'complexes' (Kostecki 1996) and as a 'security dilemma' (Herz 1950, 1959; Müller 2002: 381-382).

New methodological approaches and inter-paradigm debates relevant for security have emerged (Meyers 2000: 416-448):

- a) prevailing *traditional* methodological approaches (e.g. geopolitics, English School);
- b) *critical security studies* (Klein 1994; Jones 1999; Ralph 2001);
- c) *constructivist* and *deconstructivist* approaches.

While the 'collective' security system (Wolfrum 1995, Doehring 1991; Delbrück 1982) is the basis of the UN Charter, since the 1980's from a *traditional* approach, different cooperative security concepts have emerged: a) *common security* (Palme 1982; Väyrynen 1985; Bahr/Lutz 1986, 1987; Butfoy 1997; Liotta 2003); b) *mutual security* (McGwire 1988; Smoke/Kortunov 1991); c) *cooperative security* (Carter/Perry/Steinbruner 1992; Nolan 1994; Zartman/Kremenuk 1995; Carter/Perry 1999; Steinbruner 2000; Cohen/Mihalka 2001); d) *security partnership* (Marquina 2003); '*comprehensive*' (Westing 1986, 1989), or '*equal*' (NATO 1999) security.

With regard to its 'spatial' context, the classical goals of security policy to defend national sovereignty, in terms of its territory, people, and system of rule⁵ has also been changing due to the trends of globalization and regional integration. In Europe, close economic interdependence, sometimes competing trans-Atlantic and European political goals but also changes in technology, have replaced these classical security goals. Since the 1990's two processes (Brauch 2001: 109-110) have co-existed:

- A process of *globalization* in finance, production, and trade, and in information, media, resulted in a *deborderization* of exchanges for people, capital, and goods (e.g. within the EU among its member states) and a *deterritorialization* of international relations.
- A process of *territorial disintegration* and *fragmentation* of multi-ethnic states combined with a *reborderization* of space along ethnic and religious lines and disputes on territorial control of areas.

In the discourses on territory (Brauch 2008c) two schools coexist: a) on *geopolitique* and *critical geopolitics* (Amineh/Grin 2003), and b) on *globalization* (Mesjasz 2003). In some countries in the North, national security has been supplemented with *alliance security*, in the

⁵ See for legal perspectives of the state: Bleckmann, 1975: 125-136; Ipsen 1990: 56-57; Zippelius 1991: 81-88.

South security has often remained nation-oriented with a strong role of military thinking in the security and political elites.

In the security discourses different concepts for security dangers are used: *threats*, *vulnerabilities*, *challenges*, *uncertainties*, and *risks* dealing with both *hard* (military) and *soft* security issues (drugs, human trafficking, migration). Within the EU, *national* and *internal security* issues (justice and home affairs dealing with issues of asylum, migration and citizenship) are distinguished. The deborderization has been supplemented with two securitization strategies based on *intergovernmental* structures in contrast to the *communitization* of other issues.

While the classical means and instruments of a narrow security policy have remained the military and diplomacy, in the EU this classical *domaine réservé* of the nation state has entered a process of fundamental transformation with close consultations, common policies and strategies, and increased common voting in international institutions (UN, OSCE). In many international regimes (food, climate, desertification) the EU is a full member besides its 27 member states. Its evolving common *European Foreign and Security* (CFSP) and *Security and Defence Policy* (ESDP) has affected the traditional national military and diplomatic leverage.

Within international organizations (UN, FAO, UNDP, UNEP, OECD, IEA), sector-specific security concepts are widely used, such as ‘environmental security’ (Toepfer 2003: 139-140; El-Ashry 2003: 140-143; Brauch 2003, 2009), ‘food security’ (FAO 1996; Collomb 2003; Oswald 2009a; Salih 2009; Kapur/Kapur/Akca/Eswaran/Aydin 2009_35), ‘global health security’ (WHO 2002; Rodier/Kindhauser 2009; Leaning 2009), ‘energy security’ (IEA; Jacoby 2009), and ‘livelihood security’ (OECD 2002; Bohle 2009).

The political and scientific concept of security has changed with the international order. With the Covenant (1919) the concept of ‘collective security’ was introduced, after World War II the concept of ‘national security’ was launched to legitimize the global US role and after 1990 the security concept widened and deepened and new concepts such as ‘human’, ‘environmental’, and sectoral security concepts were added to the policy agenda.

