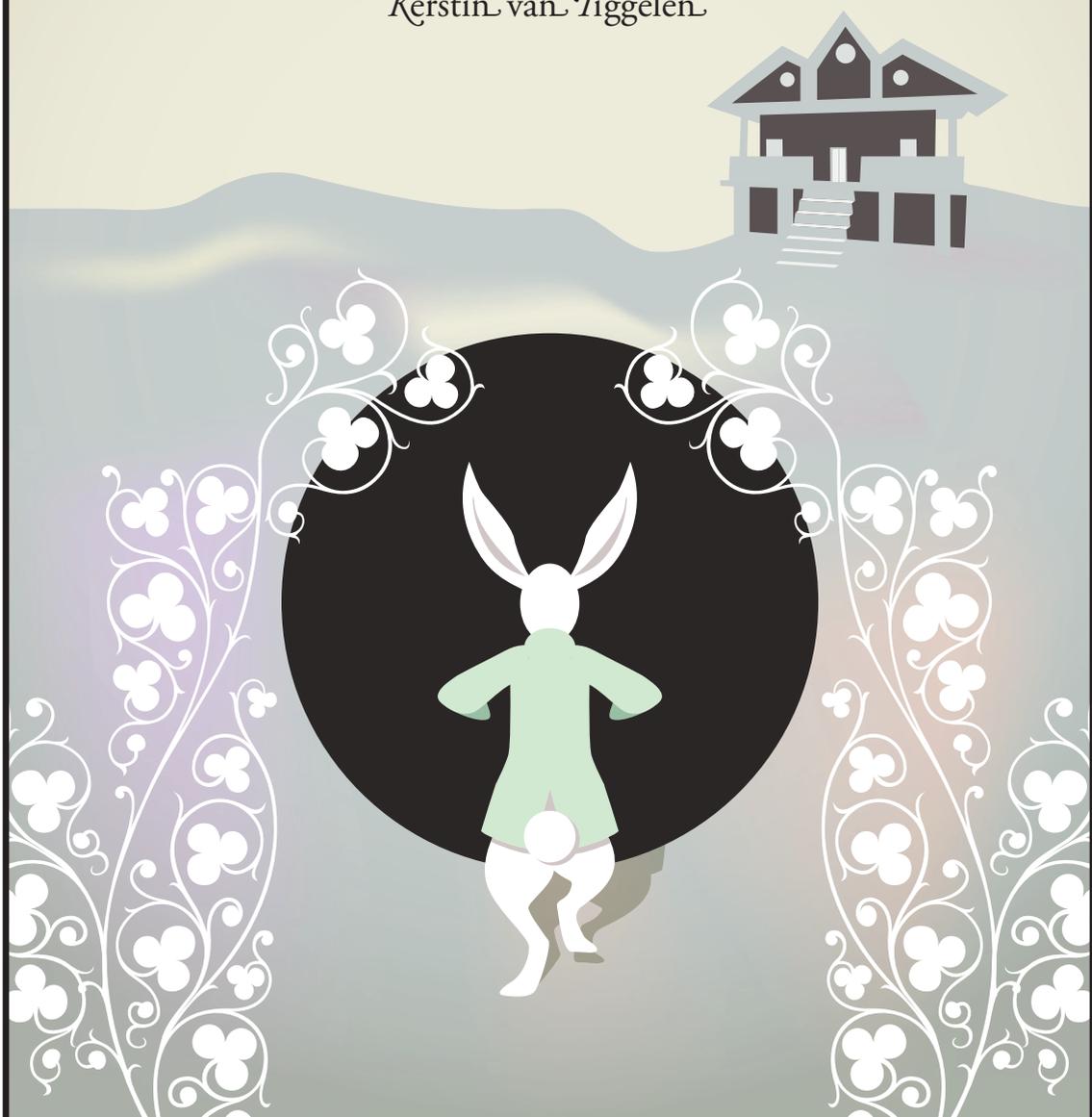# FOLLOWING THE WHITE RABBIT

Rule users' effects on the life cycle of holes in rules

Kerstin van Tiggelen

FOLLOWING
THE WHITE RABBIT

Rule users' effects on the life cycle of holes in rules

♣

Het witte konijn achterna:
de effecten van regelgebruikers op de levenscyclus van gaten in regels
(met een samenvatting in het Nederlands)

Kerstin Barbara van Tiggelen

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Promotor	Prof. dr. G.J.L.M. Lensvelt-Mulders Universiteit voor Humanistiek
Copromotor	Dr. P. Pelzer Universiteit voor Humanistiek
Beoordelingscommissie	Prof. dr. ir. G.M. van Dijk Tilburg University
	Dr. G. de Jong Rijksuniversiteit Groningen
	Prof. dr. H.P. Kunneman Universiteit voor Humanistiek
	Prof. dr. S. Lilley University of Leicester
	Prof. dr. A.J.J.A. Maas Universiteit voor Humanistiek

So she was considering, in her own mind (as well as she could, for the hot day made her feel very sleepy and stupid), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a White Rabbit with pink eyes ran close by her. There was nothing so very remarkable in that; nor did Alice think it so very much out of the way to hear the Rabbit say to itself "Oh dear! Oh dear! I shall be too late!" (when she thought it over afterwards it occurred to her that she ought to have wondered at this, but at the time it all seemed quite natural); but, when the Rabbit actually took a watch out of its waistcoat-pocket, and looked at it, and then hurried on, Alice started to her feet, for it flashed across her mind that she had never before seen a rabbit with either a waistcoat-pocket, or a watch to take out of it, and burning with curiosity, she ran across the field after it, and was just in time to see it pop down a large rabbit-hole under the hedge. In another moment down went Alice after it, never once considering how in the world she was to get out again.

Alice in Wonderland, Chapter I, Down the rabbit-hole (Carroll, 1865).

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SUMMARY

Professionals encounter problems in their work environments that can be attributed to a generally perceived friction between rules and practice. **Part I** demonstrates that this professional squeeze is not just a result of a bilateral interaction between worker and friction; it is indicative of the much larger context in which professionals operate as apparently powerless appendices, constrained by the rules and processes surrounding them. A coherent concept associated with such a context is presented by March, Schulz and Zhou in 2000, as introduced through their ecology of rules. In their study on the issue of rule change, they defined a rule's life cycle as consisting of rule birth, rule revision and rule suspension. Changes inside or outside the context may act as stimuli for a transition from one rule life cycle stage to another. A crucial precondition for managing rule change is that (problematic) environmental changes come to the attention of rule makers; after all, they possess the power to influence these three stages. However, rule makers cannot intercept or adequately respond to all environmental changes; any changes and design errors that are overlooked may negatively affect the way a rule is fit for its situation. This "unfitting" is what this thesis identifies as presenting a hole in the rule. The developments in this area are often beyond the scope of the rule makers because rule makers' activities are distant from rule users' practice, wherein these holes in rules reveal themselves. The most likely way for rule makers to know about a hole that has come into existence, is through information transfer from the rule user. One way of studying the rule user - hole encounter is by primarily focusing on the (problematizing) effects of holes on rule users' feelings and/or behavior, and by extension the influence of that on the organization's operations. This thesis inverts the perspective of interaction so that rule users shift from passive subjects to whom holes happen, to active participants in the dynamic world of rules and their failure to fit situations. This leads to the central research question which targets how rule users' behavior is affecting the existence of holes. "Behavior" is divided into acting (or not) upon holes in relation to the task at hand, and telling (or not) about holes. Organizations are increasingly tending to steer on values, inspired by thought leaders in management. Understanding the nature of holes in rules supports rule users in assessing their own positions and balancing the options they have when dealing with holes. Indications of how people's assessment, attitude and behavior possibly affect the existence of a hole also offers very valuable management information to assist in balancing the discretionary space that is given (and taken); this awareness contributes to optimizing business processes in the endeavor to attain operational and financial targets. This thesis frequently refers to two cases derived from practice, which are the Case of the Zeros and the Case of the Guests.

Insight into different phases regarding the existence of holes is a necessary capacity to help establish if and when rule users are actually able to experience a hole. After all, noticing is a hard precondition for acting and telling. The theoretical framework proffered in **Part II** focuses on the life cycle of holes with the biological life cycle as a starting point, and on telling strategies with the prisoner's dilemma as a starting point. Although not alive in a traditional sense, holes undergo a moment of coming into being, a certain period of existence, and a possible ending. These stages are indicated in this thesis, in an analogy of March et al.'s vocabulary of rule birth, rule revision and rule suspension, as hole opening, hole aging and hole closing. When a rule does not fit a situation, either from the start or

during its lifetime because of changing circumstances, a hole may be opened. Quite obviously, controlling environmental change is impossible. Predicting some change however, is within reach. It is up to the rule maker's quality to design rules that possess sufficient initial fitness and the elasticity to bear subsequent environmental changes. Incidentally, it is impossible to express the number of hole openings in an absolute number respectively as a percentage. Regarding aging, holes are either latent ($HOLE_1$) or active ($HOLE_2$). Both phases are hypothetically eternal. The moment and direction of the actual mutation from $HOLE_1$ to $HOLE_2$ depends on environmental stimuli. In other words, the way the outside world is moving determines how rules remain fit or how holes open, occur and close. Differentiation is an inevitable step that precedes occurrence because a hole can only occur as a specific deviant characteristic. A hidden $HOLE_1$ being exposed as a visible $HOLE_2$ then enters the final stage of its life cycle. Whether a hole will continue to age in a situation of exposure completely depends on the rule user's response to this unexpected and often undesired appearance of the unfitting. The encounter can be seen as a bilateral threat. A call for the repair of the unfitting rule involves literally killing the hole, but this may help the rule user to evade the discomfort of uncertainty or obstruction. On the other hand, a rule user can have considerations that interfere with an initiative for (immediate) repair; such as a lack of influence or a lack of time to wait until the repair has been completed. Quite obviously it is not the action in the sense of continuing or stopping the task at hand of the rule user that is of importance for hole survival, but the disclosure of the hole to the rule maker. Namely, telling starts the successive sequence of hole attention, rule change, and hole closing. In short, the actor faces a two-fold decision: Will I act and will I tell? And if I tell, will that be before I act or afterwards? The prisoner's dilemma predicts that telling benefits the participants the most and is thus the most probable strategy for the rule user. In addition, March et al.'s matching of identities leads to the definition of four variables as possible factors influencing the decisions to act and to tell. These four variables consist of two hole characteristics (typology and distance) and two rule user characteristics (applying rule analogy and social comparison, the latter interpreted in this thesis as peer comparison). Two spin-offs ought to be mentioned here. First, a visual combination of hole typology and hole distance in a rule is created; the so-called Morse Model of Discretion shows where discretionary challenges can be found. Second, the elaboration of the typology leads to the conclusion that holes are very locally colored phenomena, so that further investigation in Part IV in reference to rule users' attitude and behavior towards holes requires a hole inventory taking of a demarcated juridical-geographical area. Because in this thesis further research regarding hole-rule user interaction takes place in the Netherlands, this is a move towards a Dutch Collection of Holes in Rules.

To compose this collection, in **Part III** an additional qualitative empirical study of Dutch holes in rules is detailed. In advance, an existing incident monitoring and analysis model has been selected to structure the results. This Eindhoven Classification Model is an internationally acknowledged and broadly applicable instrument that was initially used by the chemical industry. Since then, the model has proven its value in many other industrial, business and health environments. The population under investigation regarding the Dutch Collection of Holes in Rules consists of situations that rule users literally have named as holes. The Internet is used as the source for data collection while data analysis is based on a combination of thematic and open coding. The size of the random sample has

been determined with fixed and variable criteria in such way that the richness of the source directly and objectively drives the research progress. The interpretation is executed on a qualitative nominal level, using three angles of interpretation: content indication, induction from the Eindhoven Classification Model, and my own observation as a researcher. The result reveals 11 types of holes, the so-called context variables. In the next step, the holes and cases that create the Dutch Collection are converted into formalized natural language. This uniformed "list" supports hole diagnosis for organizations and professionals; both rule makers and rule users. Not only with regards to understanding what the problem is, but because they have with this understanding also better fundamentals for defining one's own position in relation to the hole and for making decisions about desired or possible acting strategies.

Part IV is a survey of a group of consulting professionals in their role as rule users. The research is performed through an online questionnaire, in which the participants are asked to indicate their attitude towards several problem situations and predict their own actions upon encountering them. These problem situations or vignettes are derived from the context variables of the Dutch Collection of Holes in Rules that was composed in Part III, and selected using a Fleiss inter-rater agreements test on an absolute individual kappa ≥ .610. The questions are based on the four variables that have been defined in Part II: typology, distance, rule analogy and peer comparison. In addition, there are three groups of classic socio-demographic explanatory variables: Personal characteristics (gender, age, education); Job characteristics (line of business, workplace); and, Discretionary characteristics (actor initiative, task transparence, job autonomy). The survey is set up as a split run: One group follows a "same day" route for reading and answering the questions (deliberative thinkers, henceforth: Thinkers), while the second group receives a survey read-only version one day, and is forced to sleep on the questions before (rereading and) answering the next day (automatic thinkers, henceforth: Sleepers).

Preliminary analyses of the survey results show significant deviations between the two groups:
- Sleepers feel significantly less distance than Thinkers.
- Sleepers prefer significantly more to continue working on their own initiative (with all the risks this involves) than to stop (to be certain) than Thinkers.
- Sleepers tend to look at comparable rules significantly more than Thinkers do.

Because prior studies outside this thesis give convincing evidence that sleeping enables the unconsciousness to transmit background opinions and motives to the consciousness, the decision was taken to exclude Thinkers and to continue conducting analyses with Sleepers only (*n* = 32).

No statistical significant difference in distances between the vignettes' average score (F = .279, p = .891; no significant post-hoc tests) was found.

Regarding rule analogy, a forward stepwise linear regression delivered four results:
- The encounter of two contradicting rules is negatively related to taking other, similar situations into consideration.

- Respondents, who judge the autonomy of their position as the highest, apply rule analogy the most.
- The greater the perceived distance, the lesser the use of rule analogy.
- Women tend to use rule analogy more than men do.

The use of peer comparison is only influenced by distance; professionals who experience a larger distance show the least willingness or need to practice peer comparison.

Respondents were given three telling strategies as possible responses to problem situations: "Yes, now" (meaning: first telling, then (re)commencing the task), "Yes, later" (meaning: first finishing the task, then telling), or "No" (meaning: no telling at all, thus (re)commencing the task). Correlation analysis gave five results:

- 94.4% of the professionals in this study indicate an intention to tell; 8.8% before starting or continuing the task, 85.6% afterwards.
- "Yes, later" respondents are characterized by a positive correlation with initiative (.262), the willingness to accomplish (.380) and applying rule analogy (.406).
- "Yes, now" respondents are characterized by a negative correlation with initiative (-.162), the willingness to accomplish (-.597), and applying rule analogy (-.230).
- "No" respondents are characterized by a negative correlation with initiative (-.201) and applying rule analogy (-.335).
- Respondents who consider themselves as persons with less initiative typically prefer to wait and tell beforehand, or to not tell at all.

SAMENVATTING (SUMMARY IN DUTCH)

Professionals komen in hun werk problemen tegen die zich laten terugleiden tot een algemeen gevoelde frictie tussen regels en praktijk. **Part I** laat zien dat deze professionele beknelling niet slechts een bilaterale interactie is tussen professional en frictie. Het speelt zich af in een veel grotere context waarin professionals opereren als een ogenschijnlijk machteloos aanhangsel van de regels en processen om hen heen. Een samenhangend concept van zo'n context presenteerden March, Schulz en Zhou in 2000 met hun introductie van een ecologie van regels. In hun studie naar veranderingen in regels definieerden zij de levenscyclus van een regel als regelgeboorte, regelherziening en regelopheffing. Veranderingen binnen of buiten de context kunnen stimuli zijn voor een overgang van het ene stadium naar een ander stadium binnen de levenscyclus van een regel. Een cruciale voorwaarde voor controle over dit regelveranderingsproces is dat (problematische) veranderingen in de omgeving onder de aandacht komen van regelmakers; zij hebben immers de macht om deze drie stadia te beïnvloeden. Regelmakers kunnen echter niet alle omgevingsveranderingen onderscheppen of adequaat afdoen. De niet-opgemerkte veranderingen en ontwerpfouten kunnen vervolgens een negatieve invloed hebben op de manier waarop een regel bij een situatie past. Dit 'niet-passen' (voortaan: 'unfitting') is wat deze thesis met een gat in een regel aanduidt. De ontwikkelingen in dit gebied spelen zich vaak buiten het gezichtsveld van de regelmaker af omdat regelmakers hun activiteiten uitvoeren op afstand van de praktijk van regelgebruikers waar deze gaten in regels zich onthullen. De meest waarschijnlijke manier waarop regelmakers kennis nemen van een ontstaan gat is via informatieoverdracht vanuit de positie van de regelgebruiker. Het bestuderen van de ontmoeting van regelgebruikers en gaten kan zich primair richten op de (problematiserende) effecten van gaten op het gevoel en gedrag van regelgebruikers, en daarmee op de prestatie van een organisatie. Deze thesis kantelt het perspectief van de interactie zodat regelgebruikers verschuiven van lijdend voorwerp aan wie gaten overkomen naar actieve spelers in de dynamische wereld van regels en hun incongruenties. Dit leidt tot de centrale onderzoeksvraag hoe het gedrag van regelgebruikers de het bestaan van gaten beïnvloedt. 'Gedrag' is opgesplitst in (niet-)handelen op gaten in relatie tot een actuele taak, en (niet-)vertellen over gaten. Geïnspireerd door thought leaders in management kiezen organisaties steeds vaker voor het sturen op waarden. Het begrijpen van de aard van gaten in regels ondersteunt regelgebruikers in het bepalen van hun eigen positie en afwegen van keuzes die zij hebben in het omgaan met deze gaten. Indicaties hoe afweging, houding en gedrag van mensen mogelijk van invloed zijn op het bestaan van een gat vormen ook zeer waardevolle managementinformatie voor het afwegen van gegeven (en genomen) discretionaire ruimte; bewustwording hiervan kan bijdragen aan het optimaliseren van bedrijfsprocessen. Deze thesis grijpt regelmatig terug op twee praktijkcases, namelijk de Zaak van de Nullen en de Zaak van de Gasten.

Inzicht in de verschillende stadia van het bestaan van gaten is noodzakelijk om te kunnen vaststellen of en wanneer regelgebruikers daadwerkelijk in staat zijn om een gat te ervaren. Immers, waarnemen is een harde voorwaarde voor ernaar handelen en erover vertellen. Het theoretische raamwerk van **Part II** richt zich op de levenscyclus van gaten met de biologische levenscyclus als uitgangspunt, en op vertelstrategieën met het prisoner's dilemma als uitgangspunt. Hoewel gaten niet levend zijn in de traditionele betekenis, kennen ze wel een moment van ontstaan, een periode van bestaan, en een

mogelijk einde. Stadia die, naar analogie van March et al.'s vocabulaire van regelgeboorte, regelherziening en regelopheffing in deze thesis het openen van een gat, het verouderen van een gat, en het sluiten van een gat worden genoemd. Wanneer een regel niet aansluit op een situatie, hetzij vanaf de start hetzij gedurende het bestaan vanwege veranderende omstandigheden, kan een gat worden geopend. Uiteraard is het onder controle houden van omgevingsveranderingen onmogelijk, maar het voorspellen van bepaalde verandering is wel binnen handbereik. Vervolgens komt het neer op de kwaliteiten van de regelmaker om regels te ontwerpen die voldoende passend zijn aan de start en de elasticiteit bezitten om latere omgevingsveranderingen op te vangen. Overigens is het onmogelijk om het aantal openingen van gaten in regels uit te drukken in een absoluut getal of percentage. Ten aanzien van het ouder worden, zijn gaten ofwel latent ($HOLE_1$) ofwel actief ($HOLE_2$). Beide stadia kunnen hypothetisch oneindig voortduren. Het moment en de richting van de daadwerkelijke mutatie van $HOLE_1$ naar $HOLE_2$ hangt af van de omgevingsstimuli. In andere woorden: de manier waarop de buitenwereld beweegt bepaalt hoe regels passend blijven of hoe gaten openen, verschijnen en sluiten. Differentiatie is een onvermijdelijke stap voor verschijning omdat een gat zich alleen kan manifesteren in een specifieke gedaante. Een verborgen $HOLE_1$ die wordt onthuld als een $HOLE_2$ is in feite aan het laatste stadium van zijn levenscyclus begonnen. Of een gat blijft voortbestaan na onthulling hangt vervolgens volledig af van de reactie van de regelgebruiker op deze onverwachte en vaak ongewenste verschijning van een 'unfitting'. De ontmoeting kan worden gezien als een bilaterale bedreiging. Een verzoek tot reparatie van de 'unfitting' is letterlijk dodelijk voor het gat, maar kan voor de regelgebruiker ongemak vanwege onzekerheid of belemmering wegnemen. Aan de andere kant kan een regelgebruiker overwegingen hebben die een initiatief tot (onmiddellijke) reparatie in de weg staan. Zoals een gebrek aan invloed of gebrek aan tijd om te wachten tot de reparatie klaar is. Uiteraard is niet het handelen in de zin van doorgaan of stoppen met de actuele taak van belang voor het overleven van het gat, maar het mogelijkerwijs vertellen aan de regelmaker. Vertellen start namelijk de keten van achtereenvolgens aandacht voor het gat, het herzien van de regel, en het sluiten van het gat. De regelgebruiker kijkt kortweg tegen twee vragen aan: Ga ik handelen en ga ik vertellen? En als ik vertel, doe ik dat dan vooraf of achteraf? Het prisoner's dilemma voorspelt dat vertellen voor de deelnemers het meeste voordeel oplevert, en dus de meest waarschijnlijke strategie is voor de regelgebruiker. Daarnaast leidt het matchen van identiteiten zoals beschreven door March et al. (2000) tot het definiëren van vier variabelen die mogelijk van invloed zijn op beslissingen rond handelen en vertellen. Deze vier variabelen bestaan uit twee kenmerken van gaten (typologie en afstand) en twee kenmerken van regelgebruikers (het toepassen van regelanalogie en sociale vergelijking, de laatste in deze thesis geïnterpreteerd als intercollegiale vergelijking). Twee spin-offs moeten worden genoemd. Allereerst is door typologie en afstand van gaten visueel te combineren, het zogenoemde Morse Model van Discretionair Handelen ontstaan dat inzichtelijk maakt waar zich discretionaire uitdagingen bevinden. Ten tweede leidt uitwerking van de typologie tot de conclusie dat gaten zeer lokaalgekleurde verschijnselen zijn, zodat verder onderzoek in Part IV naar houding en gedrag van regelgebruikers ten aanzien van gaten een verzameling gaten binnen een begrensd juridisch-geografisch gebied vereist. Dit vormt de aanzet voor een Nederlandse Collectie van Gaten in Regels.

Om deze collectie te kunnen samenstellen wordt in **Part III** een aanvullend kwalitatief empirisch onderzoek uitgevoerd naar Nederlandse gaten in regels. Op voorhand is een bestaand model voor monitoring en analyse van incidenten geselecteerd om de resultaten te structureren. Dit Eindhoven Classificatie Model is een internationaal erkend en breed toepasbaar instrument dat in eerste instantie werd gebruikt in de chemische industrie. Sindsdien heeft het model ook zijn waarde bewezen in vele andere industriële, zakelijke en medische omgevingen. De onderzoekspopulatie voor de Nederlandse Collectie van Gaten in Regels bestaat uit situaties die regelgebruikers letterlijk als gat betitelen. Als bron voor dataverzameling wordt het internet gebruikt, terwijl de data-analyse zich baseert op een combinatie van thematische en open codes. De omvang van de random sample wordt bepaald met vaste en variabele criteria op een zodanige wijze dat de rijkheid van de bron direct en objectief de reikwijdte van het onderzoek stuurt. De interpretatie vindt plaats op een kwalitatief nominaal niveau vanuit drie invalshoeken: inhoudsindicatie, inductie vanuit het Eindhoven Classificatie Model, en mijn eigen observatie als onderzoeker. Het resultaat omvat elf soorten gaten, de zogenoemde contextvariabelen. Een tweede stap zet de gaten en cases die de Nederlandse Collectie om in formele natuurlijke taal. Deze uniforme 'lijst' helpt organisaties en professionals, zowel regelmakers als regelgebruikers, bij het stellen van de diagnose van gaten. Niet alleen door te begrijpen wat het probleem is, maar doordat zij door dit begrip ook een betere basis te hebben om de eigen positie in relatie tot het gat te bepalen en beslissingen te nemen over gewenste of mogelijke handelingsstrategieën.

Part IV bestaat uit een survey onder een groep consultants in hun rol als regelgebruikers. Het onderzoek wordt uitgevoerd via een online vragenlijst waarin de deelnemers wordt gevraagd om hun houding ten opzichte van diverse probleemsituaties te benoemen en hun handelen te voorspellen. Deze probleemsituaties of vignetten zijn vertalingen van de contextvariabelen uit de Nederlandse Collectie van Gaten in Regels die in Part III is samengesteld, en worden geselecteerd via een Fleiss interbeoordelaarsovereenkomsttest op een absolute individuele kappa ≥ .610. De handelingsvragen zijn gebaseerd op de vier variabelen typologie, afstand, regelanalogie, en intercollegiale vergelijking zoals gedefinieerd in Part II. Daarnaast zijn er drie groepen klassieke socio-demografische verklarende variabelen opgenomen: persoonlijke kenmerken (geslacht, leeftijd, opleiding), arbeidskenmerken (line of business, werklocatie), en discretionaire kenmerken (persoonlijk initiatief, taaktransparantie en autonomie van de functie). De survey is opgezet als split-run: één groep volgt de 'zelfde dag'-route voor het lezen en beantwoorden van de vragen (deliberatieve denkers, voortaan: Denkers), terwijl de tweede groep de ene dag een read-only survey ontvangt, en wordt gedwongen om er een nacht over te slapen alvorens de vragen de volgende dag te (herlezen en) beantwoorden (automatische denkers, voortaan: Slapers).

Eerste analyses van de surveyresultaten laten significante afwijkingen zien tussen de twee groepen:
• Slapers voelen significant minder afstand dan Denkers.
• Slapers hebben een significant grotere voorkeur voor doorgaan op eigen initiatief (met alle bijbehorende risico's) dan om te stoppen (voor alle zekerheid) dan Denkers.
• Slapers kijken significant meer naar vergelijkbare regels dan Denkers.

Omdat eerder onderzoek buiten deze thesis overtuigend bewijs heeft opgeleverd dat slapen het onderbewustzijn in staat stelt meningen en motieven die op de achtergrond spelen door te geven aan het bewustzijn, is besloten om de Denkers van verdere analyses uit te sluiten en alleen met de Slapers

(*n* = 32) door te gaan. Er is geen statistisch significant verschil in afstanden tussen de gemiddelde vignetscores gevonden (F = .279, p = .891; geen significante post-hoc tests).

Met betrekking tot regelanalogie levert voorwaartse stapsgewijze lineaire regressie vier resultaten op:
- Een confrontatie met twee elkaar tegensprekende regels correleert negatief met het in overweging nemen van andere, vergelijkbare situaties.
- Professionals die de meeste autonomie aan hun positie toedichten, passen regelanalogie het meest toe.
- Hoe groter de gepercipieerde afstand, hoe geringer het gebruik van regelanalogie.
- Vrouwen hebben een grotere neiging om regelanalogie toe te passen dan mannen.

