

# #data ethics

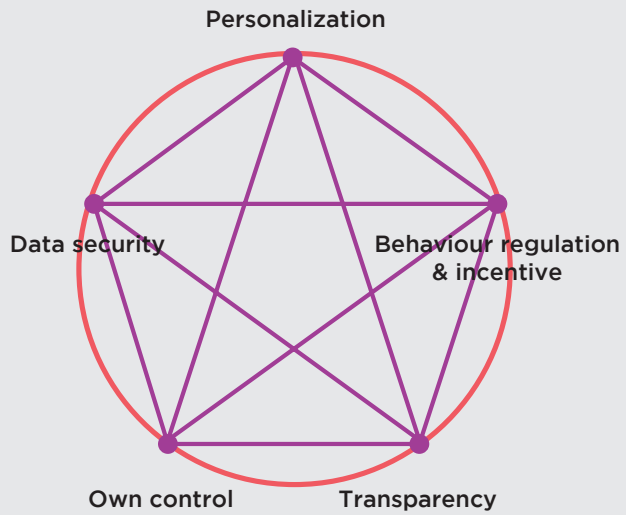
Individual,  
society  
& business

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# Towards a common data ethics

Individual, society & business

**Insurance  
& Pension  
Denmark**



### **The ethical compass**

When we talk about data ethics in relation to insurance and pension, there are five major basic themes in the tension field between individual, society and business.

“ It is a scary reality when everything can be known, but we are already living in that reality, so we need to have an open and honest conversation about this fact.

- James Felton Keith, author & chairman,  
International Personal Data Trade Association c

# Data shock or data amok

## Do we need more or fewer data – and for whose benefit?

It makes a difference whether you live in a large house at the coast or a small bungalow on a hill. It makes a difference if you drive many kilometres a day in a large car or fewer in a small car. It makes a difference how many children you have or how many bicycles are registered to your property. It makes a difference for your coverage at the end of your working life what sort of investment profile you have and how much your partner earns and has put aside. Insurance and pension have always depended on the risks surrounding the individual person. The higher the risk, the more you must pay to be covered and vice versa.

### **We have always used data**

The quantity of data that enables us to protect ourselves better against injury, accidents, sickness and old age is exploding. The insurance and pensions industry has always used data to pool and assess risks. But having evolved from needing only a few data points in the past to using quite a few more today, we will be needing an enormously greater number in a few years, because it makes sense to insure property, life and health better and more accurately.

In the insurance and pensions industry we use data about your age, housing conditions, children, job situation etc. to determine the risk and provide you with a better overview of your financial situation and future coverage. This information is important because we must each of us try to reduce the insurance risks that may influence and jointly help the unfortunate getting back on their feet again.

Should we then proceed at 130 km an hour or should we pull the handbrake? This is how most discussions about data and ethics end. In one ring corner, so to speak, we have those running data amok, while in the other are those who are dazed by data shock. And at the same time, it is as if neither quite understands the opponent's point of reference. But both sides have important points to make.

Insurance & Pension Denmark believes that data can and must be utilized to help the individual and for the common good, while always keeping our focus firmly on the rights and actions of the individual.

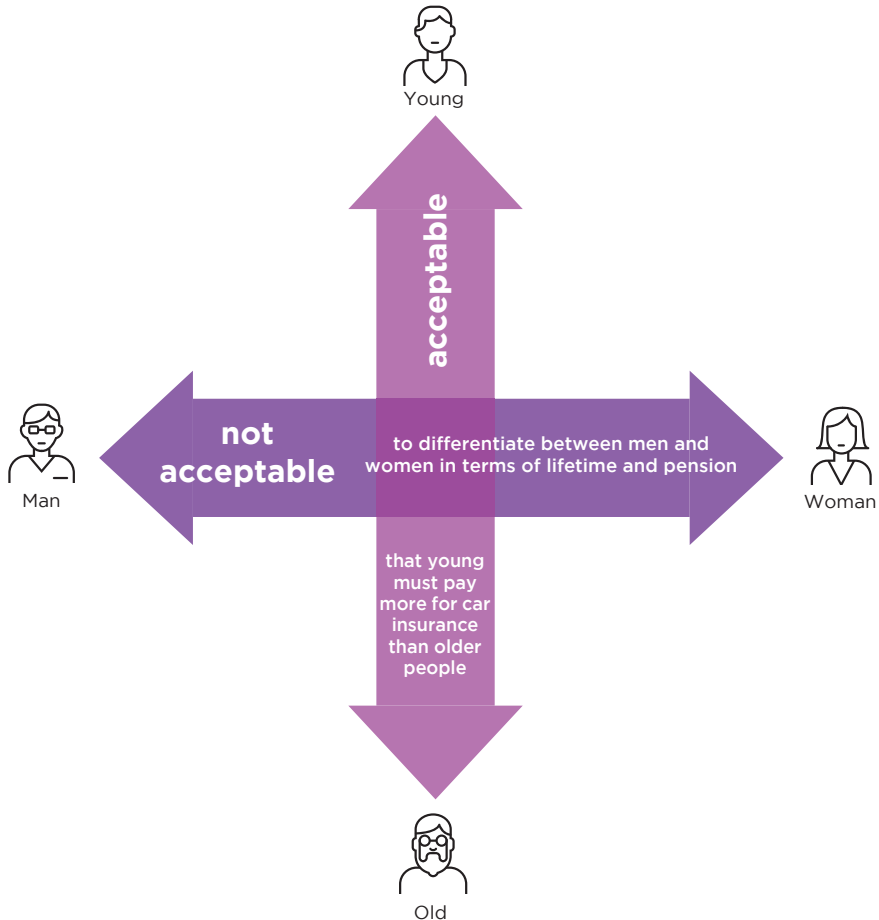


Figure 1 show that the great majority of Danes are ok with young people paying more for their car insurance than older people, because statistics speak for themselves. When it comes to pension and life expectancy, women ought statistically to pay more, because they live longer, but on this point the Danes are not ok with differentiating.

The industry hopes to cooperate across insurance companies and with all authorities, politicians and, not least, citizens on why and how we can and should use data for the good of all. Otherwise we risk cutting off opportunities that we have yet to fully grasp. We risk missing out on utility value in the fight to preserve the right to privacy or, conversely, lose important quality of life in our eagerness to get hold of the next data product.

Therefore, we have consulted several experts, at home and abroad, to learn and to be challenged. We hope you, too, will be willing to have your views challenged. Happy reading.