3. Concepts of Peace

The word ‘peace’ is a religious and a scientific concept in philosophy, theology, history, international law, in the social sciences and in international relations, and it has been a declared goal of national policy-making, of international diplomacy, and of many international organizations. Many scientific concepts of peace were used in different time periods, disciplines, and within disciplines. As peace requires a minimum of order and consensus,

peace is closely associated with law that presupposes freedom. Peace is no state of nature but must always be created anew by human beings, and thus it often relies on legal agreements that are in most cases backed by power. In many cultures the internal peace corresponds closely with the defence of the territory against outside infringements.

In Greek philosophy, for Plato war and conflicts were to be avoided within the polis. Aristotle combined peace (*'eirene'*) with politics and emphasized that all political goals may only be realized under conditions of peace, and war is only accepted as a means for the defence of the polis. During the Roman period, *'pax'* was closely tied to law and contracts, and with the emergence of the Roman Empire; the imperial *Pax Romana* relied on the contractual subjugation under the emperor in exchange for protection against external intruders.

The Westphalian Peace of 1648 requested that all parties adhere to the *'pax Christina universalis perpetua'*. After the Peace of Utrecht (1713), Abbé de Saint-Pierre called for a federation of princes to secure a *'paix perpétuelle'* in the tradition of peace proposals from Thomas More's *Utopia* (1516) to William Penn's *Essay towards the present and future peace in Europe* (1693), and by utilitarian (Bentham) and socialist authors (Fourier, Saint-Simon).

The defence of the territorial peace was linked to the monopoly of force by the sovereign rulers. Besides the 'peace within the state' that was achieved through its monopoly of the means of force and its use, the 'peace between and among states' has become a major concern of modern international law since the 16th (de Vitoria, Suárez) and 17th century (Grotius, Pufendorf). Its authors considered war still as a legitimate means for the realization of interests among states (*ius ad bellum*) but at the same time they called for constraints during war, such as a continuation of diplomacy and of the activity of neutral organizations (*ius in bello*). In his treatise for an *eternal peace* Kant (1795, 1965, 1992) went a step further and proposed a ban on war itself and developed a legal framework for a permanent peace based on six preliminary and three definite articles that called for a democratic system of rule, an international organization (league of nations), and the respect for human rights.

While Kant's philosophical conceptualization of peace influenced many philosophers and writers in the Napoleonic period, during the age of nationalism in the 19th and early 20th centuries Treitschke, Nietzsche, Sorel, and many other writers contributed to a glorification of war (*bellicists*) while simultaneously radical *pacifists* and the peace movement of the late 19th century requested a condemnation of war. Theories of hegemonic stability (Keohane 1984) refer to a peace according to the rules proposed (and in some case *imposed*) by the USA.

After World War I, the liberal Kantian tradition, represented by Woodrow Wilson at the Versailles Peace Conference, was instrumental for the creation of the League of Nation, while

after World War II, Hobbesian lessons were drawn from the collapse of the League of Nations. With the end of the Cold War (1989 – 1991), war as a social institution was not defeated but it has returned in the form of resource, ethnic, and religious conflicts, primarily within states (Kaldor 1999; Münkler 2005) but also as pre-emptive wars not legitimized by the United Nations Security Council. During the 1990's proposals for a new international order of peace and security in the Kantian and Grotian traditions were gradually replaced by concepts of preventive wars (White House 2002, 2006).

Peace has been defined as a basic value (Zsifkovits 1973) and as a goal of political action, as a situation of non-war, or as a utopia of a more just world. Schwerdtfeger (2001: 28-29) distinguished four alternatives to define peace: 1. a nominal definition; 2. as a result of a contemplative hermeneutic process; 3. a review of the historic evolution of the concept; 4. a determination by an analysis of opposite concepts. Galtung (1967, 1968, 1969, 1975, 1988) distinguished between a condition of 'negative' (absence of physical or personal violence – or a state of non-war) and 'positive peace' (absence of structural violence, repression, injustice). Picht (1971) defined peace as protection against internal and external violence, as protection against want and freedom as three dimensions of political action. Senghaas (1997) pointed to five conditions of peace among nations. 1. positive interdependence; 2. symmetry of interdependence; 3. homology; 4. entropy; that require 5. common softly regulating institutions. In his 'civilisatory hexagon' Senghaas (1994, 1995) referred to six related aspects: 1. an efficient monopoly over the use of force; 2. effective control by an independent legal system; 3. interdependence of social groups; 4. democratic participation; 5. social justice, and 6. a political culture of constructive and peaceful conflict transformation. Among the many attempts to define peace, no consensus on a generally accepted minimal definition emerged (Schwerdtfeger 2001: 44-48). Conceptual histories of peace have tried to reconstruct the evolution of this concept in philosophy, theology, history, and law in relationship to political and state practice (Biser 1972: 1114-1115).