Het gebruik van intercollegiale vergelijking wordt alleen beïnvloed door afstand; professionals die een grotere afstand ervaren voelen de minste bereidheid of noodzaak om collegiale vergelijking uit te oefenen.

Er zijn aan de respondenten drie vertelstrategieën voorgelegd als mogelijke reactie op een probleemsituatie: "Ja, nu" (betekenis: eerst vertellen, daarna beginnen of doorgaan met de taak), "Ja, later" (betekenis: eerst de taak afmaken, daarna vertellen), or "Nee" (betekenis: helemaal niet vertellen, dus beginnen of doorgaan met de taak). Correlatieanalyse levert vijf resultaten op:
- 94,4% van de professionals in deze studie heeft de intentie om te vertellen; 8,8% alvorens met de werkzaamheden te beginnen of door te gaan, 85,6% achteraf.
- "Ja, later"-respondenten worden gekenmerkt door een positieve correlatie met initiatief (.262), de wil om de huidige taak af te maken (.380), en het toepassen van regelanalogie (.406).
- "Ja, nu"-respondenten worden gekenmerkt door een negatieve correlatie met initiatief (-.162), de wil om de huidige taak af te maken (-.597), en het toepassen van regelanalogie (-.230).
- "Nee"-respondenten worden gekenmerkt door een negatieve correlatie met initiatief (-.201) en het toepassen van regelanalogie (-.335).
- Respondenten die zichzelf beschouwen als iemand met minder initiatief, geven de voorkeur aan of wachten met de werkzaamheden en op voorhand vertellen, of helemaal niet vertellen.

Part I
Prologue

1. IN WONDER

In February 2001, I commenced work as a volunteer at the Dutch Council for Refugees VVN[1]. It was one way of giving thanks for the excellent life I have, both privately and in running a successful business. My place of work for one part day per week was one of the largest asylum centers in the Netherlands. What was on the news one week, entered my consulting room the following week for eight years. The other things that I encountered in this role were Dutch bureaucracy, and, perhaps more crucially, the people who try to make it work.

1.1 THE CASE OF THE ZEROS

Mrs. Cão[2] fled with her two young children from a West African country that was in a state of civil war. After over 2.5 years in asylum centers, they had been granted asylum for a standard initial period of three years after a positive review by the Immigration and Naturalization Department (IND[3]). Because the time is calculated retroactively from the date of application, the permits and the associated temporary identification passes only remained valid for approximately another four months at this point, after which a request for permanent permits should be submitted. The temporary identification passes however, contained incorrect information: For each member of the family the date of birth was recorded as 00-00-0000. New temporary passes were requested, however, this action could be considered futile, as the bureaucratic processing time for new passes would most likely exceed the amount of time that it would take for the family to be issued their permanent identity passes.

Meanwhile, the Central Agency for the Reception of Asylum Seekers (COA[4]), which operates under the authority of the Ministry of Justice, had found a residence for her elsewhere in the Netherlands. A civil servant of the city where the asylum center was established, warned Mrs. Cão not to allow herself to be out-processed, because with incorrect passes she could not be readmitted elsewhere in the administrative system, and could therefore not expect any governmental assistance such as housing and social security. With this advice fresh in her mind, Mrs. Cão refused to leave her residence in the asylum center. This decision seemed sensible, as when she presented the identification cards to civil servants in the new city she was told that they did not know how what to do. However, the COA considered Mrs. Cão's strategy of "stay where you are and don't move" to be a formal refusal of residence, and consequentially terminated her access to all governmental services. This meant she no longer received a weekly allowance, or the bus passes for her daughter to attend primary school and for her to attend the integration course, or access to the integration course itself. In addition, she was placed in the position of awaiting a notice of eviction from the central asylum center, which meant living on the streets, even with official asylum documents.

1.2 THE CASE OF THE GUESTS

In addition to the autonomous flux of refugees, the Netherlands also has a category of invited refugees.

The UNHCR (United Nations High Commissioner for Refugees) headquarters in Geneva carries out a pre-selection process, after which a Dutch team assesses the candidates for invitation at their shelter location. This then means that these asylum seekers have already passed the criteria and procedures necessary for asylum, so can receive a residence permit upon entry to the Netherlands. The Netherlands has participated in this UNHCR resettlement program since 1987 (UNHCR, 2011, p. 2). Each participating country may voice preferences regarding the profile of the refugee groups they would like to invite. The Netherlands has chosen to reserve a few openings for medical cases. This group encompasses individuals who have requirements for serious physical or psychological care.

Mr. Yel, together with his wife and children, fled a hostile region in the east of Africa for a refugee camp elsewhere. He was at that time suffering from a life-threatening illness and his family was severely traumatized. After their arrival in the Netherlands and initial medical stabilization, the medical team from the academic hospital required, as a precondition of further medical treatment, that Mr. Yel should have a stable residential situation. The social medical advice given also suggested that the residence must be located within a 50-kilometer radius of the hospital. Due to Mr. Yel's health situation specific modifications needed to be made to the residence that was possibly available. Normally the so-called communal Wmo[5]-arrangement is expected to pay. However, the national law states that this allowance should be spent only on a municipality's own inhabitants, and the Yel family still remained in a central shelter elsewhere in the Netherlands, in a city that was not able to provide a residence. After having contacted many cities and villages, VVN finally found a municipal civil servant, responsible for housing refugees, who arranged the availability of a residence and set aside, for the necessary medical modifications to the assigned house, a basic sum of € 60,000 (price level 2006). Strictly speaking, community money was therefore being spent on someone currently dwelling outside the city, which was a violation. In total, the Yel family spent almost three and a half years following their arrival in a provisionary central shelter awaiting adequate residential space and medical treatment. No existing law, rule or norm could have prevented this theoretically unending wait.

1.3 FOLLOWING THE WHITE RABBIT

In both the case of the zeros and the case of the guests the civil servants involved perceived that the existing rules could not achieve an appropriate and rational resolution. As one of them has put it: "Yes… Listen, there are rules, but for many things there are no rules, so you have to just uh… look for the limits within the existing rules. So that's what I did.[6]" Outside the scope of their regular duties, they made an extra effort to "do good" in the eyes of the client - and probably also in their own. In the case of the zeros the civil servant implicitly advised Mrs. Cão to refuse the offer of residence, thus causing great stress to the client. In the second case, by making a house and additional funding available, a direct solution to the problem of unmatched needs and lack of funding was found. In fact, in both cases the two professionals strived to bridge an incongruity, somewhere in and between the job description, procedures, regulations, organizational values, social and personal norms, legislation or any other directive, and the situation at hand. They were not given any special discretionary

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1   Vereniging VluchtelingenWerk Nederland.
2   To protect the privacy of individuals, private, identifiable information has been limited, altered and/or several cases have been combined.
3   Immigratie- en Naturalisatiedienst.
4   Centraal Orgaan opvang asielzoekers.

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5   Wet maatschappelijke ondersteuning (Social Support Act).
6   Dutch: *Luister, er zijn regels, maar er zijn voor heleboel dingen geen regels, dus dan moet je zelf binnen de regels die er wel zijn uh… de grenzen maar opzoeken. Nou, dat heb ik gedaan.*

authority to fix incongruities - and certainly not of this kind, which seemed to expand beyond their scope of professional action. They had no official means afforded them, by which to repair the perceived incongruity itself. As a result, they acted with "discretionary initiative", meaning, according to their own considerations and without permission.

In the case of the Cão family (with the wrongly dated birthdays), the clerk took the liberty to advise an action that can readily be interpreted as instigation to civil disobedience. If he had chosen not to help then the option would have been to remain silent about this possibility. The same applies in the Yel case. The civil servant would have been saved considerable effort if he had just rejected the request for housing, having the law on his side. Despite this, as many professionals acknowledge, if one abides by rigid rule-following additional problems and dilemmas often arise. Such dilemmas are often induced by a generally perceived friction between rules and practice. In this complex web of requirements, civil servants might not only feel caught between parties, but also be literally surrounded by conflicting interests and possibly even no interests at all.

The title of this work references Lewis Carroll's Alice in Wonderland (see quotation preceding this work). In the first chapter of the book, Alice encounters a talking rabbit, a symbol of a distortion of the rules of (perceived) reality, which leads her to a literal hole that she indeed does challenge by stepping outside her usual world - or comfort zone. White (2008, p. 3) defined comfort zone as "a behavioral state within which a person operates in an anxiety-neutral condition, using a limited set of behaviors to deliver a steady level of performance, usually without a sense of risk". Whether or not to follow the white rabbit is a metaphor for everyone who is experiencing the frictions of today's "rule-filled" world.

"Of course I found it scary"[7], stated the civil servant who granted the budget for the modification to the Yel residence. Does this mean that problematic rules also represent risk? And that when discretionary initiative is wielded, what strategies are followed to cover the risks? Furthermore, are actors, especially in their role as rule users, satisfied with an instant solution for bridging the incongruity for establishing their primarily goal, or do they actively contribute to what they may see as a repairing of the rule? For professionals this means not only a focus on tasks but also on context is increasingly important to consider. In other words, not just doing your job right, but doing the right job. Arguably this can be characterized as a special kind of normative professionalism. Instead of relating oneself in a myopic way directly to the hole, the hole encountering professional can try to relate the hole (and its effects) to others, seeking out "the bigger picture". In the case of professionals within an organization, this thesis prefers to speak of situational employeeship, which requires the skills to discover the delicate equilibrium of workers compliance and entrepreneurial autonomy to achieve both a rational and emotionally satisfying performance.

The perceived professional squeeze is not just a bilateral interaction between worker and incongruity. It is about a much larger environment in which the professionals operate as apparently powerless appendices to the dominant rules, processes and rule making bodies surrounding them. In this circumstance not being able to influence the fundamentals of these processes within the temporal span of their working activities, interfering in the course of events may be considered as the (second) best solution.

2. AN ECOLOGY OF RULES

A coherent conception of such an environment was presented by March, Schulz and Zhou, when they introduced an ecology of rules (2000). The ecology of rules related to part of their research pursuant upon the development of written rules. To describe these dynamics, they identified three critical events in a rule's existence, i.e. rule birth, rule revision and rule suspension (the last two are also indicated as rule change). March et al. showed that, as they stated, "rule birth and rule changes result from relatively complicated combinations of external and internal signals and mechanisms (…)" (ibid., p. 3). This enabled them to link the life cycle of a rule to an ecology. In other words, the life and death of rules are influenced by other entities. In their ecology of rules, March et al. used the words "decision makers", "rules" and "problems/changes" to define the main actors. Since "decision maker" refers specifically to somebody who has power in relation to at least the creation and modification of rules, this position in this thesis from now on is referred to as that of "rule maker". When visualizing the relationships between these three actors, it seems that rule users are not completely left at the mercy of the waves of rules. By locating their own special place within the environment, rule users have the power to choose whether to inform others about the existence of incongruities, thus initiating a possible repair of the situation through rule birth, rule revision or rule suspension. Therefore, the life cycle concept will be elaborated on as one of the theoretical frameworks in Part II of this thesis. However, a brief introduction of this ecology of rules will map out the position of the different entities involved.

2.1 ROLE OF THE RULE MAKER

March et al. (2000) conducted a quantitative study about the effect of (the rule maker's) attention to problems (i.e. attention for disrupting external and internal environmental changes) with regards to the life cycle of rules (that is creation, revision and suspension). The interest of March et al. is not focused on the composition of this ecology, and they summarize with the notion that "(…) rules are not autonomous. Instead, they are bound together and separated from each other by barriers within an ecology of written rules and rule making" (ibid., p. 2). In fact, even the rule maker is not the objective of their study, as can be concluded from the complete absence of this actor when they are reporting their results (see below). Rather, they describe the ecology in reference to the expectations raised and the dynamics in place in and around rules. The search for historical and statistical patterns was executed at Stanford's archives, wherein the changes to written administrative rules and written academic rules have been well documented: The span of their research stretched from 1961 to 1987 respectively 1891 to 1987.

The quantitative analyses undertaken led to several observations about the production of new rules (ibid., pp. 139-140):
- Both administrative and academic rule birth tends to exhibit a strong correlation with the appearance of internal and external problems.

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7   Dutch: *Tuurlijk vond ik het wel eng.*

- The higher the density of rules, the lower the birth rate; the higher the suspension, the higher the birth rate.
- There is no evidence for correlation between the birth rate of rules and the age of the set of rules.

Furthermore assertions about changes to existing rules could be made (ibid., p. 159):

- Contagion is (much) more common than competition: attention to one rule increase the possibility of rule change for other nearby rules.
- Revision history in time since ("how long ago") and frequency ("how often") have a positive relationship with the probability of future revision: the more recent and/or the more numerous the rule changes that have been conducted, the bigger the chance that rule change will happen again.
- Rule change is mainly initiated in response to internal developments, while rule birth occurs under the influence of external causes.

Although March et al. do not mention the role of the rule maker explicitly, it is an important one. Figure 1 provides a visualization designed for this thesis, of March et al.'s ecological entities of rule makers, rules, and changes. To avoid the effect of changes on the coverage of the rule, rule makers aim to intercept the changes or neutralize the effects as early as possible, for instance through prediction or noticing. They anticipate or respond to new circumstances, where deemed necessary, by reviewing or suspending the rule.

Figure 1: Process of Rule Change
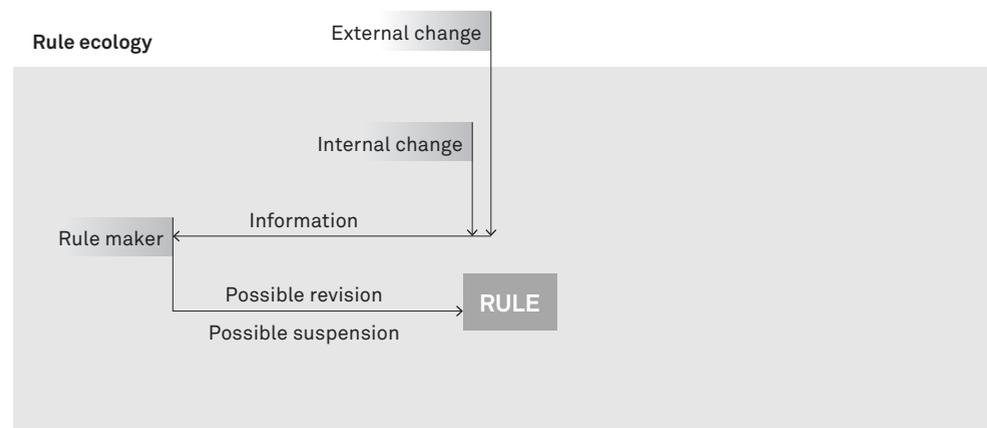
Rule makers thus have a double task: knowing and acting. In this basis version of the process of rule change, rule users have no place. However, the concept of this ecology is useful, in that it can be a good starting point for understanding the nature of the rule environments in which rule users have to operate.

2.2 DEFINING RULES

Rules are designed to instruct people, animals or machines as to what is desired behavior in a given situation. In this thesis, any instruction that is meant, perceived and acknowledged as such, is considered to be a rule, whether it be written, spoken or even imaginary. One of the most frequently studied manifestations of rules, is the law. Law is a system of rules by which to organize society. There are many ways to classify laws. One can distinguish public law (between private persons and the government) from private or civil law (between private persons or organizations), and when referring to the origin of law, the focus is often on common law (founded on common sense) and statutory law (enacted by a legislative body). The significant laws that are based on differences in system are civil law, common law, and canon or church law. When specified in relation to groups of people, we have civil law, and criminal or penal law. There is also a possible division of these branches into the classifications of natural law ("law whose content is set by nature and that therefore has validity everywhere" (Natural law, 2007)) and positive law (human-made law, "Law actually and specifically enacted or adopted by proper authority for the government of an organized jural society" (Positive law, 1979)). Written law is generally seen to oppose unwritten law. Regarding the duration, laws can be either immutable or arbitrary. When viewed in relation to their effect over time, they are categorized as prospective (determining the legal consequences of actions committed after the enactment of the law) and retrospective (determining the legal consequences of actions committed before the enactment of the law).

Additional famous sets of instructions are the Ten Commandments and Sharia, technical user manuals, medicine package leaflets, job descriptions, parental directives and the rules for games. Sometimes rules are constrained by a hierarchy (dictator versus people, employer versus employee, church versus believers, schoolmaster versus pupils), but they can also be the result of joint agreements between people who have to live, work or perform other tasks together. Rules in this instance are not then only hierarchical management instruments but also personal guidelines directing an internal drive to perform. Rules are often created to complement one another and ensure coherence because human behavior cannot be covered by a single rule. Elementary rule elements describe for instance to whom rules apply, in what situations, for how long, with what exceptions, under what rights and obligations, penalties and appeals.

Rules typically reflect values and content and are therefore culture-dependent. The case of the Zeros shows a rich bouquet of rules: from the obligation of the Cão family to possess valid documents and to accept housing that has been offered, to the obligation of the civil servant to refrain from giving housing advice, and the COA's task to respond to housing refusal. Mr. Yel and his family for their part are caught between rules that bind the Netherlands to invite medical refugees, rules issued by the hospital requiring a close proximity for residence, the constraints in the Wmo budget for spending on non-inhabitants, and the rules requiring municipalities to offer housing. The many rules within which society has to operate are not always in agreement with each other, or the situation that they are intended to cover. Therefore, it is apparent from the examples given here, that while aiming for clarity, rules can also cause confusion.

2.3 DEFINING HOLES

"Unfitting" or the aforementioned "incongruity" is the first aspect of what this thesis identifies as a hole in a rule. Unanticipated environmental changes may indeed negatively affect at some point in time the way in which an existing rule fits into or connects to a specific situation, and implied in that is the manner in which rule abiding professionals perform their tasks. Furthermore, maldesigned rules can also fail to fit, without the necessity of environmental change as a catalyst. Secondly, because this thesis involves people and their individual experiences, it will be accepted that the center of gravity lies with the rule user as the final interpreter of the existence and/or meaning of a hole. Therefore any event that a rule user perceives as the unfitting of rules to a given situation, is considered to be a hole. Keywords here are practical occurrence and individual perception, both comprising personal reality.

Analogue to the intuition that personal reality does not embed a full ontological awareness, all additional descriptive elements, although possibly involved in the theoretical exploration of the life cycle of holes and the variables for acting and telling, are excluded. The principle position is that rule users determine what to call a hole or not. It is expected that rule users would often indicate a situation that is indeed unfitting, but as a consequence of freedom of experience may "overrule" this misalignment; alternatively they may identify holes where this study does not find evidence of unfitting. Hole development during the rule's life time is part of the theoretical framework discussed in Part II.

Some additional remarks are to be made here. Firstly, in legal literature the term *lacuna legis* (literary: gap of law) is often used. In everyday speech both "holes" and "gaps" are used as equivalents to *lacunae legis*. "Holes" seems to point at phenomena inside the rule, while "gaps" may have a connotation that refers to phenomena between rules. For the purpose of this research, the word "hole" is used as an uncategorical term, with reference to the "hole in the doughnut" theory of discretion (Dworkin, 1977) that will be described in Part II, paragraph 3.4. Secondly, it is important to stress the difference between holes in rules as mentioned here, and loopholes. Both may refer to the same kinds of holes or even the same individual hole, but the latter (often) indicates an attitude expressed by the rule user to deliberately evade the intention of the rule. Loopholes are excluded from this study. Thirdly, the "problems" that March et al. mentioned are not synonymous with the problems of unfitting rules. In fact, March et al.'s use of "problem" seems to be read as a "broad and general"[8] indication of change that may create a hole. The difference in interpretation can be indicated as cause (March et al.'s problem of environmental change) versus effect (this thesis' problem of an unfitting rule). Since all environmental changes are potentially hole creating, all environmental changes equate to a "problem" in March et al.'s vocabulary and so demand the rule maker's attention. Finally, in the quotations given throughout this thesis the original synonyms for "hole" will be respected.

2.4 ROLE OF THE RULE USER

In this thesis, a rule user is any individual who is aware of the existence of one or more rules and holds a consuming position in a sense that one has no formal rule creating or rule changing power regarding

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8   With M. Schulz, Associate Professor, Organizational Behaviour and Human Resources Division, Sauder School of Business (email conversation, September 8, 2011).

that particular rule(s). The antonym of the rule user is the rule maker. The actual use (applying and/or compliance, including of underlying mental processes, among which is the understanding of the semantics, fathoming the meaning and purpose, assessing the relevance, matching the relationship with other directives, estimating the required personal effort, overlooking its effects, overcoming internal and external authority conflicts), which may turn a rule user into a rule follower is therefore not a condition but an option. A crucial precondition in March et al.'s (2000) study is that any environmental changes come to the attention of rule makers. March et al. have not elaborated on *how* rule makers become informed about changes that are approaching or have arrived; they just accept as a fact that there is some kind of signaling process involved. This thesis however, is interested in the events that take place at the intersection of environmental changes and rules. This blind spot in rule ecology is at the very heart of the rule users' position. One can be positioned simultaneously as a rule maker with regards to one rule, and as a rule user with regards to another rule while in the same social or professional position. Being a rule user is a situational role rather than a static identity. In the case of the zeros, the civil servant would have had to follow procedure if Mrs. Cão had decided to have herself out-processed from her current city; in the context of municipality registration the civil servant was a rule user. The same civil servant was given the authority to issue priority instructions regarding the allocation of available housing; in the context of housing allocation the civil servant was a rule maker – a power he later executed in favor of Mrs. Cão. The civil servant in the case of the guests had a rule making position regarding the allocation of available housing; although he set aside the necessary budget for modifications, he had formally held only a rule following position regarding the allocation of Wmo allowances.

Returning to the visualization of the rule ecology, the developments in the rule using area are often outside the scope of the rule maker because rule makers' activities are distanced from the rule users' practice. If rule makers themselves do not identify the holes or change corrupted rules during their monitoring process, the only way they will learn about them is via the transfer of information from the position of the rule user (figure 2).

Figure 2: Process of Hole Attention
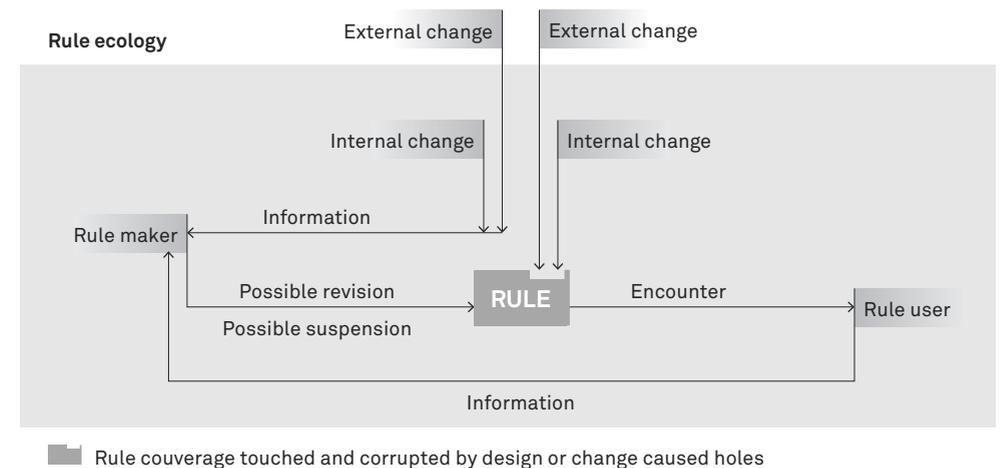
Rule couverage touched and corrupted by design or change caused holes

March et al. (2000) do not give rule users and holes an active role in their ecology because they are not primarily focusing on the process of attention (this research is), but on the process of rule change (this research is not), in which rule users and holes are not seen as entities of direct influence. However from a broader perspective, in addition to rule makers, rules and problems, March et al.'s ecology is also the home environment for rule users and holes. Thereby, in an indirect way, through informing rule makers about their encounters with holes in rules, rule users do have the potential to influence the process of hole change. But: Will they?

3. RESEARCH QUESTION

One way of studying the rule user - hole encounter is by focusing primarily on the (problematizing) effects of holes on rule users' feelings and/or behavior, and by extension on an organization's operations. This thesis however, initiates a radically different approach by exploring the effects of the environment on the holes' life cycle. By turning the perspective of interaction this way, rule users shift from passive subjects to whom holes happen, to active participants in the dynamic world of rules and their failure to fit situations. Players, by responding to the holes in rules, can contribute either positively or negatively to an organization's operations. Further, holes transform from being the perpetrators of threatening situations to rule users, into victims, as interactions with rule users carry an attendant threat to the survival of the hole.

3.1 RESEARCH QUESTION AND SUB-QUESTIONS

As a consequence of the above, the following research question has been posed: *How is rule users' behavior affecting the life cycle of holes?*

The sub-questions this raises are:

- How do rule users relate to the life cycle of holes?
- Do rule users continue or omit to act when encountering a perceived hole?
- Do rule users tell rule makers about an encountered perceived hole?
- Which variables correlate with the decision whether or not to act and tell?

3.2 RESEARCH GOAL AND RESEARCH INTEREST

The thesis aims to offer new insights into the role of rule users in solving the problems raised by holes in rules. This is of interest from multiple perspectives, among which is the scientific and organizational viewpoint.

3.2.1 Scientific

The dynamics of holes and rule users extend the ecology of rule theory that March et al. developed in 2000 at Stanford University: in addition to rules, problems and rule makers new populations of rule users and holes in rules are added thus creating a more detailed picture of the forces within an ecology of rules and offering enriched insight into the position and possibilities of the groups of entities. At the same time, the thesis speculates on the mutual risks of a hole - rule user encounter, in relation to hole survival and rule user behavior. Based on functional interdependency and typology,

the Morse Model of Discretion will be introduced to visualize the relationship between situations, rules and holes. Furthermore, the internationally acknowledged Eindhoven Classification Model of system failure will be applied in a new, innovative way to compose a Dutch Collection of Holes. Finally, a critically reflection will be conducted on life cycle concepts of rules and holes, and on relevant acting strategies.

3.2.2 Organizational

Connecting economic rationality with employee well-being is one of the continuing challenges that organizations face. Especially because organizations tend increasingly to steer on values, inspired by thought leaders in the field of management. Indications of how people's assessment, attitude and behavior possibly affect the creation, continuation, reproduction and/or closure of a hole offers potentially crucial information for management. It may support the balancing of the discretionary space that is given (and taken); this awareness can contribute to optimizing business processes in the endeavor to realize operational and financial targets.

Insight into the relations between holes and rules and the availability of a Dutch Collection of Holes may also emphasize the complexity with which rule users have to contend. Understanding the nature and typology of holes in rules may support rule users in assessing their position and so in balancing the options they have when dealing with them.

3.3 DISSERTATION STRUCTURE

After this introduction, the literature study in Part II explores the life cycle of holes, and describes where in life cycle dynamics holes and people meet. It also indicates the possibility and probability of rule users telling about perceived holes. Besides, it introduces four variables that may influence this decision. One of these variables, hole typology, demands the composition of a Dutch Collection of Holes in Rules prior to engaging in further research. This is done in Part III, a qualitative hermeneutic-interpretative population study detecting different types of holes in the rules perceived in the Netherlands. This research can be seen as a first attempt to investigate appearances and to map patterns of a very specific phenomenon under well-defined environmental conditions. The results can be used as fundamental data for the application of a quantitative research in which variation in hole type can be controlled. Part IV details a quantitative attitude study in pursuit of the rule user's critical behavior to the survival of different types of holes in rules, retrieved from the Dutch Collection. By scaling and ranking hole types the research results will either support or reject the probability of whether or not rule users will discriminate about hole characteristics. It also shows the influence of rule user characteristics, and the consequences of all hole and rule user variables regarding the hole life cycle. Part V concludes this thesis with summaries, discussions, limitations, and various supportive and additional data.

