A.N.T.E – An Intervention to Enhance Private Pension Savings of the Self-Employed

Part 1

Lotte Jansen, a case in point

Meet Lotte Jansen, a 25 year-old student and semi-professional youtuber. While Lotte is enthusiastic about her marketing studies, her Youtube career is going so well that she plans to turn it into a full-time job after finishing her Master's degree. Lotte was born and still resides in Rotterdam, Netherlands, where she feels at home and where she makes plans for her future. In light of a long-standing tradition in welfarist policy, many people would objectively agree with Lotte's subjective sentiment of the Netherlands being one of the better places to grow old in. With a low risk of poverty, good access to education, and a healthcare system that repeatedly ranks amongst the best functioning in world-wide comparison, most of what many would consider the cornerstones of citizen well-being are commonplace in Dutch society.

Lotte sticks around mostly due to family bonds, her friend-group and the diverse cultural offering, yet she is somewhat oblivious to such objective, more demure aspects of the sociopolitical ecosystem. Notwithstanding this welfarist framework, Lotte's future is somewhat less secured than that of her friend Marteen, who recently started in a big marketing firm and is so happy with the job he landed that he plans to stick around until retirement. "Retirement? God Marteen, I'm too young to even think of that…", thinks Lotte, negligent of the fact that her plans of becoming a fulltime youtuber actually necessitate scrupulous planning much more so than does Marteen's job at the marketing firm. To understand why Lotte is much more in need of foresightful planning than Marteen, let us take a look at the Dutch retirement system.

The Dutch Retirement System – the "Cappuccino-Mix"

Pillars 1 & 2

One of the backbones of Dutch social security is the retirement system. As judged by the Mercer Rating of retirement systems and its' three sub-indices of Adequacy, Sustainability and Integrity, it was considered the best system world-wide in the consecutive year of 2020 (Knox, 2020). Fully in line with the famous Dutch pragmatism, the Dutch sometimes refer to their three-pillar system as the "Cappuccino-mix". Why this analogy? Because most of us have coffee, yet everybody has it in a different style.

Take Lotte for an example. While most Dutch citizens have their coffee (pillar 1) with milk (pillar 2); Lotte, pursuing her plan of becoming a self-employed youtuber, will be served pure black coffee (pillar 1) with an option to add some cocoa powder (pillar 3). The first pillar, the pure black coffee, is the Algemene Ouderdomswet (AOW), a baseline pension that is provided by the government. It is a mandatory "pay-as-you-go" system, wherein pension returns are decoupled from levels of income and the amount of the benefits depends on years of residency within the country. While every Dutch citizen contributes to and takes from the AOW, forming the basis of the "Cappuccino-mix", the milk gets added in the second pillar.

In the second pillar, most of the traditionally employed Dutch working population subscribe to a mandatory occupational pension scheme that is arranged between the employed and the employing sides on either industry, company - or specific occupational sector level. These schemes typically come in the form of defined benefit arrangements, wherein employees are guaranteed a predefined benefit upon retirement onset. The over-aging of Dutch society puts a huge strain on the pay-as-you-go system in pillar 1, and historically low interest rates and lowered funding ratios make DB systems in pillar 2 increasingly unsustainable. There is dire need for revision and, following rigorous discussion, reform is on its way. With the volume of pillar 2 pension schemes accumulating up to more than twice the total Dutch GDP (Westerhout et al., 2021), thereby constituting the main bulk of assets in the Dutch retirement system next to value in pillar 1, consequently, most of the reforms target pensions schemes in pillar 2. More and more pension funds shift from DB systems to defined contribution (DC) schemes, wherein employees allocate a fixed proportion of their wage to a pension fund that does not guarantee a defined benefit, yet only provides an estimate of their future benefits within an anticipated margin of uncertainty, such that employees carry the associated investment risk.

Pillar 3, the pillar of the "Self-Employed"

While making up a substantial part of GDP contribution, the category of the self-employed do not partake in the obligatory occupational pension schemes in pillar 2, with some exceptions such as remaining in pillar 2 schemes upon switching from traditional employment to self-employment. Expressed in terms of the Cappuccino-mix analogy, the self-employed miss out on the milk. The self-employed may compensate this absence of milk by adding some cocoa powder to the mix. The cocoa powder is in "pillar three", the voluntary pillar, wherein traditionally employed citizens may invest into private pension schemes in order to augment their benefits from pillars 1 and 2, and wherein the self-employed may compensate for their non-participation in pillar 2. Since pillar 3 constitutes only a marginal percentage of overall pension wealth, it is not a main locus of reform, yet in the absence of the obligation to participate, strategy and intervention to motivate citizens like Lotte to voluntarily add cocoa powder to their coffee have been a matter of policy making all along. Thus, in light of the reforms that target the dairy side of things, what can policy making do for those who take their coffee black, what can be done to aid people like Lotte, the youtuber, in securing a sustainable retirement?