Peace research as a value-oriented academic programme emerged during the Cold War in the US and in Northern Europe as an intellectual challenge to the prevailing Hobbesian perspectives in international relations and in the newly emerging programmes of war, strategic and security studies. Johan Galtung (1993: 688) defined peace narrowly

as the absence of warfare, i.e. organized violence, between groups defined by country, nation (culture, ethnicity), race, class or ideology. International or external peace is the absence of external wars: inter-country, inter-state, or international. ... Social or internal peace is the absence of internal wars: ethnic, racial, class, or ideological groups challenging the central government, or such groups challenging each other.

Galtung (1968; 1993: 688-689) has distinguished between direct, *personal* or institutionalized violence and *structural* violence taking the form of “economic exploitation and/or political repression in intra-country and inter-country class relations.”

Huber and Reuter (1990: 22f.) argued that a basic condition for peace is the survival of humankind, and that “talking about peace does not make sense any longer, if life on the planet is destroyed.” Discord exists in those processes that threaten life on earth, e.g. by an exploitation and destruction of nature, that lead to mass hunger and to an endangerment of life by military means. Brock (2002: 104f.) reviewed that peace should be more than the absence of war in the framework of five dimensions: a) of time (eternal peace), b) space (peace on earth), c) society (domestic intra-societal peace), and d) procedure (peace as peaceful dispute on peace), and e) a heuristic dimension to move from the study of the causes of war to the conditions of peace.

This review of the meanings of the concept of peace in the Western or Christian and specifically in the German context is not comprehensive and offers only a glimpse of the many other meanings and definitions, e.g. in the Eastern (Chinese, Indian), Middle Eastern (Muslim, Arab, Turkish), African and indigenous traditions in Latin America (Oswald 2008). These different philosophically and culturally-determined meanings of peace influence the legal interpretations of the key concept of ‘international peace’ (Art. 1,1) as well as of ‘threat to the peace, breach of the peace’ (Art. 39) in the UN Charter.

4. Concepts of Development

Development is a major scientific concept but also an area for national and international policy making. The impact of global environmental change on society is closely linked with the stage of economic development that determines the available resources for adaptation and mitigation measures to enhance resilience.

After World War II during the decolonization process development theory emerged as a variant of modernization theory (Ake 1993: 239-243). Toyne (1996: 212-215) argued that by 1965 “prolonged and steady increase of national income” was identified as an indicator of economic development. It is accompanied by rapid population growth due to declining mortality, longer life expectancy, rapid urbanization, and improved standards of literacy and education. These processes have been criticized if the distribution of income remains unequal and if the population majority remains impoverished. Sen (1981, 1984, 1994, 1999) argued that distribution of income should be complemented by a fair distribution of entitlements to food, shelter, clean water, clothing and household utensils.

These definitions excluded environmental factors contributing to and constraining economic development. The concept of 'sustainable development' was introduced by the Brundtland Report (WCED 1987: 8) that defined sustainability "to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainable development was understood as "a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs" (WCED 1987: 9). 'Sustainable development' contains two key concepts: a) the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and b) the idea of limitation imposed by the state of technology and social organization on the environment's ability to meet present and future needs (WCED 1987: 43). This concept calls for a 'sustainable development' path with "a concern for social equity between generations, a concern that must logically be extended to equity within each generation."

The policy goals of development have been as varied as its definitions. The goals differed among the industrial (OECD, G 7, G 8) or developing countries (G 77 and China) or between those who supply or receive development aid. During the Cold War these goals were closely associated with the economic systems in a bipolar world. The goals differed on import-substitution or export-led industrialization, capital or labour intensive strategies.

Stallings used the concept for economic development, i.e. for growth and equity of distribution. She pointed to five new elements in the new international context for development since 1990: "the end of the Cold War, new relations among advanced capitalist powers, increased globalization of trade and production, shifting patterns of international finance, and new ideological currents" (Stallings 1995: 2).

Decolonization and global competition between rival systems prevailed during the Cold War where development aid was also an instrument of global policy where the geo-strategic and geo-economic importance of developing countries was rewarded with economic and military aid. Development assistance was supplied by national governments, or through the EU, multilateral international organizations (OECD, UN, UNDP, UNCTAD, UNIDO), financial institutions (e.g. World Bank Group, EIB, EBRD) and development banks, and by non-governmental economic, societal, and humanitarian (ICRC-RCS) organizations. With the end of the bipolar order, the geo-strategic importance of several developing countries declined, as did the security-motivated economic and military aid which contributed in some cases to weak, failing or failed states.