4. RECAPITULATION

Professionals encounter problems in their work environments that can be attributed to a generally perceived friction between rules and practice. This professional squeeze is indicative of the much

larger context in which professionals operate as apparently powerless appendices, constrained by the rules and processes surrounding them. A coherent concept associated with such a context was presented by March, Schulz and Zhou in 2000, as introduced through their ecology of rules. In their study on the issue of rule change, they defined a rule's life cycle as consisting of rule birth, rule revision and rule suspension. Changes inside or outside the context may act as stimuli for a transition from one rule life cycle stage to another. Any changes and design errors that are overlooked may negatively affect the way a rule aligns with a given situation. This "unfitting" is what this thesis identifies as representing a hole in a rule. One way of studying the rule user - hole encounter is by primarily focusing on the (problematizing) effects of holes on rule users' feelings and/or behavior, and by extension on the influence of this on an organization's operations. This thesis inverts this perspective of interaction so that rule users shift from their roles as passive subjects that can overcome holes, to active participants in the dynamic world of rules and their failure to fit situations. This leads on to the central research question, which targets how rule users' behavior is affecting the existence of holes. Organizations are increasingly tending to steer on values, inspired by the thought leaders in the arena of management. Understanding the nature of the holes in rules supports rule users in assessing their position and balancing the options they have when dealing with holes. Indications of people's assessment, attitudes and behavior possibly towards holes offers very valuable information to management; for instance with regards to the balancing of the discretionary space that is given (and taken); this awareness can contribute to optimizing business processes in the endeavor to attain operational and financial targets.

Part II
Theoretical Perspective

1. INTRODUCTION

If rules are to be seen as widely diversified populations with in which ecological forces play a role (Van Witteloostuijn & G. de Jong, 2009, p. 3), why should the same not apply to holes which are so bound to rules? Although not alive in a traditional sense, they undergo a moment of come into being, a certain period of existence, and a possible end. Caused by agents such as rule users within the same ecological environment. Stages that, in an analogy of March et al.'s (2000) anthropomorphic vocabulary of rule birth, rule revision and rule suspension, in this thesis will be hypothesized as hole opening, hole aging and hole closing.

Insight into different phases of the existence of holes is necessary to establish if and when rule users are able to experience a hole. After all, noticing is a hard precondition for acting and telling.

Chapter 2 will first describe the life cycle of holes. To embed the stages of holes in rules as defined, life cycle concepts will be used as the theoretical framework. Mostly based on March et al.'s (2000) study, but also dispersed over disparate scientific fields. After having grounded the naming of the stages of the life cycle, the events that may take place during these stages will be postulated about. The contradicting scientific positions about the number of holes that actually do open and their numeric relation to rules will be examined. It will shown that hole aging consists of two stages; i.e. the undifferentiated latent hole ($HOLE_1$) and the differentiated activated hole ($HOLE_2$), and that the encounter between hole and rule user takes place in the $HOLE_2$-stage.

Hole closure on the instigation of a human acting focuses on rule users telling rule makers about their encounters with holes. In fact, the rule user faces a two-fold decision: Will I act and will I tell? And if I tell, will that be before I act or afterwards? The theoretical framework in chapter 3 is based on the prisoner's dilemma strategy for telling. From March et al.'s (2000) constructions of the self, of reality, and of the match between the two, four variables will be defined that serve as possible stimuli to the decisions to act and to tell.

2. LIFE CYCLE OF HOLES

March et al. (2000) have shown that, "rule birth and rule changes result from relatively complicated combinations of external and internal signals and mechanisms (…)". With this, they linked rule's life cycle to ecology.

Ecology was first defined as the study of the relationship of organisms with both their biotic and abiotic environment (Haeckel, 1866). This initial definition has been joined over the years with a description of ecology as the study of the distribution and abundance of organisms (Andrewartha & Birch, 1954), and the study of the structure and function of nature (Odum, 1971, p. 16). In recent years, ecological logic has been used to study the evolution of, amongst others, organizational populations. The first to apply ecology to organizational founding and firm mortality were Hannan and Freeman in "The population ecology of organizations" (1977), which was later followed by

"Organizational Ecology" (1989). Meanwhile, an ecological theory of bureaucracy was constructed revealing a process of Darwinian evolution that functions as a catalyst for selective retention of bureaucratic elements (Langton, 1984). Rules have been portrayed as the result of a learning organization functioning under the influence of environmental developments, such as crises and rule makers' attention (Zhou, 1993). In the field of political science, the evolution of interest groups has been investigated in terms of ecology (Gray and Lowery, 1988, 1996, 2001a, 2001b; Lowery and Gray, 1993, 1995, 1997, 1998). A further study by Carroll and Hannan (2000) focused on the processes by which corporate populations change over time, from the founding of organizations, through growth, decline, structural transformation and mortality. More recently, an audience-based theory of organizational categories was developed and applied to organizational ecology (Hannan, Pólos, & Carroll, 2007). In line with this focus is the ecology of rules introduced in 2000 by March et al., when they published their study interrogating the mutability of written rules.

This thesis focuses on the way that other entities within this ecology, namely rule users, affect the existence of holes in rules. This assumes the possibilities of different stages of being, that is referred to here as a life cycle; a life cycle of holes in rules.

2.1 EXPLORING LIFE CYCLE CONCEPTS

The concept of a life cycle of holes was not found in literature. The history of rules that March et al. (2000) present, offers a clear and easily imagined process of chronological transitions. Taking the step to adopt this principle and apply it also to the holes in rules requires a critical analysis of the concept as a whole and its application in contexts other than the biotic. The term "life cycle theory" is generally identified with Modigliani and Brumberg (1954), who presented an economic theory about the development of spending and wealth during the lives of individuals at the national level between generations. Due to of the lack of a connection with rules in every respect, this application is considered to be too distant from the specific context of this thesis, and so it has been decided to concentrate on the original biological life cycle and those life cycle elaborations with a rule component. Four main questions will be explored. First, how does rule history as defined by March et al. relate to the biological life cycle? Second, how does the history of rules by March et al. relate to literature about the life cycle of organizational rules? Third, are the life cycles of rules applied beyond the organizational context, and if so, how? And fourth, what can be deduced, regarding all of the above, to define a life cycle of holes?

2.1.1 Biological Life Cycle

The biological life cycle involves successive generations, successive individuals and successive stages within an individual. Although March et al. (2000) speculate about "the patterns of rates of change in a population of rules, rather than the substantive content of the changes or the operation of a specific individual rule" (March et al., 2000, p. 1), their approach towards the development of rules concentrates on successive stages within individual rules. They, for example, explicitly discuss how change in one rule can affect other rules or even an entire system of rules. Concerning this "change in one rule", March et al., as detailed above, distinguish three, so-called "critical events" in a rule history, i.e. rule birth, rule revision and rule suspension. "Rule suspension" seems to be a euphemism

for "rule death", as Zhou had mentioned in previous research (1993, pp. 1143, 1146, 1162). Terminology that includes "birth" and "death" denotes a very strong reference to the biological life cycle. It is noted however, that March et al. never introduce the metaphor: "life cycle of rules", to describe transitions; indeed, aside from the previously quoted "rule history", only "life course" has been found (ibid., pp. 1135, 1146, 1162).

According to common opinion within biological science, all types of succession serve one main purpose, that being the reproduction of the species. Securing the opportunity to breed is to be seen as the most important phase. For simple organisms, such as bacteria, reproduction equals death because of the (lethal) reproductive division of the original organism. Thus, it is assumed that March et al. (2000) avoid the use of "life cycle" because of an awareness that reproduction is not part of their demarcation of rule transition. Reproduction however can be part of rule theory, even without the death of the rule. Weber (1978) and later Weberian bureaucracy theorists (Hall, Haas & Johnson, 1967; Blau & Schoenherr, 1971) believe that both phenomena of rule creation and rule stock are bound by direct proportional growth. In fact, "bureaucracies frantically breed rules, and frequently they imply that rule breeding intensifies as bureaucratization proceeds" (Schulz, 1998, p. 845). Organizational learning theory however, that considers bureaucratization as a process of intelligent improvement instead of a "rule generation process turned loose" (ibid.), defines the rate of rule creation and the rule stock as being inversely related: The more one provides coverage by rules in the present and gains experience with existing rules, the less one has to seek additional rules in the future. This act of becoming accustomed to rules applies to rule makers (March et al, 2000, p. 57) as well as to rule users (ibid., pp. 73, 78, 169, 173). However, if the operational environment is subject to significant change, a new learning cycle that is initially comprised of more holes emerges. Both scenarios however, Weberian and organizational learning, foresee an increase in the rule stock prompted by rule creation (effects of rule suspension have been left out), but they differ in the expected velocity and size. The two approaches can be summarized as:

(a) The more rules, the more new rules;
(b) The more rules, the fewer new rules.

Another dimension incorporating the reproduction stage in non-biological life cycles is also to be found in the product life cycle. The original definition addresses the development of products (and later markets and industries as well) and proposes the introduction of elements of growth, maturity and decline (Levitt, 1965; Anderson & Zeithaml, 1984). It has been modified throughout the years to pre-commercialization, introduction, growth, maturity, and decline (Fox, 1973), market development, rapid growth, competitive turbulence, saturation/maturity, and decline (Wasson, 1974), and embryonic, growth, shakeout, maturity, and decline (Hill & Jones, 1998). Although there are differences in the number and naming of stages, they share the absence of any reference to reproduction. Nonbiotic items have no natural internal directive to reproduce. The center of gravity of their lifework is to serve, to be at one's disposal. The contemporary concepts of recycling, remaking and cradle-to-cradle design however indeed then contributes to a reproductive stage. But instead of being the main purpose of the product involved, it is rather an excuse for being produced to serve.

March et al. (2000) use specific key transitions from the biological life cycle to describe rule history. They do not refer to the concept of life cycles, and do not incorporate any reproductive phase. The latter is not because of the impossibility of applying reproduction to the rule life cycle or other nonbiotic life cycles, as it has been shown that in organizational theory the reproduction of rules has been accepted. Moreover, existence without reproduction does not undermine the presence of a life cycle; at the utmost one might discuss the completeness of it. Therefore, it is concluded that the history of rules according to March, when taken from a biological perspective, can be understood as a life cycle of rules.

2.1.2 Life Cycles of Organizational Rules

March et al.'s (2000) study at Stanford University regarding the way written rules mutate, has been repeated in the Netherlands by Van Witteloostuijn and De Jong (2009). They adopt the anthropomorphic vocabulary of "rule birth" and "rule death" with reference to Hannan and Freeman (1977, 1984), stating that "In the social sciences, insights from bioecology have been translated such that they can be applied to the evolution of populations of social entities, rather than of species as in bioecology" (Van Witteloostuijn & G. de Jong, 2009, p. 3). Van Witteloostuijn and De Jong, like March et al., also use a three-stage model for rule development, but deviate slightly in the naming: "Birth" remains "birth", "revision" becomes "change", and "suspension" becomes "repeal" (ibid., p. 14). In their study, no literary reference to the life cycle concept is made. However, in the introduction text to a research paper on changing national rules written a year earlier, they stated that "We focus on rule changes because in the life cycle of rules – births, changes and repeals – change is the most common event" (2008). This is a strong indication that Van Witteloostuijn and De Jong, by using comparable wording to March et al. when indicating stages of rule development, consider March et al.'s "rule history" to be a life cycle of rules as well.

The first work, or at least one of the pioneering works, describing the life cycle of rules in an organizational context is that by Jackson and Adams (1979). They present a three-stage transition process consisting of rule creation, rule acceptance and rule rejection. These categories are quite similar to those given by March et al. (2000). Contrary to March et al. and Van Witteloostuijn and De Jong (2009), Jackson and Adams discuss the events that take place within the different stages and which shape the role of rules rather than the stimuli that instigate the transitions.

In conclusion, it is observed that in other studies concerning thinking related to organizational rule life cycle, a comparable three-stage development is followed. March et al.'s history of rules is generally supported in later studies, and it does not conflict with previous ones.

2.1.3 Life Cycles of Nonorganizational Rules

The only additional firmly established life cycle of rules that was found, relates to the field of information technology. Computer software consists of lines of code that instruct a machine how to operate. These codes are referred to as rules. Software life cycles have been the subject of a study by Zimmermann, Branding, Buchmann, Deutsch and Geppert (1996) and focus on the design, implementation and management of rules in an active database system. They define a rule cycle as a

process in which "rule R1 triggers another rule in its action and so on until rule R1 is triggered again" (ibid., p. 425) without specifying stages. Quite clearly this life cycle includes some kind of successive process of action, but one that takes place outside the boundaries of the individual rules. Furthermore, the rules involved cannot be interrelated to succeeding generations as they were bred by their predecessors in the process. On the contrary, the return to the R1 rule is an essential requirement in the completion of the life cycle at hand, which then resembles a vicious circle. Rule birth and rule death as identifiable points do not seem to be part of this process. Zimmermann et al.'s concept of the rule life cycle therefore looks to target a stage between March et al.'s stages of "birth" and "revision". It is comparable to the stage that this thesis defines as "aging".

By defining rule requirement extraction, rule specification, rule implementation, rule verification and validation, and finally rule maintenance, Vaduva presents a more detailed concept of rule development in database systems (1999, pp. 50-51), one that she indicates as "the life cycle of rules" (ibid., p. 45). There is a looping again, but now it is inside the rule: The stage of maintenance implies a continuous check with rule requirement extraction to discover whether requirements have changed or mistakes have been made during the rule design process. In both cases the life cycle recommences. Vaduva does name the different steps of the rule development process, but follows a numerical deviation from the three-phase descriptions that characterize the life cycles of organizational rules.

A third typology was found in the IT life cycle concept, concerning the management of enterprise information systems (EIS). EIS is not only related to content, but also pertains to accessing privileges for the various users. Access rights are translated into access rules in formal semantics and reflect both organization models and security policies (Rinderle-Ma & Reichert, 2008, p. 1). Changes in either of these cause access rule adaptation, leading to reduction, expansion or zero effects regarding rule user privileges. In their publication, Rinderle-Ma and Reichert introduced an approach to managing the change operation during the life cycle of access rules. For this controlled evolution, insight into the life cycle of access rules is necessary. The life cycle that Rinderle-Ma and Reichert present consists of four phases, from acquisition and definition to employment and evaluation. It is noted that an access rule comes into existence in phase two, "Access Rule Definition".

To summarize: the idea of a life cycle is well established outside the life sciences. When examining the work of Zimmermann et al. (1996) the conclusion is that they do not name stages, but do introduce a life cycle in the shape of a looping with several rules, describing the specific stages of "aging", Vaduva (1999) does name stages, producing a looping within the rule, describing the entire life cycle from zero to re-evaluation, and Rinderle-Ma and Reichert (2008) name stages, produces a looping within the rule, describing the specific stage of "change". Thus, based on research in this area it is concluded that within the ICT landscape there is a lot of variety in the coverage of the term "life cycle": It may refer to the entire existence of a rule as well as to only a specific phase in the biological life cycle; in the case of the latter presumably the label "process model" would be more applicable. The looping, suggesting the principle that the ending is the beginning of a new cycle, has a stronger presence in software rules than in organizational rules.

2.1.4 To a Life Cycle of Holes in Rules

There seems to be a consensus in organizational rule life cycle thinking that a rule life cycle is generally defined by three stages. Relabeling/reframing of stages in close proximity to the naming of biological life stages is accepted. This thesis' three-stage definition of hole opening, hole aging and hole closing matches these requirements. There is a deliberate deviation from March et al.'s (2000) second phase of "rule revision" for which a broader description of "hole aging", in which revision may or may not happen, is used. Doing this creates space for a state to exist between birth and being noticed.

2.2 HOLE OPENING: CHANGING ENVIRONMENTS AND RULE MAKER'S SKILLS

When a rule does not fit a given situation, either from rule birth or at any point during its lifetime as a consequence of changing circumstances, a hole may be opened. From the perspective of the rule maker, people, animals or machines may or may not act in an ideal and prescribed manner; while, from the perspective of the rule user, it may be uncertain what behavior is desired.

Situational change can be instigated by an endless variety of causes, from war to climatology, and from the mere passage of time to the origination of coincidence. Evidently, controlling environmental change is impossible. Predicting some measure of change however, is within reach; in general this is within limits and requires some measure of luck. However, certain changes are more predictable, namely those that are scheduled and executed by people with deliberate intent. In this case it is then up to the rule maker to design rules that, in an ideal situation, possess sufficient fitness at the start and the elasticity to bear later environmental changes. This connects with the garbage can model of organizational choice in which Cohen, March and Olsen (1972) suggested that problems are partly a result of the inability to predict the future. Organizations' routines, of which rule making can be seen as one example, have already been compared to genes as carriers of (mis)information (Nelson & Winter, 1982). Explorative discussions in the field of hole genetics[9] inspired the position that if a hole occurs at the time as a problem situation, it is possible to assume that the rule maker has lacked the anticipatory capacity to predict future needs that have now come true, of which nonbirth is the most extreme outcome ("no arrangement at all has been made").

Even if varying and unpredictable environments are hard to anticipate, a strong, skilled rule maker can apply certain strategies. In law, one way of "reducing the tension between a dynamic society and legislation" (Memelink, 2009) is the inclusion of open norms that are vague enough to cover a whole range of situations, in which the decision is left to discretionary authority – also sometimes referred to as the "license to act". However the discussion about permitted discretion extends beyond the boundaries of this thesis.

A second strategy to minimize the opening of a hole can be borrowed from evolutionary biology and relates to adding so-called junk-DNA or noncoding DNA. Junk-DNA is a repository of apparently nonfunctional genes of living organisms. Partly it consists of waste, for instance remains of previous wider or different options. Humans still carry genes for wisdom teeth, the appendix, and other

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9   With F. Debets, Associate Professor of Genetics of the Wageningen University and Research Center (telephone conversation, August 19, 2009).

anatomical parts that have no use and on occasion are no longer expressed. There is another component to this biological junk-DNA, that in which both the original and present function is not yet understood. It may well be so that in fact there is redundant material for future use; that operates as a kind of survival kit to avoid the occurrence of problems when circumstances change. In rule ecology vocabulary: Junk-DNA may provide potential extra coverage of the rule so that the rule is already in place and can be made fit in response to exogenous influences during lifetime. Nature offers some nice examples of this principle. Cod for instance, possesses antifreeze-protein genes that enable the fish to survive in subzero polar waters. But these genes have not always existed: A direct relationship has been demonstrated between polar glaciation and the creation of these antifreeze proteins (Cheng, 2006). The most remarkable fact is that the cod protected itself against freezing to death by using a gene that was already present within the junk-DNA and that (therefore) almost immediately had a fitting solution (in contradiction to the usually slow evolutionary process) to the changing conditions so that no damaging hole - between polar temperature and fish physiology - could emerge.

Because it is virtually impossible to know how environmental shifts will take place and in what direction additional coverage should be concentrated, evolutionary biology uses the method of bet-hedging: All elements of the offspring are provided with a slightly different survival kit, so that not all eggs are put in one basket. Or, as the American theoretical chemist, biologist and two-time Nobel Prize winner Linus Pauling once put it: "The way to get good ideas is to get lots of ideas, and throw the bad ones away." Rule makers however, do not have the possibility to construct for each single problem situation a series of rules that cover not only the present case but differ marginally in anticipation of future developments. Their breed consists of no more than one, and this should represent the best anticipating qualities of the rule maker.

2.2.1 Absolute Number of Openings

Concerning the number of openings and the size of the hole population, some researchers hold a very specific absolute position based on deontic logic by equaling the propositions of "being permitted" and "non being prohibited". Holes do not exist because what is not prohibited, may be considered permitted (Kelsen, 2004, p. 246; Varela, 1993, p. 264). In addition, the Constitutional Court of Montenegro refers to an old law school that only recognizes "fictitious gaps". Higher legal principles within a legal system, such as the principle of equity, will always cover a situation in which no specific rule is available (2008, p. 2). There is of course also the possibility that holes do not exist within a given rule system, for instance because of the rule maker's excellent skills, or the absence of certain conditions disrupting the environment. According to all this reasoning the absolute opening and thus number of holes in rules, or specifically in the law, is null.

The majority of legal theorist and the public opinion however, recognize the existence of holes in rules. Quoting Montenegro again: "In modern theory, however, it has been accepted that the gaps exist, as the legal order, respectively legislator may not include all that needs to be included" (ibid.). To rephrase this from an even broader perspective, it is stated that every set or system of rules will entail rules that in some party's perceptions should not be included (inconsistency), and on the other hand leaves a perceived void in situations that are supposed to be ruled (incompleteness). This indicates a

number of holes of ≥ 1 per rule set or system. In practice, this position reflects an infinite, or at least innumerable collection of holes in rules.

2.2.2 Relative Number of Openings

Besides the issue of the absolute number of holes, there is also a relationship to consider with the number of rules, a junction referred to as relative number or hole density. No studies on rule – hole ratios were found. The position of the nonexistence of holes leads, according to mathematical principles to a nonexistent density. For other options in exploring hole density, one can look at the correlation between the rule stock (defined as a given number of rules that is altered by the sum of rule birth rate and rule suspension rate) and the rate of rule creation. As already demonstrated in paragraph 2.1.1 when comparing the ideas of Weber and organizational learning, there will be an increase in the number of rules, whether it be faster or slower. Returning to the rule – hole ratio, it has been established above that the existence of holes is widely recognized. It is also demonstrated that problems with the initial design and environmental change are the two causes explaining how holes come into existence. Finally it was argued that there is an infinite number of possible changes. Therefore, theoretically, there is an infinite number of possible holes behind each rule when taking all possible design errors and changes to any location within the environment into account. It is of course impossible to foresee all of these, and if it were, it would be probably impossible to cover them beforehand – see prior remarks including the example of the cod. This leads to the premise that the more rules, the more holes.

There is a second, opposing possibility. Although hole typology is not the issue in this paragraph, it could be assumed that rule users theoretically may consider the nonexistence of a rule to be a hole. In a situation of anomie, there are more rules that are not there, than rules that are there. And every rule that is not there, represents at least one hole.

The above raises two premises about the relation between rule stock and hole occurrence, that, although contradictory, both may be true:

(a) The more rules, the more holes;
(b) The fewer rules, the more holes.

If there are already two conflicting positions regarding the rule stock and the rate of rule creation on one side, how can there be any consensus about the relationship between the rule stock and the rate of hole opening on the other? Or, apart from the hole opening ratio, what can be said about hole life cycle? How is the hole stock affected by changes in the rule ecology? Some cautious further explorations (table 1) suggest that rule creation may have a positive effect on hole opening (see (a) above: The more rules, the more holes), but also a positive effect on hole closure (the new rule may be a reaction to some kind of incongruity). A rule revision may have a positive effect on hole opening (newly uncovered situations may be overlooked and thus new holes are created), but also a positive effect on hole closure (the rule revision probably aims to close a detected hole). Finally, rule suspension may have a positive effect on hole opening (see (b) above: The fewer rules, the more

holes), but also a positive effect on hole closure (together with a bad rule, noticed and unnoticed holes will disappear).

Table 1: Competing Positions about Hole Life Cycle Developments

Rule life cycle	Hole opening	Hole closure
Rule creation	+	+
Rule revision	+	+
Rule suspension	+	+

So can the above lead to the conclusion that no matter what happens, the hole stock does not change substantially? Or would it be a stronger claim that, in practice, the creation, revision and suspension of a rule are commonly initiated to repair a definable number (at least one) of holes while it at the same time always bringing an infinite number of holes, so that per definition holes always outnumber the rules? The latter seems the most defendable position, but it is hard to know how much there is or can be of something that one cannot see in its immeasurable and alternating appearance. Although these questions are most interesting and prompt further avenues of investigation, within the scope of this thesis the basic conclusion is the impossibility of preventing hole openings and the need to express the number of hole openings in absolute numbers respectively, as a percentage.

2.3 HOLE AGING: FROM LATENT TO ACTIVE AND MEETING RULE USERS

According to the previously elaborated assumptions, holes may be seen as a result of transformations in circumstance or a lack of anticipatory qualities. They are either latent ($HOLE_1$) or active ($HOLE_2$). This vocabulary discussed in relation to errors was introduced by Reason (1990, 2000). Aging in this context means no more than "existing longer"; there are no side effects such as becoming technically or biologically weary. The latent phase can hypothetically last forever; The moment and direction of the actual mutation of the un-differentiated latent hole ($HOLE_1$) to the differentiated, activated hole ($HOLE_2$) depends on environmental stimuli. That is to say, transformations in the outside world determine how rules remain fit and how holes open, occur and close. Differentiation to $HOLE_2$ is an inevitable step before occurrence because a hole only can occur as a specific deviant characteristic. From this moment on rule users can observe and encounter the hole. The active phase can also potentially last forever, either by not being noticed or by not being act upon.

The $HOLE_1$'s and $HOLE_2$'s ecological niche, "niche" defined as the collection of essential conditions for a stable existence (Hutchinson, 1957), at least includes darkness. Darkness, as in a "cloak", that can result from the complexity of the rule construction or inconspicuousness of the rule area. Where rules in nature are intended to carry out explicit purposes, holes as an unintentional spin-off of rule making or situational change have in both the latent ($HOLE_1$) and active ($HOLE_2$) stages an interest in remaining unnoticed; otherwise they would be erased during rule design or rule repair activities. They need to be distant from environmental changes that may turn out to be stimuli for $HOLE_1$'s to expose themselves in the shape of unfittings ($HOLE_2$) or for natural closure in any stage, but above all from human sight ($HOLE_1$ and $HOLE_2$).

In other words, a hidden $HOLE_1$ when it is exposed as a visible $HOLE_2$ faces the final stages of its own life cycle. The detection of $HOLE_2$ may have far reaching implications, as March et al. demonstrated; rule maker's attention to problems is contagious (2000, pp. 52 and 159). As a result of this, rule maker's attention to a single identified $HOLE_2$ may spread to effect the broader regulated environment initiating a repair or cleaning operation directed towards more rules, through which effort also $HOLE_1$ types will be found and - most probably - closed.

However, even before the discovery of a hole has any effect on the larger scale as directed by rule makers, the question of whether the hole will continue to age in a situation of exposure, rests in the hands of the other action-competent groups implicated in this ecology of rules: rule users. Since many holes become visible at the junction of rule and practice, it is expected that rule users will notice holes sooner than rule makers. The consequence of discovery then completely depends on the rule user's reaction to this unexpected and often undesired (because not by the rule maker intended) appearance of lack of fitness in the rules. The encounter can be seen as a bilateral threat. A call for repair of the unfitting rule is literally a call to kill the hole, so as to assist the rule user in avoiding the relative discomfort of uncertainty or obstruction. On the other hand, the rule user can experience considerations that interfere with an initiative for (immediate) repair; such as a lack of influence or a lack of waiting time.

