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Chapter 11

Chapter 11: Components of the Equation

"Somebody thinking in terms of collateral damage must be a bad guy, a cold technocrat being ready to sacrifice innocent lives on the altar of military efficiency."[1]

"the law of proportionality, deciding what attacks are permissible, is far too vague to be useful, and leads to experts on different sides talking past each other."[2]

11.1 Introduction

The proportionality rule in IHL requires a balancing act between the anticipated military advantage and the expected incidental damage. As a result, the answer to the question of whether an attack complies with the IHL rule of proportionality is dependent on the interpretation of these two components. For example, there is discussion about civilians who, be it voluntary or involuntary, by their presence are shielding a legitimate military objective from attack.[3] On which side of the proportionality equation should they be included? Also, there is disagreement about the issue of whether opponents who are *hors de combat* should be taken into account in the proportionality equation as incidental damage.[4] But the discussion is broader than just that, because also other parts of the definition of the IHL proportionality rule may be discussed. The disagreement on the components of the IHL proportionality rule is exemplified by the large amount of literature that deals with the subject and the converging opinions therein.[5] Before it is possible to determine how the IHL proportionality rule may be applied in practice, which is during military operations in armed conflicts, a thorough understanding of all components of the equation is required. Even if it turns out that it is impossible to provide a simple flowchart for applying the IHL

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1   Oeter 2010, p. 167-194.

2   Reisner, see http://www.jpost.com/Israel-News/Meet-the-godfather-of-Israeli-experts-on-international-law-and-war-crimes-452131.

3   See for example the discussion in Schmitt 2009, p. 330-332.

4   See for example Henderson, p. 206.

5   The issue was also mentioned by the ICTY Prosecutor in the ICTY OTP Kosovo report. It stated that there are four unresolved issues that must be addressed for the purpose of the application of the IHL proportionality rule:
"(a) What are the relative values to be assigned to the military advantage gained and the injury to non-combatants and or the damage to civilian objects?
(b) What do you include or exclude in totalling your sums?
(c) What is the standard of measurement in time or space? And
(d) To what extent is a military commander obligated to expose his own forces to danger in order to limit civilian casualties or damage to civilian objects?" See Final Report to the Prosecutor by the Committee Established to Review the NATO Bombing Campaign Against the Federal Republic of Yugoslavia (ICTY OTP Kosovo report), available online: http://www.icty.org/x/file/Press/nato061300.pdf. See also Fenrick 2000, p. 75.

proportionality rule, commanders need to know which factors need to be taken into account and how these should be valued.[6]

The aim of this chapter is to assess the different factors which comprise the IHL proportionality rule. Recalling the definition as provided for in API, an attack is considered to violate the IHL proportionality rule if it "may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated." Therefore, Section 11.2 looks into the personal scope of the rule: who is bound to apply the IHL proportionality rule? Since the IHL proportionality rule applies to attacks, Section 11.3 assesses how the notion of an attack is defined. Section 11.4 analyses what it means that the civilian casualties and damage included in the equation are labelled as 'incidental'. Section 11.5 looks into the temporal scope of the IHL proportionality rule, assessing whether only immediate damage may be counted as increasing the military advantage or collateral damage of a planned attack, or more distant consequences of an attack must also be taken into account. The civilian side, the first of the two major parts of the IHL proportionality equation, is assessed in Section 11.6 (persons) and 11.7 (objects). It is assessed in Section 11.8 whether there are other objects and persons than the strict civilian ones that must be included on the civilian side of the proportionality equation. Section 11.9 looks into the question of how a 'combination' of the respective civilian factors must be evaluated. Section 11.10 analyses the other major component of the IHL proportionality rule: the military advantage.

11.2 The Personal Scope

The first question to be answered is the question of who exactly is "planning", "deciding on" or "executing" an attack, because according to the rule, that person is also the one obliged to conducting the proportionality equation. In this context, a distinction can be drawn between the question of *who* is making the assessment and the question of *what* this person needs to take into account. The answer to these questions is very dependent on the type of attack and the level of command on which this person is situated. Section 13.2.1 assesses who must conduct a proportionality assessment. Section 13.2.2 subsequently assesses whether a concerted string of attacks that may result in civilian casualties or damage to civilian objects in different phases and on different locations, must be assessed only on an attack-to attack basis, or that a more comprehensive proportionality analysis is required. Section 13.2.3 provides a short analysis of proportionality calculations on a strategic level.

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6   In the words of Geiss, the proportionality calculation "requires fixed points of reference. Otherwise it would be impossible to carry out the balancing judgment that the proportionality principle requires." Geiss 2012, p. 86.

11.2.1 Who Conducts the Proportionality Equation?

States are the primary objects of international law. As such they conclude treaties and are bound by the rules of the treaties they ratified, including the IHL proportionality rule. Furthermore, States are bound by the rules that follow from the other sources of international law, including the customary rule on proportionality in IHL. In reality, of course, the IHL proportionality rule is implemented by State agents, or by members of a non-State party to the conflict. According to article 57 (2) (a) API, the persons who are responsible to conduct the proportionality equation are "those who plan or decide upon an attack". At first sight, this seems to exclude the person who actually executes the attack, in situations where this is a different person. However, article 57 (2) (b) API states that the "attack shall be cancelled or suspended if it becomes apparent that (...) the attack may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated." This implies that from the moment the attack is actually under way, the responsibility no longer rests with the planner of the attack. Instead, the responsibility to monitor whether the attack continues to comply with the IHL proportionality rule shifts to the executor of the attack in those situations where this is a different individual. This executor may be situated at a lower level than the planner or commander who has ordered the attack.

If an attack is a single airstrike on a pre-planned military objective, military planners assess the components of the IHL proportionality equation before submission of the target to the commander for approval. This can take place long before an attack is actually launched, although information needs to be updated before it is decided it can go ahead. But if the target is a civilian house from which an infantry platoon has unexpectedly come under fire during a foot patrol, the platoon commander, or even a lower commander who is present on the spot, will be responsible for the proportionality calculation, if the decision is made to return fire and attack the house. It must thus not be ruled out that in the execution of an attack, the responsibility may rest on one individual soldier,[7] a pilot or a forward air controller.[8] The obligation to conduct the proportionality calculation, preceding the decision to attack, may sometimes for reasons of policy be placed higher in the chain of command: not only up to the level of generals, but some decisions are referred to the Minister of Defence, or a Head of State. As a quite extreme example, it was claimed that some targeting decisions

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7   As an example: picture a situation in which a squad of soldiers tries to attack a man with a gun in his house. After the man returns fire, the room is attacked by two fragmentation hand grenades, killing the man, five children and wounding four women and children. In this situation, which is derived from an actual event involving Australian soldiers and an Afghan man in 2010, the soldiers tossing the grenades are required to conduct a proportionality assessment themselves. See: http://www.smh.com.au/national/lost-in-the-fog-of-war-20120211-1sybr.html.

8   The forward air controller (FAC) is also known as a 'JTAC', which stands for a Joint Terminal Attack Controller. Both terms mean a member of the armed forces who is trained to direct aerial attacks from the air from a forward position for example to enable close air support to a ground unit.

during Operation Allied Force in 1999 "finally ended up on President Clinton's desk for his approval".[9]

The ICRC Commentary is helpful to interpret this provision of API. It states that:

> "Some considered that the introductory words ("those who plan or decide upon an attack") could lay a heavy burden of responsibility on subordinate officers who are not always capable of taking such decisions, which should really fall upon higher ranking officers. This view is not without grounds, but it is clear that a very large majority of delegations at the Diplomatic Conference wished to cover all situations with a single provision, including those which may arise during close combat where commanding officers, even those of subordinate rank, may have to take very serious decisions regarding the fate of the civilian population and civilian objects. It clearly follows that the high command of an army has the duty to instruct personnel adequately so that the latter, even if of low rank, can act correctly in the situations envisaged"[10]

The observation in the ICRC Commentary seems valid. Even though subordinate officers may not always have the authority to execute some types of attacks, the other side of the coin is that there is not always time to 'phone home' for any targeting decision that could lead to collateral damage, especially not for those on-scene commanders who are in the midst of a battle. Although Switzerland made a reservation to article 57 (2) API, according to which this provision only creates obligations for commanding officers at the level of battalion or group or above,[11] this reservation was revoked in June 2005.[12]

It seems logical to assume that one can only make decisions with regard to the degree to which a certain attack is proportionate if the person involved has sufficient access to information to make an informed decision. It is therefore also logical that an individual soldier does not have the oversight to be able to identify the role of the attack that he is ordered to execute in a larger framework, as, for example, the battalion commander has. On the other hand, the individual soldier on the scene may be better placed to anticipate the number of civilians that may be affected by an attack than a battalion commander who is situated in his command post. If the information of the individual soldier is different than the information that was briefed to him by his superiors, it is his responsibility to act upon that information. Tension may exist in that situation between the orders the soldiers received and their IHL-based legal obligations. Time is also a crucial factor. Time-sensitive targets, or when a unit is under attack itself, would arguably justify a less elaborate proportionality calculation, because the reasonable options to obtain conclusive information on expected

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9   See Clark, pp. 203.

10   Sandoz et al., paragraph 2197.

11   Sandoz et al., paragraph 2197, note 5. A similar statement appears in Switzerland's Basic Military Manual (1987), which states: "During every attack, commanding officers at the battalion or group level, and those of higher ranks, shall see to it that the civilian population … does not suffer any damage." See http://www.icrc.org/customary-ihl/eng/docs/v2_rul_rule15.

12   http://www.un.org/en/ga/sixth/63/Addtl_Prot_TEXT/Switzerland.pdf.

military advantage and potential collateral damage are limited. Nonetheless, it is particularly in the midst of combat, that IHL obligations, including the IHL proportionality rule, need to be applied and complied with.

Furthermore, the level of decision making is very much dependent on the type of military operation, and the level of sophistication of the available weaponry. After all, the weaponry of an infantry unit is very different from that of an artillery unit or an attack helicopter. The proximity to the battlefield is not always relevant: if an attack is executed by an operator who is flying an armed drone, it could be that the person who is executing the attack is physically dislocated from the place of the attack. For the purpose of the IHL obligations, there is however no difference between the position of the drone-operator and a jet-pilot.[13] The level of communication and control that is possible, also implies that if the communication is sufficiently sophisticated to enable having actual 'eyes on target' from a distance of thousands of kilometres, it could in theory also be possible that decisions to attack are made at a higher level, possibly even up to the political level. A possibly more problematic scenario is that where an autonomous weapons system is capable of attacking without human intervention. In that situation, the case could be made that the person responsible for the proportionality equation is the person who decided that the system would be deployed, or even the person who wrote the software code on which the decisions of the system are based. Technological developments seem to point in the direction that in the future, autonomous weapons systems deployed with artificial intelligence software will be capable of independently conducting a proportionality assessment and deciding to launch an attack. In a complex environment where civilians and military objectives are intermingled and circumstances change quickly, the person who deployed the system is unable to conduct the proportionality assessment. Whether future autonomous weapons systems will be able to conduct a proportionality assessment in accordance with the restraints dictated by IHL under these circumstances is still unclear.[14]

11.2.2 Levels of Authority

A general division of the tiers of command or authority in a military organisation is the distinction between the strategic, operational and tactical level. The strategic command is the higher command, overseeing the big picture, where the tactical level relates to the lower level of command.[15] The operational level is the intermediate level. In simple terms:

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13   In practice, there may be many differences. The drone operator is not in danger himself, being located elsewhere than the drone. The fighter pilot however is sometimes able to get his own eyes on target and look at the bigger picture. But in legal terms, their obligations under the IHL proportionality rule are equal.

14   See generally Van Den Boogaard 2015.

15   NATO defines the levels as follows: The strategic level: The level at which a nation or group of nations determines national or multinational security objectives and deploys national, including military, resources to achieve them. The operational level: The level at which campaigns and major operations are planned, conducted and sustained to accomplish strategic objectives within theatres or areas of operations. The tactical level: The level at which activities, battles and engagements

at the tactical level, a commander needs to take decisions incident-by-incident. At the operational level, the commanders plans and decides on an attack-by-attack basis, involving different types of units operating in a concerted manner. At the strategic level, decisions regard the overall military campaign.[16] In addition, a 'grand strategic' or political level could be defined to which may be referred in questions regarding the *ius ad bellum*, which is thus outside the scope of IHL. Decisions on the political level are motivated not only by military considerations, but also, if not predominantly, by political motives, such as conducting an attack to strengthen the position of a political leader.

Depending on the level on which a proportionality analysis is undertaken, that person also needs to assess the expected military advantage and collateral damage corresponding to that level of authority, which corresponds to "whatever level the regulated functions are being performed."[17] The type of military advantage and collateral damage to be taken into account may thus differ on the corresponding levels.[18] However, some States interpret the military advantage expected from a tactical attack rather broadly. According to the 2002 United States Joint Doctrine for Targeting, for example, the military advantage of an attack "is not restricted to tactical gains, but is linked to the full context of a war strategy."[19] Already during the diplomatic conference leading to the adoption of API, there was controversy on the level on which the components of the proportionality equation need to be assessed. This controversy lead to a number of declarations and reservations made by States ratifying API, such as the declaration of Canada, that it "is the understanding of the Government of Canada in relation to subparagraph 5(b) of Article 51, paragraph 2 of Article 52, and clause 2(a) (iii) of article 57 that the military advantage anticipated from an attack is intended to refer to the advantage anticipated from the attack considered as a whole and not from isolated or particular parts of the attack."[20]

The text of the Canadian declaration seems to imply that the decisions with regard to the proportionality of an attack are reserved to the higher levels of command, corresponding to the operational level. This seems to be based on the premise that a group-commander or platoon-commander on the tactical level may not have the necessary knowledge to assess whether a particular attack would be (dis-) proportionate given the importance of the military advantage that is sought by the operation as a whole. The declarations are inspired by the

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are planned and executed to accomplish military objectives assigned to tactical formations and units. See http://www.nato.int/docu/stanag/aap006/aap-6-2010.pdf.

16   Olasolo, pp. 158-159. But compare: Henderson, p. 238-241.

17   Sloane, p. 315.

18   See for example the discussion in Else, pp. 200-206.

19   United States Joint Targeting Doctrine, Joint Publication 3-60, published 17 January 2002, page A2 of Appendix A, available online: http://www.bits.de/NRANEU/others/jp-doctrine/jp3_60(02).pdf. See also "For the US military, the expected incidental civilian damage and the anticipated military advantage must be analysed in light of the strategic needs of the relevant armed conflict" Olasolo, p. 182-183, quoting Hays Parks 1982 and Carnahan, p. 866. However, Olasolo identifies a trend that also the US is conducting proportionality analysis at an operational level. Olasolo 186-188.

20   Similar declarations were made by Australia, Belgium, Germany, Italy, Ireland, the Netherlands, New Zealand, Spain, and the United Kingdom. See Roberts and Guelff, p. 501. The declarations are also available on www.icrc.org.

historical example of the attacks on the Calais area in June 1944.[21] Nowadays, many of these attacks would probably be labelled as disproportionate, but they were meant as a diversion and as such they were part of the overall invasion plan in Normandy. This seems to imply that a disproportionate attack on a tactical level would be legal as long as the operational or even strategic operation, of which the tactical attack is a part, is not expected to cause excessive collateral civilian damage. It must be noted that the reservations are directed not to the entire proportionality equation, but to the estimation of the expected military advantage, which is only one of the components of the proportionality equation.[22] The declarations and reservations to API, as mentioned above, seem to be based on the preference that targeting decisions involving collateral damage (of a certain level) should be made by higher-ranking officers with a certain degree of oversight, for example on the operational level. The declarations make sense from the perspective of a State that wishes to retain the flexibility to conduct a minor disproportionate attack that is linked to a subsequent larger attack with lower collateral damage, thus leaving the attack as a whole (consisting of different phases) proportionate. There is some support for this in doctrine.[23]

However, it is submitted that conducting a proportionality assessment on the operational level alone is insufficient to meet the requirements of the IHL rule on proportionality. Instead, it is submitted that the IHL proportionality rule must be applied on all levels of command and the calculation must be therefore be conducted separately on each of those levels. This is true because restricting the proportionality equation to the operational level is at odds with the conclusion in the previous section that the obligation to conduct a proportionality assessment may rest on very different persons, situated at very different levels of command. Individual soldiers and on-scene commanders may be unable to conduct a proportionality analysis on the strategic or operational level, because there is insufficient information for them on their level. But the same is true *vice versa*: the tactical situation may look very different than anticipated at the operational level. The obligation to conduct a proportionality calculation, even a very basic one, must therefore be placed on anyone who approves, or takes the ultimate decision to execute the attack.[24] As a result, in terms of responsibility and accountability, it depends on the exact circumstances of the attack to determine who required to conducting a proportionality assessment of a planned attack.

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21   See Commentary to the Manual on Air and Missile Warfare, p. 255, See also Schmitt on the Justsecurity blog, The relationship between context and proportionality, 11 May 2015.

22   However, it seems unlikely that the final estimation of the expected military advantage of a certain attack is decided upon by a different person than the proportionality equation as a whole. See also below, Section 11.10.