Development research emerged after World War II as an objective of social and political science. Before, it was a domain of anthropological and ethnological research. The initial fo-

cus was on preconditions and features of development processes, especially on the economic, social, political and cultural factors that enhance or restrain development. Later the goals of development and the causes of underdevelopment were added. Two main theories emerged: of modernization, used by scientists in OECD countries, and critical approaches, influenced by theories of imperialism, *dependencia*, self-reliance, or autocentric development.

The concept of development has undergone major changes since the Bretton Woods Conference in 1944. With the end of the Cold War a crisis of development theories was noted. Scientific concepts are influenced by development theories and strategies for poverty eradication, social and sustainable development that are linked to the state, market, community, and civil society (Kothari/Minougue 2002: 1-15).

During the 1950's and 1960's most development experts emphasized 'economics first' through investment driven economic development strategies with a focus on industrialization. Since 1980, the focus shifted to poverty and development and a basic human needs approach (Boserup 1970; Sen 1981; McNamara 1981). This was reflected in an upgrading of poverty eradication programmes but until 1985 there was no emphasis on governance issues, social capital development, institution building and capacity building for self-reliance. During the 1990's there was a gradual shift to agriculture, gender issues, and participatory community development to put people first as reflected in the Human Development Reports that introduced 'human security' (UNDP 1994) as a complement to 'human development'.

5. Concepts of Environment and Ecology

The 'environment' or 'ecology' is an intensively used but often undefined concept in politics and in the social sciences. Not until the late 20th century have environmental and climate concerns been perceived as security dangers and concerns or as threats that may undermine the survival of humankind.

'Environment' and 'ecology' as basic *terms* and key *concepts* in the natural and social sciences have been used in different schools, conceptual frameworks and approaches, and as guiding concepts for national and international governance. The *Encyclopaedia Britannica* (1998, IV: 512) defines 'environment' as: "the complex of physical, chemical, and biotic factors that act upon an organism or an ecological community and ultimately determine its form and survival". A modern definition of *ecology* includes a) the interactions between organisms (individuals, populations, biocoenosis), b) in their abiotic and biotic environment and c) the links in the energy, material and information flow.

Many different concepts of the *environment* and *ecology* are used in the natural and social sciences. For O’Riordan (1996: 250) ‘environment’ is: “a metaphor for the enduring contradictions in the human condition; the power of domination yet the obligation of responsibility; the drive for betterment tempered by the sensitivity of humility; the manipulation of nature to improve the chances of survival, yet the universal appeal of sustainable development; the individualism of consumerism and the social solidarity of global citizenship.”

The UN Charter lacks a reference to environmental protection and ecological concerns. The decision at the Stockholm Conference (1972) to set up the UN Environment Programme (UNEP) in Nairobi and the adoption of the Agenda 21 and of several environmental regimes at the Earth Summit (UNCED) in Rio (1992) were major steps towards international responses. The Brundtland Report (WCED 1987) stimulated new thinking and fostered an integrated global approach that was supported by regional efforts of the five economic commissions (ECE, ECA, ESCWA, ESCAP, ECLA) under the ECOSOC and UNEP. The progressing awareness and commitment for international environmental problems requires a management of national environmental adjustments.

6. Linkages of Security with Peace, Environment and Development

These four social science concepts of security, peace, development and environment refer to four research programmes in political science: *peace research* as a value-oriented research programme; *security*, *strategic* or *war studies* as a theory and policy-oriented research field, *development* and *environmental studies*. This conceptual quartet of key concepts, research programmes and policy areas implies six dyadic linkages (figure 1).

The UN Charter focuses only on the classic ‘agenda’ of peace and security (L1). With the decolonization process ‘development’ was added to the UN agenda in the 1950’s. With the first UN Summit on Environment in Stockholm in 1972 the ‘environment’ followed and with the Brundtland Report (WCED 1987) ‘sustainable’ development was added (L5). Since the 1990’s, three phases of research addressed linkages between security and environment (L 6).

For the four key concepts nine different positions can be distinguished: For the classical peace and security agenda three worldviews of Hobbesian realists, Grotian pragmatists, and Kantian optimists exist. On development three theoretical controversies occurred between modernization and critical theories (imperialism, *dependencia*, peripheral capitalism, etc.) and with sustainable development approaches. On environmental issues, three standpoints exist of pessimist Neo-Malthusians, pragmatic equity-oriented distributionists, and optimist Cornucopians.