2.4 HOLE CLOSING: TELLING AS A CRUCIAL INTERVENTION

Change can close holes, even before they have been noticed. However, this is of less interest in our context as this thesis is about the impact of the human acting on hole closing. Whether or not rule users act - in the sense of continuing or preventing the task at hand - upon a hole in performing their tasks has no direct effect on the lifecycle of the hole encountered, but is mainly of interest of the organization's performance. Parallel to the decision to act, there may also raise the issue of the rule user choosing to tell about the presence of a hole. Quite obviously telling the rule maker (regardless of the moment in time) about the hole directly correlates with the hole's survival. Namely, telling has a positive effect on the sequence of successively hole attention, rule change, and hole mortality. The decision made here is in the interest of the organization as well, but also in the interest of the hole's existence. After all, not-telling affects the life cycle by permitting continuance of the aging stage. If organizations want holes to be structurally solved or dealt with appropriately in the light of the awareness that situations such as these are an inevitable part of the professionals' practice, it is important that they create conditions that encourage sharing and reporting. Such conditions would improve the quality of the organization's performance, either by taking away the incongruity, or by collating a (competitive distinctive) maturing collective experience to act upon them.

Telling by a rule user can be divided according to two classifications. The first is about the act of telling itself: negative telling (silencing) and positive telling (sharing). The second is based on the moment in time: before acting (discretionary omission) and after acting (discretionary initiative). Table 2 demonstrates that theoretically two out of the four behavioral combinations lead to hole survival after discovery.

Table 2: Hole Survival Chances

Discretion	Negative telling	Positive telling
Before acting	Hole saving	Hole threatening
After acting	Hole saving	Hole threatening

Resuming hole opening, aging (the time between opening and closing) and closing, there are clear stages and different agents that initiate, enable or are otherwise involved in these stages (figure 3).

Figure 3: Hole Life Cycle - Agent Relation
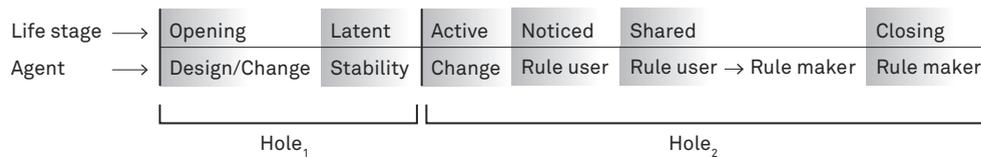
March et al.'s (2000) claim that in general drawing the attention of the rule maker to the problem leads to rule change, still stands. Meanwhile, it is important to realize that rule users could be considered as the "eyes and ears" of the rule maker in the field. In addition to darkness in both $HOLE_1$'s and $HOLE_2$'s ecological niche, $HOLE_2$'s ecological niche also includes discrete rule users.

3. VARIABLES OF TELLING

Discretion might be advantageous for hole survival, but is it also advantageous for rule users themselves when they find themselves caught in the dilemma of a hole? In short, the actor faces a two-fold decision: Will I act and will I tell? In addition, there is a second important question to be asked here, namely: What are the discriminating variables directing rules users in their decision about how to act upon holes?

3.1 EXPLORING TELLING STRATEGY

The core question of this thesis intends to uncover how rule users' behavior is affecting the life cycle of holes. As was concluded in paragraph 2.4 of the preceding chapter, the most crucial action influencing the hole's life cycle, is the rule user's decision whether or not to disclose the existence of a hole. Telling before acting, when the rule user has not done anything, is something that in human interactions might be indicated as squealing: that is telling someone in authority about a possible wrong situation that someone else causes. The squealing almost always damages the individual(s) squealed upon, which can be said also to apply in case of holes being squealed. Telling after the situation has been resolved could, depending on the relevant organizational culture in place, be viewed as confessing: telling someone in authority about a possibly wrong action for which one may be blamed.

3.1.1 Prisoner's dilemma

Balancing disclosing/confessing on one hand and silence on the other suggests a strong association with the prisoner's dilemma (Tucker, 1950). Although part of game theory, the paradigm is a very interesting model for personal perception and decision making (Nemeth, 1972, p. 204), especially because of its predictive power (Pieper, 2008). Shortly after World War II, a strong interest arose in explaining and predicting interactions between persons, groups, and nations using logic and mathematics. Flood and Dresher's model of cooperation and conflict (1950) became famous after Tucker added the prison context, changing the theoretical model to a simple symmetric two-person game. It consists of a dilemma and a paradox. The prisoner's dilemma describes a situation in which two men carrying guns are found near a crime scene and are taken into custody. There is no evidence to connect them conclusively with the crime. The prosecutor decides to interrogate each of them separately and proposes a deal: if both confess to the crime, they will be charged with a reduced penalty of five years. If both remain silent, they will be charged with 1 year for possession of firearms. If one confesses while the other is silent, the first will be freed and the second will serve the full penalty of eleven years. Table 3 shows all the outcomes.

Table 3: Prisoner's Dilemma (original)

	Man A squealing/confessing	Man A silencing
Man B squealing/confessing	Man A 5 years Man B 5 years	Man A 11 years Man B runs free
Man B silencing	Man A runs free Man B 11 years	Man A 1 year Man B 1 year

According to game theory, this model proves that based on no knowledge of what the other party will do the best option for each is to tell rather than remain silent. From the perspective of Man A this means five versus eleven years in prison when Man B confesses as well, and running free versus one year in prison when Man B is silent. So much for the dilemma. The paradox is however, that if both confess the outcome is worse than if both remain silent. This conflict between individual and group rationality connects with the principle of suboptimalization, in which optimizing the well-being of one entity such as a process or person generally does not optimize the outcome for the system as a whole.

This same model can be filled in for the relationship of a rule user and a hole in a rule. First the premise has to be accepted that there are no witnesses to the hole, just as there are none in the original prisoner's dilemma: everything is focused on the two entities, respectively Man A/Man B and rule user/hole in rule. As a consequence, it is also to be established that a hole cannot confess. These limitations of course influence the interrelational dynamics; however, the model is still very useful for explaining the rule user's position in deciding what to do when confronted with a hole.

Regarding omitting discretionary action (table 4), a rule user can chose to tell others about the hole encountered. This information might result in a positive reward (such as appreciation for not putting the liability of the organization at stake, or improving rules for future situations), but this

then deprives the actor from continuing because rule repair may take quite some time (March et al, 2000, p. 75). Withholding action and silencing, the second strategy, avoids the possible discomfort of rule repair activities, but may also lead to possible personal risk or cognitive dissonance: the rule user knows that this possibly negatively affects the measurable execution of personal tasks and relevant organizational processes.

Table 4: Prisoner's Dilemma (omitting discretion about acting)

	Hole in rule 'confessing'	Hole in rule 'silencing'
Rule user squealing	Not possible	Hole closing Rule user dual
Rule user silencing	Not possible	Hole aging Rule user dual

This thesis can also speculate about the continuation of the job by exercising discretion about acting (table 5). Confessing that one has acted upon a hole may lead to an incentive for continuing the job, and by sharing the information this gives the organization a chance for improvement by closing the hole to facilitate future processes. On the other hand, one can be blamed for putting the liability of the organization at stake. The same two-way reasoning can be applied to acting without telling. If no one finds out, and as said in this model witnesses are excluded, the actor gets away with it. But one may feel some discomfort for instance because of possible personal or organizational risk.

Table 5: Prisoner's Dilemma (exercising discretion about acting)

	Hole in rule 'confessing'	Hole in rule 'silencing'
Rule user confessing	Not possible	Hole closing Rule user dual
Rule user silencing	Not possible	Hole aging Rule user dual

This reveals that in none of the cases the payoff is as clear as in the original prisoner's dilemma. This is because one main variable deviates: the consequences to the rule users. The original prisoner's dilemma is based on doing bad according to a strict set of norms. Confessing what you have done, means automatically a possible exposure to some kind of punishment. But with reference to the explanation given above, acting on holes may be seen as either a good and bad thing. That is why it is labeled as a duality. If an organization indeed wants rule users to contribute to hole closing, they should offer a positive reward. Telling should have a pay off in regards to appreciation and so a definite cultural dimension is introduced here.

Derived from this cultural aspect, there is enhanced difficulty associated with predicting a dominant strategy. A comparison of the outcomes of table 4 and table 5 expresses no theoretical difference in the telling ratio between those who exercise and omit to act. But is this realistic? Telling beforehand

means that the rule user is no "partner in crime", thus has nothing to confess for that matter, and never faces a maximum penalty. This may indicate that telling beforehand is safer – and therefore happens more often. Or is the risk aversion of nonacting rule users so big, that apart from not acting they also do not (dare to) tell?

Once more it can be concluded that it is not the issue of telling or the moment of telling that determines the actual consequences for the actor. The real discriminating elements in this deliberation are not included, and concern personal profile and organizational culture. This is in line with several criticisms of the prisoner's dilemma. Kreps, Milgrom, Roberts and Wilson (1982) for instance suggest that altruism might influence rational choices: this includes pretended altruism, intended to convince the opponent in the prisoner's dilemma to believe that the sender will remain silent, but studies show that every population indeed contains "a significant number of altruistic types" (Andreoni & Miller, 1993, p. 571). This thesis interprets altruism as taking risk to do good for others, which may not be aimed at maximizing the economic outcomes that the prisoner's metaphor originally was designed for. Nemeth (1972) specifically criticizes the "minimal social situation" (p. 204) and the absence of an adequate context (ibid., p. 205). Meanwhile, Gilbert (1996) rejects the prisoner's dilemma as an axiom about the world because it is "devoid of any vision of enduring, mutually beneficial connections between human being who create and sustain such institutions as business and the modern corporation" (p. 165).

Taking these criticisms into consideration, two decisions were made. One: This thesis will use the prisoner's dilemma and its prediction that telling will be the dominant strategy in the empirical study in Part IV. Even in a less strong system of reward and punishments it is anticipated that, given a constructive business environment with a healthy culture, rule users will experience sufficient incentive to speak out about a hole encounter. But it is uncertain about how the telling ratio will relate to the rule users that omit or exercise discretionary action, and how the telling ratio is divided between "beforehand" and "afterwards". The second decision is "dressing" the prisoner's dilemma model with variables that will not only make the decision situation more vivid, but also offer a chance to analyze factors that might play a role in the decision making itself.

3.1.2 Matching Identities

Especially when there is uncertainty about rules, rule users create a mental framework of actual and cultural knowledge (Rasmussen, 1991). This thesis already indicated the role of culture as one of the discriminating elements for decision making about acting and telling. This mental framework is in fact a map with escape routes for which the various dimensions have to be calculated to determine a desired action to solve or successfully avoid the problems ahead. March (1994, as cited in March et al., 2000 p. 6) assumed that "thoughtful individual actors (…) act by matching identities to situations." Although March et al. (2000) referred in this case to acting upon rules, this thesis adopts this position for holes as well. This matching of identities leads, according to March et al., to three constructions, i.e. the construction of the self, the construction of reality, and the construction of the match between the two. These constructions are translated into four variables, divided into two rule user characteristics and two hole characteristics. The rule user characteristics ("construction of the

self") here involve applying rule analogy by placing oneself in the position of a rule maker on the one hand, and secondly applying social comparison by imagining "how a person as I can act in a situation as this". The hole characteristics are typology and distance ("construction of reality"). March et al. resumed the third, match-making construction with the question "What do my identities tell me to do in a situation as I have defined it?" This third construction is at the very heart of Part IV of this thesis, which is an empirical study in which professionals will be asked to assess hole situations and use four variables to predict their behavior in response to encountering them. Note: The individual approach March et al. used ("situation as I have defined it") connects with the definition of holes as completely dependent on personal perception, as used in this thesis.

3.2 TYPOLOGY

When elaborating on the case of the guests, incongruent rules have been established. In the case of the zeros, the existing rules were not adequate to manage the exceptional situation that occurred. These two situations may indicate the existence of differences between holes. Based on these grounded typology suggestions, figure 4 explores three different metatypes of holes. First, it is easy to imagine a rule that is imperfect in itself, separate from its relation to a situation or another rule. There is an error, regardless what kind of error, in the original composition, because of which the rule is not suited to the application ("rule" hole, I). The second option pertains to the perfect rule. The underlying situation may change, for instance because of new legislation, new public opinions or an event outside the human span of control. In that case, although the rule still retains its original internal perfection, an unfitting has occurred because it no longer provides sufficient coverage of the situation ("rule – situation" hole, II). A third possibility is that there is a missing connection between rules, of which the underlying situations are fully linked in process ("rule – rule" hole, III).

Figure 4: Linear Representation of Hole Typology

.... Rule connecting area
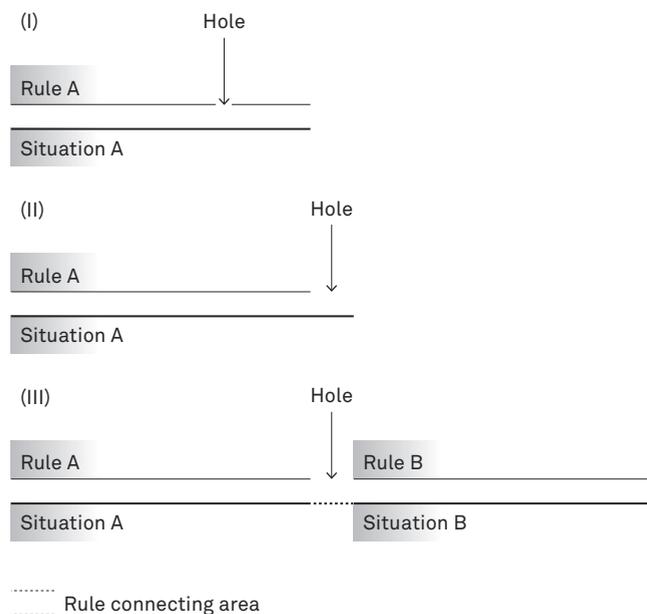
In figure 4, rules are bound by horizontal relationships, while the relationships between rules and situations are vertical. Holes can be visualized as blanks that corrupt rule coverage (see also figure 2), appearing sooner or later within the course of action. Of course, also combinations of these variations are possible, such as an incongruity between two (= hole type III), each internally imperfect (= hole type I) rules. And so other, as yet untheorized variations are also awaiting discovery.

3.2.1 Law Theorists

Leading publications about omissions in the law come from German law theorists. Great scholars of their times investigating this area were Zitelmann (beginning of the 20th century), Canaris (middle of the 20th century), and Rüthers (beginning of the 21st century). Zitelmann (1903) distinguished real and unreal gaps[10]. Meaning, that only if law does not provide an answer to a situation that is to be decided, a hole exists (p. 27). Canaris (1964, pp. 129-143) used three sections to group gaps. The first section was labeled as incorrect classifications, such as gaps inside and outside the law, formal and material gaps (= theorized or practical), and logical and ethical gaps. In this group, he also integrated Zitelmann's notion of real and unreal gaps. The second section consists of conventional gaps, i.e. acknowledged and unacknowledged gaps, initial and later gaps, open and covered gaps, and norm, regulation and area gaps (= differences in scale). In the third group Canaris proposes his own classification pursuing how gaps can be identified by solutions, consisting of function gaps (law doesn't provide any answer), teleological gaps (law provides analogies), and principal and value gaps (law provides principles and values).

Rüthers (2005, p. 190, 2006, p. 59) discusses the occurrence of gaps in many different publications. He names among others primary gaps (= initial law error), secondary gaps (= law error by time passing), and collision gaps (= lower rank laws are not in concordance with higher rank laws).

The thoroughness of these hole collections seems to be based on apparently purely academic discussions. The questions thus remain whether these, mostly theoretical, holes actually appear in practice, and secondly, whether the given predicates belong to the rule user's vocabulary.

3.2.2 Constitutional Courts

Phenomenological comparative research that took place in 2008 for the XIVth Congress of the Conference of European constitutional courts (Constitutional Court of the Republic of Lithuania, 2008), offers the possibility to descend to a slightly more practical level of hole encounter. About forty national constitutional courts reported how in each country a "legal gap" is described. Constitutional courts hold a very specific position within the law system by dealing primarily with the Constitution, i.e. the fundamental national law that aims to limit the distribution and exercise of government power. Their task is to rule as to whether or not the laws that have been laid before them are indeed constitutional. Constitutionality can be examined on a content level, namely whether or not any of the given laws conflict with constitutionally established rights and freedoms. But also the process of realization of the law has to meet constitutional demands, and so may therefore lie within the authority of the constitutional courts. The participants of the congress based their reports on at

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10   All "gaps" mentioned in this paragraph reflect the original vocabulary or official translations of the references, and are equated in this thesis to the term "hole".

least one of three levels of national sources, i.e. scientific doctrine, legal acts and legal practice. All three link in some way to real cases in which holes manifest. Legal doctrines are built on precedents (Tiller & Cross, 2006, p. 517), legal acts represent actual laws, and the practice of constitutional courts' "is a significant part of the national legal reality, giving the ultimate shape to law as a phenomenon" (Constitutional Court of the Republic of Lithuania, 2008, p. 2).

The list below consists of the definitions reported in English, and reflects in short the current Western European legal interpretations of holes in rules.

- Albania: "(…) the court cannot refuse to consider and make decisions on issues, which are presented to it for consideration, on the grounds of lack of law, it being incomplete, contradictory or unclear." (Constitutional Court of the Republic of Albania, 2008, p. 1).

- Armenia: "(…) Legal gap is the incomplete legal regulation, as well as the uncertainty in legal regulation. The latter could be not only as a result of non-complete [sic] regulation of social relations, but also as a result of uncertainty of the content of legal rules" (Constitutional Court of the Republic of Armenia, 2008, p. 1).

- Austria: "(…) the term "legal gap" is a methodical instrument designed in order to satisfy needs for regulation which appear in practice when applying law." (Constitutional Court of Austria, 2008, p. 3).

- Azerbaijan: "(…) failure of a concrete legal norm to regulate the legal relations" (Constitutional Court of Azerbaijan Republic, 2008, p. 1).

- Belarus: "(…) the legal gap in the legal regulation could be defined as full or partial lack of the legal norm that is required for the efficient regulation of the public relations." (Constitutional Court of Belarus, 2008, p. 2).

- Bosnia and Herzegovina: "(…) those legal situations which are not regulated by general or individual legal norms and which represent an interest to the social order." (Muhic, 1998, p. 326, as cited in Constitutional Court of Bosnia and Herzegovina, 2008, p. 1).

- Bulgaria: "To some, "legal gap" means the lack of a definite legal rule for the regulation of certain relations." (Fadenhecht, 1929, p. 90; Tadjer, 1972, pp. 135-136; Vassilev, 1956, p. 107; Yanev, 1977, p. 84; as cited in Constitutional Court of the Republic of Bulgaria 2008:1). And: "Others believe that "legal gaps" should be seen as the complete absence of a legal rule, i.e., the law has no answer to a certain issue either by direct application or by analogy, nor is there any exclusive rule for the mediated regulation of the case, either." (Christov, 2004, pp. 40-41; Dikov, 1936, p. 90; as cited in Constitutional Court of the Republic of Bulgaria, 2008:1).

- Croatia: "(…) when a case appears that should be legally included, regulated and solved, but the necessary legal norm to do so does not exist." (Perić, 1994, pp. 223-225, as cited in Constitutional Court of the Republic of Croatia, 2008, p. 1). And: "Unlike interpretation in the ordinary sense, when a legal norm exists but there are doubts about how to understand and apply it, the problem of the legal gap arises because of the absence (non-existence) [sic] of a norm." (Vrban, 2003, pp. 461-462, as cited in Constitutional Court of the Republic of Croatia, 2008, p. 3).

- Cyprus: "A legal gap can be defined as a defect or a lacuna in the existing law (in the written law enacted by existing statutes)." (Supreme court of Cyprus, 2008, p. 1).

- Czech Republic: "An omission of the lawgiver can be defined as the unconstitutional inactivity of the lawgiver in a situation where the lawgiver is obliged to adopt a certain legal regulation, but fails to do so." (Šimíček, 2001, as cited in Constitutional Court of the Czech Republic, 2008, para. 1.2).

- Denmark: "The problem of legal gaps is not known to Danish jurisprudence and has not been subject of discussion in legal literature." (Supreme court of Denmark, 2008, p. 2).

- Estonia: "(…) there is a gap of law when a sphere which has to be decided upon has not at all been legislatively regulated. (…) The gap of legislation, on the other hand, means a lack of a rule that should be there according to the intent behind the regulation of an Act (statute) (there is a lack of a rule the existence of which can be presupposed on the basis of the teleology of a statute)." (Luts, 1996).

- Georgia: "The legal gap exists when a certain relation is not regulated by any legal rule." (Constitutional Court of Georgia, 2008, p. 2).

- Germany: "A fundamental-rights violation can also result from a situation in which a regulatory provision that was originally constitutional has become constitutionally unacceptable because circumstances have changed in the meantime; here, the state bodies are under an obligation to remedy the unconstitutional situation. Legislative omission can also occur where the principle of equality has been infringed in such a way that the infringement can only be remedied by action on part of the legislature." (Constitutional Court of the Federal Republic of Germany, 2008, pp. 3-4).

- Hungary: "In a broad sense, a legal gap exists when it is impossible to establish beyond doubt which rule is applicable to the case in question." (Constitutional Court of the Republic of Hungary, 2008, p. 1).

- Ireland: "It is not clear from the questionnaire what is meant by a "legal gap". However, the questionnaire does refer to the concept of "legislative omission", defined as "a legal gap prohibited by the Constitution (or any other act of a higher power)". Such a concept is not known in those terms in our constitutional law or legal system. (Supreme Court of Ireland, 2008, p. 1).

- Italy: "In the light of the reflections which Italian scholarship has led us to, two different meanings of the term "gap" can be proposed: to omit is not necessarily synonymous with not being carried out, but can easily be the result of a not completely realized action. In other words, the gap is not only the result of inactivity but is also the product of a partial action, which is a gap regarding the

part in which a non completed action comes about compared to what should have been brought about by the action." (Constitutional Court of Italy, 2008, p. 4).

- Latvia: "The legal gap comes into existence if (…) no positive legal regulation is included in laws, although from the point of view of the legal system, such regulation is indispensable." (Constitutional Court of the Republic of Latvia, 2008, p. 1).

- Macedonia: "(…) legal gaps are defined as social relations that are not regulated by a general legal norm, that is, as legal situations which the legislator has failed to envisage in advance." (Gaber, n.d., as cited in Constitutional Court of the Republic of Macedonia, 2008, p. 2).

- Malta: "(…) that the law was "inadequate", with the result that either the law or practice had to be changed." (Constitutional Court of Malta, 2008, p. 1).

- Montenegro: "Legal gap is defined as an event when no norm by its linguistic meaning refers to a specific case, but there is a social need for existence of such a norm, respectively for regulating such a case by a legal norm, for sake of social interest and the objective wanted to be achieved in that case." (Constitutional Court of the Republic of Montenegro, 2008, p. 2).

- Norway: "Until this day, there have been no examples of cases involving the problem of legislative omission in Norwegian constitutional jurisprudence." (Supreme court of Norway, 2008, p. 1).

- Poland: "Legislative omission implies a situation (behavior of the lawmaker), where despite the existing and binding legal requirement (normative obligation) the lawmaker has not developed the required regulations or has enacted incomplete, insufficient regulations." (Constitutional tribunal of the Republic of Poland, 2008, p. 1).

- Portugal: "Framework of legal rules [that] does not provide for a given case" (Ascensão, 1995, p. 425, as cited in Portuguese Constitutional Court, 2008, p. 2).

- Romania: "In the period between the moment when a law is repealed and the moment when another text is enacted we deal with a legislative gap." (Zlătescu, 1996, p. 91, as cited in Constitutional Court of Romania, 2008, p. 1).

- Slovenia: "The subjects of gaps in the law are those social relations that are not encompassed by general and abstract legal rules but which are of such import that they should be legally regulated. The matter also concerns gaps in the law when certain legal institutions are only partially regulated." And: "Upon the issuance of a law or other formal legal source the law-framer can overlook those social relations that should otherwise be legally regulated (the initial gap in the law), or such a lack of legal regulation can appear after a formal legal source has already been formed (a subsequent gap in the law)." (Pavčnik, 2001, p. 272, as cited in Constitutional Court of the Republic of Slovenia, 2008, p. 1).

- Spain: "The need for the absent rule is fundamental in the concept of legal gap (…)" (Constitutional Court of Spain, 2008, p. 3).

- Turkey: ""Legal gap" is defined in general as the fact that "any necessary and obligatory regulation that has not been fulfilled by the lawmaker." (Constitutional Court of the Republic of Turkey, 2008, p. 2).

- Ukraine: "(…) absence of norms of law (or their parts), which regulate the specific public relations in case, if it is subject to the sphere of legal regulation." (Zaichuk & Onischenko, n.d., as cited in Constitutional Court of Ukraine, 2008, p. 1). And: "(…) a legal gap is a complete or partial absence of necessary legal norms in the current legislation." (Tarakhonych & Tarnopolska, n.d., as cited in Constitutional Court of Ukraine, 2008, p. 1).

The constitutional courts abide by the same types of description as the law theorists. This shapes the outline of the possibility for a widely carried common vocabulary. Meanwhile it should also be established that the institutions still seem to be distanced from every day conversation and expressions by ordinary rule users, suggesting that some reservations about representability ought to be made. There is another important remark to make here. As the constitutional courts' inventory indicates, there is a broad variety in hole occurrences and definitions. When defining holes in rules in Part I, paragraph 2.3, the individuality of perception has been accepted. The inventory above indicates that holes should be considered as a universe of subjective, very locally colored phenomena that arise from local intersubjective social constructs, and can only be labeled successfully in their HOLE$_2$ state. This means that even a vocabulary that has been filtered from a real, but single practice cannot represent every geographical or thematic practice.

3.2.3 Rule Users
So a new source is to be sought. Neither the law theorist nor the constitutional courts have offered a convincing typology of practice based, rule user labeled holes in rules. Therefore is has been concluded that it is necessary to create this typology myself to enable further empirical investigation.

The main study in this thesis, which regards identifying the relationship between telling and its stimuli, will be carried out at the national level, for which the Netherlands has been chosen. It will also be conducted among rule users, often with no specific knowledge of law lexicon.

In response to those two arguments, a Dutch Collection of Holes is required to permit operationalization of the variable of hole typology. One that is: derived from society; perceived by society; and named by society. This Dutch Collection of Holes will be composed in Part III.

3.3 DISTANCE
Speculating about rule dynamics, March et al. (2000, pp. 71-72) distinguished three dimensions of distance: functional interdependency, procedural interdependency, and temporal interdependency. Functional interdependency relates to heterogeneous rules that can visually be represented as rules in line - and therefore have neighboring rules on the input side, neighboring rules on the output side, and distant rules on both sides. The rules follow and share the linear progression of the process in
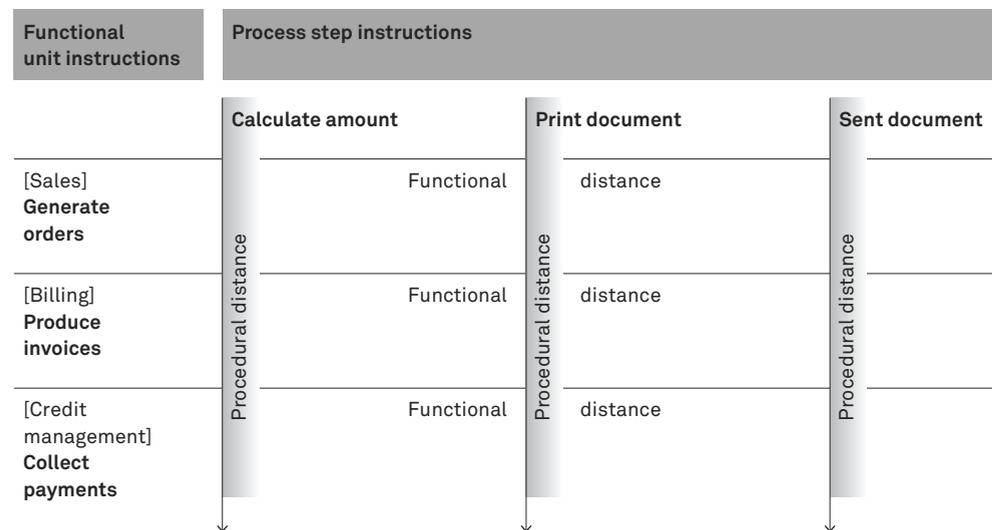
which they reside; A sales process for example, may consist of rules for calculating amounts, printing documents, and sending documents (figure 5). March et al. expected that rule makers' attention in a horizontal line would be more likely to spread to closer rules than to distant rules.