23   Olasolo suggests that proportionality assessments must be carried out in a broader context than a single attack. He points out that military personnel that can carefully conduct the targeting decision making process is not usually allocated to the platoon- or company-level. He concludes that "the fact that the position favouring the proportionality analysis at the tactical level has gained support in recent years does not mean that IHL currently requires application of the proportionality rule at this level." See Olasolo, p. 179.

24   Presumably, this is the person who in the words of Henderson has "effective control over the attack." See Henderson, p. 235.

The ICRC Commentary to API regarding the precautionary measures confirms the validity of the critique against the approach to focus exclusively on the *overall military advantage* in a proportionality assessment. The Commentary states that "[t]his article [i.e. article 57, (2)(a)(iii)], like Article 51 (Protection of the civilian population), is not concerned with strategic objectives but with the means to be used in a specific tactical operation."[25] The text of the reservations and declarations on the level to decide on the proportionality of an attack, it is submitted, contradicts the IHL obligations for some types of attack, such as operations of Special Forces, operations of infantry units in close combat in an urban area, and of pilots of attack-helicopters. Also, many situations may be envisaged in non-international armed conflicts with small units of a non-state armed group conducting attacks. It must be clear that the IHL proportionality rule applies throughout all stages of an attack in all types of armed conflicts, from the planning to the execution phases, and that there is a continuous need to remain conducting the calculation.[26]

It is therefore submitted that as a minimum, proportionality assessments must *also* be conducted on the tactical level. It may be argued that this assessment is redundant when the on-scene commander is certain that the tactical situation corresponds with what was expected on the operational level. It is submitted that amidst situations of hostilities, that is an extremely exceptional situation. Furthermore, especially if the connection between the separate parts of the attack is unclear, it may be expected that the (in itself disproportionate) collateral damage of the tactical attack will be retaliated, leading to counterattacks with ever increasing levels of collateral damage, spiralling into total disregard for civilian lives.

Therefore, it is submitted, the responsibility for a single attack must instead be on the corresponding level, even when it is part of a concerted attack. Thus, the on-scene commander retains a personal obligation to conduct a proportionality analysis and it is incorrect to dismiss the responsibility of combatants deciding on single attacks to conduct a proportionality equation. Bohrer and Osiel note that denying the tactical level of the obligation to conduct proportionality assessments could lead to "horrific results".[27] However, "the law of tactical proportionality can demand no more in efforts to safeguard civilians than consistent with the measure of discretion that soldiers of lower rank, in those circumstances, actually possess."[28]

Furthermore, it is submitted that an additional proportionality assessment must be made on the operational level because it is possible that an attack may seem proportionate on a tactical level, but proves excessive based on a lack of military advantage to be attained on the operational level, due to earlier successful results of other parts of the same concerted attack.[29]

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25   Sandoz et al., para 2207.

26   Commentary to the Manual on Air and Missile Warfare, paragraph 15 of rule 14, p. 94.

27   Bohrer and Osiel, p. 790.

28   Bohrer and Osiel, p. 792.

29   An example would be a concerted land operation aimed at killing or detaining a certain commander who is expected in a certain area. An attack on a building in that area from which even minor collateral damage is expected becomes excessive

Watkin is of the opinion that since military operations are planned on a strategic level, the military advantage that is sought to be achieved should also be viewed on the corresponding strategic level.[30] This seems in line with the commentary to Additional Protocol I, which says that it is obvious that "an attack carried out in a concerted manner in numerous places can only be judged in its entirety."[31] This approach suggests that even though one particular attack may be expected to cause excessive collateral damage, this attack may nonetheless proceed, provided the attack is part of a larger, concerted military operation, and the overall military advantage of that larger operation is not expected to be disproportionate. A justification that has been put forward for this is the execution of attacks with the object to mislead the enemy. The historic example typically provided to support this interpretation of military advantage is the heavy bombardment on the French shores near Calais, right before the Allied landing in Normandy during the Second World War.[32] The State practice of the United States is also reported to be focussing on the strategic level for the proportionality equation.[33] Also, the Prosecutor of the ICTY has claimed that when discussing integrated attacks, that "[t]he proportionality or otherwise of an attack should not necessarily focus exclusively on a specific incident."[34]

The question may be valid whether the scope of the overall armed conflict plays a role. As Carnahan notes: "[i]n weighing military advantages against civilian casualties, a more restrictive standard might be appropriate for operations in a "limited" conflict, such as Vietnam, than for operations in a "general" war, such as World War II. Such a distinction, however, finds no basis in [API]. (...) If different legal standards are to be applied to the conduct of limited and general wars, then the Vietnamese combatants would have been permitted to conduct themselves and their operations in ways prohibited to their American allies and opponents. Such a double standard for the conduct of "limited" wars would be militarily impracticable."[35] This seems to be a fair conclusion. Of course, when an armed conflict has only reached the level of small border-incidents, the question may be asked whether there is any 'overall' military advantage of an attack in the first place. However, the law does not exclude larger operations to be launched.

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when the commander has already been apprehended by another unit. Therefore, the proportionality assessment on the operational level in this example decisively influences the proportionality assessment of the tactical level. See also Neuman, p. 98, providing the example of a single strike against a power station which cannot be attacked based on a cumulative approach if the enemy would be able to use another power station.

30   Watkin 2007, p. 43-47.

31   Sandoz et al., paragraph 2218.

32   See for example Geiss 2012, p. 77. See also Bothe et al, p. 324.

33   See the discussion in Olasolo, p. 182-183, , quoting Hays Parks 1982 and Carnahan, p. 866. However, Olasolo identifies a trend that also the US is conducting proportionality analysis at an operational level. Olasolo 186-188.

34   OTP Final Report, para 78,

35   Carnahan, p. 867.

The strategic approach could be criticized because it does not seem to be conformity with the words 'concrete and direct'. Also, an inherent threat of the strategic approach seems to be that the "ultimate advantage - the end of the war - appears to have too remote a connection with any tactical operation. The alternative would be to deprive proportionality of all meaning, as it would appear to sanction a strategic nuclear strike, provided the strike was thought likely to bring the conflict to an end."[36] It has also been argued, that it is not justified to conduct only one calculation of the total expected casualties and the anticipated intensity of the campaign for a series of attacks. This would amount to dismissing the significance – or even legality – of single attacks for the reason that these attacks should be seen in the framework of the effect of the total operation.

Watkin states that "the use of a strategic approach in considering proportionality need not be viewed as a means by which conflict will get out of control as along as the analytical framework incorporates an assessment of the effects of the attacks at tactical, operational and strategic levels."[37] In his view, the military advantage of a certain strategic campaign logically also incorporates the calculations of military advantage on the operational and tactical levels. Indeed, the 'overall' military advantage seems to refer not to the war as a whole, but to a finite event.[38] The conclusion may thus be drawn that the 'overall' military objective is meant to refer to the operational level, or the lower strategic level.

The tactical approach does seem less logical when the concept of the targeting of 'systems' is considered. These could be very simple systems: destroying one bridge gives little military advantage if there is another one right next to it. For large networks, such as the communications-systems of the armed forces of the opponent, the destruction of a single component leads to no military advantage whatsoever, leading to the conclusion that certain dual-use military objectives may only be attacked as part of a large and comprehensive system-attack, because they form a part of that system that is a military objective when viewed as a whole.[39]

It is submitted that in many cases, especially when a more or less concerted attack is being planned, it is most adequate to include the 'overall' military advantage in the proportionality equation. However, when there is an attack taking place in a situation where a target has suddenly 'popped up', or when an attack is conducted in response to a sudden enemy attack, there can be no 'overall' military advantage to that attack, and the military advantage of the attack must be viewed on the tactical level. Also, for pre-planned targets, the emphasis on the 'overall' military advantage should not lead to situations in which a total disregard would emerge for the well-being of civilians. Therefore, it is submitted that in addition to a

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36 Hampson 1992, p. 47.

37 Watkin 2007, p.47.

38 Dinstein 2004, p.87, see also Dörmann 2003a, p. 164.

39 See Henderson, p. 201-202, and the quotations used there: in particular the Air Force Pamphlet 14-210 Intelligence, p. 18, http://www.e-publishing.af.mil/pubfiles/af/afpam14-210/afpam14-210.pdf. See also Watkin 2007, p. 46, on the attack on the petroleum, oil and lubricants stock and refineries during the 1991 Gulf conflict.

proportionality calculation on the higher levels of command, there should always also be an evaluation of the military objective to be attained on the tactical level.

In the end, both the strategic and the tactical approach of the military advantage seem at odds with the IHL proportionality rule if they would be the only level on which the military advantage of planned military action is analysed. The fact that the individual deciding on the launch of a planned attack is situated at the tactical, operational or strategic level should not make a difference for the question of whether a proportionality assessment needs to be conducted, including the assessment of the expected military advantage.[40] In addition, the situation in which a certain specific attack that is expected to cause disproportionate results may be justified because it is part of a larger plan, could potentially be used for lower ranking commanders to disregard their obligation to try to minimise the negative effects of their operation to the civilian population. If the tactical commander is supposed to assume that the specific attack he is to conduct is part of a larger plan, he may also assume that he has no duty to conduct a proportionality calculation. This would not do justice to the protective scope of the IHL proportionality rule and could lead to catastrophic results.

Thus, it is submitted that the ground rule is that proportionality assessments must be done on both the operational and the tactical level. The exception to this may be a situation in which three conditions are fulfilled: when the tactical operations are (1) part of an pre-existing plan on the operational level and (2) the tactical commander is aware of the fact that he will encounter a certain degree of *prima facie* excessive collateral damage and (3) the situation as it becomes apparent to the tactical commander in the course of the execution of the operation is as expected in the planning phase.

11.2.3 Proportionality on a Strategic Level

A preference for the application of the IHL proportionality rule on a strategic level seems to emerge from some case-law, as is demonstrated below in Chapter 12. The military advantage sought from operations on a strategic level may be expected to correspond with higher permissible levels of collateral damage. There are diverging opinions in doctrine on this subject. Some writers seem to confuse the IHL proportionality rule on a strategic level with a general comparison ex post facto between the amount of civilian casualties resulting from the operation and the objectives that were achieved.[41] Other authors maintain that to only focus on a strategic level for the calculation of the proportionality of an attack is incorrect.[42] However, simply adding the military advantages on the operational and strategic levels

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40 See also Stone, p. 537.

41 See for example the faulty conclusion by Barnidge on page 181, and the accompanying notes. He, as well as the statements of others he refers to, all refer to the alleged lack of proportionality of Operation Cast Lead as a whole. See also generally Parks description of the Rolling Thunder and Linebacker operations: See Parks 1982 and Parks 1983, and Fenrick with regard to Allied Force, see Fenrick 2001.

42 See also Dörmann 2003a, p. 171.

onto the military advantage expected on a tactical level, as proposed by Neuman, seems overbroad.[43] Attaching military advantage on other levels to the expected collateral damage of a single tactical attack would allow for extensive collateral damage of that single attack. Since at that level also, if not primarily, political objectives are persecuted, this seems to be at odds with the required concrete and direct military advantage.[44] Although State practice shows that the proportionality assessment is also done on a strategic level,[45] this must however not be understood to indicate that the proportionality of the entire conflict must be assessed as part of a single attack. Such a wide interpretation confuses proportionality as understood in the realm of the *ius ad bellum* rules of self-defence with the IHL rule on proportionality.[46]

There may be some confusion in the language used within the military for labelling some military objectives particularly important for an operation on a strategic level. For example, the surface to air capabilities of the opponent would be characterised as such, because disabling the air defences would render the attacker air-superiority.[47] Nonetheless, attacking one 'strategic' objective is an operation on a tactical level, but presumably with a high expected military advantage. If the single attack is part of a larger operation aiming to disable the air defence capabilities of the opponent, the same attack is also part of an attack at the operational level. It is submitted that it in such a situation, it is unacceptable to conduct a proportionality equation exclusively on the strategic level, because such a test would be too imprecise to lend any protection at all to the civilian population. Of course, a proportionality assessment on the grand-strategic level may *also* be necessary to assess the justifiability of the use of force in the *ius ad bellum*,[48] but in IHL it would be incorrect to leave it at that.[49] Thus, it is submitted that the proportionality of an attack should be assessed as a minimum on both the operational level and the tactical level.[50]

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43   Neuman, p. 100.

44   Arai-Takahashi 2015, p. 357.

45   For an example, see Chapter 12 below, in Section 12.2.2.

46   See footnote 73 on p. 19 of the Final Report of the ILA Study Group on the conduct of hostilities and IHL: "The Conduct of the Persian Gulf War: Final Report to Congress, Pursuant to Title V of the Persian Gulf Conflict Supplemental Authorization and Personnel Benefits Act of 1991 (Public Law 102-25) April 1992, at p. 611 seems to reflect such confusion ("An uncodified but similar provision is the principle of proportionality. It prohibits military action in which the negative effects (such as collateral civilian casualties) clearly outweigh the military gain. This balancing may be done on a target-by-target basis, as frequently was the case during Operation Desert Storm, but also may be weighed in overall terms against campaign objectives.")."

47   See for example US Doctrine, Joint Publication 3-30, the Command and Control of Joint Air Operations, 10 February 2014, p. I-3: "Highly sensitive strike missions against longrange strategic targets will generally require a higher level of detailed planning and centralized control"

48   See Chapter 5, Section 5.3.

49   One method of how to measure the proportionality of an attack on the strategic level could be the method that is proposed by Hays Parks 1990 in his article Air War and the Law of War: civilian deaths per ton of bombs. See also Table 2 on page 65 of Fenrick 2000. Fenrick calls this a "very crude indicator of regard for collateral casualties." See Fenrick 2000, p. 79.

50   It may be debated whether this means that the reservations and declarations made by a number of States upon ratification of API, that the 'overall' military advantage must be addressed, should be reconsidered.

In sum: if specific attacks seem to be disproportionate on a tactical level, they should be either cancelled altogether or be checked with the higher headquarters whether the attacks must be seen as part of an operational plan that would result in such a large military advantage. As a result, the rules pertaining to the proportionality equation apply "on all levels of military action and at all stages of the planning and execution of attacks."[51] This is also important since this approach offers a means by which "military commanders at all levels of the chain of command can be held accountable."[52] The conclusion is thus that operations consisting of a string of attacks must be assessed not only on an attack-to attack basis, but a more comprehensive proportionality analysis is required on the respective levels of authority.

11.3 What is an "Attack"?

According to article 51 (5) (b) API, a disproportionate attack is prohibited. Article 57 (2)(a)(iii) and 57 (2)(b) API add that both before and during an attack, precautions must be taken to prevent disproportionate attacks. Therefore, it is relevant to define what according to IHL constitutes an 'attack'.

The concept of an attack is defined in article 49 (1) API as "acts of violence against the adversary, whether in offence or in defence".[53] This concept must be interpreted broadly.[54] That means that an attack covers the use of armed force to damage objects or injure or kill persons.[55] According to Kalshoven, this implies the use of weapons, or in other words, the use of armed force through "violent means".[56] Rogers adds that the threshold of an attack is already passed by the use of his light weapon by a single soldier.[57] This does not imply that any military operation should be regarded as an attack. Military logistic operations or detention operations during armed conflict do not qualify as an attack, because they can generally not be characterised as 'acts of violence'.[58] Dinstein states that "[t]he term attack (...) means any act of violence, understood in the widest possible sense (including a non-kinetic attack), as long as it entails loss of life, physical or psychological injury, or damage to property. Attacks do not include non-forcible acts, such as non-injurious psychological warfare. The line of division between what is permissible and what is not, is accentuated by computer network

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51 Kalshoven 1992, p. 44.

52 Watkin 2007, p.47.

53   It is important to note that the concepts 'attack' and 'armed violence' are also important in *ius ad bellum* where these concepts are used to determine whether a certain use of armed force is legitimate under the law on the use of force by states. The definition of an attack under *ius ad bellum* is however distinct. See Sandoz et al., paragraph 1882, p. 603.

54 Sandoz et al., paragraph 1880, p. 603.

55 Dinstein 2010, p. 1.

56 F. Kalshoven en L. Zegveld, *Constraints on the Waging of War*, ICRC, 4th edition, 2011, p. 100.

57 Rogers 2004, p. 32.

58 Rogers 2004, p. 33. See also Oeter 2008, pp. 175-177.

attacks (CNA). These would qualify as attacks within the accepted definition only if they engender – through reverberating effects – human casualties or damage to property (it being understood that a completely disabled computer is also damaged property)."[59] Nonetheless, the notion of 'attack' is not limited to kinetic force: operations involving chemical, biological or radiological means of warfare are also accepted to qualify as attacks. Decisive are thus the effects of an operation.[60]

It must furthermore be noted that an attack may also include acts of violence 'in defence'. This includes shooting back when one is attacked, but also a more concerted counterattack against an adversary that has attacked first. Outside the ambit of armed hostilities, the military would understand this type of use of armed force as 'self-defence'. The concept of self-defence is however not a useful concept in IHL. The concept of 'self-defence' is used in *ius ad bellum* and could also be a lawful breach of a person's right to life under international human rights law in a law-enforcement paradigm. IHL is however indifferent to the reason why the armed force is used. It simply dictates that during armed conflict, one who defends is, like the attacker, obliged to adhere to the rules of IHL, such as distinction, proportionality and the obligation to take precautionary measures. In addition, the laying of mines is also considered an attack.[61]

According to the next part of the definition of an attack, the armed violence must be directed 'against the adversary'. This implies that the intention of the use of the armed violence is relevant. The idea of this part of the definition is first of all to underline that the use of armed violence may not be directed to the civilian population or civilian objects, but must be directed to the opponent.[62] Conversely, the use of armed violence that is not directed against the enemy would then not be considered part of the definition of an attack. Exceptions to this are indiscriminate attacks, because those fail to distinguish between military objectives and civilian objects or the civilian population. That means that although they are generally not as such 'directed to the adversary', they should still qualify as attacks in the sense of IHL, even as an explicitly prohibited type of attacks.[63] On the other hand, armed violence used during military exercises, or firing weapons at a shooting range, may obviously not be labelled as armed violence directed against the adversary, and thus does not constitute an attack. This would also apply to other types of the use of weapons, such as celebratory fire.

