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## **Part 1.1 and 1.2**

Principle 10: It is the duty of the *[NLP Developer]* in *[NLP Application]* to protect the life, health, privacy, and dignity of the *[User(s)]*.

This statement is partially applicable for NLP ethics. Since NLP applications are typically less involved in the “life” and “health” of the user than medical research is on its patients, their protection is slightly less relevant in this context, but still should be upheld. However, “privacy” and “dignity” hold true, possibly even more, for NLP applications and the general idea to protect the user’s values is consistent through both NLP and medical ethics.

Principle 15: *[NLP Applications]* involving *[User(s)]* should be conducted only by scientifically qualified *[NLP Developers]* and under the supervision of a *[NLP Application]* competent *[NLP Developer]*. The responsibility for the *[User(s)]* must always rest with a *[NLP Developer]* and never rest on the *[User(s)]*, even though the *[User(s)]* has given consent.

This statement is partially applicable for NLP ethics. The first sentence is much less applicable – NLP applications carry much less inherent risk than medical procedures and therefore the necessity of formal qualification and supervision is less important. Despite this, ideally any widely popular application is handled proficiently in a way that does not leak any data, private information, etc... to uphold Principle 10. The second sentence applies to NLP by replacing “[User(s)]” with their information: users entrust NLP Developers with data and ensuring the security of this should rest on the developer.

Principle 18: *[NLP Applications]* involving *[User(s)]* should only be conducted if the importance of the objective outweighs the inherent risks and burdens to the *[User(s)]*. This is especially important when the *[User(s)]* are healthy volunteers.

This statement is applicable for NLP ethics. The situations in which the risk of the objective is large are much less obvious in NLP, but the risk-reward benefit should still hold true in NLP. If the reward for some study or application is minimal but puts a risk on the user’s privacy, data, life, or other value then it should not be conducted. The final sentence about “healthy volunteers” does not hold in NLP ethics as the health of a user does not affect their use of the application.

Principle 22: In any *[NLP Applications]* on *[User(s)]*, each *[User(s)]* must be adequately informed of the aims, methods, sources of funding, any possible conflicts of interest, institutional affiliations of the *[NLP Developer]*, the anticipated benefits and potential risks of the *[NLP Application]* and the discomfort it may entail. The *[User(s)]* should be informed of the right to abstain from participation in the *[NLP Application]* or to withdraw consent to participate at any time without reprisal. After ensuring that the *[User(s)]* has understood the information, the *[NLP Developer]* should then obtain the *[User(s)]*’s freely-given informed consent, preferably in

writing. If the consent cannot be obtained in writing, the non-written consent must be formally documented and witnessed.

This statement is applicable for NLP ethics. In all cases, users should be informed of everything they are getting involved in by using any NLP application – otherwise the application would be causing the user to go against their own moral principles or ideals. Just like in medical research, the user should be able to determine whether they wish to use the application and stop using it whenever they choose. Finally, documented consent should be given in order for a person to use some NLP application – typically this comes in the form of Terms of Service or something similar.

### **Part 1.3**

Overall, most of the same principles seem to hold through ethics in many different fields. However, when the nature of the risk or burden to someone is inherently different, such as this case when comparing medical research and NLP applications, the level of precaution taken in each case can vary greatly. In all cases, the same general values should be held up but how this is dealt with can change by field. A perfect example of this is Principle 10 or 18 – they can be generalized to mean that the user or subject's best interests should be kept in mind at all times, without going into too much detail into the how. Broad principles that focus on overall risk and burden without going into specific aspects of them can easily be transferred to NLP. Typically, these cover the lower end of the risk spectrum, only posing a slight inconvenience instead of possibly affecting one's life or health.

On the other hand, there are topics in NLP that do not appear in medical research as much, such as the concern with data and privacy. The collection and manipulation of NLP data is much less concrete or obvious than being subjected to a medical test, so it can be much more deceiving at times. Despite this, the same precautions must be taken with one's data as with other aspects of their life – just as medical researchers should work to preserve the security of human health, NLP developers should work to preserve the security of people's data.

Finally, medical researchers must be much more cautious in their approach to ethics due to the severe possible consequences of the studies. An example of this is Principle 19, which states that medical research should only be carried out if it poses a likelihood of significant benefit. This could stifle progress in NLP where the effects of trivial tests and trials can be nearly zero. Principles that involve great risks also do not transfer well, such as Principle 17 which goes over research on human subjects. While medical research can affect the life and health of a person, NLP usually does not, which makes this point much less relevant.