In procedural interdependency similar rules meet each other within one domain; the closest ones are not rules that are engaged in the same process as themselves, but rules that have a vertical procedural specialization in common. Sales, billing and credit management for example, although being different processes, may share rules for calculating amounts (figure 5). March et al. expected that rule makers' attention in a vertical line would be more likely to spread to closer rules than to distant rules.

Thirdly, March et al. mentioned a time-based interdependency. This assumes a correlation, be it positive or negative, between attention spent on a rule in one time period and the next (past versus present, present versus future). March et al. expected that rule makers' attention in a temporal line would be more likely to spread to rules that have attracted attention before, than to rules that have never come to their attention.

Combining the above examples, the cross-functional visual figure 5 shows the hypothetical relationship between functional distance and procedural distance. It consists of horizontal functional instructions for respective sales, billing and credit management departments, and vertical process (or procedural) staged instructions regarding the action clusters of calculating, printing and sending. This is a two-dimensional figure, but it would be possible to imagine a third, in-depth dimension representing temporal distance, being an interval of time between all steps within and between departments.

Figure 5: Dimensions of Distance

Functional unit instructions	Process step instructions		
	Calculate amount	**Print document**	**Sent document**
[Sales] **Generate orders**	Functional	distance	→
[Billing] **Produce invoices**	Functional	distance	→
[Credit management] **Collect payments**	Functional	distance	→

(Procedural distance labels appear vertically between each process step column)

3.3.1 Functional Distance

This thesis is limited to functional interdependency. Figure 5 makes it apparent why functional interdependency can also be described as horizontal interdependency. Of all the three dimensions of distances, the horizontal lines are the most important for organizations because in these chains "the business" is actually produced (pursued) in a logical linear process. Those very same lines are also of great interest to rule users because there is often a clear relationship between cause and effect. In short: following instruction A (generate orders) leads to the execution of process A (generating orders), which initiates and/or enables following instruction B (produce invoices) for the execution of process B (producing invoices), which initiates and/or enables following rule C (collect payments) for the execution of process C (collecting payments). Rule and process C are therefore both spatially and temporally more distant from A than rule B, considering that the execution is in the hands of several persons.

Of course when assessing rules and their holes, it is always important to be aware of the position of the actor. The standard user position is set to 0 and embodies direct responsibilities; in this example Rule A and Situation A are the relevant elements (figure 6). The rule user positions 1 (Rule B/Situation B), 2 (Rule C/Situation C) and so forth express linear distance. These can also be positioned at the back-end, expressed by rule user positions -1 (Rule -B/Situation -B) and -2 (Rule C/Situation C) and so forth. For instance, in company X activities (and accompanying rules) in the purchase department functionally precede activities (and accompanying rules) in the marketing department, which functionally precedes activities (and accompanying rules) in the sales department.

Figure 6: Linear Representation of Rule Functional Interdependency

Rule A	Rule B	Rule C
Situation A	Situation B	Situation C
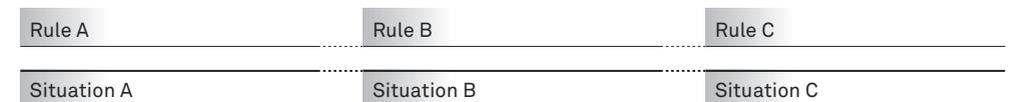
This thesis argues that the basic principle of horizontal distance not only applies to rules, but to holes as well. Figure 7 shows the different hole positions within the linearity and supports the distance claim: A hole can be associated with a close or distant rule. Holes therefore do have varying distances from rule users, just like rules.

Figure 7: Linear Representation of Hole Distance
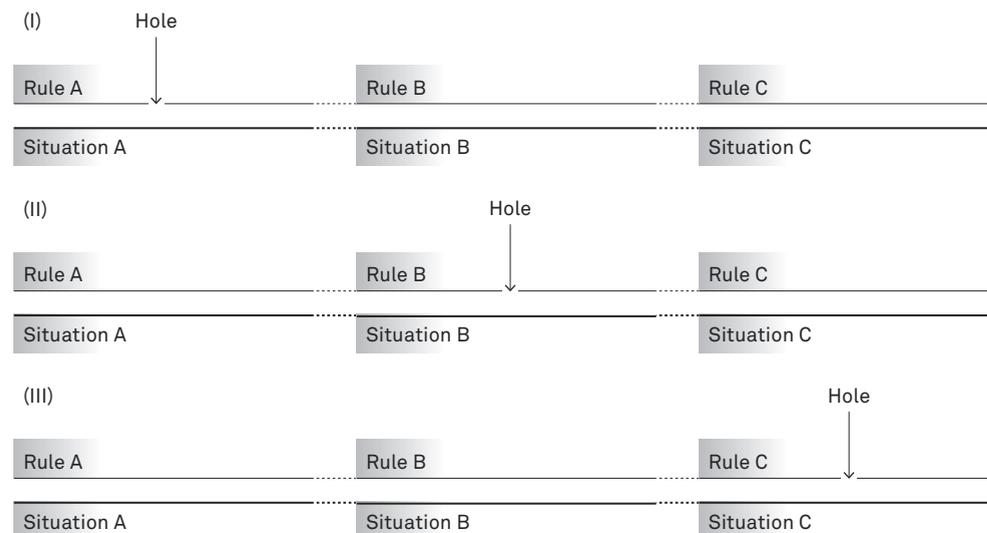
The existence of a hole seems to be less threatened if the hole is positioned at a considerable distance from the human entities present in the rule ecology. But holes cannot exercise any influence on this distance: they are bound to the position of the rules of which they are a part. Affective evaluation as a part of the considerations regarding discretionary initiatives by the rule user is in fact an estimate of the relative distance of the hole to the rule user. In other words, it is assumed that a rule user, being in Process A, has a greater interest in the effects of the hole in Rule A than of the hole in Rule B and most certainly of the hole in Rule C. Distance between rule user and the hole will thus be considered as a potential crucial variable influencing acting.

The metatypology of figure 4 can be combined with the distances of figure 7. Again, a set of consecutive rules is displayed as a line (figure 8), but now this upper rule line is interrupted by all kinds of blanks, representing the type of hole as well as the distance. The line itself transforms into a collection of longer and shorter lines and points. At every spot where a hole occurs, rule users are challenged to assess any discretionary action.

Figure 8: Linear Representation of Metatypology x Distance

Because the appearance of the linear representation of metatypology and distance in the combination above is easily associated with the sequence of dashes and gaps of Morse code in visual representation, figure 8 is referred to as the Morse Model of Discretion.

3.3.2 Perceived Distance

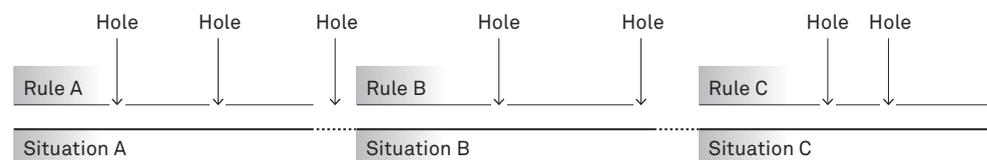Besides the theoretical distances discussed above, this study especially wants to measure perceived distances. It is important to understand that distance perception is not limited to responsibility for complying with an instruction, but is also about responsibility for a problem situation occurring and for the contribution to a solution. Rip (1981) constructed an outline of two interpretations of task based responsibility. First there is the straight forward task responsibility, consisting of the formal responsibility that belongs to a certain task allocation, including the moral responsibility for the manner in which these tasks are completed. Second, there is the responsibility attribution, referring to a causal link between event and actor, and involving considerations as to whether the occurrence or nonoccurrence of an event can be attributed to the actions or omitted actions of the actor. Here there is an implicit link with normative professionalization affecting the meaning of a continuous reflection on (the effects of) one's own actions (through events) in relation to one another. Komter (2007, p. 40) has described these delicate dimensions as follows: "The concept of responsibility has evolved over the centuries from a mainly on external entities projected force into a legally codified and psychological internalized principle. From gods, fate and defilement to sin, guilt, task responsibility and liability for damage or distress".

3.4 RULE ANALOGY

Applying rule analogy is a very common strategy within juridical discretion. Acting upon holes in relation to rules has been discussed for instance in the doughnut theory of discretion. The background to the well-known statement that "discretion is the hole of the doughnut" lies with Dworkin and Hart, two leading and opposing legal philosophers who have contributed influential theories on law and discretion. Hart, a legal positivist, argues that judges should apply the existing, man-made rules when making their decisions. Discretion begins where the law runs out (Hart, 1994). Because Hart separates law and morality (p. 268), he states that while exercising discretion a judge is allowed to make any decision he wants, from a decision derived from existing laws to even a very personal one outside the coverage of existing rules. From this perspective, a set of rules can be visualized as a circle where the domain of discretion stretches to the outer limits. Dworkin's conviction of interpretative law concurs with the obligation to apply existing rules in the so-called easy cases. But he claims that in the hard cases, those in which law runs out, one must act on public standards (Dworkin, 1963, p. 635). Principles may be understood as public standards of morality. Because these standards can be perceived as being set by an authority (namely society), according to Dworkin's definition, they leave no room for personal preference. Of course, principles are more open to interpretation than rules, and when judges balance conflicting principles, their subjective considerations can be viewed as a form of weak discretion, as Dworkin terms it. This position is the basis for the doughnut theory of discretion; where discretion is the hole in the doughnut (Dworkin, 1977). According to Dworkin there might be a version of discretion, but it is always imbedded and exercised in a set of existing rules. So whereas with Hart a judge can decide to be in or out the existing set of rules, with Dworkin a judge will always remain inside and surrounded by the existing set of rules (figure 9).

Figure 9: Discretionary Freedom According to Hart and Dworkin

■ Existing rules   ■ Discretionary freedom
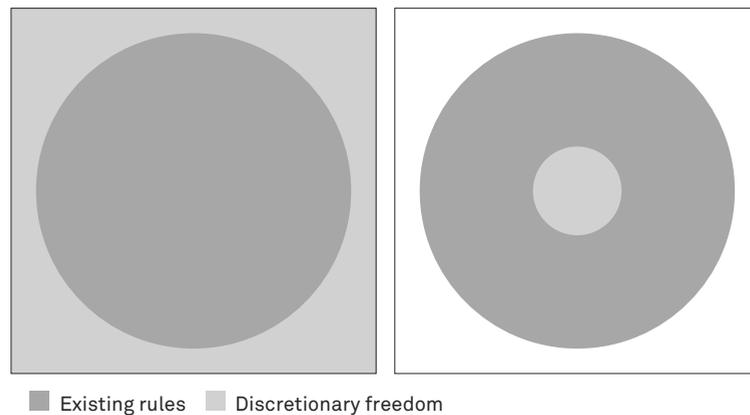
So while the Morse Model of Discretion (figure 8) shows *where* discretion could be exercised, Dworkin's doughnut theory of discretion describes *how* discretion should be exercised. And while the Hart-Dworkin discussion concerns discretionary authority, the ecological context in this thesis is confined to the discretionary initiative.

3.5 PEER COMPARISON
The social comparison theory (Festinger, 1954) explains how individuals evaluate their own opinions and desires by comparing themselves upward to people they esteem more highly than themselves and downward to people that they esteem lower than themselves. These others can be actual, imagined or implied (Allport, 1954, p. 5). The identification-contrast model (Buunk & Ybema, 1997) enriches social comparison theory by adding a positive (identification) or negative (contrast) interpretation. Thus, there are four possible combinations: upward identification (I act as well as that person), upward contrast (I cannot act as well as that person), downward identification (I act as badly that person) and downward contrast (I act better than that person).

Social comparison has already been the subject of diversity of studies. Some of them can be summarized in the vocabulary of this thesis as when the rule of "being entitled to a perfect, healthy life" no longer corresponds with the rules of reality. Furthermore, often no "manual" is available. How do people assess their position and behavior in these circumstances, such as breast cancer (Wood, Taylor & Lichtman 1985), binge eating behavior in college sororities (Crandall, 1988), social phobia (Antony, Rowa, Liss, Swallow, & Swinson, 2005), smoking cessation (Gerrard, Gibbons, Lane, & Stock, 2005), coping with spinal cord injury (Buunk, Zurriaga, & González, 2006), and coping with HIV (Derlega, Greene, Henson, & Winstead, 2008)? Other recent research on this matter addresses satisfaction in romantic relationships (Buunk & Ybema, 2003), understanding the work of Van Gogh (Brower, 2005), identification with, and attachment to, Dutch and Spanish Organizations (Rodríguez, 2006), comparison choice and comparative evaluation on academic performance at high school (Wehrens, 2008) and deceptive behavior (Edelman & Larking, 2009). In the case of this thesis social comparison will be narrowed to describe colleagues, as such it will be indicated hence forward as peer comparison.

4. RECAPITULATION

Attaining insight into different phases regarding the existence of holes is a necessary capacity by which to establish if and when rule users are actually able to experience a hole. After all, noticing is a hard precondition for acting and telling. The theoretical framework proffered focuses on the life cycle of holes with the biological life cycle as a starting point; and telling strategies with the prisoner's dilemma as a starting point. Although not alive in a traditional sense, holes undergo a moment of come into being, a certain period of existence, and a possible ending. These stages will be indicated in this thesis, in an analogy of March et al.'s vocabulary of rule birth, rule revision and rule suspension, as hole opening, hole aging and hole closing. When a rule does not fit a situation, either from the outset, or at any later point during its lifetime, because of changing circumstances, a hole may be opened. Regarding aging, holes are either latent ($HOLE_1$) or active ($HOLE_2$). Whether a hole will continue to age in a situation of exposure then completely depends on the rule user's reaction to the appearance of event of the unfitting. The encounter can be seen as a bilateral threat. A call for repair of the unfitting rule involves literally killing the hole, but this may help the rule user to evade the discomfort of uncertainty or obstruction. On the other hand, a rule user can have considerations that interfere with an initiative for (immediate) repair; such as a lack of influence or a lack of time to wait until the repair has been completed. A rule user telling the rule maker initiates the successive sequence of hole attention, rule change, and hole closing. In short, the actor faces a two-fold decision: Will I act and will I tell? And if I tell, will that be before I act or afterwards? The prisoner's dilemma predicts that telling benefits most and is thus the most probable strategy for the rule user. In addition, March et al.'s matching of identities leads to the definition of four variables, as possible factors influencing the decisions to act and to tell: two hole characteristics (typology and distance) and two rule user characteristics (applying rule analogy and social comparison, the latter interpreted in this thesis as peer comparison). By visually combining hole typology and hole distance in a rule, the so-called Morse Model of Discretion has been created. Further, the elaboration of the typology leads to the conclusion that holes are very locally colored phenomena. "Locally" often equals juridical-geographical areas. Organizations with international locations or cross-border collaborations that actively want to discuss hole situations with their employees, should be aware of these possible differences.

Part III
Preliminary Empirical Research: The Dutch Collection

1. INTRODUCTION

In this preliminary empirical study a collection of Dutch holes will be composed. This is achieved based on the explorations in the previous Part, in view of the variables that correlate with a rule users' decision about whether or not to tell rule makers when they encounter a hole. One of these variables may be typology. Research indicated vast international inconsistency about the definition and naming of holes. And as a consequence of that, possibly also about the character or typology of holes. Regardless of the question as to whether this issue is one of content or semantics, the lack of consensus demands a specific mapping of the hole area under investigation. Because further research about hole-rule user interaction in Part IV of this thesis takes place in the Netherlands, a Dutch Collection of Holes will be composed.

For reasons of validation, the methodological elucidation starts with a comparison of the three reasoned hole topologies from Part II as sensitizing concepts with an internationally acknowledged incident classification model. The Internet will be used as a source for data collection. Data analysis is based on a combination of thematic coding, derived from the hole locations as presented in the literature study, and open coding in which the retrieved texts are leading. These steps are followed by an overview of the taxonomical results, re-arranged into formal natural language as a preparation for further use.

2. METHOD

Because of the hermeneutic phenomenological character of this empirical research, the positivist research model of internal validity, external validity, reliability and objectivity has been abandoned to pursue the qualitative paradigm of trustworthiness, embodied in the aspects of credibility, transferability, dependability, and confirmability (Lincoln and Guba, 1985). See paragraph 2.2.1 Procedure (credibility), paragraph 2.2.4 Data Storage and Reporting (confirmability), paragraph 2.3 Data Analysis: Thematic and Open Coding (dependability), and paragraph 4.1 Formalized Dutch Collection (transferability). Although the terminology of both approaches may give the impression of being merely a matter of semantics (cf., internal validity and credibility, or external validity and transferability), there is a strong underlying difference in positions taken towards reality and the way this affects the assessment of data.

The hermeneutic-interpretative tradition implies a fully candid approach towards the dataset, not driven by any preselected classification structure. Nevertheless, it has been decided to decrease the vulnerability of this highly intuitively interpretive method to allegations of lack of validity, by locating support concerning the realistic value of the sensitizing concepts of a "rule" hole, "rule – situation" hole and "rule – rule" hole, as presented in figure 4. This action is in fact a preliminary check on transferability, but it will serve in the course of the research as a direction rather than a directive.

Process management, as a force ruling the business environment, has evolved into the modern field that studies holes as an aspect of risk management to describe, predict, avoid and analyze incidents. A hole may be considered as a cause of a possible incident, in the way that it can create an unintentional situation, which might cause damage to a person or an organization, both physically (in which

case in structure) and mentally (in which case in culture). Among the internationally acknowledged incident classification models, SIRE (Systematische Incident Reconstructie en Evaluatie[11], a Dutch variant of Root Cause Analysis), Tripod, MORT (Management Oversight and Risk Tree), and ECM (Eindhoven Classification Model of System Failure) are the most suited to communicating the intentions and implications of this research for two reasons. First, a series of applications in diverse branches indicates that they are broadly applicable. Second, they are based on a systems approach that takes the complexity of conditions and circumstances into consideration.

For this thesis, the Eindhoven Classification Model has been selected. First due to the considerable advantage that it is very appropriate for smaller scale analysis. Second, because it is part of the three-step Prevention and Recovery Information System for Monitoring and Analysis, in short PRISMA (Van der Schaaf, 1996). PRISMA is a tool for the collection of basic causes (via cause and error trees), the classification of cause profiles (via the Eindhoven Classification Model), and the production of frequency arrays and actions for improvement (via the classification/action matrix). Although only the classification section will be used in this research, the relationship with a larger scale analysis system may facilitate later studies to address for instance causes, frequencies or improvements.

2.1 DATA CLASSIFICATION: EINDHOVEN CLASSIFICATION MODEL

The Eindhoven Classification Model has been developed as a broadly applicable instrument that initially was used in the chemical industry (Van der Schaaf, 1992). Since that time, the model has proven its value in many other industrial, business and health environments. Examples of this are customer satisfaction in the telecommunications industry (Dye & Van der Schaaf, 2002), violation of security regulations in banking IT (Neys, 2003), patient safety events in a cardiothoracic intensive care unit and cardiothoracic postoperative care unit (Nast et al., 2005), and near miss information in the railway industry (Dabekaussen, Wright, & Van der Schaaf, 2007).

2.1.1 Groups

Regarding system failure, the Eindhoven Classification Model originally distinguishes four groups to classify the causes or "factors" of incidents, i.e. Technical, Organizational, Human, and Unclassifiable (figure 10). The technical factors of incidents in the original 1992 version of the ECM consist of three main categories, i.e. engineering failure, construction failure, and material failure. The organizational factors contain operating procedures and management priorities. The human causes are extracted from the Rasmussen SRK model of human cognitive performance (1983), which distinguishes skill (S), rule (R) and knowledge (K) based errors. The unclassifiable factors are not further elaborated on and concern all the other characteristics that do not fit into one of the aforementioned categories.

An example of the invoicing process can be used to illustrate the different groups of factors. A bug in the invoicing software is a technical cause. The transfer of incomplete information from the sales department to the accounting department is an organizational problem. Typos can be seen as human errors. On a

meta level, one could probably argue that technical and organizational causes may, in effect, be human causes as well, but this discussion has no added value within the context of the goals of this research.

Figure 10: Eindhoven Classification Model (1992 Original Version)
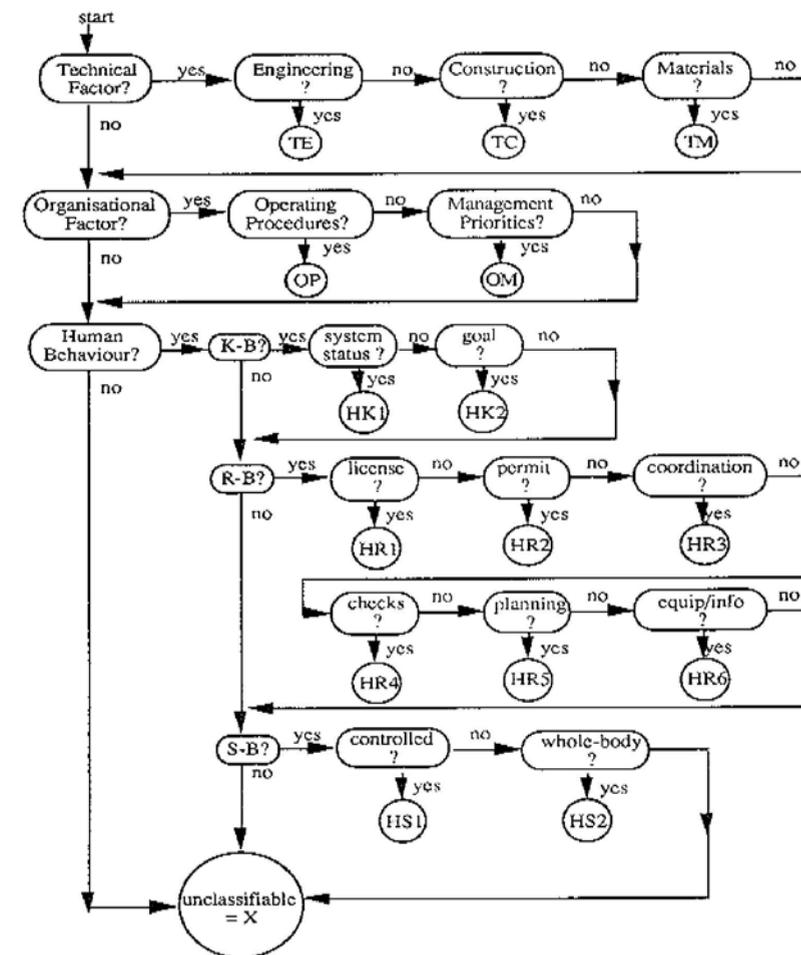
In a later version (Van Vuuren, Shea, & Van der Schaaf, 1997[12]) some modifications were made, of which three are mentioned here. First, the group level was expanded, by adding "Object related" factors, i.e. the characteristics of, or the action of the object outside the influence of the actors. Returning to the aforementioned example of an invoicing process: a wrong email address filled-out by the client's procurement office for the reception of digital invoices is considered to be object related. Second, the group "Organizational factors" was changed and expanded to cover the categories of knowledge transfer, protocols, management priorities, culture, and external factors. Third, the group "Technical factors" was also changed and expanded by adding the category "External" and the corresponding abbreviation TEx as a fourth category, while the category "Engineering" and its TE

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abbreviation was replaced with "Design" and the abbreviation TD. From then on, the ECM labels technical failure as respectively wrong technical design (TD), wrong technical construction (TC), material defects (TM), and wrong technical external cause (TEx).

It is important to remark in relation to the group "Organizational factors": To make the ECM suitable for hole classification, one should be aware of the fact that in the group "Organizational factors", the ECM 1997 version refers to protocols (interpreted as an umbrella for policy, rules, procedures, law and so forth) as an aspect of the subject under investigation. In this research "protocols" are the subject, and the protocol that creates the protocol falls outside its scope. In fact, this research is interested in the position and construction of protocols that may cause holes, and therefore only the group "Technical factors" of the ECM will be taken into account. The remaining groups however offer a structured environment to add information that is retrieved from an extensive point of view, that may assist in possible further investigations.

It is important to remark in relation to the group "Technical factors": When translating the 1997 version of the ECM (figure 11) to describe the context of holes in rules and their interdependent relationships, it should be stressed that the term "technical" does not refer to machinery or devices, but to the conceptual, intrinsic features of a hole. In this interpretation, there is a strong similarity with the sensitizing concepts of internal (ECM classification: design), situational (= ECM classification: construction) and consecutive (= ECM classification: external) holes.

Figure 11: Eindhoven Classification Model (1997 Version, Fragment) Combining Sensitizing Concepts and Technical Factors

INTERNAL	SITUATIONAL		CONSECUTIVE
Technical Design	Technical Construction	Technical Material	Technical External
(TD)	(TC)	(TM)	(TEx)

2.1.2 Categories

TD (figure 12) refers to a hole created by a failure with internal integrity. Before implementing a rule, with some background knowledge of the issue one could theoretically foresee a problem in the associated logic or coverage of the rule itself. TC (figure 13) indicates a hole created by a changing environment. TEx (figure 14) is interpreted as a hole created by incongruity in the connection of the consecutive rules. TM operates in the ECM as a (provisional) miscellaneous category in order to avoid loose ends[13].

These categories correspond very well to the hole typology as presented earlier in figure 4 and in a more elaborated form as the Morse Model of Discretion (figure 8) In addition to the graphical representation, a descriptive example may clarify the characteristics and relations between TD, TC and TEx holes. The example concerns the process of invoicing. The intended action is that invoices have to be sent on the day of delivery.

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13 Statement by T. W. van der Schaaf, Professor of Human Factors in Risk Control at Eindhoven University of Technology, the Netherlands, and Professor of Economic Aspects of Patient Safety at Hasselt University, Belgium (telephone conversation, 2008).

Figure 12: TD Hole
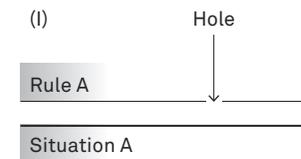
A TD hole is about the initial quality error of a rule, which could reasonably be foreseen, as independent from influences of its environment.

TD error rule in wording:
Invoices have to be sent as soon as possible after delivery.

Commentary:
By comparing the expressed rule above with the intended action, it becomes quite clear that the expressed rule ("as soon as possible") leaves room for a much broader action space than was intended ("the day of delivery"). This can cause deviations to the intended process of invoicing.