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59   Dinstein 2008, p. 2. As noted in the Tallinn Manual 2.0, Rule 92: "a cyber attack is a cyber operation, whether offensive or defensive, that is reasonably expected to cause injury or death to persons or damage or destruction to objects." Tallinn Manual 2.0, p. 415.

60   Tallinn Manual 2.0, p. 415.

61   Kalshoven and Zegveld 2011, p. 176.

62   See article 51(2) and (3) API.

63   Article 51, (4) API.

It is clear that a direct attack on civilians is prohibited. An interesting issue that may be raised is the connection between the definition of an attack and a warning shot that may be fired. Understood in the classical sense, this is an easy question: by definition, a warning shot is never aimed at the actual target. Therefore, a warning shot is not an attack because it is not directed against the adversary. However, in the context of the conflict in Gaza in 2008-2009, the Israel Defence Forces used the so-called 'knock on the roof' method to warn civilians to leave a certain building. These knocks on the roof would include a minor attack on the building that was to be destroyed, in order to make it clear that an attack on the building was imminent and to persuade the civilians that were present to leave it. It has been argued that these smaller attacks should be labelled as direct attacks on civilians.[64] However, it seems that the better definition of these 'knocks' were in fact – as warning shots – precautions in attack in the sense of article 57 API, and as such, not violations of IHL, or attacks on the military object as such.[65]

11.4 "Incidental" Damage: Expectation and Anticipation

The definition of the IHL proportionality rule states that the collateral damage that is counted in the equation should be 'incidental'. This must be understood as damage that is caused willingly, but not in itself as the primary objective of the attack.[66] Furthermore, as a result of the precautionary obligations, it must be minimised as far as that is feasible.[67] Military planners and commanders may be expected to thoroughly assess what may be expected from a certain planned attack, motivated both by operational considerations and by their obligation to apply the IHL proportionality rule, because unexpected results may be contrary to their objectives.[68] Accordingly, military planners, commanders and operators prefer weapons, munitions and methods of warfare that cause predictable effects.

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64   Human Rights in Palestine and other Occupied Arab Territories, UN document A/HRC/12/48, 25 September 2009, Report of the United Nations Fact-Finding Mission on the Gaza Conflict (Goldstone Report), p. 131.

65   See also Byron, p. 199. See more particularly Van Den Boogaard 2018a.

66   One could wonder whether this means that there could be a difference between different types of collateral damage. Reynolds notes there could be 'involuntary' and 'voluntary' collateral damage. The former could be described as "any unintended, unanticipated effect of an attack resulting from system malfunction, human error or other errant cause." The latter would then be "any anticipated incidental damage or other effect of an attack that is justified under the principle of proportionality." See Reynolds, p. 89. However, this distinction is not useful for clarifying the IHL proportionality rule. Involuntary collateral damage is per definition unexpected. Thus, it cannot be taken into account in the proportionality calculation, simply as a matter of logic. The IHL proportionality rule only requires to take into account what may be expected.

67   See article 57 (1) API: "In the conduct of military operations, constant care shall be taken to spare the civilian population, civilians and civilian objects" and article 57 (2) (a) (ii): "take all feasible precautions in the choice of means and methods of attack with a view to avoiding, and in any event to minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects;"

68   Garraway 2005, p. 3.

The military advantage must be limited to the advantage that is 'concrete and direct'. With regard to the collateral damage, such a limitation is not applicable. The use of the word 'incidental' serves merely to underline that there may not be a deliberate attack on the civilian population and civilian property. The term 'incidental' cannot be understood as an additional qualifier of the 'loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof'.[69]

The question then is which factors those who plan, execute or decide upon attacks must take into account when they examine the information available to them. As the ICRC Commentary to API notes: "[t]he danger incurred by the civilian population and civilian objects depends on various factors: their location (possibly within or in the vicinity of a military objective), the terrain (landslides, floods etc.), accuracy of the weapons used (greater or lesser dispersion, depending on the trajectory, the range, the ammunition used etc.), weather conditions (visibility, wind etc.), the specific nature of the military objectives concerned (ammunition depots, fuel reservoirs, main roads of military importance at or in the vicinity of inhabited areas etc.), technical skill of the combatants (random dropping of bombs when unable to hit the intended target)."[70] Additional factors are the availability of reconnaissance assets by the attacking force (reconnaissance drones, real-time surveillance by special forces, helicopters and other aircraft), the availability of effective precautionary measures (both general and specific warnings), time-pressure (the place and role of the specific attack in the general war-effort). This list is certainly not exhaustive, because the circumstances of every single attack are different. It is an important feature of the proportionality calculation, that it concerns not the *result* of an attack, but what was expected to happen before the attack was launched. A number of States declared specifically upon ratification of API that a decision on proportionality must not be judged with the advantage of hindsight.[71] The ICTY Trial Chamber agreed in its judgement in the Galic Case in 2003. It states that "[i]n determining whether an attack was proportionate it is necessary to examine whether a reasonably well-informed person in the circumstances of the actual perpetrator, making reasonable use of the information available to him or her, could have expected excessive civilian casualties to result from the attack."[72] The applicable standard of the commander's knowledge is thus "that which he reasonably knew under the circumstances."[73] This is true both for the expected collateral damage, as for the military advantage to be obtained. As Canada stated upon ratification

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69 See Geiss 2012, note 77 on page 89. Geiss argues that "The word 'incidental' is certainly broader than the requirements of being 'concrete and direct'.

70 See Sandoz et al., paragraph 2212 on page 684, see also Reed, p. 25.

71 For example, Germany stated that "the decision taken by the person responsible has to be judged on the basis of all information available to him at the relevant time, and not on the basis of hindsight". Similar declarations were also made by Switzerland, Italy, Belgium, The Netherlands, New Zealand, Spain, Canada and Australia. See www.icrc.org for the exact texts of the statements.

72 See the Galic Case, paragraph 58.

73 Bill, p. 136. Bill calls this the 'Rendulic Rule'. Bill states explicitly that the Rendulic Rule is a rule of customary international law and it applies to the IHL proportionality rule. See Bill, p. 151 and 140.

of API: "[i]t is the understanding of the Government of Canada that, in relation to Articles 48, 51 to 60 inclusive, 62 and 67, military commanders and others responsible for planning, deciding upon or executing attacks have to reach decisions on the basis of their assessment of the information reasonably available to them at the relevant time and that such decisions cannot be judged on the basis of information which has subsequently come to light."[74]

The civilian side of proportionality equation is thus based on a combination of expectations, as assessed by a reasonable military commander. Expectations are subjective by definition, yet an expectation may become more objective when there is sufficient information available on the nature of the target and the amount of civilian objects and civilians that are surrounding the target. The availability of surveillance assets and other information sources are therefore important in order to be able to obtain a clear picture of the target and presence of civilians and civilian objects. Also, other objective factors may play a role, such as a temporal component[75] or the type of weapon that is used. A tragic example of how expectation can be deceiving is the attack on the Al-Firdis bunker in Bagdad on 12 February 1991. The expected collateral damage of the specific attack was zero. The US planners reportedly had no knowledge that the families of the military would hide for safety in the bunker at night. As a result of the attack, a considerable number of civilians died.[76]

The fact that expectation is the decisive factor also means that civilian casualties and damage to civilian structures that have occurred by accident, are outside the equation. It may be cynical for the victims of such attacks, that the executors of such an attack never intended for these casualties to happen in the first place. After all, that does not change the damage done, nor does it provide comfort for the lost lives. There is a limit to these accidents of course. It is a fact of life that weapons will sometimes malfunction, or that civilians are present in places they were not expected to be. But when it is known that the used weapon often malfunctions, this does impact the proportionality equation. The same goes for the presence of civilians: if the planner and executor of an attack has to act upon the knowledge that he may reasonably be expected to possess, he is required to examine whether his assumptions are correct. When he decides to be reckless, the responsibility of the attack must be attributed to him. If he is not reckless, but has reasonably come to the conclusion that the attack he plans to execute is proportionate, the damage resulting from that that attack is caused legitimately because IHL allows for these casualties and damage to occur. Of course, also other factors may play a role in the determination of recklessness, such as the question of how much time there is to conduct a planning or an attack, the value of the target and the question of whether the attackers are under fire.

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74 See   https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/Notification.xsp?action=openDocument&documentId=172FFEC04A DC80F2C1256402003FB314.

75 For example, a munitions factory may be expected to contain less civilian workers at night than during the day.

76 See also http://www.hrw.org/reports/1991/gulfwar/INTRO.htm for an appreciation by Human Rights Watch.

As far as the use of weapons is concerned, the expectation of the effect of that weapon plays a role. This means that knowledge is required of the exact effect of the type of weapon that is planned to be used in an attack to be able to calculate the amount of military advantage it may be expected to accomplish, but also the amount of collateral damage that may be expected to result from the attack using that particular weapon. In this regard, the question may be asked whether the expected failure rate of a particular type of weapon must be taken into account. On the one hand, it seems apparent that there is always a chance that a certain weapon will malfunction. This seems part of the reality of warfare and not a factor that a military commander must take into account when he uses a type of weapon or munitions. On the other hand, there also does seems to be a limit to this. Part of this limit is the scale of the planned attack: if the attack is assessed on an operational level, the failure rate and expected percentage of malfunction of a certain type of weapons used in a significant number of single attacks of that operation can be statistically calculated. Resulting collateral civilian damage is thus foreseeable and must therefore be taken into account. The obligation to take this into account may however also present itself on a tactical level. As an example, one could think of some types of cluster munitions. The submunitions of some types are well-known to malfunction for a considerable percentage. When this is known to the commander, he is indeed obliged to take this effect of the weapon into account when he calculates the proportionality of an attack. This means that when using certain types of cluster munitions, the commander will have to take into account that the expected military advantage is decreased because a large number of bomblets will fail to explode upon impact. This will also increase the likelihood of civilian casualties, also on the longer term.[77] Greenwood and Boothby however think that only immediate risks caused by weapons known to result in leaving dangerous explosive remnants of war after their use should be taken into account by the military commander who plans an attack, because "there are too many factors which are incapable of assessment at the relevant time."[78] They argue that these effects are only 'immediate' in the first few hours after the attack, and that the commander does not have to include an expectation on the possible return of civilians to the area. Henderson however states that since cluster munitions are well known to possess a high dud rate, it can be expected that there will be civilian casualties when cluster munitions are to be used in civilian areas.[79] It is submitted here, that it has now sufficiently been established, at least for some types of cluster munitions, that remaining submunitions will pose a threat to the (returning) civilian population, thus increasing expected civilian casualties.[80] Even though the casualties resulting from remaining bomblets may only substantiate in the longer

77   See for example McCormick & Mtharu, p. 206: "Israel's apparent reckless disregard for the rule of proportionality by ignoring the mid to long term civilian damage from unexploded submunitions makes it more difficult for other states to argue that the general rules of international humanitarian law adequately cover the use of cluster munitions and obviate the need for any additional specific prohibition"

78   See McCormick & Mtharu, p. 197.

79   Henderson, p. 210.

80   See for example HRW Report "Civilians under assault" August 2007, p. 47. Available online, see https://www.hrw.org/reports/2007/iopt0807/iopt0807web.pdf.

term and they may be labelled as indirect, these consequences of cluster munitions are nevertheless foreseeable and are thus part of the proportionality equation.[81] The nature of cluster munitions is why these weapons were, and still are, the subject of substantial efforts to prohibit them altogether.[82]

Another issue is the situation when only less-precise bombs are available to an attacker. After all, not all parties to armed conflicts around the world have laser-guided weapons that can be directed to an exact location, thus minimising the collateral damage to civilians and civilian objects. Less-precise bombs may be expected to have a larger area where they may impact, thus the expectance increases that they miss the intended military target at which they were aimed. An example may be the sophisticated weapons that were engaged by the Israel Defence Force against 'katoesja' and other primitive rockets that were deployed by fighters of Hezbollah and Hamas. The fact that these latter armed groups do not have more sophisticated weapons at their disposal does not mean that they are not bound by the same restraints as the IDF is. In theory, the protective value of the IHL proportionality rule seems to benefit from the development and use of increasingly sophisticated weapons – at least more precise and weapons with more limited effects. However, assuming both parties to a conflict conduct a thorough proportionality calculation before an attack, the party with more sophisticated weapons may end up having more potential legitimate targets available to attack, than the party armed with less-sophisticated weapons, because the former may be presumed to have the better capability to limit the expected collateral damage. However, there is a danger here: assuming more targets can be attacked because the weaponry is more sophisticated and thus more precise, this means that the proportionality analysis must be done on a more detailed scale. These details may not be easily anticipated, however. This may in turn lead to an increase of the collateral damage that is expected.

As an additional problematic issue in the identification of that which may be anticipated from a certain attack, the question of the probability of success of an attack should be addressed. Sometimes there is only a limited likelihood estimated to exist in advance that the military advantage that is sought by an attack, will also be achieved. How must this percentage be factored into the total proportionality equation? Suppose it is possible to identify that a certain high-value target is present in a certain house, and 1 civilian. The military advantage of killing him would be very high, and although it is equally likely that the civilian will also be killed, suppose for the sake of argument that this would be proportionate. However, what if, given the circumstances, there is only a 10% chance that the target would indeed be killed, because you know that the target is wearing a bullet-proof vest, while the civilian is not. Does this alter the proportionality equation? When the expected military advantage of an attack is considered, it is obvious that if a relatively small military advantage is sought, the probability that the operation actually will attain this objective, must be larger than in a case

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81   Garraway notes in 2005, in a brief on the issue of cluster munitions that "[i]f it is known that there is a likelihood, or even a certainty, that an attack will leave behind some explosive remnants of war, then that must be factored into the equation." See Garraway 2005, p. 5.

82   Haines, p. 284.

where there is much more at stake.[83] Thus the probability of failure must also be examined, and that includes the failure rate of the means and method that is employed in the operation. It seems logical to conclude that the success of the operation also needs to be taken into account in such a way that the smaller the likelihood of success, the smaller also the amount of collateral damage may be in order for the attack to remain proportional.[84]

There is another danger in the execution of the proportionality equation. Military commanders may intuitively conduct their proportionality equation is such a way that the different components of the equation are not weighed in a sufficiently objective manner, particularly when one of the parties is military superior.[85] In the words of McPherson: "Our tendency when we are in a position of considerable advantage will be to identify with the possible benefits to ourselves and others for whom we have special concern and to dissociate from the costs to persons likely to bear the burdens of use of force."[86] It seems to be a common feature of mankind to become more or less indifferent to the suffering of the adversary. Yet, this kind of indifference is in direct contrast with the whole reciprocal spirit that lies on the basis of IHL. On the other end of the spectrum, it has also been suggested by the Commentary to the 1956 Red Cross Draft Rules, that in case of doubt how large the collateral damage will be, it should be estimated as large as possible: *in dubio pro humanitate*.[87] This statement, however, seems to tip the balance too far to the disadvantage of military personnel. A more helpful suggestion, made by a number of writers,[88] is to include in the equation a 'reversed assumption' whether the commander would consider the attack lawful if the expected collateral damage would consist of civilians of his own side. In this rather simple way, the danger may be avoided that the lives of civilians of the adversary are seen as less valuable than the lives of 'own' civilians would be.

Another factor that impacts on the expected collateral damage and military advantage are foreseeable secondary explosions. This may for example occur when an object is attacked that contains a large number of explosive material. If secondary explosions are reasonably foreseeable, they also need to be taken into account.

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83   McPherson, p. 94.

84   See also below, Chapter 14, Section 14.2.

85   See for example Fenrick 2000, p. 74 and Rowe 2000, p.160: "It is, for instance, common for those who make targeting decisions to exaggerate (albeit unwittingly) the contribution to military action and the military advantage to be gained from a particular bombing mission and, in addition, to expect the 'smart' weapons to produce precision bombing (and thus leave civilians untouched). The reason for this is that Protocol I sets the dividing line between an indiscriminate attack (illegal) and one that is not (legal) on the basis of expectation before the attack is commenced. At this stage of military operations those planning the attack are at their most optimistic and civilians are at most risk. The position has been reached where the well-established principle of distinction between civilian objects and military objectives has been rendered of little practical significance when some military advantage in the destruction of the object is discernible and smart weapons are used."