*Director General,  
Insurance & Pension Denmark  
Per Bremer Rasmussen, Deputy CEO*

# A new world. From knee-deep in water to up to your neck in data

Address, year of construction, living floor space and type of basement. These data points may be used to represent Anne's risk of a flooded basement. And based on this risk, Anne's premium will be fixed at a certain rate. As Anne is living in an especially exposed area close to the water, she pays more than Jens, who is living further inland. This is the fairness principle of insurance. But if one day Anne is knee-deep in water, there will be a massive redistribution from Jens and the others in the insurance community in favour of Anne. In other words, solidarity of insurance is not a matter of whether you pay a premium of DKK 4.000 or DKK 5.000 but of the redistribution taking place between those affected by accident and those who are not.

## From statistics to dynamic data

The new digital world allows access to using far more data points, also for the point of insuring property and life. Anne, for instance, can now place sensors on her water pipes to gauge the pressure etc. These data will then be transmitted to her insurance company. The company will then pair the data with weather data and data about the public sewage system, enabling it to calculate Anne's risk more accurately, and the premium she will have to pay will then more accurately reflect the risk. At the same time the company, using Internet-linked sensors (Internet of Things) on the water pipes and in the sewage system, will get a more realistic view of Anne's risk of damage caused by water.

This knowledge may subsequently be used to meet the risk or limit, and perhaps even prevent, damage from taking place. This example illustrates two of the insurance possibilities in a world of increasing data quantities. Where we – so to speak – are up to our necks in data. We may control and utilize data to more precisely uncover the risk. Thus enabling us to take preventive measures. No matter whether we see these scenarios as potential opportunities or threats, the quantity of data will continue to increase dramatically.

## The Internet of things will provide gigantic quantities of data

“ We will be witnessing quantum leaps during these years in terms of the potential of data, and therefore it is probably more important than ever to sit down and find out how to play along in that world. What rules and principles will we aspire to adopt.”

-Thomas Ploug, Professor, Aalborg University and former member of the Danish Council on Ethics

## Before

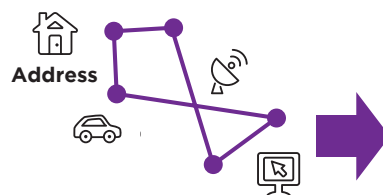


Figure 2 shows that 90% of the data available today has been generated within the past two years. *World Economic Forum, 2017: The Value of Data.*

According to World Economic Forum there will be around 50 billion internet-connected devices in 2020. And they will not only be like the sensors on Anne’s water pipes, lights, heating system or smoke alarms.

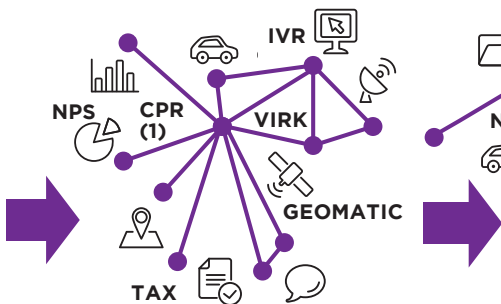
Several experts point out that a large part of the growth of data will be within health. Our mobile phones and wearables with activity meters, such as Fitbit, can measure Anne’s number of paces when she is taking the dog for a walk, her geolocation, pulse and much else. Data will increasingly be registered everywhere as technology gains ground. But will we use them?

The question for the insurance industry is not “whether” the new data points should be used but rather how to group them according to the value they represent. Value, first to the policyholder and secondly to the company, in terms of collecting, correlating and using data. And which data, analyses and potential uses of data may be considered ethically legitimate.

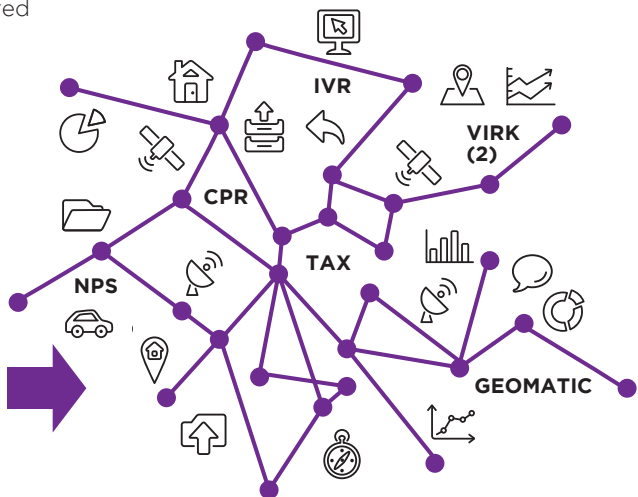
### Internet of Things

Internet of things, or IoT, is a network of devices interconnected and linked to the Internet for the purpose of gathering and integrating data from the physical world in the digital world. It may provide insurance companies with an insight into behavioural patterns and a possibility for offering better and more dynamic services, while policyholders and members may achieve a better basis for decision-making. The technology also poses certain risks with respect to security, control, lack of transparency and third-party problematics in terms of data storage and processing.

### Today



### In a few years



### Data may be used for good as well as bad purposes

Already in ancient times people began chronicling on clay tablets. In those days information about commercial transactions, professions etc. was recorded on the tablets. In the great majority of cases, registration of the doings of citizens has been for their own good. Because registration of data permits things like tax collection, thus minimising tax fraud. But, historically, data has also represented a potential and at times quite real threat. During WW II register data from the synagogues were the most effective tool in capturing Jews. So, data are not in themselves good or bad. It depends on the way they are collected and used.

### Monitoring of home, car or walks with the dog

For insurance purposes (in Denmark), it is possible for Anne to have her water pipes or her spins in the Volvo monitored. One day her walks with the dog may also become a relevant data point for insurance companies. If Anne lived in the UK, certain insurance companies might already now offer her an IoT-based life and health insurance for which behaviour and lifestyle data, such as number of walks with the dog, would be used to set the price of her insurance and help her lead a healthier life.

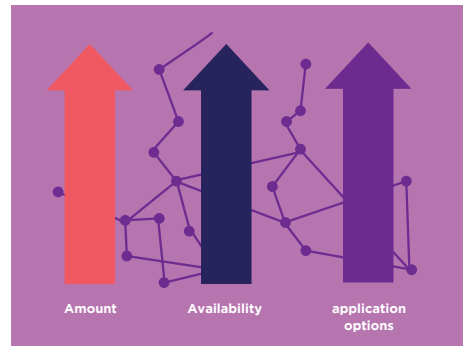


Figure 3 shows that not only will the quantity of data increase. Data will become more available (to Anne as well as her insurance company), and the uses will multiply.