Figure 13: TC Hole
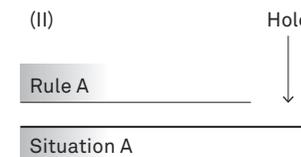
It is possible that the intended action has indeed been translated into a perfect rule: Invoices have to be sent on the day of delivery. A TC hole is about an event that intrudes into the working space/domain, and causes a new situation in which an initially fitting rule fails. The situations below show two variations that put pressure on the original rule.

TC error situation in wording:
The new e-store requires payments in advance.
Orders concerning more than one item from the latest collection can only be delivered in parts.

Commentary:
Prepayments require a formal notification for customers so they know how much money they have to transfer. Should this be the actual invoice (not provided for in the initial rule) or some kind of other document? And then there is the definition of "delivery day". Apparently the new collection introduces a new situation of multiple moments of delivery. By matching the original rule with its (changed) environmental conditions, an integration error can be established making it impossible to (fully) cover the situational construct.

Figure 14: TEx Hole
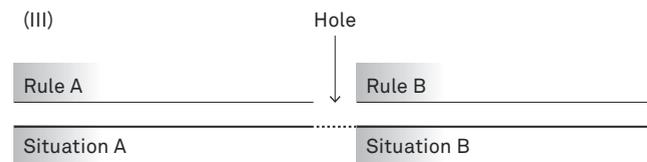
A TEx hole describes the incongruency of one rule with a rule directly prior or directly following in the process. Both the consecutive rules can be considered perfect in themselves.

TEx error consecutive incongruity in wording:
Invoices have to be sent on the day of delivery. The accounting department only works on Mondays.

Commentary:
The original rule seems to be feasible in itself, but is not congruent with the (conditional) presence of someone to execute it.

2.1.3 Context Variables

The category level of the group "Technical factors" for rule failure (figure 11) displays quite a rough division. The Eindhoven Classification Model defines a series of context variables to divide several possible interpretations for sub categorization. Regarding the context of this study the context variables from the group "Organizational factors" (operating procedures or OP's) offer a possible valuable differentiation to failures, which are related to the quality and availability of the procedures. These context variables however are no longer at the level of describing the location or functional interdependency of the holes, but rather have descended into a description of their characteristics. It may be wise to be aware of the variation within each type, but for the moment this is to be put aside. Making a detailed subdivision in advance can be done from the context of pattern matching (Yin, 2003), but would steer the outcomes of the highly interpretative incident analysis. To avoid this effect, it has been decided to study the phenomena as offered by the sample with only the categories from the ECM group "Technical factors" as a rough classification framework at hand, so as to describe and derive from an inductive angle a (grounded) collection of context variables. Without any interest in the frequency as such, this method is led by the actual (practical) appearance of holes instead of possible (theoretical) reasoning.

2.2 DATA COLLECTION: RETROSPECTIVE HOLE COLLECTION

Lincoln and Guba propose various techniques for establishing credibility. During data collection two of these, i.e. persistent observation and triangulation, will be applied.

2.2.1 Procedure

The population under investigation consists of situations that rule users literally have identified and named as holes. For rule users, holes are only visible at their differentiated $HOLE_2$-stage. Such a diverse stock, especially when this has been recorded in the past and therefore cannot be influenced by the theme of this research, has more validating power than for instance interviews with a limited

number of professionals. The interpretation of these conditions suggests the Internet as the general source of information for retrospective incident collection. With regards to diversity, this public platform reflects simple practice within a community, and presents $HOLE_2$-occurrences without discrimination based on their nature or background. Concerning objectivity, using Google's organic results excludes researcher's bias from the selection. In general, Google will rank documents with large visitor volumes such as newspapers and governmental reports higher than for instance individual blogs. This not only means that the subject of the document is of interest to many people, but also increases the probability that more sources will report on the same subject, possibly from different angles, which enables triangulation. Public discussion often refers to a concrete law or regulation, which simplifies verification. The debate regarding Google influencing the organic search results for commercial purposes has been taken into account. However, because holes in rules in principle have no widely spread commercial value, it is assumed that this effect will not be too dominant.

With reference to replicability, no Google attempt will ever deliver the same result, simply because Google will assign a search query to one of its estimated million plus servers worldwide, of which none can contain all the sources available everywhere. Each server therefore will vary in its search results. The URL's of course have been recorded so that the original cases can be retrieved. Furthermore, it is assumed that this very variation indeed may be the perfect base for a representative sample. Lastly, because no estimation can be made about the number of holes that exist in the Netherlands, nor any prediction about the size of potentially relevant documents can be made, such a large, infinite population prevents undesired boundaries in advance. Furthermore, this wide range sampling also offers the possibility of finding a maximal variety of types of holes. Conversely, searching for holes in the open may however result in overlooking holes that are less visible, less explicit or by other reasons not present in this medium.

More specifically, the organic presentation of holes in the Dutch Google version is used. Dutch keywords result in Dutch sources - which however do not necessarily report about Dutch events but refer to events that the messenger has recognized and acknowledged as hole-related. While in English both "hole" and "gap" are used to indicate integrity errors in sets, the Dutch word "*gat*" covers both. At first, the more general search string "hole in process"[14] was executed, without quote operators ("") so that combined, separated and plural results might occur. The pretest did not deliver many results, only 4 out of 100, probably because "hole in process" is an artificial combination of everyday speech and professional vocabulary. The international qualification "process failure" delivered a substantial number of search results. But many of the results were either unrelated to the Dutch situation because of the English origin of the search string, or theorized as a part of a study, or referred to business process problems alone thus moved away from the desired wide spectrum of (perceived) holes. The switch therefore has been made to everyday speech; "hole in law" and its equivalents are more common expressions and probably result in a much higher density. The search strings have therefore been defined as "hole in regulation"[15], "hole in legislation"[16], and "hole in law"[17].

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14 Dutch: *gat in het proces.*
15 Dutch: *gat in de regelgeving.*
16 Dutch: *gat in de wetgeving.*
17 Dutch: *gat in de wet.*

2.2.2 Sample Size

The size of the sample has been determined by applying fixed and variable criteria. The fixed criterion encompassed per search string the first (for they represent the results with the highest relevancy) 4 result pages with 10 Google search results, which is a total of 40 organic links. Then, the investigation continued until three consecutive pages did not result in any new type of hole, so that saturation can be defended. In this two-stage sampling method the richness of the source directly and objectively drives the research progress. Multiple references to the same hole occurrence and single references to plural hole occurrences are assumed to cancel each other out, so that the sample size based on the minimal number of 7 pages multiplied by 10 results multiplied by 3 search strings, is estimated as n ≈ 210. This volume is regarded equivalent to persistent observation. Even a high-precision *a priori* power analysis developed for statistical tests in behavioral research (Faul, Erdfelder, Lang, & Buchner, 2007) advises a sample size of 150 for an acceptable power level and a small population effect.

2.2.3 Sample Frame

Screen shots of the first 15 organic result pages have been taken for each of the three search strings. The screen shots for "hole in regulation" were made on March 1, 2009, "hole in legislation", and "hole in law" both on March 2, 2009. In this way a fixed framework was guaranteed, even if the analysis phase were stretched over a longer period. If the sample size proved too small, additional pages could be added. It is expected that because of Google dynamics this will return different results than a same day sampling, but this variation will only be minimal because changing organic ranking is a very slow process. Of course, there is also the influence of the randomly selected Google server that carries out the search query to consider, but in this research variation is not to be considered a disadvantage.

2.2.4 Data Storage and Reporting

All assessed search results have been labeled according to the following system: R01_01, for which the letter represents respectively the search string "hole in regulation" (R), "hole in legislation" (LE), and "hole in law" (LA). The number prior to the underscore refers to the Google page on which this search string was found. The number after the underscore is the position of the result on the specific Google page. This systematic documentation ensures confirmability.

In interpretative research, the context is of great importance. Therefore, a selection of the results will be presented with their full appearance, including a short description of the source as an indicator of the position of the author or publisher. The extensive textual illustration places the conceptual abstraction within the reality of everyday life, and by doing so grounds the variety in appearance and supports the meaning of holes on a very personal level. Shorter text fragments will be chosen if the hole under investigation is for instance listed among nonrelevant issues.

2.3 DATA ANALYSIS: THEMATIC AND OPEN CODING

The results that are found serve as inspiration for interpretative inventory. Examples that have multiple explanations in fact illustrate the richness of the phenomena and the subjectivity here, as well in professional practice when judging holes. The interpretation will be executed on a qualitative nominal

level, using three angles of interpretation: content indication, induction from the four categories of the group "Technical factors" of the Eindhoven Classification Model, and researcher's comments. This so-called thick description (Ryle, 1949; Geertz, 1973; Lincoln & Guba, 1985, p. 125) - in which according to Lincoln and Guba the findings themselves are excluded (ibid.) - supports the assessment of the criterion of dependability. This also responds to the criterion of persistent observation: "If the purpose of prolonged engagement is to render the inquirer open to the multiple influences - the mutual shapers and contextual factors - that impinge upon the phenomenon being studied, the purpose of persistent observation is to identify those characteristics and elements in the situation that are most relevant to the problem or issue being pursued and focusing on them in detail." (ibid., p. 304).

2.3.1 Content Indication

Concerning literally quoted key sentence(s) that indicates a perceived hole and may point out the problem.

2.3.2 ECM Induction

Concerning reasoned by thematic coding (figure 15) following the "outside – in" order. This means first checking with the most distant relationship, i.e. between rules (TEx - external or consecutive); then between a rule and a situation (TC - construction or situational); and finally the rule itself (TD - design or internal). The role of the TM category will evolve during analysis.

Figure 15: Inductive ECM Analysis
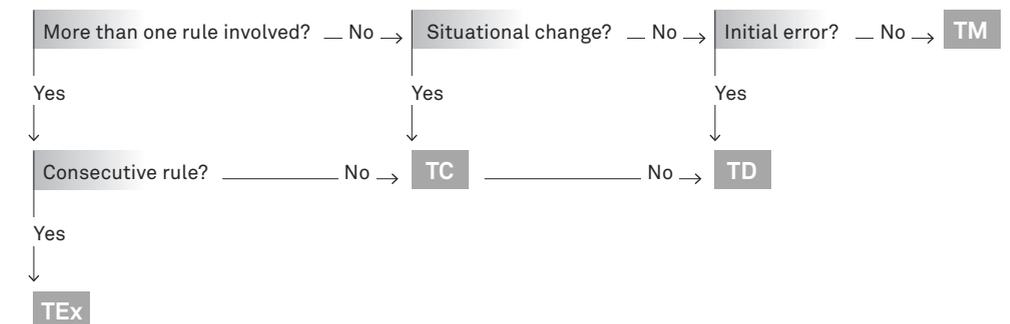
2.3.3 Researcher's Comment

Concerning a more detailed and subjective exploration of variables. A contextual identification will be added to refine the rough ECM classification (open coding).

Working from this principle of resuming analysis, the assessment here is set up as a taxonomy rather than a typology. In other words: The classification algorithm is based on the empiric finding of holes and the inductive analysis of typical characteristics in order to reconstruct possible meanings. This is also referred to as Grounded Theory (Evers & Van Staa, 2010; Glaser & Strauss, 1967). The alternative, a typology in which all samples are deductively divided according to an earlier theorized construction upon the level of context variables might be considered as reflecting a less open attitude towards possible new findings, because a rather rigid conceptual framework dominates the assessment.

3. RESULTS

Upon examination of the results of the Internet search[18], at the main level the ECM classification offers a useful coverage. The TM (miscellaneous) category has been specifically addressed as TW (wishful thinking). In addition, several classifications have been found. The vocabulary of categories, classifications and context variables has been derived from the Eindhoven Classification Model. The specific naming per classification, and that of the TW category, has been determined by analyzing the actual findings in this study.

3.1 DUTCH COLLECTION HOLE TREE

The four category levels and ten classifications create the Dutch Collection Hole Tree (figure 16). The category levels will be outlined in the following paragraphs. After which, a selection of the original texts retrieved from the sample has been taken up to illustrate the various types of holes and to show how the determination has been achieved.

Figure 16: Dutch Collection Hole Tree

INTERNAL	SITUATIONAL	CONSECUTIVE	IDEOLOGICAL/COMMERCIAL
Technical Design (TD)	Technical Construction (TC)	Technical External (TEx)	Technical Wishfull Thinking (TW)
Absent (TD-a)	Contradicting (TC-c)	Short - backward (TEx-sb)	
Contradicting (TD-c)	Short (TC-s)	Short - forward (TEx-sf)	
General (TD-g)			
Incomplete (TD-i)			
Short (TD-s)			
Unclear (TD-u)			

A technical design (TD) failure can be established by assessing two conditions. One: There is no other consecutive rule involved. And two: There is no unforeseeable situational change. A technical design error therefore reflects a problem in the internal integrity of a rule. In other words, if one would rigidly follow a rule comprising a TD hole, the outcome might be unintended and probably undesirable to the rule maker. The TD holes below are presented in order of appearance.

A technical construction (TC) failure is actually about the hole identifying an instance where the technical design of the rule and the changed 'construct' of the working field result in failure. Being able to indicate the occurrence of a new fact or event in the process domain of the rule (important: not in a prior or following process, which characterizes TEx holes) is crucial for this main level classification. This new fact or event creates a problem with the span of the original rule, that (suddenly) is too short or overlapping. In case of a TC-s(hort) the original working field of the rule is smaller than the new, expanded working field. An existing rule can also conflict with a new situation, for instance when a new event concerns an overlapping rule. As long as this overlap is a mutual confirmation, no hole arises. But should each rule contain different prescriptions about the same situation, there is a TC-c(ontradicting). Thus, the TC-c is a specific kind of overlap.

Where TD holes denote the intrinsic quality of a rule, and TC holes denote the adaptive quality of a rule in relation to situational dynamics in its domain, TEx relates the consecution or connective quality of a rule with other sets of rules that touch its domain. Because in this (artificial) division working fields do not mix, overlaps are by definition excluded. This is clear cut with TC holes.
From the interdependency perspective, in which one process follows another, the TEx holes are considered as a problem limiting the effort to progress to the realization of one's list of objectives. In this linear sequence, the Dutch Collection shows one context variable, shortcoming in consecution, that appears in two dimensions: backwards and forwards. Given any rule-based situation, a backward shortcoming indicates that the right input or any other functional bridge with the (perfect rule that manages the) previous process, fails. A forward shortcoming occurs when the (right) output is not picked up by the (perfect rule that manages the) subsequent process.

Some search results appeared in which it was not possible to identify a hole. Analysis of the situation did not result in a recognizable unintentional technical failure of rules, individually or in cohesion. It seems like that it is very attractive in case of, for instance moral or commercial considerations, to label an unpleasant situation as a hole, as if one can force by "legislationizing" a modification in a desired direction - or at least to have it taken more seriously. In this scenario "hole labeling" may be considered as a technique for manipulation. Assuming that this is not deliberate (because this is ruled out in this study), it might be considered as a mechanism based on wishful thinking: "(…) an interpretation of facts or situations according to one's desires or wishes rather than as they exist in reality, usually used as an unconscious device to avoid painful or unpleasant feelings" (Mosby/Elsevier, 2009) or a "Psychology Dereitic thought that a thing or event should have a specified outcome" (Segen, 2002). This introduces the TM-w, a technical failure created by wishful thinking. A similar phenomenon has been found with Visković's work (1997, pp. 218-220), which distinguishes besides technical holes (the insufficient normative covering) also so-called "value legal holes" which "is the view of some subjects that the norm regulates a social relation unjustly or in some other value-deficient way, and that it must therefore be changed or brought into harmony with the values that these subjects uphold."

The question is whether or not to classify this type of hole, and if so, as a category or as a classification; it clearly only exists in one's mind, so it can be argued that this is not a technical failure but a

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18   Data available on the publisher's server at accentgrave.nl/phd until at least December 31, 2014.

human error, and is therefore also ruled out. On the other hand, for all of the above holes perception - and therefore subjectivity - has been accepted as valid grounds for classification. A second consideration is the fact that the holes under investigation are measured according to the possibility to point out a location of appearance in the sequence of events. A hole that is not there (not to be confused with a rule that is not there) can also be defined in terms of location, namely nowhere. For these two reasons, the TW hole is admitted to the collection.

Finally, a decision is to be made as to whether the wishful thinking hole should be considered as a category (joining TD, TC and TEx), or as a classification of the miscellaneous category TM. Categories relate to the position or origin of the hole, whereas classifications describe technical characterization. As argued in the previous paragraph, wishful thinking holes can technically be positioned at the position "nowhere", and therefore act at the highest level. They therefore can be labeled as a category, TW; because of its special characteristics this operates also as the 11th and final context variable.

3.2 SATURATION AND QUALITY

The search has been executed in the following order: "regulation", "legislation" and "law". In relation to "hole in regulation", the final new type characteristic was found on page 11, because of which the search continued to and included page 14 (table 6). In "hole in legislation" and in "hole in law" no new types were discovered, so for each of these two search strings the minimum of seven pages has been examined. In total, 28 Google pages have been analyzed, representing 280 search results[19].

Table 6: First Appearances per Hole Type

Hole Type	Abbreviation	Page
Wishful thinking	TW	R01
Design-short	TD-s	R01
Design-unclear	TD-u	R01
Construction-short	TC-s	R01
Design-incomplete	TD-i	R02
External-short backward	TEx-sb	R02
Construction-contradicting	TC-c	R03
Design-general	TD-g	R04
Design-absent	TD-a	R04
External-short forward	TEx-sf	R07
Design-contradicting	TD-c	R10
Design-wrong[20]	*TD-w*	*R11*

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19   Data available on the publisher's server at accentgrave.nl/phd until at least December 31, 2014.
20   After reviewing the March 2009 search results in 2010Q4, the TD-w(rong) classification (frequency: 1) has been withdrawn. The case concerned a Dutch and French linguistic interpunction problem. Because both event and source were entirely Belgian domestical, the observation has been excluded from the Dutch collection. TD-w as the last new classification found in the initial analysis, effected the continuation of the search. For that reason, classification TD-w remains displayed in table 6.

Sixty-one incidents were found to be not applicable: The search result was not valid because "hole" and "[second key search word]" turned out not to be connected with respect to relevant content (for instance a bar called The Hole has difficulties in complying with regulations), or because the relevant words from the search string do not appear in the displayed text. Fifteen incidents were not accessible because the search result was part of a publication in print or online for which subscription or purchase is required, or because the page had been removed. Twenty-one incidents were not assessable because the information was either too specialized to fully understand or too minimal. The gross number of search results remaining was 183, of which 109 cases concerned 32 subjects that repeated twice or more frequently; because of a possible different angle, each was considered as offering a possible new perspective and each was analyzed as well. Finally, there were 74 unique incidents. The holes found did not necessarily appear in professional situations, but this is not a condition for studying the phenomenon in itself.

In several cases, a hole could be classified in more than one way. This then has three causes: position, interpretation and accumulation. First, by placing oneself in different positions as regards the situation, one could argue there are different holes (or even none). Second, depending on the (in)completeness of the information multiple interpretations are possible. In third place, hypothetically, an internal integrity failure (TD) can cause external consecutive incongruity (TEx); more combinations of these cumulative effects are plausible within a single case. As noted earlier all these multiple outcomes illustrate richness and complexity, and because it is not intended to deliver conclusive judgment, it is enough to be aware of the existence of diverse types of holes and their mutual relationships.

The cases here are dated from 2000 to 2009 and all have been published in (at least) the Dutch language - as a logical result of using Dutch search words. The majority of the results are related to governmental, business and private affairs in the Netherlands, but also Dutch cross-border regulation problems with Germany and Italy are included in this. In most of the cases professionals (individually or as a branch) have been involved, among who are MP's, lawyers and attorneys, port authorities, housing corporations, Internet providers, music industry, pharmaceutical companies, priests, car adjustment specialists, and coffee shop entrepreneurs.

3.3 HOLES CREATED BY DESIGN FAILURE (TD)

3.3.1 TD-s holes (context variable = short)

Opinion regarding Habitat directive; Kafka in nature- and environmental-land

About ten years ago the EU Habitats Directive was established. The goal of the EU Habitats Directive is to better protect the natural habitat from, among other things, excessive ammonia deposits. Recently the Council of State determined that the local governments could not directly enforce the guidelines of the Habitats Directive. Only in instances in which citizens or nature and environmental organizations specifically ask, may the local governments apply the Directive guidelines to the environmental permits. This practice leads to a kafkaesque situation, such as that in the city of Apeldoorn.

In 2004 the Gelderse Milieufederatie (GMF) asked local governments to adhere to the Habitats Directive guidelines when issuing environmental permits to livestock farmers. A number of cities, among them Apeldoorn, considered this request and established a testing framework for the guidelines. In the Gelderse Valley, the city, agricultural, and environmental organizations collectively developed this testing framework. Thus, all participating parties knew what was acceptable and unacceptable with regards to livestock expansion and the accompanying increase of ammonia emissions that are detrimental to the environment.

In the Spring of 2005, the city of Apeldoorn refused environmental permits to four cattle farmers. This refusal was on the basis that, the requested expansion of livestock would lead to an excessive burden on the environment beyond the levels deemed acceptable by the testing framework. The cattle farmers filed an appeal with the Council of State protesting the permit refusal. In 2006, the Council of State decided that the city could not directly apply the guidelines of the Habitat Directive to the environmental permits (Apeldoorn, 200504036/1 dd. February 1, 2006). Direct application of guidelines could only be applied in cases when a private citizen, nature organization or environmental organization specifically requests. The Council of State therefore overturned the city's original refusal.

Meanwhile, the city of Apeldoorn had investigated new means of reviewing environmental permits. The permits are no longer refused on the basis of the Habitats Directive guidelines, because they are simply not tested on them. If they were to be tested on the guidelines, then the city would establish significant negative effects on the nearby Habitat Directive area, Veluwe, and the permits would be refused. If no one were to submit a request for the application of the guidelines, then permits would be granted that are contrary to European rules and nature would then be further burdened beyond the European standards. It is not that the city is too lazy, but that the current Kafkaesque situation with regards to laws and regulations, makes it impossible for them to do anything else. Other cities have also abandoned the Habitat testing framework. Nature and Environmental organizations feel forced to submit considerations and to ask for direct examination with the Habitat directive guidelines, so that this hole in the regulations is not at the expense of the protection of nature.

Does the new Nature Protection Law solve this? Since October 2005 the Nature Protection Law 1998 (Nb-wet 1998) has been in effect. The provinces are to consider all new applications for environment permits with regard to the European guidelines. This is valid for every case in which plans or projects pose a significant negative effect on the Bird Directive areas (VR-gebieden). These BD areas are primarily located in the Netherlands. The Habitats Directive areas still need to be presented, and shall be named within the next year. As long as nothing has yet happened, the cities have the implied authority to directly apply the Habitat guidelines. But, this may only occur if a person specifically requests, as this validates the so-called direct application. Nature and Environmental organizations must, at least for a while longer, keep an eye on the issuance of permits and present their concerns in a timely manner. A government that wants to seriously protect nature is dependent upon these organizations to do their work

successfully. For now, and at least until next year, Kafka reigns supreme in the nature and environmental lands, thanks to a slow Dutch government.

(R03_05, *milieuhulp.nl, earlier published in the Staatscourant, May 5, 2006*)

Interpretation.

Content indication: "Recently the Council of State determined that the local governments could not directly enforce the guidelines of the Habitats Directive"[21].

ECM concept: There is only one rule at stake, i.e. the EU Habitats Directive. The actors do not express any indication that there is a situational change that affects the coverage of the law. Therefore, this will be classified as a Technical Design error.

Researcher's comment: This example is displayed in the Dutch Collection Hole Tree as a Technical Design error, context variable "short". It is clear that the purpose of the law is there to protect the environment. It seems likely that the more simply and directly the directive can be applied, the better the chance that the purpose will be served. Apparently the directive reduces the possibility of a direct application by the local authority (or at least allows that interpretation), the body that receives building requests and which has a legal obligation to examine whether all regulations and legislations are met. If so, permits can be supplied. If not, one is supposed to act. The EU Habitats Directive however, paralyzes the local authorities from responding. The existence of local authorities cannot be considered as a complete surprise to the EU, and should have been incorporated in the EU Habitats Directive during the design phase. Because of this omission, the span of the rule is too short. The lack of inclusion is specific to a TD-s hole.

3.3.2 TD-u holes (context variable = unclear)

Close the legislative hole that the Ivory Coast poison disaster made possible

The navigational services should have never allowed the "poison ship" Probo Koala, to leave Amsterdam harbor. Several government officials spent the summer making and receiving phone calls while the ship was reloaded with a highly toxic cargo and departed the harbor. It is still being investigated to see if this incident was against legal regulations. Socialist Party MP, Remi Poppe, had his suspicions confirmed by the Hulshof commission. "There is clearly a hole in the Dutch legislation. The officials had no idea of what to do and knew of no means to prevent the transportation of the toxic cargo to Africa. It is about time to do something about this."

Poppe stated that "the captain can now keep his toxic waste on board, and deliver it elsewhere. He can choose any harbor at will, also outside of the Netherlands. Nine times out of ten it will be the cheapest harbor, often in a land without environmental regulations or strict enforcement. Let us change the laws and regulations so that sea vessels are not allowed to depart for sea with ship waste, loading residues, or slob water."

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21   Dutch: *Recent heeft de Raad van State bepaald dat gemeenten deze richtlijn niet rechtstreeks mogen toepassen.*

For port authorities, it is a small task to physically inspect each ship where it is unsure if it will depart with waste on board. The majority of the ships that enter Amsterdam harbor are known. They come several times per year and therefore, it is known what can be found and what happens on board the ship. It is important to check the ships that frequently change cargo and whose contents and commerce could be questionable. "It is easy to separate the wheat from the chaff", comments Poppe. "The responsibility for inspection and enforcement should lay with one organization. A couple of extra inspectors could physically inspect each ship at departure to see that no waste is on board." (R01_02, *sp.nl, December 6, 2006*)

Interpretation.
Content indication: "It is still being investigated to see if this incident was against legal regulations (…)"[22].

ECM concept: It is not clear how many rules may be involved, but there is no reason to expect incongruity between rules. Nor do the actors also express any indication that there is a situational change that has affected the coverage of any law. Therefore, this will be classified as a Technical Design error.

Researcher's comment: This example is displayed in the Dutch Collection Hole Tree as a Technical Design error, context variable "unclear". It seems fair to state that this concerns one or more individual rules that are not sufficiently clear for the officials to apply. Very interesting is the fact that there is no reference to a specific law that demonstrates failure of any kind: it is even unclear which law is relevant.

3.3.3 TD-i holes (context variable = incomplete)
(…)
Mediation

A landlord has, on the basis of article 1586 of the civil code, the obligation to provide a peaceful living environment. Above all, is it the case that if renter A complains of excessive noise from renter B, the landlord is in a better position to reprimand renter B than is renter A. The renter A could threaten legal action with an associated fine, but in practice, this seems to be in-effective. The landlord can cancel the rental agreement and threaten eviction, which does seem to be effective. The landlord can be forced by renter A to do so, if the disruption is severe enough, through legal action.

Still, utilizing legal action should be a last resort. According to a study conducted by Erasmus-University in Rotterdam, professional mediation between neighbors is the best method. This has been, among other places, tried in Gorinchem, Gouda, Rotterdam and Zwolle with success, according to Erasmus University. However, just like legal actions between renters, control of the compliance is the most difficult part.