Ignoring Pillar 3 Investment – Blunders and Biases

In terms of our analogy, let's assume that Lotte is not a coffee afficionado; she has always viewed coffee as a means to an end, she consumes it without giving it much thought. To her, black coffee in the morning is a given and she never cared much for adding cocoa powder to the mix. As trivial as the example may seem, the real-world parallel to this analogy may have dire consequences for Lotte, since having a spartan black morning coffee may make her run on fumes in the evening; or, put differently, it may well preclude her from being able to afford a nice cup of Cappuccino out in town once she retires. Why, like many other of the growing group of self-employed in the Netherlands, does Lotte fail to save for her retirement?

Like many others within her age group, for Lotte, the utility of her income translates more or less directly to its hedonic capacity. She likes to go out frequently with friends, likes to shop for clothing, and enjoys going on city-trips. Afterall, spending on experience is spending on happiness, right? Lotte is acting under a self-control problem that is otherwise known as *present bias* (Chakraborty, 2019). She values the short-term gratification of consumption over the delayed gratification of long-term saving. Lotte's utility function with regards to the financial means of which she disposes thus shows a pattern of hyperbolic time discounting (Laibson,1997), such that, when assessing her financial household, Lotte places higher value on imminent hedonic pleasure and the money that is at immediate disposal for purchase, than on the financial security that is immanent in accumulating assets for future use. The flipside of this bias in intertemporal decision making implies that economization and saving become more attractive to her the further they are delayed to the future (Thaler & Benartzi, 2004), and hence Lotte keeps on procrastinating the matter of planning for her retirement. She is naïve in the behavioural economic sense of the word, as she is unaware of the fact that the decisions made by her future self will be affected by the same time discounting tendencies.

Furthermore, besides prioritizing disposability of financial means in the now, her present bias also extends to non-financial costs. In a CentERdata survey amongst a sample of employees, students and job-seeking individuals, a large majority expressed their endorsement of mandatory pension schemes, 60% of which justify this endorsement by pointing to the associated savings in terms of the time and the effort which, in the absence of compulsory schemes, have to be invested into financial education and individual planning (Van Rooij et al., 2007). Thus, a lack of expertise in financial matters along with inertia and the reluctance to allocate time and invest effort into attaining the relevant information and education seem to be further factors in Lotte's ignorance of pillar 3 investment. This explanatory factor is further backed up by self-report data that demonstrates that the percentage of those feeling inadequately informed about the pension system is higher in the group of self-employed than in the group of traditionally employed, with easier access to information about pension funds within conventional employment infrastructure hypothesized as the main differential factor (Karpowicz, 2019). Another psychological aspect that influences Lotte's decision making and gets in the way of adding cocoa powder to the coffee is that she is loss averse. Her current net income sustains a lifestyle which she would be reluctant to give up. Her monetary means, and the fact that she pushes the tedious and time-consuming task of commiting her free-time to pension planning to the indeterminate future, endow her with a lifestyle of which she is very fond. Besides her individual living standard, the resulting household expenses, and her basic living cost, she is part of a social system of friends and family, with fixed habits and rituals that are of high importance to her. Thus, there is further endowment nested within her social network and giving up parts of both her temporal and her financial freedom would not only affect her living standard, but could potentially exclude her from social activities to some extent. Stated in terms of prospect theory, the proximate losses in living standard loom much larger than the distal gains in pension returns.