86   McPherson, p. 94.

87   International Review of the Red Cross, 1956, p. 702.

88   Guisández Gómez 1998, pp. 347-363, see also Henderson, p. 229.

It may be concluded that everything that may be expected to occur as a result of a planned attack must be taken into account as incidental civilian damage or casualties. It is important to note in this context that there are no qualifiers attached to the notion of 'incidental' civilian damage and casualties to be included in the IHL proportionality assessment, in contrast to the military advantage to be taken into consideration, which must be 'concrete' and 'direct'.[89] The extent to which the expected incidental damage is indeed foreseeable and the related issue of the temporal scope will be further elaborated in the next Section.

11.5 Temporal Scope, Directness and Foreseeability

Linked to the difficult concept of the expectation of a reasonable commander dealt with in the previous paragraph, are the issues of the temporal scope of the proportionality equation and the question of how direct the effects must be in order to be included into it. It is already difficult to predict the direct and short-term effects of an attack, but it is even harder to predict indirect and long-term effects, or as they are sometimes labelled: the reverberating effects.[90] The 'reverberating effects' are defined by the ICRC as "the effects that are not directly or immediately caused by the attack, but are nonetheless a consequence of it."[91]

Direct effects are those effects that are expected to be caused by an attack, such as bullet wounds, but also the effects of an explosion: blast, fragmentation, thermal effects against the human skin and the penetration of those within, which causes damage, often enough to expect the death of the person affected by it. However, also the secondary effects of a blast wave caused by an explosion are included, such as fragments of glass and other material that flies through the air a s a result of the explosion, the collapse of buildings, dysfunction of objects (such as damaged vehicles) as well as secondary explosions caused by explosive material located at the aiming point of the attack. There are also effects that are not caused by bullets or explosions, such as laser beams, fire, sound blast and electrical shock, which would also be direct effects of an attack. Reverberating effects may for example be understood to include the effects of flooding caused by the destruction of a bridge, radiation, the unavailability of medical services, outbreak of deceases due to the lack of clean water etc.[92]

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89   See below, Section 11.10.

90   See for example the discussion in http://blogs.icrc.org/law-and-policy/2017/03/02/war-in-cities-the-reverberating-effects-of-explosive-weapons/: "the increasing experience of armed forces in urban combat and greater awareness in the public domain about the interconnectedness of essential services arguably makes it objectively foreseeable that damage to or destruction of essential infrastructure will have certain reverberating effects on essential services, such as health care and water distribution"

91   ICRC report on Explosive Weapons, presentation by Isabel Robinson, p 21. See also Robinson and Nohle 2016, p. 108.

92   See generally Robinson and Nohle, pp. 107-145.

With regard to the temporal scope of the expected effects of an attack, there is no explicit guidance in the text of the IHL proportionality rule. It is however now well settled, according to Schmitt, that "any consequences, even long-term ones, which are foreseeable and likely in light of the information reasonably available to the attacker, must be factored into the proportionality calculation.".[93] Thus the test does not include any *possible* effect, but only those effects that are foreseeable, whenever they may be expected to materialise. The temporal aspect thus does not impose a restriction on the temporal scope of the effects of a planned attack that must be taken into account. Recent treaty law confirms this approach.[94] for the purpose of the IHL proportionality rule.

With regard to the directness of the effects of the planned attack that must be taken into account for the IHL proportionality assessment, a distinction is made between direct-effects and indirect effects. It must be noted in this regard that the rule contains a distinction between the civilian side of the proportionality equation and the side of the military advantage. Since, according to the text of the rule, the anticipated military advantage must be 'direct and concrete', it is necessary to distinguish between those effects that are directly militarily advantageous and those that are indirect, because the latter may not be factored into the proportionality assessment.

For the civilian side, a distinction between direct and indirect effects is irrelevant, because the standard is that of 'foreseeability', not directness.[95] This is supported, for example, by the commentary to the Red Cross Draft Rules of 1956. With regard to the expected collateral damage, it states that "[i]t is reasonable to require an attacker to take into account his assessment of indirect losses and destruction which he could reasonably foresee to occur in the prevailing circumstances."[96] This means that no assessment is required of the number of steps that may be identified between the attack and the foreseeable effect to determine whether an effect is direct or indirect.[97]

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93   Schmitt 2006a, p. 296. See also the ILA Study Group Report: "[t]here is, however, no basis in IHL to impose a certain (absolute) time limit on those indirect effects that need to be taken into account", See ILA Report, p. 25 and the accompanying footnotes 90 and 91. Report available on website of the ILA: http://www.ila-hq.org/index.php/study-groups.

94   See for example article 3(10) of the Amended Protocol II to the CCW: "All feasible precautions shall be taken to protect civilians from the effects of weapons to which this Article applies. Feasible precautions are those precautions which are practicable or practically possible taking into account all circumstances ruling at the time, including humanitarian and military considerations. These circumstances include, but are not limited to:
(a) the *short- and long-term effect of mines upon the local civilian population for the duration of the minefield*;
(b) possible measures to protect civilians (for example, fencing, signs, warning and monitoring);
(c) the availability and feasibility of using alternatives; and
(d) the *short- and long-term military requirements for a minefield*." (emphasis added)

95   See for example the AMW Commentary, p. 91: "there is no dispute that indirect effects cannot be taken into account if they are too remote or cannot be reasonably foreseen"; the ILA Report in ILS, pp. 23-24: "the prevailing view is that indirect effects of attacks must also be considered alongside direct ones."

96   International Review of the Red Cross, 1956, p. 701, original in French: "On peut raisonnablement demander à l'attaquant de tenir compte, dans son appréciation, des pertes et destructions indirectes qu'il peut normalement prévoir du fait qu'elles sont attendues et caractéristiques dans les circonstances données." (translation by the author).

97   See also ILA Report, p. 25.

Thus, 'directness', understood in terms of the closeness or remoteness of an effect connected to a planned attack, is only relevant to determine whether an effect of a planned attack contributes directly to the military advantage.[98] For the determination of the incidental effects, however, the directness of the foreseeable effects is irrelevant, as long as the effect is foreseeable. The commentary to the Air and Missile Warfare Manual notes that: "[t]he members of the Group of Experts could not agree as to what extent (if at all) indirect ("reverberating") effects of attacks have to be factored into the proportionality calculation. In any event, there is no dispute that indirect effects cannot be taken into account if they are too remote or cannot be reasonably foreseen. The Group of Experts could identify no conclusive State practice that settles the issue of indirect effects of attacks."[99] Similarly, the ICRC Guidance on Direct Participation states that "the relevant threshold determination must be based on "likely" harm, that is to say, harm which may reasonably be expected to result from an act in the prevailing circumstances."[100] This expectation for the civilian side is thus arguably a 'but/for test': all effects are foreseeable that one would reasonably expect to result from a planned attack and that would not occur but for that attack.

Foreseeability is nonetheless a difficult concept to be applied to, for example, power grids that are used both by the military as by civilians. Short term-effects of losing the ability to turn on the light or use computers is clear, but qualify as nuisance rather than damage. However, it may also be foreseen that there are reverberating effects on the civilian population because of the lack of power to water purification plants or hospitals. During the 1990-1991 Gulf war, the number of civilian casualties of the actual attacks on the electrical power grids were outnumbered by the civilian deaths that were the result of the longer term results of the lack of power of hospital and water purification facilities.[101] It is clear that the water purification facilities and the hospitals themselves were not object of the attack. In fact they probably did not suffer any damage of the actual attacks. But that does not seem to imply that the nature of the target (in this case: a dual-use target like the electricity grid) and the effects that may have, can simply be ignored.[102] Even though it may be difficult to quantify the exact effects, they can be foreseen. Provided these effects are reasonably foreseeable, they must be taken into account, especially for dual-use objects. However, it seems that it is an inherent subjective factor in the assessment of whether a certain effect of a planned attack is foreseeable.

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98   Reynolds, p. 90: "A distinction could be made between direct-effects and indirect effects of an attack. Direct collateral damage may be defined as "any immediate physical effect incidental to any type of attack." Indirect collateral damage may be defined as "any delayed, long-term effect, including physical, economic, social, public health, political or other effect incidental to any type of attack." See also See Henderson, p. 207-209.

99   Commentary to the AMW Manual, p. 91.

100 Melzer 2009, p. 47.

101 Shue and Wippmann, p. 568.

102 Byron, p. 208. According to Byron, "the longer-term threat to civilians from attacks, particularly on electricity stations, *must* be taken into account when making a proportionality assessment." (emphasis in original text).

11.6 The Civilian Side

The civilian side of the proportionality assessment is composed of a material and a human component. This section deals with the human component and therefore discusses what must be understood by the term "incidental loss of civilian life [and] injury to civilians". A crucial part of the proportionality equation is therefore the question of which individuals qualify as 'civilians' in the sense of article 50(1) API.[103] Here the principle of distinction comes into play. Since armed conflict is waged against the armed forces of the enemy, the civilian population is immune from attack.[104] Civilians should therefore refrain from participating in hostilities, and combatants should distinguish themselves as such. It must be clear that in principle only injury and loss of life of civilians is counted in the proportionality equation, and not injury or loss of life to the military forces of the opponent, even if this was unintended.

The definition of a civilian under international law is formulated in a negative sense: a civilian is any person who does not fit into the categories of article 4(A)(1), (2), (3) or (6) of GCIII and article 43 API.[105] Put simply: a civilian is anybody who is not a combatant. A prominent problem for the definition of the notion of civilians in IHL exists in the law applicable to non-international armed conflicts. The cause of this is the fact that in that context, the notion of combatants is non-existent, at least in the applicable treaty law.[106] The alternative term to be used in a non-international armed conflict is that of 'fighter'. An acceptable definition is proposed by the ICRC, suggesting that "all persons who are not members of state armed forces or organized armed groups of a party to the conflict are civilians and, therefore, entitled to protection against direct attack unless and for such time as they take a direct part in hostilities. In non-international armed conflict, organized armed groups constitute the armed forces of a non-state party to the conflict and consist only of individuals whose continuous function it is to take a direct part in hostilities ("continuous combat function")".[107] These persons retain civilian status for the purpose of protections once they are captured by their opponents, but for the purpose of the protection against direct attack, they have lost this protection continuously for the duration of the armed conflict or until such time the fighters have disassociated from the non-state armed group that is a party to the conflict. Civilians who participate in a more occasional fashion regain their protection against direct attack as soon as they have stopped participating directly in the hostilities and must thus from then on be included on the civilian side of the proportionality assessment.

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103 See also Henderson, p. 206.

104 See for example Rogers 2004, p. 12-13 and Dinstein 2010, pp. 121-124.

105 As phrased in the ICRC Interpretative Guidance on DPIH: "For the purposes of the principle of distinction in international armed conflict, all persons who are neither members of the armed forces of a party to the conflict nor participants in a *levée en masse* are civilians and, therefore, entitled to protection against direct attack unless and for such time as they take a direct part in hostilities." See Melzer 2009, p. 20.

106 For a discussion of the concepts of civilians in non-international law, see the ICRC Interpretative Guidance on DPIH, Melzer 2009, pp. 27-36.

107 Melzer 2009, p. 36.

Customary law indicates that the prohibition to attack civilians exists both in IHL applicable in international armed conflicts and in non-international armed conflicts.[108] Therefore, for the application of the IHL proportionality rule, it is imperative to distinguish between protected civilians and civilians who participate directly in hostilities. Only the former enjoy the protection awarded to civilians and only the latter may be attacked. The difficulty to make an accurate assessment of which civilians then must, and which must not, be included in the proportionality equation is apparent. The ICRC study into the issue of direct participation of hostilities is a clear manifestation of how the issue of direct participation has divided experts in IHL.[109] Although an in-depth study of the issue as such will be omitted for the purpose of this chapter, Section 11.6.1 addresses the specificities of civilian immunity, and the relevance of the notion of direct participation for the application of the proportionality calculation. Subsequently, the focus shifts to a number of difficult issues where there could be doubt on the question of whether an individual should be taken into account in the proportionality calculation. This includes the question of whether the civilians that are taking part in a voluntary or involuntary human shield must be taken into account (11.6.2). Another issue is the question whether the allegiance to one or another party to the conflicts plays a role in the proportionality equation (11.6.3). Finally, the question must be addressed whether individuals who work in a military objective lose their status as a civilian (11.6.4). Before these issues are explored, the nature of civilian immunity deserves some further attention.

11.6.1 Civilian Immunity

Even though civilians may not be attacked directly, IHL acknowledges the unavoidable reality that they may still be affected by armed violence, without a breach of IHL occurring. It must be noted that not any inconvenience for civilians in armed conflict is included in the term 'damage'. It is common understanding that armed conflict causes many unwanted side-effects, such as "inevitable scarcities of foodstuffs and other essentials. Indeed, food, clothing, petrol and additional consumer goods may have to be strictly rationed. Moreover, buses and trains may not run on time; curfews and blackouts may impinge on the quality of life; etc."[110]

Civilians may be affected by an attack because they are relatively close to a military target, because they are inside a military target, because of a misunderstanding of their status or protection, or if a weapons malfunction results in them being hit.[111] Given the definition

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108 See ICRC Customary Law Study, Rule 1, see Henckaerts & Doswald-Beck 2005a, p. 3.

109 Melzer 2009.

110 Dinstein 2012, p. 270

111 Dinstein 1997, p. 6. See also Byron, p. 195, noting an incident in Iraq, where a large number of civilians was killed, and the US and UK forces claimed that this was caused by an anti-aircraft missile that was fired by the defending Iraqi forces.

of an attack, as mentioned above in Section 11.3, defensive military operations that may be expected to cause collateral damage must also be proportionate.

Civilians who participate directly in hostilities, lose their immunity from attack, which is afforded to them in accordance with their civilian status.[112] Therefore, they may be directly attacked. It has been argued that the provision that has codified this concept in API, was "a fairly substantial shift in the balance between military necessity and humanity, with a weighting in favour of protecting civilians."[113] This is particularly due to the fact that the civilians are only liable for attack "for such time as" they participate, and the participation must qualify as 'direct'. For the purpose of the application of the IHL proportionality rule, the question is whether civilians still count in the proportionality equation on the civilian side, or that they have become part of the military advantage that is expected to result from a planned attack. The issue at stake here is the difference between 'protection' and 'status' of civilians.[114] It seems safe to conclude on the basis of the text of API that there are indeed only two categories of status that may be attached to persons: one is either a civilian or a combatant. For the purpose of the conduct of hostilities, it seems self-evident that once the protection against direct attack of a civilian is lifted, due to direct participation in hostilities, the civilian also loses the protection that is awarded by the IHL proportionality rule. That means that although the status remains the same, the civilian does 'change scales' for the purpose of the proportionality scale. This is a complicating factor for the attacking party to the conflict, because it complicates the proportionality equation in the sense that not all civilians of whom the commander expects that they will be affected by the imminent strike, have to be factored in as collateral damage. Also, the commander runs the risk that affected individuals with a civilian status (but not protection) may be exploited as propaganda by the opposing party to the conflict, once the attack is conducted. It is thus submitted that for the purposes of the conduct of hostilities, including the application of the IHL proportionality rule, the focus is more on the protection of the civilian, than on the civilian status.

It has been argued that civilians who have been (but are no longer) participating directly in hostilities, or civilians who have supported the active fighting forces in an indirect manner, must be excluded from the civilian side of the proportionality assessment.[115] Also, it has been proposed that if civilians are voluntarily participating in a human shield, they can under certain circumstances count less than other civilians.[116] It is however submitted that the former proposal is unacceptable and contrary to IHL. Furthermore, it is submitted that accepting the latter proposal would further complicate the (already difficult) proportionality analysis, and finds no basis in the law. If commanders need to take into account not only

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112 Article 51 (3) API.

113 Camins, p. 879.

114 See generally: Dörmann 2003b.

115 Blank and Guiora, pp. 66-67. Blank and Guiora suggests that "[p]ersons who participate in hostilities, or assist those who do so, should be counted as legitimate collateral damage, even if they could not be targeted directly at the moment of an attack, and therefore should not factor into the proportionality analysis as civilian casualties."

116 See Dinstein 2010, pp. 152-155. See also below, Section 11.6.2.

the number of civilians, but also add a certain 'value' to these civilians, or multiply the number of civilians with a certain factor, it becomes even more complicated. Therefore, it is submitted here that it is undesirable to step upon this slippery slope. Individuals either enjoy civilian protection, and are included on the civilian side of the IHL proportionality assessment, or they are not taken into account because they have lost their protection. As such, civilians must be counted equally in the proportionality equation as long they refrain from participating directly in the hostilities. It could be argued that this is in accordance with the general principle that "[a]ll human beings are born free and equal in dignity and rights."[117] While civilians participating in hostilities lose their protection against attack, if they are captured they benefit from all protection of civilians under IHL on the basis of their civilian status. When civilians are known to be sympathetic to the attacked party, or when it is known that they have participated directly in hostilities in the past, they are not eligible for direct attack. Therefore, they must be counted as a civilian on the collateral damage side of the proportionality equation.[118] It is true that if it becomes impossible for a military commander to determine who is a legitimate target, and who is a protected civilian, "his ability to make the necessary proportionality assessments is severely handicapped [and that these] difficulties will correspondingly undermine his ability to carry out his mission within the bounds of the law."[119] Nonetheless, it is submitted that creating a category that is less protected than 'innocent' civilians finds no basis in the law.