## The global players will screen out people living on the ground floor

The possibilities are plentiful and should be seized. The challenges exist and we must meet them. We wish to create a playing field that will benefit both the individual, society and business. But to what extent will we be allowed to decide for ourselves? Essentially, Denmark is playing in a small corner of a large international field. The commercial Danish insurance companies are facing tough competition from foreign players with experience from markets with other rules and standards or ethics and morality. This very likely means that foreign players will



appear to offer Danish policyholders to ensure their life and property. Based on far more accurate risk assessment and, consequently, potentially lower premiums. And who will be the first to accept such and offer? The woman living on the fourth floor who is less exposed to burglary and therefore eligible for a cheap policy. And the man who leads a healthy life and has no registered family diseases. Leaving the Danish companies to insuring the rest, the expensive ones who live on the ground floor and lead less healthy lives.

**Will Amazon be allowed to provide insurance in Denmark?**

Not only insurance companies will appear on the scene. External players who may not know very much about insurance but a lot about what we're all doing on Facebook, Google or order from Amazon may also appear in the field. And Google will be able to buy the necessary insurance expertise very quickly, should it decide to enter the market. If that happens, Danish companies will be hard pressed to match the competitive advantages offered by such players without access to the same data.

**Insurance within a safe framework**

No data ethics can ignore that to some extent increased use of data is necessary. At least if insurance and pension are to continue being provided within a familiar, safe framework where ethics and consumer conditions are taken seriously.

**Insurance in uncharted waters**

Already today foreign competition within the insurance industry is felt in a very tough and tangible way. Many Danish boat owners, while keeping their boats in Danish marinas, have taken out foreign policies. In such cases, the foreign insurance companies can offer better prices, because Denmark operates with a charge on all-risk insurance of leisure boats. And it need not be like that. In a global world, we cannot keep out foreign entrants.

**DIGITALISATION AND PRIVAT-PUBLIC COOPERATION**

**Q:** “To me it seems quite dangerous with all those data. And, honestly, aren't we doing all right as it is?”

**A:** Yes, we are doing quite well for now. But then, in Denmark, we do have unique advantages with respect to digitalisation and private-public cooperation. That's why we are still able to treat use of data as an opportunity rather than a threat. We can export our model of cooperation and ethically aware use of data. But our foreign competitors will not hesitate to act if we chose to be complacent about the status quo. And we have a unique opportunity for taking the entire ship and crew into safe international waters – if we so wish and dare.

# Towards a position on data ethics. What choices do we have?

To the insurance and pensions industry, data ethics is a matter of finding the interfaces between the difficult dilemmas. Rather than digging trenches we wish to take the lead in an open discussion of what to do with the large quantities of data we are all producing today.

It is unavoidable that difficult ethical choices and dilemmas will turn up. But ignoring them will not make them disappear. The best way to handle them is to establish a clearly defined position on data ethics. We look at three positions that have arisen during these years.

## **Ethics of duty and utilitarian ethics**

In ethics a distinction is typically made between ethics of duty and utilitarian ethics. Where ethics of duty is about putting the individual before the goal – because all individuals are to be treated as goals in themselves – utilitarian ethics is about increasing the usefulness for as many as possible.

The one does not necessarily exclude the other if, for instance, data may be used to prevent Jens from injuring his back while at the same time creating value for his employer and the welfare society in general.

## **If we minimize collection and use of data**

It is possible to achieve ethically justifiable goals by refraining from utilizing data, minimizing the quantity and anonymizing existing data. In this way minimizing the risk that Anne's data may end up in the wrong hands or be used against her. Unfortunately, this may impair value creation as Anne's data from the water pipes will not be registered and used for any practical purpose.

## **If we maximize collection and utilization of data**

We can also achieve ethically justifiable goals by using several data across systems and databases. This may considerably improve the customer experience and provide more opportunities for new knowledge to the benefit of all.

By giving Anne's pension provider access to both SKAT (the Danish tax authority), Pensioninfo and her bank account information, Anne will be able to make far better-informed decisions and feel more secure about her future coverage. But we are moving into uncharted territory with increased risks of breaches of security, wrong use or actual abuse of data.

In combination, questions of data and ethics establish three different positions for a data ethics.

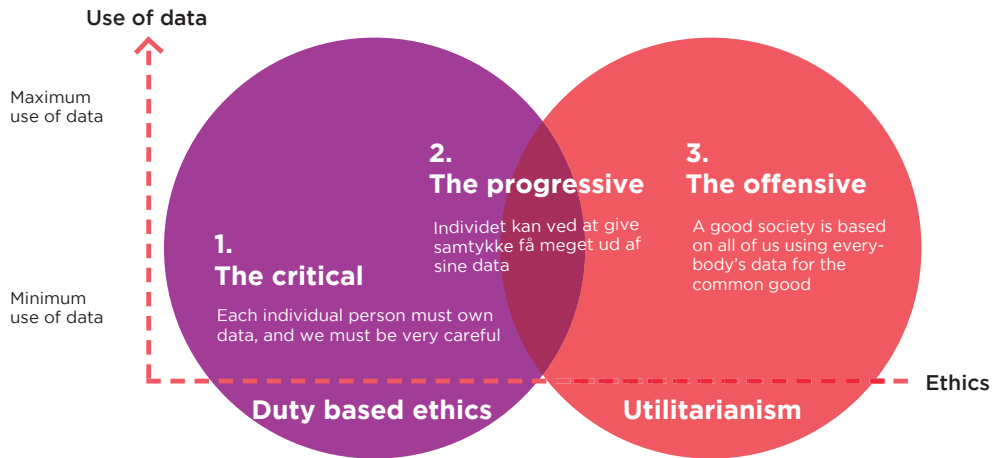


Figure 4 shows the three positions of data ethics. From the point of ethics of duty versus utilitarianism and maximum use of data versus minimal use, three different positions of data ethics emerge. A position based on ethics of duty and minimal use of data and two of maximum use of data which differ from each other in terms of the ethical point of reference.

## Three positions of data ethics

### POSITION 1. THE CRITICAL

**The individual must own all data, and we must be very careful**

In this situation individuals and companies will argue for limiting data collection and deleting data out of the respect for privacy.