Figure 1: Research Programmes and Linkages within the Conceptual Quartet

Research programmes in international relations	The Conceptual Quartet	Conceptual Linkages
<ul style="list-style-type: none"> ■ Peace Research ■ Security Studies ■ Development Studies ■ Environment Studies <p>Four Conceptual Pillars</p> <ol style="list-style-type: none"> 1. S-P: <i>Security Dilemma</i> 2. D-E: <i>Sustainable Development</i> 3. S-E-D: <i>Survival Dilemma</i> 4. P-D-E: <i>Sustainable Peace</i> 		<p>L 1: Peace and security (Wæver 2008)</p> <p>L 2: Peace and environment (Oswald Spring 2008a)</p> <p>L 3: Peace and development (De Soysa 2008)</p> <p>L 4: Development and environment (Brown 2008)</p> <p>L 5: Development and security (Uvin 2008)</p> <p>L 6: Security and environment (Dalby 2008)</p>

Four linkage concepts have been discussed in research of which two have been widely used:

1. *Security dilemma* for the classical peace and security interaction (S-P);
2. *Sustainable development* for the link between environment and development (D-E).

In addition, two new conceptual pillars have emerged:

3. *Sustainable peace* has been used in the UN context and by action-oriented researchers who combined peace with sustainable development (P-D-E; Oswald 2008a).
4. *Survival dilemma* addresses security, environment, and development linkages caused by human and nature-induced factors of global environmental change (Brauch 2008b).

The six conceptual linkages between the four key concepts of peace, security, environment, and development have been analyzed in detail in six chapters (Brauch/Oswald/Mesjasz/ Grin/Dunay/Behera/Chourou/Kameri Mbote/Liotta 2008) on: 1) peace and security (Wæver 2008); 2) peace and environment (Oswald 2008a); 3) peace and development (De Soysa 2008); 4) development and environment (Brown 2008); 5) development and security (Uvin 2008); and 6) security and environment (Dalby 2008). Besides the two classic concepts of the UN Charter, two new concepts and policy areas of development and environment and of sustainable development have gradually emerged since the 1950's, 1970's, and late 1980's.

6.1 Linkages Between Peace and Security in the Three Traditions

The linkage between 'international peace and security' is used repeatedly in the Charter of the United Nations, in the preamble and in Art. 1(1) as a goal of the UN "to maintain international peace and security", and in the provisions dealing with the powers of its organs (Art. 11, 24, 33(1), 36(1), 39 (see Bothe 2008, box 35.1). Since the end of the Cold War, Bothe (2008)

noted a major shift in the state behaviour on peace and security as reflected in many resolutions of the UNSC with regard to reasons that justify its involvement.

This linkage between peace and security has been analysed by the English School (Bull 1977, Wight 1991, Buzan 2001, 2004, 2006) that distinguishes three basic traditions on international relations they associated with *realism* based on power (Machiavelli 1531; Hobbes 1651), *rationalism* relying on cooperation (Grotius 1625, 1975), and *idealism* relying on international law and human rights (Kant 1795). These traditions represent schools of thought that also exist in other traditions of political philosophy in the East (India, China, Japan), but also in the Middle East (Arab, Turkish, Persian and other), African and pre-Columbian Mesoamerican traditions that are often ignored in the self-centred Western discourses on international relations, peace and security (Oswald 2008).

Three basic standpoints on environmental issues (table 3) may be distinguished:

- a *pessimist* or *Neo-Malthusian view* that stresses the limited carrying-capacity of the Earth to feed the growing population (Meadows/Meadows/Randers/Behrens 1972; Meadows/Meadows/Randers 1992; Brown 1977);
- an *optimist* or *Cornucopian view* that believes an increase in knowledge, human progress, and breakthroughs in science and technology could cope with these challenges (Lomborg 2001, 2001a, 2002);
- an *equity oriented pragmatist* (Homer-Dixon 1999; Brauch 2003, 2005).

Table: 3: Worldviews and Standpoints on Security and Environmental Issues.