The Last-Post organization adds here the following. The researchers at Erasmus University are correct in stating that litigation should be used as a last resort. Even if a noise disturbance can be proven, it is still the question if the disturbance was, in the eyes of a judge, severe enough to warrant a strong punishment such as eviction. We encounter here, in fact, a hole in regulation. One party has experienced disturbances for a time, while the other party has not (yet) done anything criminal. This hole should be filled by the landlords, especially the living corporations which have been privatized, but obtained all their possessions from tax money. The corporations should have made sure that the ceilings and floors were so well constructed and insulated that any possibility of disturbance wouldn't affect the neighbor. The secretary of housing has also laid the responsibility on the housing corporations. The corporations are using financial reasons as their excuse. (…)
(R02_08, *Stichting ter bevordering van een Geluidsarme leefomgeving, September 2001*)

Interpretation.
Content indication: "Even if a noise disturbance can be proven, it is still the question if the disturbance was, in the eyes of a judge, severe enough to warrant a strong punishment such as eviction. We encounter here, in fact, a hole in regulation."[23]

ECM concept: There is only one rule at stake, i.e. art. 1586 of the Civil Code. The text does not indicate that there is a situational change that affects the coverage of the law. Therefore, this will be classified as a Technical Design error.

Researcher's comment: This example is displayed in the Dutch Collection Hole Tree as a Technical Design error, context variable "incomplete". It seems reasonable to argue that certain parties can judge the law as incomplete because of no objective measurements such as limiting dB-values and no enforcement on corporations to ensure that the ceilings and floors are well constructed and insulated.

3.3.4 TD-a holes (context variable = absent)

Hole in nature protection law

Emergency laws after ministers forgot to extend structure schemes

THE HAGUE - The outgoing cabinet is, in the short term, creating an emergency law to fill a judicial hole left in the protection of nature and landscape. The ministers Veerman (Agriculture and Nature, Christian party CDA) and Kamp (Housing, Spatial Planning and the Environment, liberal party VVD) added their input to a speed debate that was requested by GroenLinks MP Van den Brand. The cause of this debate was a decision made by the Council of State two weeks earlier, where it appeared that the Structure Schema Green Space was not extended and therefore lost its legal strength.

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22   Dutch: *Of dit tegen de wettelijke voorschriften in gebeurde wordt nog onderzocht (…).*

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23   Dutch: *Zelfs als geluidsoverlast bewezen kan worden, is het nog maar de vraag of die overlast in de ogen van de rechter ook sterk genoeg is om een zeer zware maatregel als uitzetting te rechtvaardigen. We stuiten hier in feite op een gat in de regelgeving.*

The structure scheme, wherein the nature and landscape areas of protection are established, should have been prolonged in October 2000, but the then ministers Pronk and Brinkhorst did not complete that task. Van den Brand found that the ministers "failed to pay sufficient attention" and as a result nature and landscapes have now been unprotected for two years.

Kamp and Veerman contradict this opinion. They recognize that their predecessors failed because they wrongly assumed that with the announcement of a new structure scheme the old one remained enforced. According to minister Kamp, the mistake had no significant consequences to the protection of the environmental areas, which is what GroenLinks fears. According to Van den Brand, the environmental areas could be developed and filled with homes, greenhouses, garages, and so on.

Kamp assures that the ecological areas in the head-structure, the associated networks and nature areas that are to be completed by 2018, are completely covered. He points out that construction plans must be cross checked with regional and zoning plans. The national guidelines are included in the provincial and local governmental regulations.

"If the regional plans are good, then there is nothing on the hand," said Tom Goedhart, lawyer for the Nature and Environment foundation. "If indeed all regional plans are in order, one cannot know for sure. In addition to this, the borders of the ecological head-structure are for the most part, about 90 percent, established by the provinces. And for the areas, which are submitted in Brussels with regard to the Bird and Habitat Directives, the rules of the directives are directly applicable when the Dutch law does not provide protection."

The case, in which the Council of State supplied the fallen legal strength of the structure scheme, resided between the city of Soest and the Ministry of Housing, Spatial Planning and the Environment. The city of Soest had changed zoning plans, to allow for a hotel expansion. In exchange for this allowance, the demolition of an old hospital (Zonnegloren) would be paid for by the hotel. The city approved the changes, but the ministry reversed the approval. This reversal is what the Council of State overturned.

The Utrechts landscape supported the city of Soest and the province. Marco Glastra comments that "the old hospital was located in the middle of an ecological head-structure, in a dune and moor. The hotel is located outside of the head-structure and furthermore the expansion will not consume any additional space. This way is was indeed possible to actively work on the head-structure."
(LA04_09, *trouw.nl, June 26, 2006*)

Interpretation.

Content indication: "The outgoing cabinet is, in the short term, creating an emergency law to fill a judicial hole left in the protection of nature and landscape"[24].

ECM concept: There is only one law at stake, that is the Structure Scheme Green Space. The text does not indicate that there is a situational change that affects the coverage of the law. Therefore, this will be classified as a Technical Design error.

Researcher's comment: This example is displayed in the Dutch Collection Hole Tree as a Technical Design error, context variable "absent". Apparently, this law expired automatically at a certain date. After the expiration date there was no longer any legal coverage. This absence of a default regulation was unintentional.

3.3.5 TD-c holes (context variable = contradiction)

Government must return millions to landlords

LEEUWARDEN - The Dutch Government must return almost ten million Euros to landlords in the Netherlands. The government collected this money in 2000 as penalties for the infractions of performance norms.

According to the Rental Subsidy law of 1997, corporations and local governments, collectively, needed to make sure that the payment of rental subsidies stays within set limits. Anyone that exceeds the governmental norm is fined by the national government. The courts have determined this practice to be unlawful.

In the subsidy year 1 July 1998 - 1 July 1999, eight housing associations and foundations in Friesland, exceeded the norms in their communities. Therefore they owed the government a financial contribution.

The total sum of almost 500,000 Dutch guilders was spread over housing corporation BWL in Leeuwarden (fl. 86,032), housing management agency Harlingen (fl. 56,935), housing corporation Talma in Drachten (fl. 42,168), housing corporation De Stellingwerven (fl. 18,032), housing foundation Patrimonium (fl. 118,947) and housing foundation De Wieren in Sneek (fl. 81,651), housing development association Smallingerland (fl. 71,363) and housing foundation Dantumadeel (fl. 14,700).

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24 Dutch: *Het demissionaire kabinet komt op korte termijn met een noodwet om een juridische leemte in de bescherming van natuur en landschap te dichten.*

These parties filed a complaint against the assessment of the fines. They claimed that renters could not be refused housing or rental subsidies if they had a legal right to receive them. The number of renters, their income and the performance norms were all factors over which they have no influence.

The government responded that landlords needed to carefully check their renter's incomes. "They shouldn't rent expensive homes to people" according to a spokesperson for the ministry of public housing. "They can give that money to the subsidies."

The court in Leeuwarden was in agreement with the Council of State's decision earlier this year, that the Dutch government was working in contrast to a European pact to protect the rights of citizens. After all, the landlords had broken no laws. *(R10_01, website Vereniging P.E.L., earlier published in the Leeuwarder Courant, January 21, 2003)*

Interpretation.
Content indication: "They claimed that renters could not be refused housing or rental subsidies if they had a legal right to receive them."[25]

ECM concept: There is only one law at stake, i.e. the Rental Subsidy law. The text does not indicate that there is a situational change that affects the coverage of the law. Therefore, this will be classified as a Technical Design error.

Researcher's comment: This example is displayed in the Dutch Collection Hole Tree as a Technical Design error, context variable "contradiction". The Rental Subsidy law seems to delineate at least two things: The criteria according to which housing benefit should be given, and a limitation in the number of housing benefits. If, based on the criteria, the number exceeds the limitation, the government wants to take punitive action. The local authorities argue that this is a contradiction, because they must treat everyone equally in the application of rental subsidies. Just stopping because of a number is considered an injustice, and the court has agreed. It seems that the rule, in itself, is not an integer rule, because of this contradiction.

3.3.6 TD-g holes (context variable = too general)

SGP takes the initiative to close the hole in the Store opening-hours law

The SGP thinks that the "touristic hole" in the Store opening-hours law must be closed. SGP leader Van der Vlies has therefore developed an initiative that he has proposed to the parliamentary parties of CDA, PvdA, SP and CU. These political parties, like SGP, have a problem with the interpretation that continually more local governments give to the "touristic directive" in the Store opening-hours law. This directive was created at the request of PvdA, to prevent that on Sundays, a sort free-for-all

in commerce could occur. It was meant for use by stores in a limited number of communities, to allow for hours of commerce on Sundays. In practice, however, it seems that this article is being used more frequently as a loophole to allow for Sunday commerce nearly everywhere.

Van der Vlies brought forth his initiative after the government, on two occasions, seemed unwilling to force cities to adhere to the law. These cities include, among others, Leiden and Almere. The SGP has petitioned the government to address the situation with both city governments. It appears, however, that the cabinet is not prepared to address the issue. For the SGP leader is that enough reason to take the initiative up himself and try to close the hole in the law.

The SGP would most like to see the multiple-interpretable directive of tourism (article 3; Store opening-hours law) scrapped. That way, abuse could be ruled out. A second option is to sharpen the law with regard to this point. This could effectively occur by adding to article 3, that a "touristic opening" may only be used by a "small part of the center." It should also be established in the same article, that it must be a touristic area "of special nature and proportion." Both additions would prevent the ability of every city to claim "touristic necessity" in the law. (LA03_03, sgp.nl, March 31, 2006.)

Interpretation.
Content indication: "The SGP would most like to see the multiple-interpretable directive of tourism (article 3; Store opening-hours law) scrapped."[26]

ECM concept: There is only one law involved, i.e. the Store opening-hours law. The presented situation is unintentional. No indication can be found to suggest that there is a situational change that affects the coverage of the law. Therefore, this will be classified as a Technical Design error.

Researcher's comment: This example is displayed in the Dutch Collection Hole Tree as a Technical Design error, context variable "too general". Specific for a TD-g hole is the lack of exclusion; thus the span is too broad. This indeed opens up the intended possibilities, but on a scale with too few limitations. Repair should be targeted on restricting: "A second option is to sharpen the law with regard to this point."[27]

3.4 HOLES CREATED BY CONSTRUCTION FAILURE (TC)

3.4.1 TC-s holes (context variable = short)

Hole in the tax law for delivery autos to be closed in the near future

The cabinet stops the usage of a "trick", which allows for lower tax fees on delivery autos. Delivery autos are not subject to the very high tax rates on personal autos, BPM. In order to qualify as a

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25 Dutch: *Zij betoogden dat zij huurders geen woning of huursubsidie kunnen weigeren als zij daar recht op hebben.*

26 Dutch: *Het liefst zou de SGP zien dat de voor meerderlei uitleg vatbare bepaling over toerisme (artikel 3 Winkeltijdenwet) zou worden geschrapt.*
27 Dutch: *Een tweede optie is om de wet op dit punt aan te scherpen.*

"delivery auto", an auto must meet strict criteria. One necessity is that there be a flat loading area located behind the driver's seat. With a protruded rail, upon which the rear seats can be affixed, is the loading floor no longer flat. It is then no longer a delivery auto but a normal, highly taxed, personal vehicle. But what if the rail is not mounted on the loading floor, but is sunken in the loading floor?

According to the Arnhem tax court judge, H. Lam LL.M., the loading floor is then indeed flat – precisely as the regulations state. You could, without a problem, place a glass plate window on it. State Secretary Jan Kees de Jager (Finance) does not take the law literally. He has therefore asked for a ruling from the high court. But the State Secretary is not prepared to wait that long. A repair-law needs to immediately offer assurance. According to a spokesperson for the State Secretary, the situation does not involve specific types of delivery autos. The modifications, on behalf of buyers, should be made by a specialist that is able to make on request adjustments in almost any type of delivery van. Additionally, it is not only an issue of having the rails sunken in the floor; they could (while maintaining a flat floor) also anchor seats to the side walls of the vehicle. The loading floor then just remains flat.

If the law were accepted within a few months, then a sunken rail would no longer form a hole in the law.
(LE01_04, *nrc.nl, April 10, 2008*)

Interpretation.
Content indication: "But what if the rail is not mounted on the loading floor, but is sunken in the loading floor?"[28]

ECM concept: There is only one law involved, that is the tax law for delivery autos. New adjustment options affect the coverage of this law. Therefore, this will be classified as a Technical Construction error.

Researcher's comment: This example is displayed in the Dutch Collection Hole Tree as a Technical Construction error, context variable "short". The rule is perfectly clear with regards to the flat loading floor. It seems that the new situation has been created as a consequence of the creativity of the market and thus the span of the rule becomes too short.

3.4.2 TC-c holes (context variable = conflicting)

Law of anonymity is badly needed

Anonymous communication is a civil right. So slowly, it appears that anonymity has become synonymous with abuse. The debate has been reduced to the antithesis of privacy vs. safety. The Internet deserves to have proper legal ruling regarding anonymity. Consumers, Internet providers and especially public debate will benefit from that.

Last week, the police in Utrecht, with the help of the FBI, were able to foil a plot in which a 45-year old man blackmailed Campina by poisoning snack food products. The dessert terrorist was able to avoid police for some time by utilizing an 'anonymizer'. This is a computer program that erases Internet tracks.

This case seems to validate the fear that the Internet is only used by pedophiles, frauds and terrorists. Since its breakthrough into the mass-media, has the Internet been (both justly and unjustly) associated with serious crimes and the decay of moral values. The rules of the law seem to be more difficult to enforce in the digital environment.

The negative associations are understandable and explainable. Extending beyond traditional communication technologies, the Internet offers more opportunity for people to communicate without divulging their own identity. The disadvantage of this anonymity is clear, those who are anonymous can without consequence, speak nonsense, make threats or make insults. The victims of such instances have no recourse and can hold no one responsible. That is a completely unacceptable fact in a constitutional state.

Because serious crime, such as the Campina case, receives so much media attention, the threat of not being able to find the person responsible, further damages the reputation of the Internet. The Internet itself, and the anonymous communication that this medium makes possible, is now considered a guilty party.

Unjustly so! The advantages of anonymity are often overlooked. The Internet, as a free medium of communication, can only remain if the innocent Internet user is able to access an enormous amount of valuable information and communication without the risk of being monitored or limited by governments. Anonymity allows the user to protect his own privacy and avoid of all spam and other unwanted information.

Above all, anonymity is an unmistakable benefit for society. The public debate is benefited by a free exchange of ideas and information. All kinds of critical sounds would often be unheard if the author was mandated to identify himself at all times. The anonymous user is, in some cases, only honest and uninhibited about giving his opinion if there is no fear of repercussion from malevolent government agencies, employers or neighbors.

Anonymity is an essential guarantee for the whistleblower who brings light to social wrongdoings, for the voice of those who do not focus on being politically-correct, and for the critics of the totalitarian regimes in China, Burma or Iran. An adult democratic society must be so strong not only to tolerate anonymity but to appreciate and to protect it as a part of the freedom of speech.

The dilemma, between maintaining law and order on one side, and protecting privacy and free communication on the other, is not fully recognized by the Dutch legal system. It is predomi-

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28   Dutch: *Maar wat als de rail niet op de laadvloer is gemonteerd maar er in is verzonken?*

nantly a large legal vacuum with regard to the maintenance of private interests, where in fact many difficult considerations should be made.

The offensive by the music industry can be given as an example of this, when attempting to try to prevent the illegal spread of digital music by identifying and penalizing Internet users. In the future more of these type of problems will occur. Can someone who feels threatened by a remark on the Internet, legally force the provider to disclose the identity of the sender? And a company that must fight a falling stock price due to the misleading tips of a cunning speculator? In the courts it is not clear.

As long as this hole in regulations remains unfilled, the Internet providers remain in an unpleasant split position. They are legally and contractually obliged to protect the privacy of their clients, while at the same time, they must cooperate in the enforcement of criminal laws and justified private interests. When should they hand over personal information? Could their clients take them to court if, after the fact, it appeared that the personal information should not have been divulged?

It is necessary now for legislators to explicitly accept and clearly identify the importance of anonymity. At the same time, it must be determined under which circumstances identification can be divulged. Such a rule would assure that anonymity would quickly be abandoned in the case of a suspect of a serious crime. But there must also be a guarantee that the provider needn't divulge identity by minimal offences or slight infractions. This means, that if it regards a violation of authors rights, first it must be proven that there is a necessity to uncover the identity of the author. The judge must then overlook the civil rights of the author in favor of the rights of, for example, the music industry.

With a break in the legal regulation the image of cyberspace remains a dark, unregulated place where creeps lie in and wait preserved by anonymity. That picture is just as simplistic and dense as the fictive idea of a utopian society where no government is necessary. Defenders of privacy and anonymity can quickly change public opinion, becoming rogue accomplices or naive activists. Normal Internet users, providers and eventually the debate itself are the most important victims of a lazy legislator. A clear anonymity law must prevent, as with the desserts, a further poisoning of the image of the Internet.
(R03_10, *ivir.nl, earlier published in De Volkskrant, August 26, 2003*)

Interpretation.
Content indication: "As long as that hole in regulations is not filled (…)."[29]

ECM concept: There are two directives involved, privacy law and criminal law. No consecutive relationship between both is indicated. They meet each other in the same domain of online communication. Therefore, this will be classified as a Technical Construction error.

Researcher's comment: This example is displayed in the Dutch Collection Hole Tree as a Technical Construction error, context variable "conflicting". One law commands the protection of one's identity and one law commands the revelation of one's identity. The dilemma for Internet providers lies in those two conflicting instructions (TC-c): "(…) the Internet providers remain in an unpleasant split position."[30]

3.5 HOLES CREATED BY EXTERNAL FAILURE (TEX)

3.5.1 TEx-sf holes (context variable = short forward)

Flash divorce or mediation

Since 1 April 2001 it has been possible in the Netherlands to obtain a divorce without intervention of a judge. For this, a hole in the law must be used. People call this a flash divorce. This form of divorce seems to be quite appealing, but it most certainly isn't. As often occurs when someone makes use of a hole in legislation, there appear to be many disadvantages to a flash divorce. Upon close consideration, there are hardly any advantages. It is much better to go through divorce mediation under the guidance of a lawyer or notary who specializes in divorce, after which all consequences are bound in a court verdict and can have all the decisions bound in a legal document. A divorce mediator handles all the necessary formalities after which, the divorce can be quickly (sometimes within a matter of days) issued.

(…)

An attorney recently described an unsolvable problem, for which he asked my advice. His client was an Italian who was married to a Dutch woman in 1988. Since then, he has lived in the Netherlands. The couple have children and the man has a business in the Netherlands. In 2002 the marriage was resolved through a flash divorce. The man wanted to return to Italy and continue his business. He had sent the appropriate documents with regards to the flash divorce to the Italian embassy, with the request that the Italian government recognize the resolvement of the marriage in the Netherlands. The consulate returned the documents with the message that there was no possibility of the Italian government recognizing the divorce. The Dutch resolvement of marriage by flash divorce was not recognized in Italy. There are many countries, in and outside of Europe, where flash divorces are not recognized as a legal resolution to a marriage. This forms a great problem. The man cannot marry again, not in his birth country nor in many other countries in the world. If he did, he would be considered to commit bigamy. But that is not all. If the man would like to take out a loan, and the chance is great that he may need to at sometime, then his spouse – in many instances – must also sign the loan documentation. Everyone understands that the Dutch ex-wife, possibly already re-married, would not be very keen to do this. Also in the case of the purchase of property, there is a problem. And what of the possibility that the ex-wife declares bankruptcy in the Netherlands? Could a smart curator

make claim on the man's Italian possessions? What happens if one of the ex's should die? In Italy, the parties are considered married with all possible consequences with regards to inheritance. (LE03_04, *banning.nl, n.d.)*

Interpretation.
Content indication: "For this, a hole in the law must be used."[31]

ECM concept: There are two regulations involved, i.e. the Dutch flash divorce and Italian matrimonial law. Therefore, this will be classified as a Technical External error.

Researcher's comment: This example is displayed in the Dutch Collection Hole Tree as a Technical External error, context variable "short forward". From an Italian point of view, one can argue that this is a TEx-backward because an arrangement earlier in the order of events prevents the execution of the second marriage. However, because hole classification always takes the situation primarily presented as a starting point, which is the flash divorce, the problem lies forwards, with the Italian law.

3.5.2 TEx-sb holes (context variable = short backward)

Fourteen warnings for the youth care

The new youth care law gives provinces an important role in the new youth care system. But are they in practice, fulfilling their role? Nine months after the implementation, there still appears to be a large gap between the law and reality.

The youth care law has been in effect since 1 January 2005 and has created a new youth care system. The right to youth care has been introduced, the youth care bureau is legally anchored as the entry point to the system and the care is no longer subsidized but is instead purchased. The managerial direction for the total system now lies with the provinces. The law introduces not only new demands on the provinces, but also on all other youth care partners. Now that the law has been in effect for about nine months, the question remains as to how far the provinces and youth care partners meet the demands of the law.

The state commission for policy evaluation of the North Brabant province proposed this question also. It had a concern over the functioning of youth care and decided that the DSP group, an independent organization for investigation and advice, should investigate. The results are remarkable. And what is valid in North Brabant, is also recognizable for other provinces.

The gap between law and reality is rather large regarding several points. The province is therefore put at risk. These areas were indicated by the 14 "early warning" signs for the North Brabant youth care system. An important warning highlights a problem with the new relations.

The law of youth care has radically changed the relations between the province, the bureau of youth care and the youth care partners. The province has become the director, whereas in the earlier system they were only the financer. All partners have new positions, but have yet to assume those positions. The province must explicitly lay out how parties must work together and identify the tasks for which each party is responsible. The North Brabant province has not satisfactorily done this to date. Without a vision on direction, the steering of the province remains ad hoc. The province can respond to this warning by creating a description of the desired relations for each partner as well as outlining their roles and responsibilities.

Right to youth care not cashed in

There is a waiting list for youth care in North Brabant as well. Because of a lack of government assistance, the rights to youth care cannot be cashed in. The province is legally responsible for guaranteeing this right. The new financial system though, will only begin to function in 2007; because of which, the province has limitations on purchasing and thereby limits also the volume of care. The hole between law and reality is very large in this area and so is the warning. The possibility for the province to close this hole is limited. For example, there is a small influence on the national financial framework for youth care. However, the province does have the responsibility, socially and managerially, to help as many juveniles as possible with the current means. Aiming to improve efficiency, for instance through a reduction of treatment time, is the only instrument that the province can use to fix the warning.

(…)
(LA02_03, *lokaalbestuur.nl, September 20, 2005)*

Interpretation.
Content indication: "Because of a lack of government assistance, the rights to youth care cannot be cashed in."[32]

ECM concept: There are two regulations involved, i.e. the youth care law and the new financial system. Therefore, this will be classified as a Technical External error.

Researcher's comment: This example is displayed in the Dutch Collection Hole Tree as a Technical External error, context variable "short backward". Regarding the new youth care law there are a complexity of laws and actors that are not functioning coherently. This interpretation focuses on the final paragraph that brings up the problem of the waiting list. The government has to accommodate the provinces with sufficient financial means to enable their compliance with the legal duty of supplying youth care, according to the youth care law that at the time of the article was already in effect. As the influx of governmental funds has not begun yet, the provinces are experiencing difficulties in executing their tasks. From the perspective of the youth care law, which is the central issue in this text, there is a shortage of input at the backend.

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31 Dutch: *Er moet dan gebruik worden gemaakt van een gat in de wet.*

32 Dutch: *Door het ontbreken van voldoende rijksmiddelen kan het recht op jeugdzorg niet worden verzilverd.*

3.6 HOLES CREATED BY WISHFUL THINKING (TW)

Preparation and counsel for building projects

The CBB functions as an independent consulting bureau in the construction world. It offers guidance on the construction process, usually on behalf of the developer, from the inception of concept to the objects' final delivery.

With an internal force of about 70 employees, the company is located in Arnhem South in an office building that was privately built and is privately owned. The offices house the company's various disciplines which include;
• project advising
• sketch/blueprint division
• project management
• construction site management

The project advising division writes project based specifications, provides long-range maintenance advice, inspects and cross checks to ensure that the designs meet all the rules in the building agreements, and establishes the budgets. The blueprint division takes care of all the drawings from the design stage. This means that if desired, the architect's idea is developed in a design blueprint; but the division also manages all necessities, from technical blueprints up to and including contractual blueprints.

The company also has supervisors in its service, who can manage the construction site. In most cases, this is then in a close working relationship with the contractors' supervisors. Wagenaar: "The interest of the contractor is in black and white; to make a profit. The interest of the developer is to have a high quality end product. The financial interests of the contractor can, in some instances, be a liability to the construction quality. The developer can choose to use one of our project managers to assure the quality of their project. The idea of this is to bring all persons involved in the project together and, with respect to each person's function, achieve the optimal end result." (…)

The business began in 1968 as a contracting agency for project managers and is currently the largest company offering this service. The construction site management division is still a core pillar of the company. "It is through this service that we manage the entire construction process from A to Z," according to Wagenaar. "It is ideal, if we can manage a project from beginning to end. This way, thanks to a close working relationship between all divisions, there is an optimal usage of everyone's knowledge and know how."

Legally, similar guidance is not mandatory, which is what Wagenaar names as a hole in regulation. "My insight is most often left to the responsibility of the contractor, in the form of an internal quality control (IKB) or related system. But these are not sufficient because they are not independent. Preventative, external and independent supervision remains necessary." (R06_08, *wapeninginbeton.nl, 2005*)

Interpretation.
Content indication: "Legally, a similar guidance is not mandatory, which is what Wagenaar names a hole in regulation."[33]

ECM concept: There is only one law involved, an undisclosed regulation concerning safety in building. There are no indications that government or other stakeholders find the present arrangements to be unsuitable for construction practice. Therefore, this will be classified as a Technical Wishful thinking error.

Researcher's comment: This example is displayed in the Dutch Collection Hole Tree as a Wishful Thinking error. The CBB is a company that delivers certain services. They have a commercial interest in selling as many of these services as possible. Whether the spokesman claims the hole in law for commercial reasons or on the grounds of conviction, no actual legal omission can be identified.

4. DENOMINATION IN FORMAL NATURAL LANGUAGE

The Dutch Collection consists of hole labels that have been abstracted from concrete examples. These original situations however, are very diverse and understanding them demands a certain foreknowledge. Without this, only quite vague combined descriptions remain; for instance "TC absent/ Structure Scheme Green Space", "TC contradicting/law of anonymity", and "TEx short forward/ safety regulations".

4.1 FORMALIZED DUTCH COLLECTION
One way to improve the understanding and usability of the context variables is by considering them as if they were incomparable fractions; The hole types as described above operate as numerators, and the contexts should then be converted to a common denominator in order to create a coherent collection in a formalized natural language. The provisional denominator "rule" can easily later be replaced by any desired ruling equivalent, such as law, job description, or medical prescription. This formalized Dutch Collection (table 7) can be seen as practical translation of the Dutch Collection Hole Tree in figure 16. Furthermore, it concludes the three-way substantiating of transferability.