### POSITION 2. THE PROGRESSIVE

**By giving consent an individual may benefit far more from his or her data.**

Here individuals will assume ownership of their data and create value for themselves, and the company will support this for the benefit of the policyholder and the company.

### POSITION 3. THE OFFENSIVE

**A good society is based on all of us using all our data for the common good**

Here the company may want personal data to benefit innovation and for the good of society. And this must take priority over concern that a data point may ultimately be linked to a specific individual. The most important is not that the individual should assume ownership and put data into play but, rather, that data should benefit as many as possible. This common utility value will often be looked after by one of the institutions of society, such as an insurance unit, but may also be handled by a private business.

### Positions of data ethics help us plot a course

Positions of data ethics help us plot a course. A course that will protect us from being overtaken or run into the ditch.

“ If you think of the car when it started. It got faster and faster over the early decades and more people got badly injured or died as a consequence. The legislative response could have been to ‘slow down’. Everything would be nice and safe then. And the analogy to the internet would be that we do less. We restrict our use of data and do less. But with the cars, we didn’t slow down. Instead we added safety features such as seatbelts etc., which allowed us to go faster, go off-roads and do more with the safety in order. So the question now is this: can

*we fit the internet with safety features – not to slow down the use of personal data but in order for us to do more with personal data?*

- Julian Ranger, founder & chairman, Digi.me

In the insurance and pensions industry we believe that in the short and, especially the long run, position 1 will be like stopping at a green light, likely to result in loss of welfare. However we are ready for an open and inclusive dialogue. In our view there are considerably greater advantages to the other two positions but, obviously, also disadvantages and risks. The natural thing to do, when ethics are involved, is to discuss concretely. To do this we have chosen five themes as a sort of ‘ethical compass’ for the difficult dilemmas on which the discussion will be based.

## The ethical encompass - the five major basic themes

We need to be able to navigate in terms of the five basic themes that are relevant for Anne in her dealings with the insurance company. The five basic themes, dealt with on the remaining pages, are: Personalization, behaviour regulation and incentive, transparency plus own control of data and data security.

### As many data as possible in play - with the individual in control

*Personalization.* Anne should be able to put more data into play to obtain more specific personalization for her personal

benefit. If Anne is young and her car insurance is expensive, Anne might obtain a relatively lower price if she allows the insurance company to place a sensor in her car to ascertain whether she is actually a sensible driver. But solutions must also be available to especially vulnerable policyholders who may be affected negatively by more accurate pricing.

*Behaviour regulation and incentive.* If Anne so wishes and gives her consent, it is ethically justifiable for us to use data to influence Anne’s behaviour.

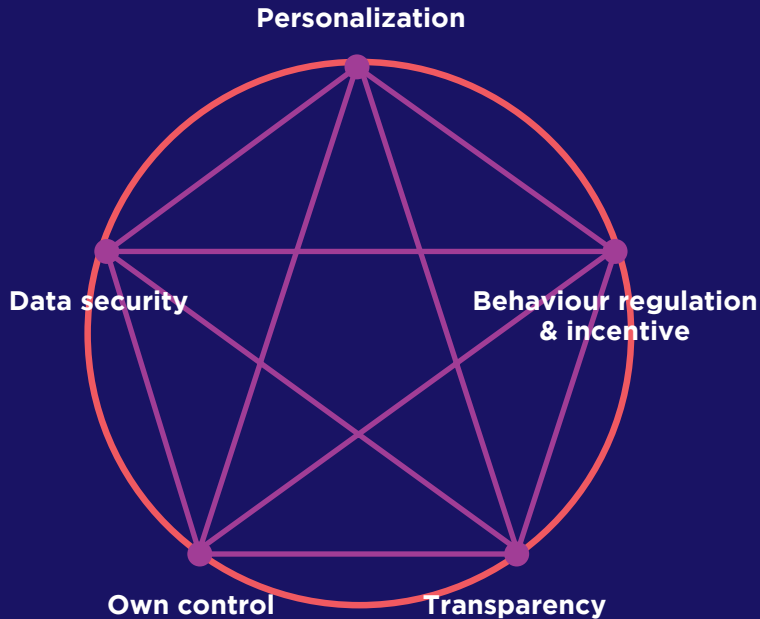


Figure 5 shows the ethical compass. The figure illustrates the five basic themes of data ethics in insurance.

Prevention of insurance claims may lead to an absolute lowering of claims payments and make insurance cheaper for many more people. But most importantly, it will enable us to live with fewer insurance claims. The incentive to share data is a prerequisite for doing so.

Anne must want to share true information in order to experience preventive advantages etc. On the other hand, it would not be ok either for Jens to give false information about his injury and achieve large benefits at the expense of Anne and the rest of us. So, his *incentive* to give false information about his injury must be minimized.

*Transparency.* For Anne to control and safely share her data, it must be transparent to what purpose she gives her consent, why and how her data are analysed and stored, what they will be used for and, not least, how Anne will benefit from all this.

*Individual control.* Anne should have more control of her own data than the case is today. She must have the possibility of sharing them with companies and authorities of her own choice.

*Data security.* When a private enterprise or authority manages Anne's data, the institution in question is under an ethical obligation to store these data securely.

**Data ethics is not just a matter of either or. It is possible to turn data ethics into a question of combining the two.**

To us data ethics is about doing the right thing for both Anne, Jens and society. Use of data must first of all benefit the individual, but the utility value for the rest of us is certainly not negligible.

Data ethics is also about preserving trust between us. It is about transparency and that the individual knows precisely what he or she has consented to and, as far as possible, the consequences entailed.

To us data ethics is about finding a balance that allows us to use more data in full respect of and for the benefit of the individual. At the same time, we must not be completely off target in terms of utility value. It is a difficult balance to strike, and we do not claim that there are any easy solutions. But it should and must be possible.

## How can we set a fair price if we don't know everything

“ If you take someone who is in his forties, has diabetes and hypertension, he'll pay the highest premium based on mortality tables. But if you take it to the next layer and really analyze that data and combine it with lifestyle data, there is a group that should be super preferred. They have the same mortality risk and life expectancy as the usual super preferred risks because they manage their diabetes, take care of their health, take their medicine etc. That level of precision doesn't exist today with the way insurers manage risk – but embracing more data will help insurers offer much more personalized insurance. It can never be individualized because it would destroy the whole purpose of pooling risk but breaking it further down than we do today makes a lot of sense in this scenario.