Worldviews/Traditions on peace and security (→)	Realism (Tzun Tzu, Thucydides, Machiavelli, Hobbes) <i>Power matters</i>	Rationalism, pragmatism (Confucius, Grotius) <i>Cooperation matters</i>	Idealism, constructivism (Kant, Gandhi) <i>International law matters and prevails</i>
Standpoints on environmental issues (↓)			
Neomalthusian <i>Resource scarcity</i>	I Military, economic power solves resource scarcity	II International cooperation will solve resource scarcity	III International law and cooperation solves resource scarcity
Equity-oriented pragmatist <i>Cooperation will solve problems</i>	IV Military, economic power and cooperation will cope with environmental issues	V International organizations and regimes will address/contribute to adaptation/mitigation	VI International law and environmental cooperation can cope with global environmental change
Cornucopian neo-liberal <i>Technological ingenuity will solve problems</i>	VII Military, economic power and technological innovation avoids resource scarcity	VIII International cooperation, organizations and regimes and technological innovation can cope with global environmental change	IX International law and cooperation as well as technological innovation cope with global environmental change

Table 3 combines the three traditions on peace and security with these three standpoints on the environment. This leads to nine positions on peace and security and environmental issues. While Neo-Malthusians stressed the linkage between environmental scarcity and violent conflict, *Cornucopians* (Lomborg 2001: 317) challenged the pessimism that global warming would decrease food production, but they acknowledged the high cost of global warming and that developing countries are hit most due to poverty and lesser adaptive capacity. From the third perspective peace improves the conditions for environmental policies. Resource scarcity is often a result of unequal domestic distribution and of a lack of equity in the international division of labour.

6.2. Linkages Between Peace and Environment

Several linkages have evolved between 'peace' and 'environment'. In the intellectual history of ideas and concepts, a debate on 'peace with nature' has existed since Bacon (17th century) up to 'peace with creation' in the ecumenical movement (20th and 21st century), and in the context of the debates on ethical approaches to global environmental change. Oswald (2008a) reviewed these contemporary linkages as seen from the South and their integration into the concept of sustainable peace that have been suggested together with sustainable development as key components of a sustainable peace policy for the 21st century (Brauch/Oswald 2009).

6.3. Linkage Between Peace and Development

While the peace research programme emerged as a critical response to cold war policies and to prevailing realist approaches in security or strategic studies, development studies evolved with the decolonization process in economics and political science as a field of study that focuses on processes of economic and human development and on causes of underdevelopment. What conceptual linkages have evolved between both concepts and research fields, and how has the global turn of 1990 impacted on both?

Between the three scientific approaches on peace (realists, rationalists, and idealists) and three approaches to development (modernization, critical theories, and sustainable development) nine positions emerge of which three are most pertinent, that of a) *realist modernization theorists*, b) *idealist critical theorists*, and c) *pragmatic supporters of sustainable development*.

During the Cold War period, the position of realist modernization theorists and professionals in national development agencies and international organizations reflected the mainstream that influenced development policy that was often a key instrument in the Cold War competition. Within international relations, some critical theorists analysed problems of

(under)development critiquing both realist security concepts and dominant modernization theories by incorporating the thinking of Third World scholars.

But in both perspectives the environment played hardly any role. The Brundtland Report induced a conceptual reassessment towards 'sustainable development' that has been a primary focus of environmental diplomacy since the late 1980's, at UNCED in Rio de Janeiro (1992) and at UNSSD in Johannesburg (2002). This third position has been strong among theorists and development professionals in international organizations since the Cold War.

On the relationship between war and peace and development, two main political arguments coexist. The negative economic impact of war on development have been human fatalities, destruction of infrastructure, wealth and capital, devastation of the environment, as well as high indebtedness of the state and high interest rates as a constraint for economic activity. As a result of wars, in post-war periods the economic demand for reconstruction has been in many industrialized countries a stimulus for economic growth, high consumption of fossil energy, and technological innovation. In the South periods of peace, security, and domestic stability have been a major precondition for economic and social development. Since 1990, most developing countries did not experience a peace dividend. Rather, weapons to be disarmed in the North were sold to the South where violent internal conflicts have occurred primarily due to greed (drugs, diamonds, timber, etc.) rather than due to scarcity of natural resources (Human Security Centre 2005), involving warlords and criminal gangs.

6.4. Linkages Between Development and Environment

The linkage between development and environment has been stressed by developing countries since the environment summit in Stockholm when many of their representatives called for 'additional' efforts and funding by the North to deal with global environmental issues that were to a large extent caused by industrialized nations since the industrial revolution with the tremendous growth in the consumption of scarce resources and fossil energy that resulted in a human-induced global warming. But the controversies between modernization and critical theories of development since the 1960's were not about the environment. Since the late 1980's the controversies have increased between proponents of sustainable development and those of the neoclassical modernization theory and critical theories of development.