Part 2

A.N.T.E - A four-step behavioural insights intervention

From the perspective of life-cycle theory which assumes that people manage their household and spending such that they factor future demand/need into present spending and consumption (Modigliani, 1966), Lotte's spending behaviour is far from optimal. Every pleasure and treat that she is indulging in today diminishes her potential returns from a privately managed pension plan. In terms of the behavioural economic paradigm, her behaviour is indeed irrational, yet there is a certain systematics to this irrationality, which reveals itself in the impact and interaction of the above-described biases. The fact that her behaviour is not fully random, but influenced by prevalent behavioural biases that follow well documented patterns, makes it predictable and alterable. In other words, we can use some of the very biases that negatively affect Lotte's behaviour to her advantage, we can design a choice architecture in order to nudge her. Lotte's first contact with the tax office serves as the point of entry to our intervention. Upon concluding her first year in business, Lotte is handing in all relevant documents that concern her enterprise at the tax office and receives a notice of tax assessment in return. Let's assume that Lotte had a very successful year in business and earned 4000 Euro on average per month. Since every tax paying citizen has the right to a certain tax allowance allowing for tax free pension investment (pillar 3), the tax office is the optimal relay to inform Lotte about both her need, as well as her opportunities regarding her retirement planning: In the intervention planned, the tax office cooperates with financial service providers by providing them with the basic data (name, postal address etc.) of the solo-self-employed, such as Lotte. On her first tax notice, Lotte will not necessarily register the indication about her data having been passed on to a state-approved, reputable financial service. Nevertheless, it opens a trustworthy channel of contact by equipping the service provider with a provision to refer to. The intervention follows in several steps:

1. *"Allude/Anchor"*
   One week after Lotte received her first notice of tax assessment, a financial service provider sends her a package of high quality Cocoa-powder, along with a business card and the handwritten greeting: „For a wonderful Cappuccino experience!". The package does not contain any further information. Lotte will most likely be confused with regards to the sender and the purpose of the gift and not make any sense of the associated message, yet, she will probably be pleased about the high-quality present.

2. *"Nudge"*
   Two weeks later, Lotte receives a letter (Appendix A). The letter is formal, addresses her personally, and is signed by hand. Subsequent to the anonymous gift, the communication is now continued on a personal level. The letter supposedly comes from the future, it is dated in the year of 2057, the year when Lotte will enter into retirement. The letter informs Lotte about the forthcoming disbursal of a savings contract into which she entered 40 years ago, amounting to a total savings sum of

552.000 € that will be transferred to her bank account. The letter emphasizes that it was her own foresight that led to successful assurance of her standard of living and secured her against old-age poverty. Attached to the letter, she finds a bank statement that is issued on her name and displays the respective amount. The letter ends on the formulation: We wish you all the best for your future, thanks to your foresight we are sure that it will be bright!

3. *"Talk-though"*

   With Lotte now probably being even more confused than upon receiving the coco powder two weeks before, yet probably also being quite excited about holding a bank slip that claims her ownership of 552.000 €, a second letter (Appendix B) that follows on the subsequent day finally enlightens her. The letter opens by informing Lotte about the sender and the symbolic meaning of the gift (step 1). It then addresses Lotte in her role as a successful self-employed solo entrepreneur, and points her to the fact that her status as such comes with the fortunate freedom of being able to make her own decisions regarding her pension plans and thus tailor them to her specific needs. In the next step, the letter refers to the previous letter (step 2) which contained the fictitious bank slip and explains that, based on hypothetical data, a trusted certified financial consultant calculated how a relatively small monthly contribution (200 Euro) to a representative global index funds could accrue to the substantial sum that she encountered on the bank slip. Furthermore, the text informs her about her retirement reserve and the associated tax benefit, through which the state complements her investment and reduces her actual contribution significantly below 200 Euros. Lastly, the letter emphasizes that it is of great importance to start early in order for her to profit from large compound interests, and closes by stating that an appointment with a financial expert has been reserved for her if she wishes to receive further information on the program.

4. *"Empower"*

   In the fourth and final step of the intervention, Lotte has an appointment with a consultant who works for the financial advising firm. During this appointment, the advisor shortly summarizes her economic situation with regards to what differentiates her from the traditionally employed. Subsequently, the two assess Lotte's financial situation more closely, and extrapolate her future living costs. He then explains once more the advantages she could have with regard to her tax benefit if she chooses to invest in a retirement savings plan. Next up, he provides her with detailed information about different investment options, ranging from low-risk index funds and ETFs to no-risk insurance products. Given that Lotte wants to follow the advice and work together with the company in order to construct a savings plan, a general conversation as well a rigorous empirical assessment of Lotte's risk profile serves to determine the optimal product.