This issue raises the question of whether one's own civilians should also be taken into account in the proportionality equation, and how the value of these civilians must be equated to the opponent's civilians.[120] The following situation may be used to illustrate this. If a valuable military target has malfunctioned, such as a combat-helicopter and the enemy is approaching fast, its crew may decide to abandon the helicopter and subsequently call in an airstrike to destroy the helicopter and to prevent it from falling into the hands of the enemy. If however the pilot of the airplane that is tasked to destroy the helicopter notes that the party's own civilians are in the process of stripping the helicopter of its valuable parts, does he need to take the lives of these 'friendly' civilians into account in his proportionality equation? It is submitted that the allegiance of the civilians should not be decisive in the question whether the civilians should be factored into the proportionality equation. After

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117   Article 1, UN Universal Declaration of Human Rights, see http://www.un.org/en/documents/udhr/index.shtml.

118   The suggestion of Blank and Guiora seems to amount to a conclusion that in case there is difficulty in determining which civilians still enjoy civilian protection, this protection must therefore be afforded to them in a more limited way. This is however contrary to the well-established rule of the assumption of civilian status as codified in both treaty and customary IHL. See for example article 52 (3) API. There is no similar rule identified in the ICRC Customary International Humanitarian Law Study, but a brief discussion is included in the rule that regards the protection of civilians who take a direct part in the hostilities. It concludes to say that "one cannot automatically attack anyone who might appear dubious." See also Henckaerts & Doswald-Beck 2005a, pp. 23-24.

119   Blank and Guiora, pp. 66-67. Blank clarified their suggestion to this author in e-mail correspondence to mean that "1) on the battlefield there are more people than just combatants or DPH and then totally innocent civilians and 2) that when there is confusion in determining who is who and what is what, commanders will have greater difficulty making proportionality determinations (and other determinations of course)."

120   See Porat and Bohrer for a view that more value may be attributed to the safety of the own troops than to enemy civilians, as well as a plea to attach more weight to the safety of 'own' civilians than on enemy civilians. Porat and Bohrer, pp. 99-158.

all, this would introduce an additional restraint into the definition of a civilian that is not present in the applicable law. It cannot be said that the civilians are participating directly in the hostilities because they are trying to steal scrap metal for reasons of personal gain. Also when the criteria proposed in the ICRC DPiH Interpretative Guidance are applied, it seems safe to assume that the civilians are not participating in the hostilities because a belligerent nexus is lacking. The challenge the pilot is facing is therefore a balancing act between the relative value of the lives of the civilians and the military advantage that consists of the military advantage that the enemy will not come in the possession of the helicopter.[121]

It is submitted that all civilians should be protected equally by all parties to the conflict.[122] After all, the text of the articles of API that govern the protection of the civilian population during the conduct of hostilities, give no evidence that there could be any differentiation between the nationality or ethnicity of the civilians.[123] The ICRC Commentary to article 50 API supports this conclusion by stating that "[i]n protecting civilians against the dangers of war, the important aspect is not so much their nationality as the inoffensive character of the persons to be spared and the situation in which they find themselves."[124] Therefore, it does not seem logical to differentiate between enemy or own civilians.

One other issue that complicates which civilians should be included in the proportionality equation concerns the fact that in modern military forces, an increasing number of traditional military functions is being performed by civilians. This blurs the status of the military target, but also, the question arises whether these individuals should still be included in the proportionality calculation as civilians, or have become part of the military advantage when they are expected to be affected by an attack, even though they are not wearing uniforms.[125]

11.6.2 Human Shields

Human shields is the practice of deliberately collocating civilians or persons *hors de combat* with military objectives with the specific intention of preventing the enemy to attack these

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121 Arguably, the helicopter's military value is lost once the civilians have removed so many valuable parts from the helicopter, that the enemy will no longer be able to fly it, thus diminishing the military advantage to destroy it. The value of depriving the opponent of the ability to require knowledge about the weapons system may be considered important, however that military advantage is probably only indirect.

122 For a different view, see Dinstein 2016, pp. 159-160.

123 See articles 48-60 API.

124 See Sandoz et al., paragraph 1909, p. 609. It must be noted that there is a clear differentiation between civilians of different nationality in the provisions protecting the civilian population in GIV. The ICTY Appeals Chamber however seemed to water down this distinction. It held that "[...] *hinging on substantial relations more than on formal bonds, becomes all the more important in present-day international armed conflicts. While previously wars were primarily between well-established States, in modern inter-ethnic armed conflicts such as that in the former Yugoslavia, new States are often created during the conflict and ethnicity rather than nationality may become the grounds for allegiance. Or, put another way, ethnicity may become determinative of national allegiance. Under these conditions, the requirement of nationality is even less adequate to define protected persons. In such conflicts, not only the text and the drafting history of the Convention but also, and more importantly, the Convention's object and purpose suggest that allegiance to a Party to the conflict and, correspondingly, control by this Party over persons in a given territory, may be regarded as the crucial test."* ICTY, Tadic Appeals Chamber Decision, 15 July 1999, para. 166.

125 See Parks 1997, p. 109.

military objectives or restrict their options.[126] Unfortunately, the use of human shields has been a frequently recurring tactic in a number of armed conflicts.[127] The use of human shields is a specific violation of IHL[128] as well as a violation of the obligation to take precautions against the effects of attack, more specifically the obligation to refrain from placing military objections in the vicinity of civilians.[129]

Civilians may decide voluntarily to endeavour to shield a military target from attack by their presence, or they may be forced to do so. The question may be asked whether civilians acting as voluntary human shields count differently in the proportionality assessment than those who are forced to do so. The discussion of the protection of civilians participating in a human shield often focuses on the question of whether the participation in a human shield as such constitutes direct participation in hostilities.[130] If the definition of direct participation is followed as it has been formulated in the ICRC Interpretative Guidance on direct participation of hostilities, a human shield does in most cases not qualify as direct participation. This is because there is no direct harm caused to the opponent by the shielding.[131] In those situations, it must be assumed that the civilians do count on the civilian side of the scale.

There is merit in the position that the opposing force must still be reasonably able to wage their war and not be restrained by voluntarily shielding civilians. The 2004 UK Manual on the Law of Armed Conflict states that although the duty of the attacker to take precautionary measures remains in effect, unlawful actions by the opponent "may be taken into account in considering whether the incidental loss or damage was proportionate to the military advantage expected."[132] This approach seems to suggest that the status and protection of the civilians remain unchanged due to their placement as a human shield. The presence of a human shield does not alter the character of a military objective itself: it remains liable to attack. However, a heavier burden is borne by the attacking side to take precautionary measures. The approach of the 2004 UK Manual seems to suggest that the ultimate assessment of excessiveness is relaxed for the commander as a result of the unlawful act of the side of the conflict that uses human shields, decreasing the value attributed to the shielding

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126 Henckaerts and Doswald-Beck 2005a, p. 340.

127 For an overview, see Schmitt 2008, p. 17-21. See also Geiss and Devaney, pp.11-12, Henderson, p. 211-218, and Bouchié de Belle, pp. 883-885.

128 See for example articles 23 GCIII, 28 GCIV, 12(4), 28(1) and 51(7) API, rule 97 of the ICRC Study on Customary International Humanitarian Law.

129 Article 58 API, see also Rule 22-24 of the ICRC Study on Customary International Humanitarian Law.

130 See for example Schmitt 2008, p. 45 and Bouchié de Belle, pp. 893-896.

131 See DPIH Interpretative Guidance, Melzer 2009, p. 56-57: "The fact that some civilians voluntarily and deliberately abuse their legal entitlement to protection against direct attack in order to shield military objectives does not, without more, entail the loss of their protection and their liability to direct attack independently of the shielded objective. Nevertheless, through their voluntary presence near legitimate military objectives, voluntary human shields are particularly exposed to the dangers of military operations and, therefore, incur an increased risk of suffering incidental death or injury during attacks against those objectives". See also Sandoz et al., p. 633, para 1943, and Bouchié de Belle, p. 895, who concludes that the human shield's participation is merely indirect.

132 See the UK Manual of the Law of Armed Conflict, para 5.22.1, p. 68. See also Dinstein 2008, p. 15.

civilians. The updated version of the US DoD Manual has been changed on this point, but still maintains that "[b]ased on the facts and circumstances of a particular case, the commander may determine that persons characterized as voluntary human shields are taking a direct part in hostilities."[133] These civilians are thus discounted in the proportionality equation and it may be concluded that the US understands civilians voluntarily participating in a human shield as assuming a certain risk and therefore to count differently in the proportionality assessment.[134] The ICRC however maintains that any civilian who is not directly participating in the hostilities and who is voluntarily shielding a military objective, must be taken fully into account in the proportionality assessment.[135]

With regard to involuntary human shields, Dinstein, proposes that civilians who are present involuntarily should be "discounted in value"[136] or that in relation to them at least "the test of excessive injury to civilians must be relaxed".[137] This is however a minority view. The better view seems to be that civilians involuntarily shielding military objectives retain their full civilian protection and must be fully taken into account in the proportionality assessment as long as their participation does not amount to direct participation in hostilities.[138]

Ultimately, it is submitted that the suggestion of attributing different values to civilians who voluntarily shield military objectives than to civilians who do not, amounts to accepting that there are different categories of civilians. The law in the Geneva Conventions suggests that this is not appropriate. It may be considered the better view to take all civilians who are part of a human shield into account equally for the purpose of the proportionality assessment, assuming they are not participating in the hostilities.[139] First of all for practical reasons: it is very difficult to determine in practice whether a civilian is shielding involuntarily or not. Furthermore, it may be considered prudent to give civilians participating in a human shield the benefit if the doubt, because if there is uncertainty about the status of civilians, they must enjoy the protection of a civilian, which would include the protection of the IHL proportionality rule.[140]

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133 See the updated US DoD Manual on the Law of Armed Conflict, para 5.12.3.3. For a discussion, see also Haque 2015: https://www.justsecurity.org/27173/human-shields-dod-manual-mistake-one/ and Dunlap, https://www.justsecurity.org/24199/human-shields-dod-law-war-manual-cant-improve-debate/#more-24199

134 See on the civilian assumption of risk and the DoD Manual: Khalfaoui, pp. 251-303.

135 See Melzer 2009, pp. 56-57. See also Pedrazzi, pp. 98-116.

136 Dinstein 2010, p. 131.

137 Dinstein 2008, p. 14.

138 See for example Schmitt 2009, p. 301: he proposes *not* "to relax the incidental injury calculation for involuntary shields [because it] would be to enter upon a normative slippery slope." See also Henderson, p. 215 and Pedrazzi, pp. 98-116.

139 See also Henderson, p. 218.

140 See article 50(1) API.

11.6.3 Physical Injury, Sickness and Mental Harm

It is debatable whether the phrase 'injury to civilians' in the IHL proportionality rule refers to injury in a broad sense, consisting of physical injury, sickness and mental harm, or that the two latter categories are excluded. A literal reading of the IHL proportionality rule provides no further guidance, but a further interpretation of the rule paints the picture that it is not only the physical injury that is taken into account.

That physical injury may be inflicted incidentally to civilians in the context of hostilities goes without saying. Civilians may be hit by stray bullets, by blast and shrapnel through the detonation of explosives and other foreseeable effects of the use of kinetic force. These effects include pieces of glass that fly around as a result of blast waves that shatter windows, injuries resulting from collapsing buildings and fires that erupt as a result of explosions.

The collateral infliction of sickness may not be expected when a grenade is launched in the direction of military objectives where a limited civilian presence is deemed acceptable incidental harm. However, in other scenario's, the infliction of diseases may be highly likely, and therefore foreseeable. The scenarios in which diseases are likely to occur include those carried out with weapons causing severe radiation, such as nuclear weapons; or some chemical weapons causing cancers.[141] In addition, when sewage systems may be expected to get hit incidentally, this may lead to catastrophic diseases, especially when the population is already vulnerable as a result of prolonged hostilities. As explained above, the standard is that of foreseeability.

With regard to the question of mental harm is also included in the assessment of expected incidental harm to civilians, the literature on the subject is limited.[142] One could debate whether the ordinary understanding of physical injury must be understood to also include expected mental harm. If that is the case, foreseeable mental harm must be taken into account.[143] Treaty law does contain indications that intentionally inflicted mental harm to the civilian population is take into account, particularly through the prohibition of terror attacks.[144] To be included into the IHL proportionality assessment, mental harm must amount to more than merely the inconveniences of war, and the fear and anxiety that the conduct of hostilities in the vicinity would instil on the civilian population. But when studies in the realm of psychiatry would show the foreseeability of the expected occurrence of measurable mental harm such as PTSD, there is no reason why this must be excluded on

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141 Admittedly, chemical weapons are banned and their use would as such already be illegal. Nonetheless, the release of chemicals as a collateral effect may significantly affect the health of civilians through diseases.

142 See generally Lieblich 2014, pp. 185-218, Tallinn Manual 2.0, p.108, Schmitt and Highfill and the ILA Report, p. 29.

143 See generally Lieblich 2014, who argues that mental harm can be assessed separately from bodily harm. See Lieblich 2014, p. 188. The ILA report distinguishes between psychological harm and mental harm, suggesting that only the latter must be included because only the latter is "a biological condition that requires medical treatment". See ILA Report, p. 29. It is submitted here that this distinction is not useful: foreseeable, but less severe, mental harm would simply be given less weight in the proportionality assessment than more severe types of mental injury.

144 See article 51 (2) API: "Acts or threats of violence the primary purpose of which is to spread terror among the civilian population are prohibited."

the side of expected incidental injury to civilians.[145] Furthermore, it has been argued that exposure to blast may cause certain concussive effects, resulting in injuries that are in fact physically of character.[146] This traumatic brain injury is invisible, but must be taken into account nonetheless when the state of science is sufficiently advanced to calculate the impact of the use of certain weapons that are known to cause these effects.[147]

It is submitted that in practice, it is not foreseeable for a military commander whether the harm that will be caused by a single strike will also include mental harm or diseases. Therefore, it is submitted, that on a tactical level, the statistical possibility that the planned attack will also cause mental harm or diseases is, depending on the factual circumstances, usually too remote, and therefore not foreseeable. However, it is submitted that the statistical likelihood of causing mental harm and diseases by conducting a large scale operation must be taken into account on the higher levels of command. As Lieblich notes: "[t]his harm can be accounted for prior to the attack by relying, for instance, on prediction models concerning the risk among inured persons."[148] Therefore, from the operational level up, statistics and information about the likelihood of an operation to cause mental harm and diseases must be taken into account as far as that is reasonably possible. This may, for the time being, be a difficult factor to be applied in practice. Nonetheless, it is a foreseeable factor to be taken into account in the practical application of the IHL proportionality rule in larger, concerted attacks, planned on the operational level. As a result, it may be necessary for States to study the foreseeability of collaterally caused diseases and mental harm on the civilian population and include experts in the respective fields into the planning staff for concerted operations.

11.6.4 Civilians inside a Military Objective

A final controversial issue that must be addressed in this section concerning the protection of the civilian population in the IHL proportionality assessment, is that of how civilians who are present inside a military objective must be valued. The often cited example of such a situation is the civilian worker in an arms or ammunition factory.[149] These civilians are by definition more at risk than other civilians, because they are inside an object that in most circumstances qualifies as a military objective.[150] It is also clear that the status of these civilians is not in doubt.[151] They are civilians, simply because they do not qualify as

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145 See also Lieblich 2014, p. 215, arguing that mental harm must be taken into account in the assessment of the IHL proportionality rule.

146 Schmitt and Highfill, pp. 76-81.

147 Schmitt and Highfill, p. 98, noting that to take these effects into account in a proportionality assessment is "[g]iven the current state of science (…) arguably premature".