6.5. Linkages Between Development and Security

Since the 1990's, there has been an intensive debate on the linkages between development and security, where 'no development without security' has become a development-policy paradigm that calls for new approaches in development policy (Klingebiel/Roehder 2008). But

there will be no lasting security without development. The distance between scholars from both research programmes and between development and military professionals has diminished for donors and multilateral institutions (Tschirgi 2004, 2006; Griffin 2003). While earlier debates focused primarily on the civil-military relationship in the area of humanitarian aid pertaining to logistical tasks (transport of aid supplies), and security in the areas receiving aid, “the current debates since the early 2000’s have focused more directly on convergence in conceptual and practical policy terms” (Klingebiel/Roehder 2008). The shift from the state-centred to a protective security concept related to the individual (Duffield 2006; Thakur 2006) led to an intensive debate on the linkages between human and sustainable development and human security. These discourses have been influenced by the debates in the United Nations (ICISS 2001; UN High Level Panel on Threats, Challenges and Change (UN 2004); Annan 2005). Klingebiel and Roehder (2008) argued that the United Nations’ decision in December 2005 to establish a Peacebuilding Commission (PBC), “which will seek improved coordination among the various actors and integrated strategies in post-conflict situations, may also serve as a guide for the future” (Einsiedel/Nitzschke/Chhabra 2008). Peter Uvin (2008) reviewed the link between development and security: with a special focus on the genealogy and typology of an evolving international policy area. Sending (2008) analysed how the institutional set-up of the UN has been adjusted to respond to the ‘nexus’ between development and security. Katseli (2008) addressed the “EU policy coherence on security and development [as] a new agenda for research and policy-making.”

6.6. Linkages Between Security and Environment

The debate on linkages between security and environment has also evolved since the Brundtland Report (WCED 1987). Since then, three linkages between ‘security’ and ‘environment’ have been discussed: a) impact of wars on the environment, b) peacetime impact of military activities on nature, and c) environmental problems leading to environmental stress that could, under specific socio-economic conditions, either cause or contribute to natural hazards, distress migration, domestic, bilateral, regional or interregional crises and conflicts that may involve the use of violence and force. Three phases of the debate have been reviewed elsewhere (Brauch 2003, 2005, 2005a), and several proposals for a fourth phase have been made (Dalby 2002, 2002a, 2008; Brauch 2003a; Dalby/Brauch/Oswald 2009; Oswald/Brauch/Dalby 2009).

7. The Four Pillars of a Widened Security Concept

Four conceptual pillars were introduced above on the linkages among the four components of the conceptual quartet: the classic state-centred ‘security dilemma’, and the new people-centred

'survival dilemma', as well as the concept of 'sustainable development' (Brown 2008), and the related concept of 'sustainable peace' (Oswald Spring 2008a).

7.1. State-Centred Security Dilemma

Elements of the 'security dilemma' concept can be traced to Kant in his *Treatise on Eternal Peace* (1795). The term was first coined by John Herz (1950, 1959) to interpret the linkage between fear and armament during the bipolar Cold War. After the end of the Cold War, the concept has still been used as a key term of security analysis (Booth/Wheeler 2008; Brauch 2008b). With this concept John Herz (1950, 1959) referred to the propensity of countries "to acquire more and more power to escape the impact of power of others", a tendency that has resulted in a vicious circle of mutual arms build-up. Herbert Butterfield (1951) referred to it as a 'predicament of Hobbesian fear' or as the 'Hobbesian' dilemma. But Herz disagreed with the thesis that mutual suspicion and the security dilemma have resulted in a continual race for power and armaments resulting in unending wars. Herz (1996: 231) defined it as

a social constellation in which units of power (states or nations) find themselves whenever they exist side by side without higher authority that might impose standards of behaviour upon them and thus protect them from attacking each other. In such a condition, a feeling of insecurity, deriving from mutual suspicion and mutual fear, compels these units to compete for ever more power in order to find more security, an effort which proves self-defeating because complete security remains ultimately unobtainable.

Alan Collins (1995: 11-15) pointed to "four characteristics of a security dilemma: uncertainty of intentions, no appropriate policies, decrease in the security of others, and decrease on the security of all." Jervis (1976: 66) wrote that "the unintended and undesired consequences of actions meant to be defensive constitutes the 'security dilemma'," while Wheeler and Booth (1992) labelled them a "security paradox", and considered "insecurity as the central characteristic of the security dilemma" (Ralph 2001: 17-19). In Jervis' (1982: 361) view "the security dilemma cannot be abolished, it can only be ameliorated," while Wheeler and Booth (1992: 29) claim that "the theory of security communities and the practice of international politics among liberal-democratic states suggests that the security dilemma can be escaped, even in a setting of sovereign states."