Theoretical Framework - A Basis in Biases

In the following, we will look at the specific design features and formulations in each stage of the intervention steps in order to assess both the mechanisms employed to drive behavioural change, as well as their specific reference to and acting upon the behavioural biases that we have established previously. Why does Lotte receive a gift of luxury cocoa powder in the first step? This gift serves two purposes. First of all, if Lotte has heard of the Cappuccino analogy, the cocoa powder, along with the greeting card, may serve as an initial prompt to get her thinking about her own retirement plans. Secondly, regardless of whether Lotte knows the analogy or has never heard of it, the gift serves as a strategy to install a notion of indebtedness in Lotte: She has received a gift of high quality, maybe she even googles the brand and finds out that it is a luxury product, yet, upon wondering why someone would make her this gift, it is difficult for her to come up with a valid reason. In the absence of a valid explanation, once contacted by the source of the present, she will be more likely to make a concession. The principle of social reciprocity (Cialdini, 2001) may thus prompt her to be more receptive to the advice she will encounter in step 3 of the intervention and may render her more willing to accept the reservation that has been made.

The second step of the intervention serves to mitigate the effects of hyperbolic time-discounting under which Lotte is acting with regard to her present-day spending behaviour. While, as delineated above, her current net income and the goods and experiences she invests in, endow her toward a present bias, designing the letter such as to appear maximally realistic while presenting her with a hypothetical yet substantial endowment in the future may partly reverse this bias. The idea here is thus to use the endowment effect in terms of a future projection. Related studies have shown that letting participants interact with an age-rendered avatar of themselves in a virtual reality environment leads to empathizing with this future self (Hershfield et al., 2011). Participants take the perspective of their future selves and adjust their saving behaviour toward delayed gratification in order to benefit the future self. The idea of the future endowment as suggested here, is that a similar effect may be evoked not by confronting Lotte with an avatar of herself, but by creating a frame for her to imagine herself 40 years later. The idea of herself disposing of 552.000 € is pleasant, she might come up with a lot of purposes on which to spend her money: Travelling, going to Restaurants, meeting her old friend Marteen for a coffee, and taking part in social life in general. She could maintain the lifestyle she is loving today and is endowed with an idea of a prosperous future self.

While the proposed investments that Lotte will encounter in the final step of the intervention are quite low in risk - she will be familiarized with global index funds and ETFs that have a history of stable positive dividends - many naïve subjects still perceive any type of investment into stock as a risky endeavour. Pointing her to the possibility of old-age poverty and a potential decrease in general living standard thus serves to create a loss frame which, as postulated by Tversky and Kahnemann (1984), better prepares decision makers for accepting risk than does a framing in terms of potential gains. While this loss frame has no in situ effect, since Lotte is not making any investment decision within this acute frame, it may well prepare her to better accept risk once the arguments that constitute the frame are repeated by an expert in the following counselling meeting (step 3).

The third letter presents Lotte with what she can actually do to achieve the pension goals as delineated in the first letter. The opportunities that come with her status as a self-employed are now presented in a gain frame, in order to set a positive tone for pitching the ultimate and central element of the intervention. Lotte is now superficially informed about the steps that she may take in order to materialize the scenario as presented in step 2. This is by no means an exhaustive account of her options with regard to her pension planning, yet only serves as a basic guideline on which she may follow up. She is further informed that this follow-up has already been planned for her – reserving a fixed appointment with a counsellor for her relies both on her inertia to cancel the meeting as well as on her indebtedness and resulting concession that have been primed by the earlier donation of a gift. The function of the last step of our intervention is self-contained and does not need further elaboration. And even if Lotte does not turn up, steps one to three will most likely have served the purpose of sensitizing her for the subject matter. From now on, Lotte will never have a coffee without at least briefly thinking about her retirement plans.

To evaluate the success of the intervention in convincing self-employed citizens like Lotte to start investing time and resources into their private retirement plans, several steps should be undertaken. First of all, to determine the size of the sample of self-employed that are subject to the intervention, the tax office provides the necessary basic data. Next, since the main goal of the intervention was to motivate the self-employed to start caring for and privately investing into their pension, an operationalisation of this dependent measure is needed. To this end, the financial advising company provides data on how many of those who were subjected to the intervention actually turn up to the counselling meeting. During a piloting period, wherein the above-described behavioural insights intervention is compared to a mere informational campaign (control group receiving information material and invitation to meeting), attendance between the experimental group and the control group is compared. Once the piloting phase terminates, the percentage of those turning up to the counselling session still remains a valid measure of the interventions success with regards to elicit motivation. Last but not least, the tax office provides anonymized financial data of the participants 2, 5 and 10 years into the intervention. This data serves to assess in how far the intervention was a success not only in terms of igniting motivation but also in terms of the overarching goal, the actual increase of pillar 3 investment of the self-employed. This analysis should differentiate those who took part in the counselling meeting and those who did not, in order to identify those individuals who took action subsequent to receiving council and those who became active themselves.

