

which are intended or may be expected to cause widespread, long-term and severe damage to the natural environment". Within AP I Art. 35, the natural environment is itself the object of protection. A few preliminary observations, firstly, the disposition is eloquent in its silence. The term "natural environment" is used and not "human environment". Secondly AP I Art. 35 addresses the consequences of the use of any weapon whatsoever, be it a kinetic or directed energy weapon. Furthermore, the conditions that result from the use of the weapon are expressed within API as being cumulative. In other words the damage to the natural environment must be at the same time widespread, long-term and severe. The term "long-term" is interpreted to mean lasting decades¹⁰⁵. In this sense ASAT weapons, which cause such damage, would be prohibited. Considering the effect of space debris that would result from hard kill of a satellite, such a weapon could arguably be considered in violation of this disposition. The use of a nuclear blast is more problematical. Article 35 was accepted by consensus. The United States and the United Kingdom made a declaration to the effect that this disposition does not apply to nuclear weapons¹⁰⁶. However an ASAT weapon, which would create an EMP without a nuclear explosion, could conceivably not be perceived as a nuclear weapon and fall within the ambit of article 35.3 AP I. However EMP emissions might escape from the time requirement of the norm. The problem with EMP weapons lies with another issue, namely that of distinction.

An ASAT weapon must not have indiscriminate effects. An attack is considered indiscriminate if either it is not directed at a specific military objective¹⁰⁷, or the method or means cannot be directed at a specific military objective¹⁰⁸. This may be problematical for an EMP weapon, as is the case if the effects of the means and methods cannot be limited as required by the protocol. Thus an EMP weapon would have to be directed at the target satellite in an efficient manner. It is this last condition of an indiscriminate attack, which is also most problematical in the case of a hard kill of a satellite, which causes space debris. In this case the targeting of a satellite within a crowded geostationary orbit becomes more problematical. On the other hand a telecommunication satellite within a less cluttered orbit such as a molnya orbit is less problematical. However, the targeting of telecommunication satellites within the LEO orbit also becomes problematical as this orbit is shared by many nations.

Furthermore, recent developments in space colonization, namely the creation of a permanently orbiting space station have changed the possible application of article 55 API to the use of force in space. API Article 55 edicts that care is to be taken to protect the natural environment against widespread, long-term and severe damage, including means and methods which are intended or expected to cause prejudice to the health or survival of the population. Again a semantic analysis helps clarify the application of Article 55 to the use of force in space. The ICRC commentaries proffer that a broad interpretation must be given to "natural environment"¹⁰⁹, encompassing the biosphere. Although space is a hostile environment to human life the concept of "environment" can be interpreted to include the orbits within which there is a human presence. Which brings up the second definitional issue. The word "population" is not defined within the Additional Protocol. The word "population", within its plain and ordinary meaning, refers to the inhabitants of a particular place, or even the action of populating an area. The word can conceivably be applied to the astronauts occupying the space station. Furthermore, does the word "population" presuppose a minimum human presence? In the case of the application of API there does not appear to be a minimum required for humanitarian protection. Thus, if broadly interpreted, Art 55 API could prohibit the use of ASAT weapons which imperil the lives of the inhabitants of the ISS by affecting the orbit within which the space station orbits the earth, or which would prevent supplies from being brought to the space station. On the other hand the ISS could conceivably become a military target should it be used for military purposes. Furthermore, although military satellites should not be stationed near non-military objectives, a commander could employ a proportionality analysis in determining whether to attack a military target that has been located near civilian objects, and as a result of such an analysis the attack may be lawful. In short the LOAC does not give special protection to the ISS.

It is important to grasp the difference in application between AP I art. 35 and 55. API art. 35 deals with environmental issues through a perspective of the means and methods of force application. On

¹⁰⁵ Commentary, supra, note 86, para. 1453.

¹⁰⁶ Commentary, supra, note 86, para. 1403.

¹⁰⁷ API art 51.4 (a), supra note 11.

¹⁰⁸ API art. 51.4 (b), supra note 11.

¹⁰⁹ Commentary supra note 86 para. 2127.