Wheeler and Booth (1992: 54) argued that with the emerging post Cold War security community "peace is predictable; the security dilemma has been escaped." For Czempiel (2002: 31) the security dilemma is no objective result of analysis but a societal and group determined phenomenon that is created by self, world, and enemy images in the tradition of the political culture of the respective country that may reflect both ethnocentrism and ideological funda-

mentalism. For Czempiel, the security dilemma is no exogenously existing factor in an anarchic international system but the result of “deliberate choices of particular governments” (Wheeler/Booth 1992: 43). For the constructivists the security dilemma is also influenced by domestic politics (Wendt 1992: 402; 1995: 71-81). Czempiel challenged the use of the ‘security dilemma’ by realists as an ahistoric theorem derived from the uncertainty of international anarchy. He also redefined the concept as the product of domestic politics.

7.2. People-centred Survival Dilemma

This author has conceptualized a ‘survival dilemma’ from two perspectives: as a state and human-centred concept. Initially he argued that while the three global orders of Vienna, Versailles and Yalta (1815-1989) were based on power legitimized in terms of the *security dilemma*, the emerging new global challenges of the 21st century (Renner 1997: 25-6) may require a new international order based on a Grotian *survival dilemma* (Brauch 1996, 2000) that may necessitate additional multilateral cooperation in international security (arms control, terrorism) and environmental regimes (climate, desertification, water), and in international and supranational organizations. For coping with these new challenges, he argued that the zero-sum games of realist approaches of the 19th and 20th century must be replaced by non-zero-sum games where all major players should aim at the creation of conditions for the survival of humankind (Axelrod 1984).

Since 2004, he reconceptualized the ‘survival dilemma’ within the discourse on environmental and human security as a ‘people-centred’ and ‘bottom-up’ concept where both the old (violence, conflicts, complex emergencies and wars) and new non-military security threats, challenges, vulnerabilities, and risks posed by the causes of global environmental change (climate change, deforestation, soil erosion and desertification, water scarcity and degradation), their impacts (hazards, disasters), and societal outcomes (forced migration, crises, complex emergencies and wars as well as conflict avoidance, prevention and resolution) have confronted individuals, families, communities with several unpleasant alternatives (or a dilemma) to stay in their threatened livelihoods and possibly to die from starvation and thirst, or to flee to refugee camps or migrate to the urban centres or overseas to gain better prospects for themselves and to support their families. These two facets of the emerging concept of a ‘survival dilemma’ try to combine both a top-down state-centred perspective with that of a people-centred human security approach (Brauch 2004, 2008b).

8. Conclusion: Relevance of the Conceptual Quartet, Six Linkages and Four Pillars for the Analysis of Security

From a European perspective this chapter introduced the discourse on the reconceptualization of security (parts 1-6) and reviewed the four concepts of the conceptual quartet by combining three scientific methods of etymology, conceptual history, and systematic conceptual mapping with an overview of the use of these concepts in the four related research programmes (parts 7-9). Analyses from other cultural backgrounds, intellectual traditions, and disciplines and in other languages are needed to diversify this Euro-centred perspective.

The underlying epistemological interest and research question has been to conceptually map to which extent the global contextual change with the end of the Cold War has triggered conceptual innovations primarily for the security concept and its three related concepts of the quartet as they have been analysed by the four research programmes and can be observed for six dyadic conceptual linkages and for four conceptual pillars.

This analysis does not offer simple answers but provides a framework for a multi-disciplinary and multicultural mapping of the rethinking of security since 1989-1990. The changes have been significant as the widening, deepening, and the sectorialization of the security concept illustrate. This is an ongoing process, where the securitization has shifted from the narrow military focus of the Cold War to many newly perceived security concerns posed by global environmental change, and most particularly by climate change.

Awarding the Nobel peace prize of 2005 to Wangari Matthai and in 2007 to the IPCC and Al Gore, and putting 'human security' and 'climate change' on the agenda of the UNSC, are all indications of an ongoing change in the thinking on and use of the 'security' concept in its relationship to peace, development, and the environment. With the *securitization* of 'climate change' and water (Oswald/Brauch 2009) the threat is posed not by 'them' (the other, the enemy) but by 'us' (human beings and humankind alike), by those who have posed the threat by the consumption of fossil fuels that have contributed to anthropogenic climate change (Oswald/Brauch/Dalby 2009).

This requires a fundamental new policy of peace and security where sustainable development and sustainable peace are two strategic components to deal both with the 'security dilemma' among nations (top-down perspective) and with the 'survival dilemma' posed for the most vulnerable and poor people (bottom-up perspective) in the developing countries (Brauch/Oswald 2009).