Sources

Chakraborty, A. (2019). Present bias. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3474231

Cialdini, R. B. (2001). The Science of Persuasion. Scientific American, 284(2), 76-81. https://www.jstor.org/stable/26059056

Hershfield, H. E., Goldstein, D. G., Sharpe, W. F., Fox, J., Yeykelis, L., Carstensen, L. L., & Bailenson, J. N. (2011). Increasing saving behavior through age-progressed renderings of the future self. Journal of Marketing Research, 48(SPL), S23-S37. https://doi.org/10.1509/jmkr.48.spl.s23

Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. American Psychologist, 39(4), 341–350. https://doi.org/10.1037/0003-066X.39.4.341

Karpowicz, I. (2019). Self-employment and support for the Dutch pension reform. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3370960

Knox, D. (2020). Mercer CFA institute Global Pension Index. Mercer. https://www.mercer.com.au/content/dam/mercer/attachments/private/asia-pacific/australia/campaigns/mcgpi-2020/MCGPI-2020-full-report-1.pdf

Laibson, D. (1997). Golden eggs and hyperbolic discounting. The Quarterly Journal of Economics, 112(2), 443-478. https://doi.org/10.1162/003355397555253

Modigliani, F. (1966). The "Life-Cycle" Hypothesis of Saving, the Demand for Wealth and the Supply of Capital. Social Research, 33(2), 160-217. https://www.jstor.org/stable/40969831

Thaler, R., & Benartzi, S. (2004). Save more Tomorrow™: Using behavioral economics to increase employee saving. Journal of Political Economy, 112(S1), S164-S187. https://doi.org/10.1086/380085

Van Rooij, M. C., Kool, C. J., & Prast, H. M. (2007). Risk-return preferences in the pension domain: Are people able to choose? Journal of Public Economics, 91(3-4), 701-722. https://doi.org/10.1016/j.jpubeco.2006.08.003

Westerhout, E. W., Ponds, E., & Zwaneveld, P. J. (2021). Completing Dutch pension reform.

Appendix A

Ms. Lotte Jansen
Musterstrasse 5
54321 Spaßstadt

Maastricht, 07.03.2057

Payout

Dear Ms. Jansen,

Exactly 40 years ago you gifted us your trust and made a very wise decision!
Your savings contract with our global fonds terminated today and we are more than happy to inform you that we will transfer the below amount to your bank account (IBAN: DE17 3625 0000 4321 03). For these great news, you have no one but yourself to thank. We like to see ourselves as nothing but a helping hand in your quest to look out for yourself and preserve your standard of living.

We wish you all the best for your future, thanks to your foresight we are sure that it will be bright!

Kind regards,
John Doe

Lotte Jansen
Musterstrasse 5
54321 Spaßstadt

Statement Date: 07.03.2057

STATEMENT OF ACCOUNT
Lotte Jansen
Musterstrasse 5
54321 Spaßstadt

DATE	DESCRIPTION	CHARGES	CREDITS	ACCOUNT BALANCE
07.03.2057	*Transfer Index-funds XYZ*		$552.000,00	

Appendix B

Dear Ms. Jansen,

Two weeks ago, we made you a gift. Did you ever hear of the term “Cappuccino-mix”? It describes the Dutch retirement system, with the first pillar of basic provisions being the “coffee”, the second pillar of occupational schemes representing the “milk”, and the third pillar, the private pension schemes, being referred to as the “cocoa-powder”. Since you are self-employed, you do not participate in pillar 2 and thus may only accrue benefits in pillar 3 in order to complement your basic provision. Please understand our gift as an invitation to start thinking about the importance of planning the financial aspects of your retirement.

As a successful entrepreneur, you know the value of thinking and acting with foresight. You are in the fortunate position of being able to decide for yourself how and to what extent you want to ensure your financial well-being in old age. And did you know just how much sensible financial planning actually pays off?

Using hypothetical data, we have calculated what can be achieved with relatively small monthly contributions over the course of your entire working life.

You will be surprised: Just 200 € investment per month over 40 years into one of our funds will result in future assets of more than 500.000 €! And the best of all: You only pay 130 of the 200 € yourself, as the rest is paid by the state in the form of tax benefits.

The important thing is to start early. We would be pleased to welcome you soon, in order to discuss your personal case and draft a personal savings plan. We have withheld an appointment for you with one of our specialists (20.07.2022); if you do not wish to take this appointment, please let us know.

With kind regards,

John Doe,