148 Lieblich 2014, p. 213.

149 See Dinstein 2016, p. 150. See also Khalfaoui, pp. 251-303.

150 Rogers 2012, p. 12. See also the discussion in Henderson, pp. 218-220.

151 But see the discussion in Camins, p. 869-870. The workers inside the ammunition factory were seen as 'quasi-combatants' in the interbellum, for example by Spaight.

combatants. The next question therefore is whether they remain protected, or they lose their protection because they participate directly in the hostilities. Although it must be granted that civilian workers in an ammunition or arms factory, do indeed contribute to the opponents war-fighting and war-sustaining capabilities, it must also be noted that these civilians as such are not participating directly in hostilities.[152] Therefore, "[a]s civilians who take only an indirect part in the hostilities, these workers continue to enjoy protection."[153]

The question remains whether these civilians must be treated any differently than other civilians who are not working in the factory, but who only happen to be close to the military objective. It seems that the civilians of the former category are taking a calculated risk to be near that military objective, since it could be attacked. Henderson takes a clear position in this issue: he concludes that "the injury or death to any particular civilian is of no lesser weight than the injury or death to any other civilian."[154] Given the position taken above with regard to the relative weight that must be attributed to civilians in the case of a human shield, which is shared by Henderson, it is submitted that this is the correct position. This does not mean that the munitions factory may not be attacked. Instead, this places a higher burden on the attacker to take more far-reaching precautions before the attack is launched. This additional duty on the part of the attacker is the result of the objective of the section where the IHL proportionality rule is formulated: it is a protective rule for the civilian population. However, if the attack is deemed to be proportionate, it may proceed. Rogers agrees that "[s]uch incidental damage is controlled by the rule of proportionality."[155] He uses as a similar example, the civilian truck driver who is driving a military ammunition truck. The driver is a civilian, but the truck is a military objective. When the truck is attacked, the driver will subsequently be viewed as proportionate civilian collateral damage.[156]

As Dill notes, the assertion that the IHL proportionality rule would apply differently to civilians who are within a military objective, and thus choose to be subject to a greater danger than those who stay away, is merely an 'intuition', not a matter of law.[157] An earlier version of the US DoD Manual position on civilians inside an ammunition factory misrepresented this, but this has now been corrected.[158]

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152 This issue lead to heated debate during the discussions among the experts. See for example N. Melzer 2005, p. 21-23. However, according to Schmitt, [v]irtually all commentators agree that the workers are civilians who are not participating directly in the hostilities. See Schmitt 2008, p. 53. See also Bothe et al., p. 295: "By being within, or in the vicinity of a military objective, these civilians assume the risk of collateral injury from the effects of attack."

153 Bouchié de Belle, pp. 896-897.

154 Henderson, p. 220.

155 Rogers 2012, p. 12.

156 Rogers 2012, p. 13.

157 See Dill on the Just Security blog, https://www.justsecurity.org/35068/dod-law-war-manual-false-appeal-differentiating-types-civilians/: "It is a powerful intuition that what happens to civilians in war should at least to some extent be a result of their own choices. Crucially, this is an intuition about what the law should be, not about what it is. As an intuition about what the law should be, it is deeply misguided."

158 See particularly Khalfaoui pp. 251-303, and Hathaway, Lederman and Schmitt on the Just Security blog: see https://www.justsecurity.org/35025/lingering-concerns-forthcoming-law-war-manual-amendments/

11.7 What are Civilian Objects?

With regard to the scope of the damage included in the IHL proportionality assessment, it may be noted that any 'damage' to civilian objects counts for something, including loss of functionality.[159] Civilian objects are defined as any object that is not a military objective,[160] therefore it requires defining what is excluded from the proportionality assessment to determine what is relevant for it. Only objects that are not military objectives may be included on the side of the civilian damage in the proportionality calculation. In short: "Once it is subject to attack, the object itself is not collateral damage"[161] Therefore, it is useful to quote the definition of a military objective:

> "In so far as objects are concerned, military objectives are limited to those objects which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage. In case of doubt whether an object which is normally dedicated to civilian purposes, such as a place of worship, a house or other dwelling or a school, is being used to make an effective contribution to military action, it shall be presumed not to be so used."[162]

11.7.1 Civilian Objects and Military Objectives

Objects that may be identified as a military objective because of its nature are objects that have an undoubtedly military character, such as military vehicles or platforms (armoured vehicles, fighter-jets, attack-helicopters). Static examples would include military airfields, military barracks, bunkers or fortresses. As a result of the definition, it may happen that a *prima facie* civilian object must be included on the military advantage side of the proportionality equation because of its location, purpose or use. Objects that may be identified as military objectives because of their location could include strategic points, such as bridges, intersections of important roads or rail tracks, hill-tops or mountain passages. These locations could be non-military of character as such but the location of an object in relation to another location could turn a certain object into a military objective nonetheless. Objects that may be identified as military objectives on the basis of their purpose could include objects that are not of military nature, but that could become military objectives because of their intended future use. The intended use of an object is of course difficult to ascertain. Mere potential future use is not sufficient to qualify as a military objective, because there is no concrete military advantage

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159 See ILA Report, pp. 25-26.
160 Article 52 (1) API.
161 Henderson, p. 207.
162 Article 52 (2) and (3) API.

(yet). Only reliable information regarding the future use of an object could be taken into account. A possible example could be situation where reliable intelligence is available with regard to the intended future use of a civilian airfield, in case the military airfield has been rendered unusable for military airplanes. In this case, its intended future use could lead to the conclusion that the civilian airfield becomes a military objective because of its purpose once the military airfield has actually been attacked.[163] Examples of objects that may become military objectives because of their use are civilian objects where combatants or military equipment are located. This could include the use of civilian houses by combatants as shelter, weapons storage, hideout or shooting position. Another example could be a school building that is used by military forces as temporary barracks, headquarters or weapons storage.

It is important to stress that there is a fundamental difference between the criteria that render military objectives liable to attack and those that are decisive for persons to be liable for attack, as seen above in Section 11.6. For an object to be a military objective it is not only required to have a military nature, location, purpose or use, but in addition, the planned attack must offer a definite military advantage in the circumstances ruling at the time. The test is thus 'two-pronged'. This additional requirement does not exist with regard to individuals: their status as a combatant alone makes them a legitimate military target, to be attacked at all times. The requirement of military advantage will be discussed below, in Section 11.10, because the concept of military advantage is also an important component of the proportionality equation.

It must be noted that the logical result of the two-pronged test for military objectives is that even an object that would be military by nature, would count as a civilian object for the purpose of the proportionality assessment in situations where the second prong of the definition of a military objective is not fulfilled. This could lead to the situation in which a military object which is not a military objective, such as a temporarily inoperable tank or empty military barracks, would have to be taken into account as *civilian* collateral damage when a nearby military objective is attacked. This situation however does not seem to lead to problems in practice because the value that must be attributed to these objects for the protection of the civilian population is arguably zero and these object therefore do not count for any real significant counterweight against the military advantage of the destruction of the military objective that is planned to be attacked.

According to the Commentary to the Red Cross Draft Rules of 1956, the terms civilian loss and damage must be interpreted broadly.[164] Therefore, according to this commentary, in case of dual-use objects, (such as a train station, cultural object or a school), more weight needs to be attributed in a proportionality calculation to damage to certain important civilian objects, even when the object has become a military objective. This would imply that there are different values to be attributed to civilian objects in the proportionality equation: some

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163 See HPCR Manual on air and missile warfare, Commentary, pp. 107-108.

164 "pertes et destructions infligées à la population civile doivent s'entendre dans un sens très large." (translation by the author) International Review of the Red Cross, 1956, p. 701.

types of collateral damage apparently count more than other types. This is supported by the particular rules that apply to some types of civilian objects, such as cultural and religious objects (article 53 API), objects indispensable to the survival of the civilian population (article 54 API) and objects that contain dangerous forces (article 56 API), as well as the example above of the inoperable tank and empty military barracks counting marginally as civilian collateral damage.

It is recalled that for the relative value of civilians, it was rejected that there could be a different evaluation of categories of civilian individuals. For civilian objects, apparently, some civilian structures are more important than others.[165] This may be illustrated by the example of schools. Schools may be attractive to the military because they could be suitable to be used as barracks.[166] However, the importance of education for children is of high value for the civilian population. Therefore, as compared to shops or a community house, in some cases more value must be attributed to collateral damage to schools. Similarly, a residential building in which two families are living must be counted for less collateral damage compared to one in which seven families have their home, assuming similar family sizes. The existence of civilian objects with different values attached to them, does however further complicate the proportionality equation, because it is easier to balance equal entities, than it is to balance unequal ones, even when they are on the same scale.[167]

With regard to the scope of the notion of incidental civilian damage, the question must be asked of whether economic losses and expected displacement of the civilian population also count as collateral damage. In this regard, there is a link with the question of whether reverberating incidental effects must be taken into account. It is submitted that since the applicable standard is that of foreseeability, economic losses and expected displacement of the civilian population which is foreseeable must indeed be taken into account as civilian damage. It must be emphasized in this respect that it depends on the situation whether these effects are indeed foreseeable for the commander in a specific situation: it is important that the application of the IHL proportionality rule remains realistic. The next section addresses the question of the extent to which damage to the environment must be taken into account in the application of the IHL proportionality rule.

11.7.2 The Natural Environment as Part of the Proportionality Equation.

A problem with the interpretation of the component of the natural environment in the proportionality equation is that its interpretation is complicated by the fact that a number of nuclear weapons States are unwilling to accept any rule of IHL that would *a priori* prohibit

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165 See also Henderson, p. 192.

166 Henderson, p. 207.

167 See the report by Human Rights Watch on Schools and Armed Conflict, available online: http://www.hrw.org/sites/default/files/reports/crd0711webwcover.pdf.

the use of these weapons.[168] Outside the scope of nuclear weapons, the two major cases on damage to the natural environment as a result of armed conflict pertain to the use of herbicides in the war in Vietnam[169] and the oil spills that occurred during the Gulf Wars in Iraq and Kuwait.[170]

Except in circumstances where a certain part of the natural environment would qualify as a military objective, the natural environment must be deemed to be of a civilian character.[171] In fact, IHL provides for special protection of the natural environment.[172] This includes provisions on the use of certain means and methods of warfare and the rather general statement that "[c]are shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage."[173] It is worth noting that the provision in article 8 of the Rome Statute that deals with the prohibition of disproportionate attacks in international armed conflicts, also mentions "widespread, long-term and severe damage to the natural environment."[174]

Although there does not seem to be an agreed definition of the term 'natural environment',[175] it is likely for any substantial attack to have some effect on the natural environment. There seems to be no doubt that the protection of the natural environment should, as a minimum, be taken into account during the planning and executive phases of targeting decisions.[176] According to Koppe, this 'duty of care' (or 'due regard') that is part of article 55(1) API, has developed into customary IHL.[177] The treaty provisions of articles 35 (3) and 55 API were declared part of customary IHL in rules 43-45 of the ICRC Customary Law

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168 See for example Boivin, p. 76, and the discussion in the Nuclear Weapons Advisory Opinion, p. 226, para 31.

169 In fact, Blix argues that the background to the provisions now codified in API, "was the widespread environmental destruction which was brought about during the Indochina war through the use of herbicides, bulldozers and extensive bombardment." See Blix, p. 149.

170 Bothe 2007b, p. 237, Schmitt 1997, p. 9-22 and Dinstein 2001, note 3, p. 524, on the oil spills in the Persian Gulf in 1984, during the war between Iraq and Iran.

171 But see Boivin, p. 74-75, who states that "[t]he principle of proportionality also applies to direct attacks against parts of the environment that have become military objects". While this is generally correct, the natural environment itself can in that case no longer be part of the civilian side of the equation, since it is liable to direct attack itself.

172 See articles 35 (3) and 55 of API. See also the ENMOD Convention, that "prohibits the use of the modified natural environment itself as a weapon (as opposed to damage to the environment, dealt with in API). See HPCR Manual on air and missile warfare, Commentary, p. 204.

173 Article 55 API. The initial proposal of the ban was the clause "the stability of the ecosystems", but it was deemed insufficiently explicit. See Blix, p. 150.

174 ICC Statute, article 8(2)(b)(iv). The full provision reads: "Intentionally launching an attack in the knowledge "that such an attack will cause incidental loss of life or injury to civilians or damage to civilian objects or *widespread, long-term and severe damage to the natural environment* which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated". (emphasis added)

175 See the discussion in Koppe 2008, pp. 165-166.

176 See for example Dinsten 2001, p. 524, Boivin, p. 74, Koppe 2008, p. 175 and the HPCR Manual on air and missile warfare, Commentary, p. 207.

177 Koppe 2008, pp. 175-177.

Study.[178] However, the customary character of these rules has since been contested.[179] This discussion is reflected in the Commentary on the HPCR Manual on Air and Missile Warfare:

> "Some members of the Group of Experts were strongly of the opinion that the protection of the natural environment "must" be taken into account when planning and conducting air or missile warfare attacks. In their view, expected collateral damage to the environment, if excessive, requires that any missile or missile attack must be aborted. The majority of the Group of Experts reached the conclusion that such a high bar is not mandated by customary international law and that the 'due regard' criterion adequately reflects the state of the law of international armed conflict today."[180]

Yet, it seems safe to conclude that the natural environment should be taken into account as part of the collateral side of the proportionality equation, because as such, in principle, the natural environment is a civilian object.[181] According to Schmitt, "consensus exists that environmental damage constitutes collateral damage."[182] However, the value that should be attributed to damage to the natural environment for the purpose of the proportionality calculation does not seem straightforward. It may be argued from the definition of the war crime in the ICC Statute, that not any damage to the natural environment should be counted as collateral damage, but only that which is expected to be 'widespread, severe and long-term'. It is notable that for civilians and other civilian objects, there is no such additional requirement. It would imply that damage to the natural environment is not automatically included on the civilian side of the proportionality equation, but only in certain instances, when it is expected that a certain threshold is met, which is that the damage will be sufficiently widespread, severe and long-term. However given the designation of the natural environment as a civilian object, it is submitted that this interpretation would be incorrect. It is on the other hand a reality that the conduct of active hostilities entails consequences for the natural environment. Normally, this damage to the natural environment is not severe enough to add meaningful weight to the civilian side of the proportionality equation. Yet, if the environmental damage caused by an attack is expected to be disproportionate to the anticipated military advantage, it is still prohibited.[183] When damage to the natural environment is expected, it must be ensured that those means and methods of warfare are chosen, that prevent environmental damage as much as possible. Commanders thus particularly need to take expected damage to the natural environment into account when

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178 Henckaerts & Doswald-Beck 2005a, pp. 143-158.

179 See for example Bothe 2007a, pp. 167-168, Koppe 2008, pp. 170-173.

180 See the HPCR Manual on air and missile warfare, Commentary, p. 207.

181 The natural environment should not be seen as a fully independent entity but rather as a prerequisite for the health and survival of the human population. See also Blix, p. 150.

182 Schmitt 2006a, p. 293. See also Koppe 2008, p. 164, Boivin, p. 74, Henckaerts and Doswald-Beck 2005a, p. 145. See however the HPCR Manual on air and missile warfare, Commentary, p. 207.

183 Rogers 2012, p. 234.

they expect the consequences of a planned attack to be widespread, severe and long-term, because an additional layer of IHL protection needs to be taken into account on that situation. However, as long as the expected damage to the natural environment fails to satisfy the additional requirements, it is taken into account as damage to regular civilian objects. Nonetheless, "[I]n order to satisfy the requirement of proportionality, attacks against military targets which are known or can reasonably be assumed to cause grave environmental harm may need to confer a very substantial military advantage in order to be considered legitimate. At a minimum, actions resulting in massive environmental destruction, especially where they do not serve a clear and important military purpose, would be questionable."[184]

11.7.3 Dual-use Objects and Proportionality

'Dual-use object' is as such not a term defined in IHL rules,[185] but it may nonetheless be used to describe objects that are used by both the civilian population and by the military. These objects become military objectives as a result of such military use, provided these objects also satisfy the second prong of the definition of a military objective. Therefore, these objects lose protection against direct attack as civilian objects. The status of dual-use objects is thus dependent on their concrete use.[186] Examples of dual-use objects include roads, bridges or railroads that are normally used by civilians but are also used during armed conflicts to transport military equipment or personnel. Airports that are simultaneously used by military and civilian aircrafts are another example. Some dual-use objects are under certain circumstances essential to both the military and the civilian population, such as oil production facilities, electricity generation facilities and grids.[187] It is important to stress that the mere use of an object simultaneously by civilians and the military is not sufficient to identify it as an object that may be attacked. As becomes clear from the wording of article 52 (2) API, there is an additional requirement. In order to become a legal military objective, it needs to be ascertained that a definite military advantage is to be gained under the circumstances ruling at the time, and subsequently, the proportionality calculation needs to be conducted. Watkin notes that the term dual-use objects is problematic because the term masks the fact that an object is either a valid military target, or a civilian object that is not liable for attack.[188] It seems that the special characteristic of a dual-use object is that if it is attacked, it "inevitably affects the civilian population"[189] and thus "the attack on a dual-use object can be considered as the attack on a military objective with collateral damages."[190]

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184 ICTY OTP Kosovo report, para 22.

185 Sassòli and Cameron, p. 57.

186 Kolb and Hyde, p. 132, see also Benvenuti, p. 516 and Sassòli and Cameron, pp. 57-58.

187 See Watkin 2007, p. 16, Dörmann 2008, p. 87.

188 Watkin 2007, p. 16.

189 Dörmann 2008, p. 87.

190 Sandoz 2002, p. 273.

Dual-use objects may thus 'change sides' in the proportionality equation as soon as the military starts using it or weigh in partly on both sides of the proportionality equation. This last point does not seem straightforward, because it means that even though a certain object has been identified as a military objective, it nonetheless also counts partly on the civilian side of the proportionality equation.