– Jon Cooper, co-founder & CEO, Life.IO

One of the very big themes in insurance – whether of houses, cars, spectacles, health or life – is how much we should personalize and, with that, how far we should go to achieve an optimal, risk-based price. Personalization of price is also called ‘micro tariffing’. It describes a price differentiation process enabling us to determine Anne's general risk very accurately by means of data. Based on Anne's risk of damage by water, she is placed in

a specific insurance pool. More data may contribute to Anne having to pay more or less for her insurance. How far must we go to ensure fairness for Anne – while still being fair to everyone else?

### A fair price

Data does not in themselves involve any specific upward or downward adjustment of price but do, objectively, provide a far more accurate picture of Anne's risk. With that it becomes possible, too, to move Anne from a high-risk category into a low-risk one to actively taking steps to prevent damage by water. Or if new correlated data in some other way show that Anne should pay less, because her risk is actually not so high.

#### **It is getting more and more difficult to explain...**

Most people understand that the young driver must pay more for his car insurance than the older driver. But it is slightly harder to see why Anne should pay less for her insurance, just because she is a member of a knitting club.

More data make it possible to map complex patterns and to identify more of the many factors constituting a risk. Maybe Anne is living a quieter life than someone like Jens, who does extreme sports, and therefore it seems quite fair that she should pay a lower premium. But it is getting harder and harder to grasp and explain patterns and connections.

### The 1000 kroner question: What about the most vulnerable?

We encounter a political and ethical problem when we become able to use data to accurately identify very high-risk individuals from individuals with a lower risk. Those with a high-risk rating may have to pay a higher insurance premium. Especially if the decisive data points are matters that cannot be changed actively by asking a plumber to have a look at the pipes or by driving extra carefully. And things will get even more sensitive if we get closer to individuals and life, such as data about handicaps, sex, age, specific social factors, DNA codes etc.

### Is there a point of balance between “fair price” and welfare solutions for the most vulnerable?

““ When it comes to micro tariffing, there are policyholders who will get very high premiums, which is likely to have a socially unbalanced effect. In such cases the government may intervene and provide a solution but not without consequences, because the government's services are usually relatively poorer.”

– Thomas Ploug, Professor, Aalborg University and former member of the Danish Council on Ethics

The welfare state and its regulation often intervene to forestall unpleasant scenarios. Therefore, it is forbidden in both the USA and the EU to use DNA data for insurance purposes. But in Denmark insurance companies have not really progressed very far with respect to personalization and micro tariffing. However, the development is not only going in that direction, for one thing because of foreign competition, for another because Anne, Jens and the great majority of

policyholders demand a more accurate and fair price for their insurance. It can be difficult to roll back the development, and therefore it is necessary to develop products for vulnerable groups that may be difficult to insure, such as compulsory, joint solutions like flooding contribution, insurance pools to handle natural disasters or voluntary, joint communities, such as group life insurances, which are often linked to a labour market pension.

### Who will share data? Avoid creating an A and a B team

“ Today, there are people who accept paying a higher premium in exchange for having to share less data. Because they know they're high risk or because having to share data is perceived as inconvenient. Then there are people who are willing to share more data because they are curious and want to have that level of precision. I think this trend will continue but with the spectrum getting broader, enabling me to eventually go down to the epigenetic level perhaps and find the 'super-duper preferred risk group' consisting of people who are actually willing to share that kind of data. And as you go further upstream and people are willing to share less data, they're going to be pooled in larger higher risk groups. So, it will be the same market as exists today, but the number of tiers in there will just be far greater if you ask me.

- Jon Cooper, co-founder & CEO, Life.IO

Anne has completed a long further education and she is living quite sensibly. So, she is prepared to share more data with her insurance company, especially because she can look forward to cheaper insurance. Her neighbour, Jens, on the other hand suffers from

certain disabilities, and he does not feel the same urge to share more data as his policy probably would not get any cheaper. Therefore, in figure 6 we can see that on the person-related left side Jens is categorised as having a higher risk than Anne. And because he shares fewer data than Anne, he is placed in a larger pool. Anne has a lower risk, and because she shares more data, her risk is more accurately calculated.

Both Anne and Jens have installed sensors in their houses, partly because it is not about sensitive personal data and partly because both benefit from being able to prevent damage. Anne's house is closer to the water, and the risk of water in the basement is higher than for Jens, who lives further inland. Given this scenario, the insurance price can be calculated equally accurately for both houses, and we know why Anne must pay more than Jens.

As with all other knowledge providing greater precision and increased fairness, new data-driven knowledge may also be used inappropriately. Use of data may leave a group on non-insured. Adopting position 1 you would be of the opinion that this consequence for the few is not counterbalanced by the advantages for the many. In positions 2 and 3, however, you would agree that more data will create major advantages for the individual and the community. But where, in position 2, you would draw the line at where the individual opts out, those in position 3 would choose options of data processing allowing more data about everyone to achieve the optimum solutions for as many as possible.



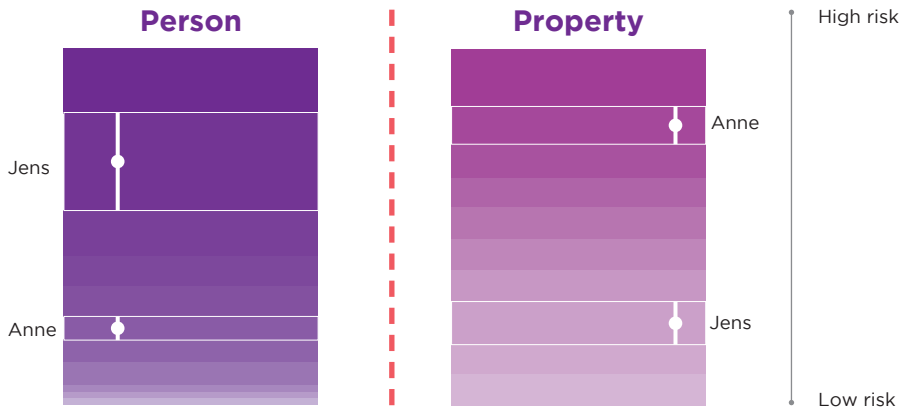


Figure 6 describes two theoretical scenarios with implications for data ethics. Both in the left side and the right-side scenario, increased use of data has created a greater difference between Anne and Jens. In principle this might lead to an A team and a B team in both cases, but it will be more sensitive for the person-related area to the left. In both cases, it will be to the benefit of both the insured and the company that most members of the “B team” are motivated to improve their risk profile in order to get cheaper insurance.

## PERSONALIZATION

**Q:** *“If more data are used to know precisely how expensive I am to insure, won’t the principle of solidarity of insurance disappear?”*

**A:** *No. Even if you pay for your general risk, the redistribution from the community to the unfortunate, individual claimant is still very considerable.*

Personalization with a more accurate calculation of what it costs to insure property, health and life is a necessary other element of insurance. Firstly, to counter a natural selection in which low-risk groups either will not take out insurance or will go to foreign competitors. Secondly, for risk and premium to reflect each other, making it inopportune to do senseless things, such as building your house on the very shoreline. In addition, more data points and tariffing may help if you have unfairly been placed in a category or group. However, in the industry we do acknowledge that increased personalization may potentially lead to the creation of an A and a B team. If possible, policyholders should be motivated to improve their “high” risk profile. But there is a risk that some policyholders will be in a difficult position, making it practically impossible for them to take out a policy. We do not want such a society, and we do believe that solutions to this problem should be found. The solutions depend on concrete cases and market trends, so at this stage it is impossible to point to the best solution. It may be a matter of sectoral solutions, governmental solutions or semi-voluntary group communities, which are characteristic of the Danish model.

# Stop the insurance fraudster!?

Insurance fraud is a common problem in all countries. As a result of insurance fraud all policyholders must pay higher premiums every year than actually necessary. And in an ever more digitalised world, administration of claims cases will increasingly be done administratively, too. There are indications that the scale of insurance fraud will increase if Jens no longer needs to speak on the telephone with the case manager but can enter all information on his computer at home. This creates new demands on the insurance companies' methods of fighting fraud. Not only in terms of solving fraud cases, but also when it comes to preventing fraud and motivating Jens to resist committing fraud at the expense of all the rest of us.

## Another 1500 kroner a year straight from your pocket into the fraudster's

International surveys indicate that in up to 10% of claims cases insurance fraud is involved. This corresponds to insurance fraud costing the Danish society a total of 4bn kroner in 2017. As a result, Anne must pay more than 1500 kroner extra for her annual premium. Money that she might well have spent on other things. And on top of this, the fraudster is stealing time from the case manager that might have meant quicker case administration for Anne when she faced a flooded basement and needed help.

## How far are we prepared to go to stop the fraudster?

Data and machines may contribute enormously to discovering and stopping

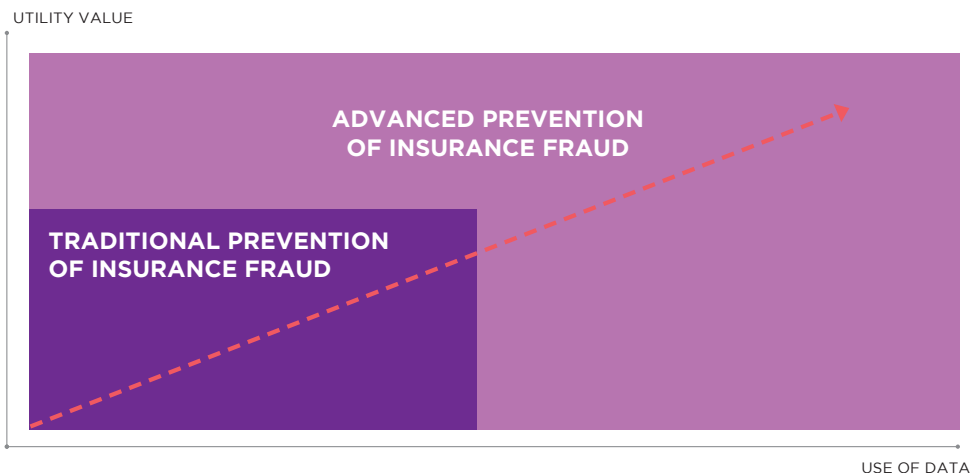


Figure 7 basically describes two paradigms of fraud prevention. The traditional method of fraud prevention is based on a few specific threshold values and relatively few data points in addition to some simple rules to identify when a claim is suspicious. Advanced fraud prevention is based on far more data points and complex patterns which in coordination may indicate whether a claim is suspicious.



Figure 8 illustrates advanced case administration and suppression of fraud. Different data are entered into the machine, which then carries out an analysis and alerts the case manager in the event of suspected fraud.

the fraudster. Artificial intelligence, or so-called machine learning, where you look at patterns across data, and especially unstructured data, such as pictures, are essential to identify possible fraudsters. But how many data are you allowed to use to identify fraudsters? This is a question of legislation and ethics.

### 15 control questions for everyone or dynamic administration by means of automatic correlation of data

“ We identify suspicious claims by comparing data points and their connections. We have developed the ‘recipes’ of data points and indicators underlying patterns of fraud. You really don’t need a lot of data points, because by means of statistical algorithms and machine learning we can teach a system to see fraud patterns by means of historical data. But in order to raise the quality of alerts and reduce the false positive rate, we recommend using many data sources. – Bo Søvsø, CEO, Shift Technology

If the caseworker asks 15 control questions of everyone making a claim, he or she will most likely catch Jens, but Anne will be subjected to unnecessary control. By means of digitalization, data from BIQ (business-related database), DMI (weather service), police data, claims adjusters’

reports etc. may be correlated in a data bank. The machines can detect patterns that appear suspicious or resemble other cases of fraud. Suspicious cases are marked, and the case manager knows, when Jens is calling, that something suspicious is afoot. Jens will then be asked the 15 questions, and perhaps ultimately be reported to the police. Anne’s claim will be dealt with easily and painlessly, and before the day is over, she will receive her compensation. So, it is not just a question of insurance companies being able to look all of us over the shoulder. It is about how data can be used to focus our efforts to suppress fraud to keep the number of inconvenienced, honest policyholders as low as possible.

### When fraudsters go company shopping

Whenever companies start using new ways of identifying fraud, the fraudster, unfortunately, also optimize their strategies to avoid getting caught, such as moving to a company that operates with different lower thresholds or less advanced systems than company A. To avoid fraudsters shopping around among companies, many other countries have adopted joint registers, through which companies share data. This enables the case manager to identify suspicious traits in a policyholder’s claims history.