It is clear that the simultaneous use by civilians and the military of a dual-use object will put a larger burden on the attacker. The military advantage that may be gained must be sufficiently high in order to prevent the attack from being disproportionate. Especially when there are many civilians present in the vicinity of the object, additional precautionary measures may be necessary. As long as the object is still also used by civilians, the remaining civilian characteristics should not be discounted altogether on the civilian side of the equation.[191] The object itself has lost its protection from direct attack, but "the loss of the civilian function also performed by that object cannot be allowed to disappear from all calculations as if it had never been performed."[192] An example may illustrate how this may be dealt with in practice:

Suppose during an armed conflict a section of a large bridge crossing a big river is used as a cover for a military objective by nature, such as a surface-to-surface multiple launch rocket system (MLRS) and its crew. The bridge is therefore now used for a clear military purpose, and makes an effective contribution to the military action because it is expected to be used in the ongoing struggle between the parties to the conflict. The bridge is normally used for civilian purposes and therefore it would be a civilian object if not the MLRS was hidden underneath. It is clear that possible harm to civilians as a result of the fact that they happened to be driving their car over the bridge at the time of the attack on the MLRS, may be foreseen as counting as incidental damage. The question now is whether the damage to the bridge itself and the indirect effects this may have on the civilian population, must also be taken into account as incidental civilian damage. It seems to this author that the use of the bridge as cover for the MLRS, that particular section of the bridge has lost its protection as a civilian object. That is not to say that the entire bridge has now become a military objective, but the section that serves to hide the MLRS has and therefore it has lost its protection as a civilian object. As a result, the direct damage done to the bridge when planning the attack on the MLRS should not be taken into account as incidental civilian damage. However, foreseeable indirect effects the attack on the bridge may have for the civilian population, depending on the circumstances ruling at the time, must be taken into account.

It may be noted that the solution as proposed in this section is also of use for cultural objects that have become military objectives, because it would enable, if not require, the attacking side to take the cultural value of a military objective into account.[193]

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191 Dörmann 2008, p. 87: "the civilian part of the object affected by the attack, including foreseeable reverberating effects, must be counted among the incidental civilian damage in addition to the possible civilian damage to civilian property in the vicinity."

192 Shue and Wippman, p. 565.

193 See the discussion in the Chatham House Report on proportionality, Gillard, p. 35.

11.8 Combatants *Hors De Combat* and Other Protected Persons and Objects

The previous section addresses the civilian side of the proportionality equation. Civilians, including those who are wounded, sick or detained as well as civilian objects are incorporated into the proportionality equation on the basis of their civilian status. Excluded are civilians who participate directly in hostilities, because they have lost their protection against direct attack for such time as they directly participate. Nonetheless, one may wonder whether categories of persons and objects must also be taken into account without a *prima facie* civilian status, but which are specifically protected or exempted from direct attack nonetheless. The first example of such persons is the category of combatants or fighters *hors de combat*, such as wounded, sick, shipwrecked and captured soldiers. Equally to civilians, they may (no longer) be attacked. The question may be raised whether these persons must therefore also be included in the civilian side of the proportionality equation. Secondly, the same question may be asked for military medical personnel and military chaplains, because they are not combatants, although they are clearly not civilian either.[194] Similar questions may arise with regard to specifically protected objects, such as military medical installations and holding facilities for prisoner of war or detained opponents. It must be noted that there are absolute protections in the Geneva Conventions prohibiting the attack of these objects. Nonetheless, it is unclear what could happen if they may be affected as collateral damage to an attack on a military objective, or in a situation where these objects have become military objects.

The text of the IHL proportionality rule is clear and refers only to civilians and civilian objects. Furthermore, the articles containing the IHL proportionality rule are placed in Part IV of API, which has as its topic the "Civilian population". The protection of medical personnel is covered in Part II of API (title: "Wounded, sick and shipwrecked"), and the rules regarding combatants in part III ("Methods and means of warfare - Combatant and prisoner-of-war status". A logical inference thus seems to be that the decisive criterion according to the proportionality equation, is the question whether the person or object is of a civilian character.[195] As noted above, civilians are defined as any person who does not fit into the categories of article 4(A)(1), (2), (3) or (6) of GCIII and article 43 API.[196] Damage to military medical objects, and injury and loss of life to medical military personnel, military chaplains and military personnel *hors de combat* thus seems *prima facie* excluded from the proportionality equation, because they are not of a civilian character and not included in the categories referred to in the previous sentence. The 2016 update of the United States Department of Defense Manual explicitly excludes non-civilians from the proportionality rule and instead

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194 See generally also Gisel 2013, pp. 215-230.

195 Henderson, p. 206. However, during an expert meeting on the principle of proportionality on 27 October 2018 in Chatham House, London, one expert noted that not too much weight should be attached to the placement of the IHL proportionality rule in this part of API, because this was not viewed as decisive during the drafting of the rules.

196 As phrased in the ICRC Interpretative Guidance on DPIH: "For the purposes of the principle of distinction in international armed conflict, all persons who are neither members of the armed forces of a party to the conflict nor participants in a levée en masse are civilians and, therefore, entitled to protection against direct attack unless and for such time as they take a direct part in hostilities." See Melzer 2009, p. 20.

refers to precautionary measures.[197] In doctrine, Henderson and Merriam make the point that only civilians are part of the IHL proportionality equation.[198]

Although it must be admitted that combatants and fighters *hors de combat* and military medical personnel and chaplains are uniformed and are part of the armed forces, it must also be born in mind these categories of persons enjoy strong protection under IHL.[199] Including wounded soldiers and medical personnel into the civilian side of the equation would presumably increase their protection, which would be a result that would be in accordance with many well-established rules and principles of IHL. A situation may for example be envisaged, where a legitimate military objective, for example military equipment of high importance,[200] is located adjacent to a medical unit where many wounded soldiers and their care-takers are present. Of course, medical installations and equipment enjoy a high degree of protection,[201] and the presence of a military objective adjacent to it is a violation of IHL. Is the military commander who is planning an attack on the military equipment required to include the persons present near the military objective into his proportionality assessment? Or are these categories of persons simply ignored in the application of the IHL proportionality rule when attacking the military objective?

There is some State practice that indicates that protected persons or objects other than civilian ones are included in the proportionality equation. For example, the Military Manual of New Zealand refers to the "possible harmful effects upon protected persons and objects."[202] Similarly, the updated Commentary to GCI argues in favour of the inclusion of wounded members of the armed forces into the proportionality equation.[203] In doctrine, the

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197 See DOD Manual, para 7.3.3.1 on p. 441 and 442: "The respect and protection due to the wounded, sick, and shipwrecked do not prohibit incidental damage or casualties due to their proximity to military objectives or to a justifiable mistake. Combatants who are wounded, sick, or shipwrecked on the battlefield are deemed to have accepted the risk of death or further injury due to their proximity to military operations."

198 Henderson, p. 206, and generally Merriam on the justsecurity blog: see https://www.justsecurity.org/31905.

199 ILA Report, p. 27. See for example for wounded and combatants, article 12 (1) GCI: "Members of the armed forces (...) shall be respected and protected in all circumstances."

200 For example an anti-aircraft installation.

201 See article 21 and 22 of GCI. Particularly, their protection against attack is absolute and not to be lifted, unless they are used to commit acts harmful to the enemy and a warning to stop those acts is ignored.

202 See ICRC Customary Law Study, Practice (Volume II, Part I), Henckaerts & Doswald-Beck 2005b, p.302. See also the ILA Report, footnote 97 on page 28.

203 2016 updated ICRC Commentary to GCI, para 1357: "in view of the specific protections accorded to the wounded and sick, namely the obligation to respect (and to protect) them in all circumstances, a fortiori they should also benefit from the protection accorded to civilians. In other words, if civilians are to be included in the proportionality assessment all the more so should the wounded and sick. Indeed, if the wounded and sick were not to be considered for purposes of the proportionality principle, their presence in the vicinity of legitimate military objectives would be legally irrelevant. However, this would contradict the explicit obligation to respect them in all circumstances and the basic rationale of according special protection to them. It would be unreasonable to consider that direct or indiscriminate attacks against the wounded and sick would be strictly prohibited and would amount to a grave breach, while incidental harm and even excessive incidental casualties would not be prohibited. Accordingly, the presence of wounded and sick members of the armed forces in the vicinity of a military objective is to be taken into consideration when carrying out a proportionality assessment prior to an attack. In addition, and on the basis of the same rationale, an attacker must take precautions in accordance with Article 57 of Additional Protocol I in relation not only to civilians but also to wounded and sick members of the armed forces, to protect them from direct attack and collateral damage."

position to include protected persons other than civilians into the proportionality analysis is posited by a number of authors.[204]

Civilians who are directly participating in the hostilities do not count as incidental casualties during their direct participation, but once they have become wounded, they are always included in the proportionality assessment for the purpose of a planned attack on another military objective in their proximity. The first reason for this is the fact that they never lose their status as a civilian for the purpose of their treatment after they are captured, but that only the accompanying protection against direct attack is suspended until their participation has ended. Secondly, it may be assumed that the direct participation in the hostilities of the civilians has indeed ended as soon as they are *hors de combat*. As a result, civilians who are directly participating are included in the proportionality calculation. To exclude those permanently participating in the hostilities thus seems to imply that their protection is lower after they are rendered *hors de combat*, even though there are no reasons of military necessity to justify this.

Medical personnel generally enjoy a higher level of protection than 'ordinary' civilians. For medical personnel, there are no convincing reasons that explain why civilian medical personal would factor into the proportionality equation, and military medical personnel would not. In practice, their tasks are mostly identical. The only relevant differences between the two categories of persons is that the institution that pays their wages differs and that military medical personnel may be armed with small arms for self-defence purposes. Moreover, it seems impossible in practice to take the differences in protection into account when a medical installation that is expected to be affected by an attack on a nearby located military objective contains both wounded civilians and wounded combatants, and both military and civilian medical personnel.

It is submitted that the protection under IHL of persons *hors de combat* and medical personnel is simply too strong to ignore this category of persons altogether. A number of legal bases for this conclusion have been suggested, including the specific articles that provide specific protection to the different categories of persons and objects, assimilation into the categories of 'civilians and civilian objects' as included in the IHL proportionality rule and the invocation of the Martens Clause and general principles of IHL.[205]

The approach by Corn and Culliver is that it is simply irreconcilable with the practice of the conduct of hostilities that attacking forces constantly need to take into account the wounded opponents made by an earlier attack on the military objective. It is submitted that this approach is unconvincing, because it confuses the principle of the proportionality calculation during such a situation with the actual outcome of the equation. In the example used to illustrate the issue, Corn states that it is incompatible with the attack on entrenched Iraqi forces that are about to be enforced by other forces, to take the wounded into

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204 See ILA Report, pp. 27-28, Bartels 2013, p. 304, Corn and Culliver, Gisel and Kleffner 2017 (blog). Note however that except for Bartels and Culliver, the other authors, including the present author, were part of the ILA Study Group responsible for drafting the ILA Report. See also the Sanremo Manual on International Law applicable to Armed Conflicts at Sea, para 13.9.

205 See specifically: Gisel, pp. 221-226, Corn and Culliver, pp. 464-466 and Kleffner 2017 (blog).

account.[206] It is submitted that the wounded must nonetheless be taken into account and balanced against the military objective to decisively destroy the military objective. This does not necessarily "require the US commander to postpone a subsequent attack decision in order to first conduct a proportionality assessment to protect the wounded Iraqi soldiers and military personnel in the target area". In this example, the proportionality assessment can be done on the spot and does not need to take hours, given the direct and concrete military advantage that is at stake. Furthermore, (additional) wounding or killing enemies *hors de combat* and military medical personnel decreases the expected military advantage in the long run, because affecting them will turn into disadvantage for all parties to the conflict. After all, as a result of the reciprocal character of IHL, it is detrimental to the protection of their own military personnel *hors de combat* and medical personnel if massive numbers of protected persons are killed during an attack on an otherwise legitimate military objective that only causes minor civilian collateral damage. As far as medical personnel is concerned, it may be added that both the attackers as the defenders would benefit from their work and therefore causing injury or death to them during an attack on a legitimate military objective decreases the military advantage of an operation.

With regard to objects, Gisel makes the point that the category of civilian objects consists of all objects that do not meet the definition of a military objective. Since this definition for objects is two-pronged, in contrast to the definition of combatants and members of a non-State armed group with a continuous combat function, the *military* medical installations and arguably also *military* detention facilities for detained opponent fighters must be designated as civilian objects. For this reason, they are covered by the protection of the IHL proportionality rule.[207] Although this seems confusing, given the fact that these objects are certainly 'military' in the ordinary meaning of the term. Nonetheless, it is submitted that these objects must be included in the proportionality assessment nonetheless, as is equally done to civilian objects (again, using the word civilian in its ordinary meaning).

In the end, it is not the status of a person or object that invokes their protection by the IHL proportionality rule, but the protection it enjoys at the moment an attack is planned. Any person or object enjoying protection against direct attack, as can be reasonably foreseeable for the attacker, must be included on the civilian side of the proportionality assessment. It is submitted that this is also what any reasonable military commander would do on the basis of common sense.[208] The legal basis for this conclusion is the respective specific protectionary rules of IHL, reinforced by the IHL principle of precautions and the broader IHL proportionality principle (as opposed to the IHL proportionality rule) as described in Chapter 9.[209]

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206 Corn and Culliver, pp. 456-457.

207 Gisel, p. 219-220.

208 According to Merriam, the US CDE methodology does take specifically protected persons and objects into account: "at least in the US, our collateral damage estimation process requires us consider not only civilians, but also other specially protected persons or objects. But that collateral damage methodology is a process, which is not the same thing as a position on the law." See https://www.justsecurity.org/31905.

209 Here, the positions of Corn and Gulliver, based on the Martens Clause, and Kleffner (see Kleffner 2017 (blog)), based on the General principles of IHL, seem to be in agreement with each other and congruent with the position taken above in Chapter 9.

11.9 How to Evaluate a 'Combination' of Incidental Loss of Civilian Life, Injury to Civilians and Damage to Civilian Objects?

Having analysed which civilian individuals and objects must be taken into account in the proportionality calculation, a next question is how the 'combination' of incidental loss of civilian life, injury to civilians and damage to civilian objects should be calculated. Even though the IHL proportionality rule is not a mathematical formula, it seems safe to conclude that at least to determine the absolute total amount of collateral damage, a simple sum of the totals of expected casualties and total damage to civilian objects could be calculated. It may be more difficult to compare the relative totals of collateral damage when different means and methods of attack may be used in an attack. This would necessitate the assessment of the relative value of the components of the expected collateral damage.

It has been suggested that the value of the damage to civilian objects should be discounted.[210] The rationale of this approach seems to be that both in the statements of States and in the media, the emphasis is always on human casualties, not on destroyed civilian property. Although it seems correct that this emphasis is prevalent, it is submitted that this does not imply that there is no legal obligation to include civilian objects in the proportionality calculation. It rather indicates that civilian casualties should be counted more than damage to civilian objects. It is submitted that this is indeed the way the two components of civilian harm must be interpreted, but this is not unlimited. In particular, when some objects are indispensable for the survival of the civilian population in a particular area, or when it may be expected to contain dangerous forces leading to more foreseeable civilian death and injury, arguably, more weight may be attached to the object than to civilians who are expected to be affected by the attack directly.

Obviously, injury is normally less severe than death, since one still has a chance for recovery, which may be assessed on the basis of recognised medical criteria. Yet, the IHL-principle prohibiting serious injury or unnecessary suffering (the SIRUS Principle) paradoxically points in a different direction. The principle dictates that some types of weapons and methods of warfare are prohibited under IHL because the injury they cause is deemed to be superfluous and the suffering this causes unnecessary. This principle leads to the effect that sometimes a certain non-lethal weapon may not be employed against the adversary, because it is outlawed through the application of the SIRUS principle, such as permanently blinding laser-weapons. Thus, instead a means or methods of warfare may need to be employed that will lead to more civilian collateral damage. However, paradoxical as this may seem, it is the legal reality a military commander has to deal with in the conduct of his operations. Military commanders are generally used to be guided in their actions by the law and additional restraints like rules of engagement.

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210 Watkin 2007, p. 13. See also Parks 1997, pp. 97-98: "[t]he record of concern for collateral damage to enemy civilian property is virtually nonexistent, suggesting that the pairing up of protection for lives and property in Additional Protocol I may not even see application in future conflicts."

With regard to civilian objects, it may be argued that it is too simple to qualify damage to civilian objects only in the monetary value of rebuilding the object. After all, the destruction of some civilian objects is less severe than that of others. The destruction of civilian objects that are indispensable for the survival of the civilian population is placed in a more important category by the Geneva Conventions.[211] In addition, the collateral destruction of a modern shopping mall, it could be argued, is not such a great loss as the destruction of unique and irreplaceable cultural property would be. As an example, one could compare the loss of a modern shopping mall to the destruction of the ancient Buddhas of Bamyian by the Taleban government of Afghanistan in 2001.