## INCENTIVE

**Q:** *“Aren't you just going to monitor everything I do simply to save pennies?”*

**A:** For one thing, it's not a matter of pennies but about large amounts defrauded every year. For another, it is not fair that you as an honest policyholder is defrauded and will have to pay more than 1500 kroner in extra premiums a year, because others do not know how to behave decently. So, the industry should be able to collect, store and use the data points needed to provide value in terms of fraud suppression. Moreover, it is an important principle that customers tell the truth and do not lie by, say, freely adding a couple of fictional Ray-Ban sunglasses to the description of a stolen car. We see it as an important ethical task to give policyholders the incentive not to lie and report false data. On top of that, it acts as an important driver if we can suppress fraud, reactively as well as preventively. This may be done by means of advanced fraud prevention systems, common claims registers and preventive efforts through which influencing of conscience or fear of subsequent retribution may contribute to doing the right thing and providing true information.

### Fusion of case administration and fraud prevention

Over time case administration and suppression of fraud will need to be fused and run in a far more automated way and in real-time. One reason may be that Anne and Jens both want case administration to be done smoothly and, preferably, resulting in immediate compensation. Therefore, we will see computers being of great help in speedily analysing many data points and looking for suspicious patterns.

The ethical question, then, is whether we should use what we know will work – or whether that would be going too far? In position 1 you would be deeply sceptical. In position 2 you would be prepared to use more relevant data points and automatic correlation to prevent inconveniencing of individual policyholders in the name of the common good. In position 3 you go all in and maximize the quantity and correlation of data for the benefit of the community.

## How can we use data for prevention?

### When we get close to the individual person, things get sensitive

Because Anne has placed sensors on their water pipes, her insurance company is able to limit or prevent damage. This also goes for the car, in which a sensor monitors Anne's driving. But, as we saw earlier, things get more sensitive when data monitoring moves closer and closer to Anne and Jens as individuals.

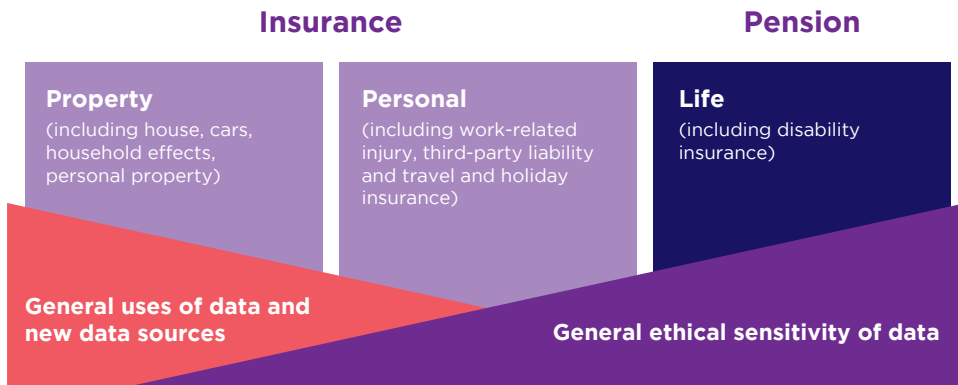


Figure 9 illustrates how use of data within the field of insurance has generally developed the greatest in the field on the extreme left, especially with respect to damage to property. The further we move to the right – towards individuals – the more sensitive the data will be. Social norms are undergoing change during these years as especially younger generations have grown up using large quantities of data. However, the major ethical sensitivity of life data further complicates collection of necessary health data in connection with payment of claims, and people may experience running into a wall while being in a very vulnerable position.

**Lifestyle and behaviour will come under close scrutiny**

“ In 10 years no one will care about their data being shared with others due to two things: first of all it will be much more secure and you will be in more control of what you want to share or not; and second of all, people will realize that sharing your data actually has more benefits than keeping it to yourself.

- Luca Schnettler, CEO & founder, HealthyHealth

Collection of data on Anne’s and Jens’ behaviour, patterns of movement, lifestyle and state of mind is still in its early stages in Denmark. But it is a development to be expected, and even though it might sound dangerous, it may actually make sense. Pension companies already use data to discover whether Jens is at risk of stress or in need of help before things go wrong. Or if Jens might benefit from good advice about better lifting techniques to avoid serious injury to his back that might result in loss of capacity for work and long-term absence due to illness.

**Less expenditure on welfare**

If companies, with the consent of their clients, can use data to help Anne and Jens stay well, is it not then an ethically justifiable welfare responsibility? Neither Anne, Jens, the employer, society nor the pension company will benefit from a long absence due to illness.

**Is the patient receiving the right medication?**

Genome data will explain why some patients do not react to their medication. Today legislation prevents the use of genome data for insurance purposes. There may be quite legitimate reasons for this, but the consequence is that treatment is not optimised, and money spent on welfare is wasted. We can achieve great utilitarian goals if we are permitted and dare go far in our use of data.

### Better prevention with more and better data

“ If you monitor people, it clearly influences their behaviour. But a good part of such behavioural adjustment, the result of feeling that you are being watched, is not always fair or professionally justifiable as it is often based on rather slim documentation.

- Thomas Ploug, Professor, Aalborg University and former member of the Danish Council on Ethics

If Jens changes his behaviour to drive more carefully or live more healthily, it is important - in order to be justifiable from the perspective of data ethics - that such behavioural change is rational. The pension provider may offer good advice and tips on what constitutes sensible changes of behaviour, but one-size-fits-all solutions are not always the best answer.

“ The thing is that everyone has different risks and each risk that you have should be prevented in a different way. If you apply the same prevention methods to different medical conditions they will not be as effective.

- Luca Schnettler, CEO & founder, HealthyHealth

Even more data and knowledge may personalize counselling even more than today to ensure that it is especially aimed at and relevant for Jens.

### Towards a data-sharing economy

There are major, positive possibilities of sharing data – especially sensitive personal data – with a view to prevention of damage and disease. But a well-functioning data-sharing economy also requires solid infrastructure. And trust.

To convince Jens to share very sensible data with his insurance or pension provider, he must:

- Be informed of which purposes his data will be used for
- Be convinced that data security is 100% bullet proof
- Be in much greater control of who gets access to his data

So, is prevention through use of data ethically justifiable? In position 1 you would see many risks of passing on behavioural data to the insurance company. In position 2 you would be ok with behavioural change based on informed and consent-based data-sharing. In position 3 behavioural change should be used to the maximum to benefit the community.

## BEHAVIOURAL CHANGE

**Q:** “Isn't it like 1984 if you know more and more about my house, my car, where I've been and what I'm doing?”

**A:** Perhaps, but you are in control of how much we know. We believe it is justifiable if we can tell you that you have a major risk of water in your basement or a disabling back injury – and if you can do something about both before they happen, it will benefit you, your family, your landlord and your insurance company; and if change of behaviour may prevent you from injuring you back, it will be of benefit to everyone, including your employer and society. Perhaps excluding your chiropractor.

# Easier, quicker, safer. Please!

## More data in play, with the individual at the centre and in charge – it will not happen of its own accord

### You are in charge

It is important that the individual is in control of his or her own data, and that it is fully transparent to Jens to what he has given his consent. Privacy by Design is about building transparency and more individual control into the interfaces between Jens and the insurance or pension provider. It is about creating a win-win situation, where Jens gives his consent to allow the pension provider access to data to see how well he is covered 10,20 or 30 years into the future. Or to let the provider know when to assist or counsel him with relevant, valuable offers at times of important life events. We do not see this as monitoring but as individual control and security.

“Those who are able to put together the total value package and combine a reasonably noble purpose with excellent customer experience, compliance, high ethical standards – both as business model and in terms of data processing – and convenience, they will be the winners. And millennials will intuitively be capable of decoding those things immediately.”  
– Sam Kondo Steffensen, Program Director, DTU Business

In position 1 you will be more sceptical as to whether you can achieve true privacy through consent. In position 2 you will make the individual capable of putting data in play to the greatest possible extent. In position 3 you will find that some data accesses should be based on granting of special processing authority or opt-outs.

### TRANSPARENCY AND CONSENT

**Q:** “Can I know for certain what you are using my data for?”

**A:** We value transparency and consent very highly, and we believe it is important to inform about how and why data are analysed, where they are used and what the advantages are for you. In that way we will be able to preserve a trusting relationship where both parties win by revealing more data and making them useful. Consent is not just about observing the law, it is also about creating more value for everyone with you at the centre. Data security is closely connected to transparency and remains a prerequisite.

### The individual at the centre

“GDPR is fantastic, because it has made possible the creation of a “data subject”. This constitutes a strengthening of the world, because it clarifies what we can and should do with our data. It is no longer about ownership of data but about administration of the values of others, and it can be troublesome for large organizations to handle gigantic registers. But in the long term, based on the right agreements between administrator and data subject, we may experience much more agility in terms of correlation of registers etc. Provided this is ok with the data subject.”  
- Claus Renfeld, entrepreneur and Ph.d.

With the General Data Protection Regulation (GDPR) it was made clear that Anne and Jens own their data. And GDPR opens up great possibilities for Anne to bring more data in play. But to us, data ethics is naturally not only a matter of observation of GDPR. In many cases, it may be relevant to go further than legislation and to build

upon GDPR – And sometimes we must refrain from using data even if it is legal.

“More control with your own personal data will also eventually determine how much you want to participate in the ever-growing digital economy as you get to control how private you want to be. If there are economic incentives to share data, we will see economic participation increase in addition to new, more robust sources of data to better quantify and manage risk.”  
- Steven Schwartz, managing director, CEO, Quest and vice-chairman of the International Personal Data Trade Association

In position 1 data ethics will consist of strict observation of GDPR, and care will be exercised with regard to consent. In position 2 Jens will not only be guaranteed ownership of his data, he will also be urged to make use of them. In position 3 attempts will be made to introduce specific regulation allowing access to data of common utility value.

## INDIVIDUAL CONTROL, SECURITY AND DIGITAL CULTURE

**Q:** “How can I be sure who has my data and that they don't end up in the wrong hands?”

**A:** We value own control of data as an important principle. You own your own data and you are in control of them. No one else. So, it is you who must decide who gets to administrate your data. You own the data, but knowing that they remain inaccessible in some large database does not necessarily guarantee better control. Therefore, we propose that your data should be as safe and, at the same time, as accessible for you as possible. You should have the possibility – on a transparent and informed basis – to use your data. It is important that everyone gets onboard and that everyone has the possibility and wish to be part of our communities. For this reason, digital culture is another important ethical principle. It is essential to include the greatest possible number of people and to focus on how insurance may be tailored to different groups, making it possible for all to see advantages of sharing data, even when individual advantages may be hard to spot.



# From welfare data to risk assessment to welfare solutions

Thanks to data we know more and more about the world and the risks that exist. Risks that we may jointly insure against if we are not personally able to limit or minimise them. Without insurance of life and property, wheels will grind to a halt. If we are to live longer and more securely, we need to put more welfare data into play. The question is only: how? We have prepared the ground for a discussion of three positions of data ethics and five basic themes with respect to insurance against risks. With this the insurance and pensions industry hopes to contribute to creating welfare solutions in response to our different contemporary problems. And, moreover, to handle

the difficult dilemmas in this connection. It must be possible in full respect for both the individual and the common good. And without anyone being left behind. We very much hope that you will contribute to this debate.

## THANKS FOR NOW

**Q:** *"It all sounds great. But listen, isn't it simply that you want to know more about us to earn more money?"*

**A:** Actually not. Please read the publication again. And thank you for your attention.

This publication was prepared in 2018 for Insurance & Pension Denmark by the consulting company Nextwork A/S on the occasion of the association's 100th anniversary.

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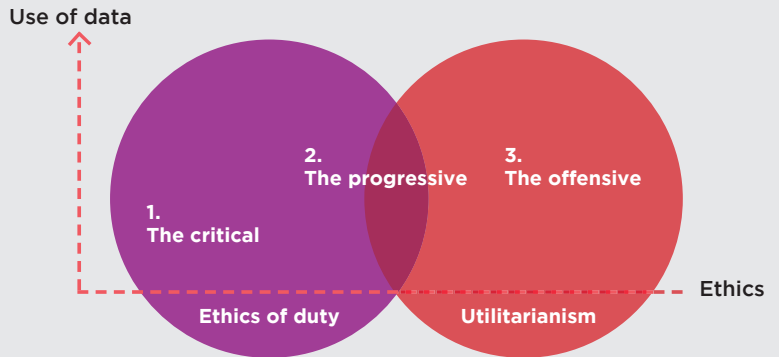
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### Three positions of data ethics

Based on individualized ethics or community-oriented ethics, and minimizing or maximizing data utilization, there are three basic data ethical positions:

1. *The critical*, Each individual person must own data, and we must be very careful.
2. *The progressive*, By giving consent an individual may benefit far more from his or her data.
3. *The offensive*, A good society is based on all of us using everybody's data for the common good.

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