Another question is how injury to civilians and loss of civilian life may be valued as compared to damage to civilian objects on the longer term. It would seem, as noted above, that loss of civilian life is always more severe than damage to an object. This my however change if the expected damage to the civilian object will inevitably lead to significant loss of civilian lives on the long term. There is unfortunately no universally accepted method of measurement available to solve this issue and the situation is very different for every single attack. It will therefore be a separate evaluation for every attack that is planned or executed. It is therefore impossible to provide more clarity for this component of the equation other than flagging the issue. It must be left to the discretion of the military commander to evaluate how the combination-calculation must be executed for a future planned attack.

11.10 The Military Advantage Side

The concept of 'military advantage' is both part of the proportionality equation as an important component in itself, and as part of the definition of a military objective, which also dictates whether an object is a civilian object. The meaning of the phrase 'military advantage' for the determination of an object to be a military objective is, however, not necessarily identical to the definition of the military advantage that needs to be factored into the proportionality analysis.[212] For example: in the latter case, the security of the attacking force may be taken into account, as is discussed below in Section 11.10.3. This is not the case for the determination of whether the destruction of a military objective leads a definite military advantage. Obviously, for the identification of an object as a military objective, there is no assessment required of the civilian damage that may occur in the destruction of that object, because this is part of the proportionality equation that will need to be conducted in the next phase of the targeting cycle. The threshold for the concept of military advantage for the purpose of identifying a military objective, it is submitted, is thus rather low. This type of military advantage may be defined as "any consequence of an attack which directly enhances friendly military operations or hinders those of the enemy" under the circumstances ruling

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211 See art 54 API.
212 Contra: Watkin 2007, p. 18.

at the time.[213] It must be borne in mind, however, that the question whether this military objective may actually be attacked, is subject to additional requirements, such as the proportionality calculation and precautionary measures. Therefore, the appreciation of the military advantage that will arise from a certain attack says nothing in itself, because it depends on the counterweight of the expected collateral damage whether it is sufficient to execute the attack

It is also important to note that the notion of 'military advantage' does not equate 'military necessity'.[214] If it is deemed that an attack may result in some type of military advantage, that does by no means result in the conclusion that an attack is military necessary. The mere fact that something *could* be attacked, does not mean that it *must* be attacked.

11.10.1 Concrete and Direct Military Advantage

The IHL proportionality rule puts the additional qualifiers of 'concrete', 'direct' and 'military' to the assessment of the advantage of an attack. These qualifier clearly place extra limitations on the extent to which effects of a planned attack may be factored into the IHL proportionality assessment. These factors imply that there must be a measurable effect[215] with a "close connection between the action and the attainment of the military purpose."[216] Clear examples of military advantageous results that may be expected from an attack are the ground that is conquered by the attack or the effect on the opposing forces, both in terms of casualties and damage to the objects and installations of the enemy.[217] However, military advantage may be deemed to be somewhat broader.[218]

A definition of military advantage that may be included in the proportionality equation is formulated in Rule 1(w) of the ICPR Air and Missile Warfare Manual: "'Military advantage' means those benefits of a military nature that result from an attack. They relate to the attack considered as a whole and not merely to isolated or particular parts of the attack." This military advantage must be sufficiently tangible: "[t]he advantage concerned should be substantial and relatively close"[219] It cannot be "based merely on hope or speculation."[220] Military advantage cannot include advantage which is only political, psychological, economic, financial, social or moral in nature.[221] There is no debate on the fact that the notion of military advantage is comprised of a wide range of tactical gains and military considerations.

213 Commentary on the Harvard Manual on Air and Missile Warfare, p. 45.
214 See generally Redse Johansen, pp. 271-308.
215 Watkin 2007, p. 22.
216 Hampson 1992, p. 47.
217 Sandoz et al., para 2218, p. 685.
218 Watkin 2007, p. 19. Geiss 2012, p. 77.
219 Sandoz et al., para 2209, p. 684.
220 Commentary on the Harvard Manual on Air and Missile Warfare, p. 92.
221 Commentary on the Harvard Manual on Air and Missile Warfare, p. 45.

Furthermore, the components of that military advantage "need not necessarily derive from the destruction of the specific object under attack [but] may be considered cumulatively."[222] Military advantageous effects may be valued in terms of importance (strategic, operational or tactical advantage) and in terms of urgency (urgent advantage, moderate advantage, distant advantage). Whether the terms 'concrete and direct' mean that there must be a single 'causal step' approach or rather must be defined in terms of a temporal link is debatable and depends highly on the type of military objective subject to attack. There is no single formula outlining how the concrete and direct military advantage must be evaluated in relation to the underlying plan, or commander's intent. The elements of crimes explaining the meaning of the 'overall' military advantage as included in article 8(2)(b)(iv) of the Rome Statute of the International Criminal Court refer to "a military advantage that is foreseeable by the perpetrator at the relevant time. Such advantage may or may not be temporally or geographically related to the object of the attack."[223] Finally, it needs to be emphasised that the probability of success of a planned attack plays a role in the proportionality equation: the probability of a high military advantage may not result in a reckless attack.

The ultimate limit to military advantage is that military advantage cannot be attributed to damage to civilian objects and civilian casualties. This is why the morale of the civilian population cannot be deemed to amount to a military advantage.[224] Military advantage may also be derived from the blockade of a transportation route or a communication line. These types of objects may often be 'dual-use' objects. Therefore, the military advantage that is achieved by attacking these objects, also determines whether the objects qualify as military objects in the first place. Similarly, the military advantage that results from attacking objects that support the economic sustainability of the enemy, may only become part of the military advantage if the armed conflict has developed into a situation where it is expected to become a conflict that will stretch over a longer period of time. If not, economic targets must be deemed to be insufficiently 'military' to be part of the military advantage of a planned attack and the military advantage that is thus attained is too indirect to be included in the proportionality calculus.

For some types of military operations, such as counterinsurgency operations, the military advantage also consists in part of protecting the civilian population against the dangers of attacks. In this type of operations, attacking an enemy may be dependent not only on its status as a targetable individual, but also on the "how much harm the targeted insurgent could do if allowed to escape."[225] It is thus also the conduct, not only the status of the individual that must be taken into account in this specific type of operations.

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222 Geiss 2012, p. 77.

223 Dörmann 2003a, p. 161.

224 On this subject, see for example Sassòli and Cameron's discussion of Dunlaps and Meyers proposal to include civilian objects into the list of legitimate military objectives, Sassòli & Cameron, p. 59-62. See also Parks 1997, p. 77-84.

225 Wright, p. 845.

11.10.2 The "Overall" Military Advantage

It is controversial to what extent the military advantage from an attack should be limited to the tactical level of one isolated attack, or that it must be regarded as part of a larger attack. As a result of the negotiations for the formulation of the definition of the war crime of article 8 (2)(b)(iv) of the ICC Statute, the adjective 'overall' was added to the concrete and direct military advantage, because it was deemed that this was now customary law.[226] The ICRC has however argued that the word "overall" to the definition of the crime "could not be interpreted as changing existing law."[227] The ICRC explained that if 'overall' indicates that with regard to a certain military objective, the importance of the military advantage extends a lengthy period of time and affects military action in areas other than in the direct vicinity of the objective, then "this meaning is included in the existing wording of Additional Protocol I and the inclusion of the word 'overall' is redundant."[228]

The conclusion of Section 11.2 may be recalled, which is that the proportionality assessment, including the assessment of the military advantage, must be done on all levels of authority (strategic, operational or tactical level), with the exception that a proportionality assessment on a tactical level does not need to be repeated if it has been done previously on the operational level in a situation in which three conditions are fulfilled: when the tactical operations are (1) part of an pre-existing plan on the operational level and (2) the tactical commander is aware of the fact that he will encounter a certain degree of *prima facie* excessive collateral damage and (3) the situation as it becomes apparent to the tactical commander in the course of the execution of the operation is as expected in the planning phase.

11.10.3 Military Advantage and Force Preservation

The proportionality equation is meant as a protective rule[229] for the sake of the civilian population, in particular that of the adversary. Thus it may be assumed that it has not developed because there is a need to protect one's own forces. For this reason, it seems cynical at first glance to include the responsibility for a commander to protect the life of his own soldiers into the proportionality equation when attacking a military objective. It seems to deny the very basic of the IHL proportionality rule, which aims to protect civilians. In general terms, one would therefore assume that the definition of military advantage in the proportionality equation regards the damage that is done to the war fighting capacity of the adversary, not the own capacity. This does not mean that military commanders must

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226 Dörmann 2003a, p. 169.

227 Henckaerts & Doswald-Beck 2005a, p. 50, referring to the ICRC Paper submitted to the Working Group on Elements of Crimes of the Preparatory Commission for the International Criminal Court.

228 Roscini, p. 422.

229 See for example Krüger-Sprengel, p. 181: "la règle de proportionnalité n'a pas pour objet de faciliter les opérations de guerre, mais d'en limiter les effets nuisibles".

disregard the lives of their own soldiers, or that they have no rights at all. The omnipresent balance between military necessity and humanity argues against that. One could however argue that the IHL proportionality rule is a clash between the right to life of the civilians of the adversary, and that of the soldier. Put in those simple terms, it would seem that the right to life of the civilians of the adversary should be more unconditional than the competing right of the soldiers of the own military. Indeed, the belligerent privilege to participate in hostilities comes with the inescapable fact that soldiers may also be killed in combat. Their protection is however framed in different rules, such as those based on the principle prohibiting superfluous injury and unnecessary suffering. When commanders conclude that a planned attack could be executed in accordance with the IHL proportionality rule, but a large number of their own soldiers may be expected to become a casualty in the course of the operation, commanders may simply decide to cancel or postpone the planned attack to preserve the lives of their own soldiers. IHL does not oblige them to do so, but nor does IHL prohibit it. IHL does, on the other hand, prohibit proceeding with an operation when the expected collateral damage would be disproportionate.

Yet, doctrine and state practice show that the proportionality equation is in fact influenced by the responsibility that is put upon a commander to protect the lives of his own soldiers. In the words of a U.S. Army general: "commanders are morally responsible not to waste lives of their soldiers because they are charged to protect soldiers' right to life"[230] This is a factor that may be regarded as part of the military advantage that is to be gained. After all, it is militarily advantageous to him not to lose soldiers in combat, because it will negatively influence the morale of his soldiers, and he will have less men to fight his next battle. This applies equally to military equipment that may be lost in an attack. Thus, when identifying a military objective, the commander will take the question into account whether the military advantage is sufficiently significant to justify the danger that his troops will be subjected to when they execute the attack.

Canada, New-Zealand and Australia declared upon ratification of Additional Protocol I that they view the protection of the attacking forces as part of the military advantage that could be gained from an attack.[231] In operation Allied Force in Kosovo, the concept of 'zero casualty warfare' was defended (that is in this case: no casualties on the side of the NATO armed forces).[232] The prosecutor of the ICTY deemed it to be one of the difficult and yet unresolved questions surrounding the applications of the proportionality calculation. In the Final Report on Operation Allied Force, he concluded that:

> "there is nothing inherently unlawful about flying above the height which can be reached by enemy air defences. However, NATO air commanders have a duty to take practicable measu-

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230 Major General (United States Army) James M. Dubik, "Human Rights, Command Responsibility and Walzer's Just War Theory" (1982) vol. 11, nr 4, *Philosophy & Public Affairs*, pp. 345-371, as quoted by McPherson, p. 89.

231 See for example Canada's Declaration, accessible at https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/Notification.xsp?action=openDocument&documentId=172FFEC04ADC80F2C1256402003FB314.

232 For a general discussion of the concept of 'zero-casualty warfare', see Rogers 2000.

res to distinguish military objectives from civilians or civilian objectives. The 15,000 feet minimum altitude adopted for part of the campaign may have meant the target could not be verified with the naked eye. However, it appears that with the use of modern technology, the obligation to distinguish was effectively carried out in the vast majority of cases during the bombing campaign."[233]

Also, there are many notable writers who do include the protection of the own forces into the equation.[234] Others agree that "[t]he security of the attacking forces is a factor that must be weighed in the balance when assessing military advantage"[235] and "in an effort to improve security of the attacking force, increased collateral damage is permissible"[236] Schmitt acknowledges that "[s]urvival is a valid factor in the assessment"[237] but he however claims that the protection of the own forces is particularly a question of precautions.[238] Survival of the own troops would then be a valid factor in the assessment of the proportionality equation but only when "collateral damage and incidental injury are excessive (...) one must further factor in the military advantage that is inherent in combatant and weapon survival."[239] An example is the circumstances under which it may not be possible to give an 'effective advance warning' because of the safety of the attacking force. In the example of the U.S. "Linebacker II" air raids on Vietnam in 1972, "[g]iven the extremely heavy air defenses surrounding Hanoi during the campaign, circumstances obviously did not permit warning the Vietnamese civilians before each raid. Indeed, it is difficult to imagine when such warnings would be practicable except in the case of lightly defended, immobile targets."[240]

On the other hand, a number of writers discount own casualties in the proportionality equation.[241] As an example, Fenrick notes that one's casualties among the own forces conducting the attack may not be calculated into the analysis of the military advantage that will be gained.[242] Geiss concludes that the safety of the attacking force must be seen as part of the military advantage, but that the real issue is whether that military advantage is sufficiently concrete and direct.[243] He states that "the overall aim of protecting one's own

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233 OTP Final Report, paragraph 56.

234 See for example Dinstein 2010, p. 141 and Henderson, p. 205. See also Henderson and Cavanagh, pp. 73-94 and The Commander's Handbook on the Law of Naval Operations, NWP I-14 M, July 2007 edition, para 8.3.1: "Naval commanders must take all reasonable precautions, taking into account military and humanitarian considerations, to keep civilian casualties and damage to the minimum consistent with mission accomplishment and the security of the force."

235 Goldstone Report, p. 39.

236 Henderson , p. 205.

237 Schmitt 2006a, p. 298.

238 Schmitt 2006a, p. 297.

239 Schmitt 2006a, p. 298.

240 Carnahan, p. 866.

241 See the discussion in Geiss 2012, p. 73 and 74, referring to Fenrick, Solis and Oeter.

242 Fenrick 2000, p. 78.

243 Geiss 2012, p. 79.

forces would indeed be too abstract to be considered,"[244] however if the planned attack "will prevent the imminent annihilation"[245] of the attacking forces, the military advantage of their protection seems to be sufficiently concrete and direct. The requirement that there must indeed be 'imminent annihilation' at stake, seems to be overly strict. It is submitted that also in the event significant losses are expected, this may be factored into the expected military advantage. There is a limit to this: "the focus must be on the forces that are in fact being protected, and the maximum value that may be considered when conducting a proportionality assessment is the relative military value of these forces."[246] However, when there is a choice between different modes of attack, and the mode of attack that saves most lives of the attacking forces is chosen, this in itself does not allow for factoring in the possible losses that would have accrued from the mode of attack that was not chosen. Since that attack never happened, the military advantage of the safety of the attacking troops was in that case never sufficiently concrete and direct to be included in the proportionality equation.[247]

In conclusion, even though it seems counterintuitive and the protection of the attacking forces was never the basis of the proportionality rule, in reality, the safety of the attacking forces is included in the military advantage that may be achieved by an attack. However, the view of Geiss must be accepted that the advantage must be particularly concrete and direct. It may be seen as the far edge of the military advantage that may be included in the proportionality calculation. And even then, caution remains necessary, since "whenever 'force protection' is at issue, self-preservation is at stake"[248] which has the potential to be overstated by the person who feels that his life is on the line, at the expense of the civilian population. In the end, "the idea that the armed forces' own soldiers could be ascribed a greater value in the balancing exercise than civilians is incompatible with the [IHL rule of] proportionality, and would in fact undermine [it]."[249] Self-preservation of the military must not be tantamount to a personalised military necessity exception to the IHL proportionality rule.

11.11 Conclusion

It has been suggested that the uncertainty of the proportionality assessment that is present in the fact that every attack must be assessed on its own merits, renders its protective value presently null and void.[250] The analysis of the components of the proportionality equation in this chapter reveals that diverging opinions indeed exist on almost all components of

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244 Geiss 2012, p. 81.
245 Geiss 2012, p. 82.
246 Geiss 2012 , p. 86.
247 Geiss 2012, p. 87-88.
248 Geiss 2012, p. 88.
249 ILA Study Group, Final Report, p. 34.
250 See for example Shamash, pp. 103-105.

the proportionality equation,[251] and thus the unsurprising conclusion of this chapter is that there is no mathematical proportionality formula."[252] But must the fact that there is no a mathematical formula be understood to mean that the proportionality equation is nothing more than "a thankless game of guesswork"?[253] It is submitted that the IHL proportionality rule requires a thorough analysis of its components as far as circumstances permit. The fog of war may make it impossible to acquire more information concerning possible civilian casualties, or the expectations of military commanders with regard to the military advantage of their planned attack may be misperceived. Nonetheless, military commanders need a sufficient understanding of the components to enable them to conduct an assessment of these factors. The next chapter provides a number of descriptions of factual situations where the IHL proportionality rule is applied in practice.

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251 Already in 1979, Krüger-Sprengel proposed in Ankara to initiate efforts on the international level to reach an uniform interpretation of the principle of proportionality. See Krüger-Sprengel, p. 195.

252 Garraway 2005, paragraph 21.

253 Anderson, "Who Owns the Rules of War?", available online.