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33   Dutch: *Wettelijk is een dergelijke begeleiding niet verplicht, wat Wagenaar een gat in de regelgeving noemt.*

Table 7: Formalized Dutch Collection

Interdependency location	Classification	Formalized natural language
Internal	TD-a(bsent)	The entire rule is absent
	TD-c(ontradicting)	The rule contradicts itself
	TD-g(eneral)	The rule is not specific enough, it leaves too much room
	TD-i(ncomplete)	The rule is not complete, something is missing in the description
	TD-s(hort)	The rule is on a content level complete, but too limited
	TD-u(nclear)	The rule is incomprehensible
	TD-w(rong)[34]	The rule does not match the intention
Situational	TC-s(hort)	The rule does not cover the new situation
	TC-c(ontradicting)	The rule contradicts another, external rule
Consecutive	TEx-sb (short-backward)	The rule does not connect with a prior, different activity (start condition)
	TEx-sf (short-forward)	The rule does not connect with a subsequent, different activity (output condition)
Ideological/ commercial	TW(ishful thinking)	The rule is fine, the problem is in someone's mind

This uniformed overview remains consistent with the Eindhoven Classification Model, to which in this particular context new context variables have been added. The "list" supports hole diagnosis for organizations and professionals; not only in understanding what the problem is, but also in light of this understanding reflecting better fundamentals for defining one's own position in relation to the hole and making decisions about acting strategies.

The hole classification above can of course also be applied to the case of the zeros and the case of the guests in the Prologue. With regards to the case of the zeros, the civil servant involved assessed the IND housing instructions as not prepared to address this newly created situation. This is a TC-s.

In the case of the guests, the invited refugees encounter a situation in which the list of people and the list of houses are not being matched by a demand-driven protocol. As a consequence, the flow through - movement forwards - is obstructed. According to the Dutch Collection Hole Tree this has to be labeled as a TEx-sf. In the next chapter, the classification of this specific hole in this specific case will be validated by an open interview with the civil servant who was involved.

4.2 VALIDATING INTERVIEW: CASE OF THE GUESTS

As already mentioned, rules are social constructs, thus so are holes. Furthermore, the awareness of their existence and presence is in the eye of the beholder. Interviews offer an excellent opportunity to discuss the factual and meaning level of the individual experience. Such as in the case of the guests, in which invited medical refugees could not be offered a house with custom-made adjustments because the necessary funding has been prohibited.

At the end of May 2009, a few months after closing the Yel file, I made an appointment with civil servant Ronald[35] whom I contacted for the very first time in 2006. I had told him in advance that I was working on my Ph.D. and Ronald gave me permission to record the interview. The recording was divided into two segments of respectively 38"17 (fragment A) and 10"39 (fragment B) with only less than a minute between. See Appendix 1 for the original Dutch transcription of the selected fragments below.

Looking back at my very first contact with him about the Yel family, at the time of the conversation over two years ago, Ronald makes a very clear statement about the type of hole:

> **[A 08'18" – 08'35"]**
> *Well yes, that you had a family and you thought that it was really urgent and actually uh… That they weren't accepted anywhere, that there wasn't a house anywhere and that we both thought that The Hague shouldn't have just said A but B as well in this case.*

Ronald's use of the metaphor employing the alphabet implies that he would expect a logical order of arrangements; more specifically, two consecutive governmental directives to make the housing of the Yel family possible: A and B. At the same time, he establishes that one of them, the B-directive, is lacking. In terms of the Dutch Collection classification, this is a forward consecutive incongruity (TEx-sf).

Ronald seems to blame the government for this, but also imagines that this is possibly a matter of naïveté rather than of unwillingness.

> **[A 20'14" – 20'22"]**
> *Yes, of course, ok, you also know that as an authority but maybe they don't know that, that there is simply no housing available for those people.*

Nonmatching rules seem to be not only quite usual in the professional practice, but are also part of the informal job description, according to Ronald's explanation of his role:

> **[B 00'28" – 00'33"]**
> *I will explain it because you have a unit manager and my position reports to her. I am the operations manager, which means that it's my job to fill in all the gaps and overcome any obstacles.*

Regarding to the Yel family case, Ronald describes his interpretation of "filling in all the gaps".

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34   Withdrawn, see footnote 20 p. 74.

35   To protect the privacy of individuals, private, identifiable information has been limited, altered and/or merged with several cases.

[B 02'55" - 03'06"]

Yes… Listen, there are rules, but for many things there are no rules, so you have to just uh… look for the limits within the existing rules. So that's what I did.

Ronald is aware of the risk he is taking on behalf of his organization:

[B 00'08" - 00'09"]

Of course I found it scary.

And later on:

[B 01'35" - 01'49"]

Well yes, really exciting… Thrilling. Of God uh… You know, because you circumvented things, as you said. You are going to use Wmo resources for people who don't even live here yet - a considerable amount at that.

[A 12'19" - 12'46"]

Where we may run into problems is if an accountant carries out a proper audit, like every year. He might say "Yes, this doesn't add up because when it started these people weren't living here yet."

Interesting enough, besides the moral governmental responsibility, Ronald introduces a second justification on the municipal level:

[A 12'47 - 12'58"]

So yes, we have to meet our targets and we have no restrictions if someone is disabled… that we say "no" because that comes from another budget.

So by narrowing his formal assignment, that is housing the appointed number of refugees every year, and ignoring possible financial consequences, Ronald creates his perfect excuse.

[A 13'11"- 13'22"]

…In the meantime nine people. So it was a great big prize. You can also look at it that way. If you shut off all your emotions, you can say, well, that's a nice big prize. There you go, that works fine.

But in the end, this external formal justification only seems to be a rationalized backup for the internal social justification. This indicates his involvement to the situation, which he repeatedly expresses in quite an agitated manner, referring to it with in words like "Ridiculous"[36], and "Oh how awful, those people are still sitting there"[37].

[A 21'23"- 21'45"]

Well, I did it purely for emotional reasons. As you know the basis for my decision and the reason I wanted to make sure that everyone was behind me was: emotional. That's what it was in fact. Uh… yes. Of course because of the targets, well yes, beautiful, but I did know what was to come.

Ronald however realized that his decision to act is not only discretionary, but also arbitrary:

[B 03'12" - 03'27"]

If you had gone to the first colleague, he would have said: "No, those people don't live here; they are not our responsibility so we are not going to do anything to help them."

Then the question of telling. He discussed his emotions at home, with his partner.

[A 03'38" - 04'02"]

Yesterday I was with uh… Bob, my partner, talking about the fact that you were coming. Saying, oh, you are coming, and I don't know why and then I told him again – and again, he knows, he knew all about it – because for me it was a really emotional issue, uh… I was very angry with The Hague, that they…

Ronald also shared these feelings with his manager.

[A 11'07" - 11'12"]

I also consulted my unit manager Anne, saying "I think it's absolutely degrading."

Consulting with his direct manager seems to be the logical thing to do in his work situation. Several times Ronald uses phrases like "I inform her"[38], "Then I talk to Anne once again"[39] and "At that time I also talked to Anne"[40]. In relation to the defined acting strategies for addressing holes, Ronald quite often uses peer comparison, sharing his considerations with some of his colleagues and his operational manager. Not one of them however acts on rule making or rule supervising organizational levels. Thus there is no effect on the life cycle (by closing) of the hole in question.

4.3 VALIDATING INTERVIEW: CASE OF THE TAXI PASS

Ronald also presents another case out of his daily practice:

[B 04'55" – 08'08"]

There is a gentleman of my age, so that's somewhere in his forties, who has become visually impaired. He does get outside sometimes, but at night he wants to go to his daughter and friends and so… So that gentleman requires a taxi pass, which is being rejected. If you read the assessment report, they

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36 Dutch: *Beláchelijk.*
37 Dutch: *O wat erg, die mensen zitten daar nog steeds.*

38 Dutch: *Ik informeer haar.*
39 Dutch: *Dan overleg ik nog wel eens met Anne.*
40 Dutch: *Ik heb toen ook nog overleg gehad met Anne.*

begin first with the circumstances that blablabla. And then you think: "Oh, this man is getting a taxi pass." But these are just the findings that they have noted as the man has explained. Then there is their vision, which is: "Well, this man has not finished all other treatments." They mean by this: he has not tried if he can use a guide dog, he has never walked with a stick… So let him check out all these options first. And if it turns out that all these things don't work, uh… Then we say: "Well, we'll see if a taxi pass is necessary". A taxi pass, if you have one, means that you're also entitled to transportation outside your region at reduced rates and with guidance. And this cannot be used if you don't have a taxi pass, so it all comes together. And actually, if I make a correct estimate, I think that this gentleman mainly wants to use those facilities, for he had some friends in town, his daughter lives there. So I think: "Yes, he should simply have that taxi pass," I think, and uh… and "end-stage" treatment sounds a little rotten because his visual handicap is only getting worse. So when I again went with the CIZ[41] in conclave. I say: "Well okay, of course, he must first figure out about that uh… dog and the stick." Which is of course too bad because then you are very visibly visually impaired, which I can imagine at my and his age you don't want that. Anyway, the Wmo is to ensure that people can continue to function independently, and this can also happen nicely with a dog with a stick. And these are simply the means available. All very plausible and very neatly indicated. Well, we have sought for an interim solution. I say: "For the time being this man has no dog man and this man has no stick. And the man may just evening as he wants, so uh… Can this gentleman please grab a taxi, but for a temporary period, and then we indicate again. Well, this is what we are going to tell him this afternoon. You know, and that's looking for a solution… Because they're right. Provisions have been made, quite rightly indicated. I think they only have forgotten a little piece. But what about now? That bit… because he won't have just… Yeah, that stick he might have soon, but first you must have lessons. And with such a dog for sure, that's a whole process. And perhaps that man might find a dog in the house very unpleasant, or is he allergic to dog hair, or whatever. Just name it. And this way you're busy every day looking for solutions.

Before going to the Dutch Collection Hole Tree, some remarks about the distance variable need to be made. It seems quite clear that Ronald feels very closely connected with the (problem) situation. Or even more with the person involved. He twice compares the man with himself ("at my age") and puts himself into the man's situation, being able to speak out for his wishes ("if I make a correct estimate") and thoughts ("And perhaps that man might find a dog in the house very unpleasant, or is he allergic to dog hair, or whatever."). A small distance may therefore be assumed.

About hole typology, Ronald offers in his evaluation that "they have only forgotten a little piece". He doesn't literally specify who he means by "they", although he refers to the work of the people responsible for the indication that is "All very plausible and very neatly indicated." Taking that into consideration, "they" reflects those who construct the arrangements, the rule makers.

Then, "forgetting a little piece" seems to refer to something Ronald mentioned earlier, "For the time being this man has no dog man and this man has no stick." And "grab a taxi, but for a temporary

period". Ronald experiences a certain problematic amount of time between the indication and having the indicated means at one's disposal. Although the rules themselves and their execution are not disputed, the two rules are perceived as a nonsufficient consecutive match. Thus, according to the Dutch Collection Hole Tree this indicates a TEx-sf.

5. RECAPITULATION

The lack of consensus about the definition of holes demands a specific mapping of the hole area under investigation. Because further research regarding hole-rule user interaction takes place in the Netherlands, a qualitative empirical study has been conducted to compose a collection of Dutch holes, based on the Eindhoven Classification Model of System Failure (ECM). The population under investigation is comprised of situations that rule users literally have named as holes, with the Internet as the source for data collection. Data analysis is based on a combination of thematic coding and open coding. The size of the random sample has been determined with fixed and variable criteria in such a way that the richness of the source directly and objectively drives the research progress. The interpretation is executed on a qualitative nominal level, using three angles of interpretation: content indication, induction from the ECM, and the researcher's comment. The result reveals 11 types of holes, the so-called context variables. In the next step, the holes and cases that create the Dutch Collection were converted into formalized natural language. This uniformed "list" supports hole diagnosis for organizations and professionals; both rule makers and rule users. Not only with regards to understanding what the problem is, but also because they have, with this understanding, better fundamentals for defining one's own position in relation to the hole and for making decisions about desired or possible acting strategies.

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41   Centrum indicatiestelling zorg (Care Needs Assessment Center).

Part IV
Main Empirical Research:
Telling About Holes

1. INTRODUCTION

The main body of this Part is comprised of a survey among a group of consulting professionals in their roles as rule users. The research was performed using an online questionnaire in which the participants were asked to indicate their attitude towards several problem situations and then to predict their own actions upon them. These problem situations are holes in rules, derived from the Dutch Collection of Holes in Rules composed in Part III. Through the results of this survey the second, third and fourth sub-question of this thesis can be addressed; these are:

- Do rule users continue or omit to act when encountering a perceived hole?
- Do rule users tell rule makers about an encountered perceived hole?
- Which variables correlate with the decision whether or not to act and tell?

The theoretical explorations in Part II led to the definition of four explanatory variables, which were then divided into two groups: hole characteristics and rule user characteristics. The two hole variables were operationalized as "typology" (1 – What kind?) and "distance" (2 – How close?). The two rule user variables have been operationalized as applying "rule analogy" (3 – What could be meant?) and applying "peer comparison" (4 – What would others do?). This study combines the four variables and the act of telling variously to formulate four survey questions upon which to structure the questionnaire:

Question 1
Is there a relationship between the two hole variables "Typology" and "Perceived distance"?

Question 2
Does taking comparable rules into consideration relate to the two hole variables "Typology" and "Perceived distance"?

Question 3
Does peer comparison relate to the two hole variables "Typology" and "Perceived distance"?

Question 4
Does telling relate to the two hole variables "Typology" and "Perceived distance", and to the two rule user variables "Rule analogy" and "Peer comparison"?

The cohesion of all the variables within the four survey questions can be summarized as shown in table 8.

Table 8: Variables Cohesion Matrix

Variables	Hole variables		Rule user variables		Intervention
	Typology	Distance	Rule analogy	Peer comparison	Telling
Typology		SQ_1	SQ_2	SQ_3	SQ_4
Distance			SQ_2	SQ_3	SQ_4
Rule analogy					SQ_4
Peer comparison					SQ_4
Telling					

Note: SQ = Survey question.

To reduce the negative effects of the cognitive burden on participants, as much as possible, a split run was conducted. One group followed a "same day" route for reading and answering the questions (Thinkers), while the second group received a survey read-only version one day, and is then required to sleep on it before (rereading and) answering the next day (Sleepers).

In the following chapters, all the above will be elaborated on in greater detail. The outcome from the relationships described will deliver actor consideration insights, as well as providing an indication of their influence on hole survival, which is the principal purpose of the main research question.
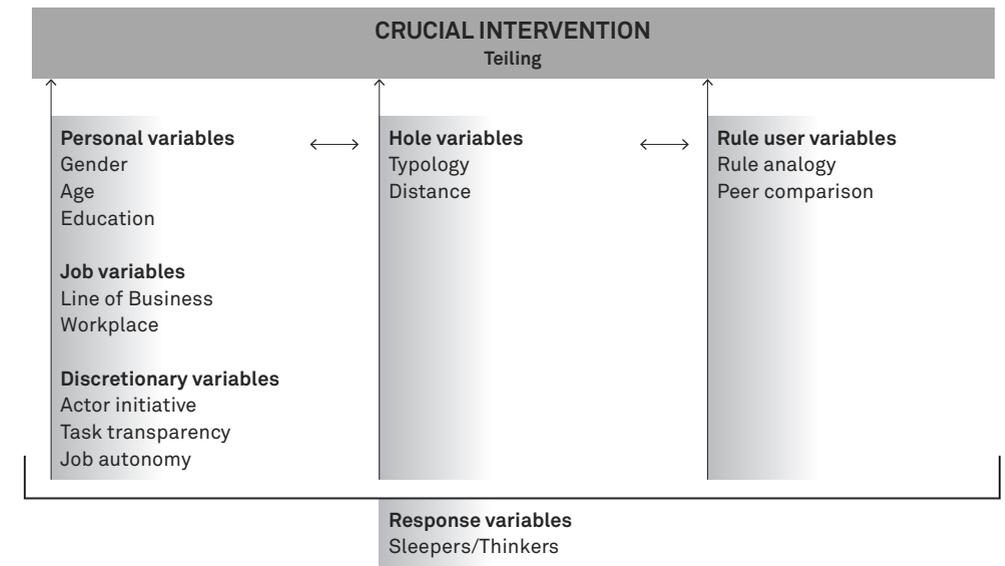
2. METHOD

2.1 PROCEDURE

2.1.1 Respondents' Organization

The survey requires a homogeneous group of professionals whose organization or common working field is structured with a recognizable set of rules. Further, these professionals must have a certain autonomy to act upon these rules. Mintzberg (1983) defined six organizational configurations of which the professional bureaucracy is the one most suited to this investigation. This configuration concerns a noncentralized bureaucracy that expresses a high level of confidence in its professionals. Inherent within this organization structure is the notion that the power is divided among each of the employees who each possess a unique combination of knowledge, skills, experiences and networks. Also inherent to this organizational structure are the personality traits of often autonomously working specialists, who are aware of their vulnerability from this secluded position. In order to achieve and protect their own interests, the power to decide and to control is utilized as a strong instrument.

The company and employee profile of the professional bureaucracy matches one of the researcher's agency's clients. ConQuaestor is a Dutch top consulting company in the field of finance, business performance and process management. It has a workforce of about 600 people (ConQuaestor, 2011, p. 22), mainly highly educated professionals with a large span of autonomy and a broad secondment dispersion in both profit and nonprofit branches and geographical locations. This survey can be qualified as a single case study.

2.1.2 Questionnaire

The survey was conducted as an online questionnaire **composed** of different groups of questions (figure 17). Information about whether participants would inform (tell) rule makers when confronted with a hole in a rule was sought using a direct question. To understand the backgrounds associated with the answers to this question, there were three groups of classic socio-demographic explanatory variables. Further, there were several hole typologies (representing varying circumstances), a visual distance model, and a set of behavioral questions covering the four stimuli variables. Finally, an experimental response layer referred to as "Sleeping on it" was incorporated.

Figure 17: Questionnaire Layout

Using a questionnaire brings some important advantages. As the most common research method in marketing, questionnaires have been widely proven to be appropriate for broad applications such as structured interviews, written surveys, emails and online surveys. Second, a questionnaire offers a highly controlled and standardized environment for the problem situations presented and the desired inventory of perceived distances. In combination with the digital possibilities of the Internet, an online questionnaire is a less (time) demanding option for both interviewer and respondent. It also has almost unlimited reach, and so can include a larger group of respondents. Other positive aspects of the questionnaire as a tool concern the absence of the interviewer bias and the possibility of detailed quantitative analyses (Lensvelt-Mulders, Lugtig, & Hox, 2010; Ossenbruggen, Huizing, Muller, Van der Wal, Lensvelt-Mulders, & Hubregste, 2007).

The usage of an online questionnaire with regards to the specific participants is a logical choice due to two considerations. First, the Internet is one of the primary communication channels between ConQuaestor head office and its professionals. Second, an online questionnaire is easily accessible from all secondment workplaces.

Tourangeau and Rasinski's cognitive model (1988) distinguishes four cognitive processes that are part of the mental information processing that takes place between reading the question (stimulus) and answering (response). These then involve the interpretation of a question, the retrieval of relevant beliefs and feelings, the composition of a judgment, and the use of this judgment to create or select a response. The abstractness of the research subject, in combination with the quick response possibilities of an online survey may create a cognitive burden causing respondents to answer hastily.

Cognitive and neurocognitive research regarding the cognitive demands of attitude as measured in surveys (Krosnick, 1991), indicates two tracks of information processing: deliberative and automatic (Lodge, Taber, & Verhulst, 2011). Automatic processing is also referred to as the deliberation-without-attention effect (Dijksterhuis, Bos, Nordgren, & Van Baaren, 2006). Such background mental processes result in knowing, believing and feeling things unconsciously[42]. There is convincing evidence that the unconsciousness can indeed speak out when given time to "transmit" the background opinions and motives to the consciousness (Nordgren & Dijksterhuis, 2009; Dotsch & Wigboldus, 2008).

2.1.3 Split Run Experiment

The design of this study enabled the background mental processes mentioned above to come forward by having the participants sleep on the questions they had been asked. To test whether significant differences in outcomes appear as a result of more thorough elaboration, a split run was set up, built upon two identical questionnaires that only differ in terms of the moment of accomplishment. One group followed a "same day" route for reading and answering the questions (deliberative thinkers, henceforth: Thinkers), while the second group received a survey read-only version one day, and was forced to sleep on it before (rereading and) answering the next day (automatic thinkers, henceforth: Sleepers) (table 9).

A similar approach was not found in literature nor was it known to Dijksterhuis[43]. This design is not to be confused with the Sleeper Effect, which is associated with source reliability effects on the impact of messages (Cook & Flay, 1978; Hovland & Weiss, 1951; Hovland, Lumsdaine, & Sheffield, 1949).

Table 9: Survey Split Run

Planning	Test group 1 (Sleepers)	Test group 2 (Thinkers)
Day x	Reading	Reading and accomplishing
Day x +1	Reading and accomplishing	

To guarantee that the participants who were involved in the Sleepers read-only version read the questionnaire from begin to end on day one, a formal check was carried out in two ways. First, like all participants they had to fill out the current date on the first page of the questionnaire. In addition, the Sleepers also had to type in the completion date on the final page of the read-only questionnaire. The question about the second date was not announced at the beginning, so that only the partici-

pants, who had really read the questionnaire from beginning to ending, discovered and responded to the request for the second date. See Appendix 13a and 13b for specific issues in the Sleepers read-only questionnaire and Appendix 14a and 14b for the Sleepers/Thinkers fill-out questionnaire.

The Sleepers were contacted via: S1 prenotification message (Appendix 6), S1 invitation (Appendix 7), S1 reminder (Appendix 8), S2T1 invitation (Appendix 9), and S2T1 reminder (Appendix 10). All contact was through email and, with the exception of the prenotification message, each contained a direct link to the online survey. To maximize the response ratio, the introductory texts for the Sleepers read-only questionnaire and the combined Sleepers/Thinkers questionnaire were based on Cialdini's principles of persuasion (1988). These being reciprocation, commitment and consistency, social proof, liking, authority, and scarcity. They were applied as follows:

- Reciprocation: the introductory text to the questionnaire stated that the researcher is offering a donation to a charity based on participation rate[44].
- Commitment and consistency: the introductory text to the questionnaire mentioned that knowledge and personal development is highly valued within ConQuaestor, and that this is important scientific research.
- Social proof: the introductory text to the questionnaire mentioned that all the contact's colleagues are anticipated to also participate.
- Liking: the prenotification email was personally signed by the LoB director (member of the board).
- Authority: the board sent the prenotification email, the company's intranet showed a banner, and the University of Humanistic Studies was mentioned in the introductory text.
- Scarcity: the introductory text in the questionnaire mentioned that only this department has been chosen.

The survey was conducted according to the schedule in table 10.

Table 10: Survey Schedule

Contact	Day	Date	Activity
1	1	Monday, February 21, 2011	Prenotification email S1
2	2	Tuesday, February 22, 2011	Questionnaire S1
3	4	Thursday, February 24, 2011	Questionnaire S2T1 for respondents S1 + Reminder for nonrespondents S1
4	5	Friday, February 25, 2011	Questionnaire S2T1 for reminded respondents S1 + Reminder for nonrespondents S2T1
5	8	Monday, February 28, 2011	Reminder for nonrespondents S2T1 of group reminded respondents S1
6	11	Thursday, March 3, 2011	Banner intranet questionnaire S2T1 activated
7	25	Thursday, March 17, 2011	Banner intranet questionnaire S2T1 deactivated

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42 There are different scientific interpretations of the meaning of and relation between "unconsciousness" and "subconsciousness". In this thesis the vocabulary of the referred literature has been adopted.

43 A. Dijksterhuis, Professor of Psychology, Radboud University Nijmegen (email conversation, January 30, 2011).

44 A contribution to KiKa, the Dutch fund for children suffering from cancer, was made on August 17, 2011 according to the customary fee of € 0,80 per respondent.

In addition to the banner (Appendix 11), on day 37 an extra call was made in the company's e-newsletter (Appendix 12).

The professionals in the Line of Business Process Consulting have the most interesting variation of work locations, from in house at ConQuaestor's to being fully seconded at the company's clients. For this reason they were chosen as the sampling frame for Sleepers; all other employees were utilized as Thinkers reference group.

2.1.4 Piloting

Two pretests were conducted to examine the questionnaire and the online software for both usability and technical stability including analytical robustness. The first pretest consisted of a cognitive lab test in which I was present and I observed the test subjects filling out the online questionnaire following a Talk-aloud protocol. The second pretest was an Internet survey that invited another group of test subjects to evaluate their findings utilizing in a text box at the end of the questionnaire. Both pretests resulted in valuable improvements to the research design, and will be elucidated in the following paragraphs.

A cognitive lab (Snijkers, 2002; Ericsson & Simon, 1999, p. 16; Willis, DeMaio, & Harris-Kojetin, 1999) offers a controlled environment in which mental processes can be studied, while participants perform a set of specified tasks. It then provides an effective insight into the user's understanding of surveys, questionnaires, and assessments (Zucker, Sassman, & Case, 2004, p. 2). Cognitive labs are based on verbal reporting, which manifest in two varieties: think-aloud and talk-aloud. The Think-aloud protocol (Lewis, 1982) encourages participants to discuss their observations, thoughts and feelings whilst filling out their questionnaires, and also to explain why they make a specific decision or take a particular action. It is this latter activity that distinguishes the Talk-aloud protocol; this asks the participants only to describe what occurs, without giving explanations. Besides the two protocols, there are also two options described according to time: concurrent and retrospective (table 11).

Table 11: Cognitive Lab Options

	Think-aloud	Talk-aloud
Concurrent	Description + evaluation	Description
Retrospective	Reconstruction + evaluation	Reconstruction + evaluation

As table 11 shows, in three out of the four results, some aspect of evaluation, interpretation or justification takes place. With reference to earlier reservations in this Part in relation to the unconscious, all evaluative options have been rejected. Thus, use of the Talk-aloud protocol with the concurrent descriptive procedure remained.

Willis and Lessler (1999) introduced a method for a systematical assessment of survey questions: a modified Questionnaire Appraisal System (QAS) that connects with the intended nonevaluative

approach of this study. In fact, Willis and Lessler "have eliminated codes that characterize the nature of the response task, that focus on mnemonic and judgment processes, and have, instead, focused on question characteristics that are likely to present problems when administered in the field" (p. 1). The QAS-99 divides the potential problem areas, also indicated as improvement areas, into eight steps or categories. These are reading, instructions, clarity, assumptions, knowledge/memory, sensitivity/bias, response categories, and other (ibid., p. 2). Three professional auditors, who are at an educational level and have an autonomy comparable with the intended participant's population, took[45] the usability test. This was conducted following the accompanying manual and coding forms. QAS-99 originally was designed for reviewing telephone interviews, and not for debating online questionnaires. This meant that a small adaptation was necessary: Step 1 was left out; it involved the difficulty experienced by the intended interviewers when attempting to read the questions uniformly to all respondents. The pretest was run according to a test protocol (Stasche, 2005), consisting of the following elements:

- A verbal consent to allow digital recording of the session.
- An instruction not to plan out what the test subjects were to say and not to try to explain their reasoning.
- A notification that if the test subjects were silent for a long period of time, the researcher/supervisor would remind them to talk.
- A warm-up exercise of the "Imagine"-type in another generally well-known set of instructions, close to the actual vignettes, was undertaken to encourage the test subjects to be familiar with the talk-aloud procedure.
- Instructions for the researcher/supervisor should "What if"-scenarios arise; such as what if the test subjects forget to talk-aloud or what if the online survey fails.

The sessions were then analyzed with the code forms afterwards, using one full code form for each question assessed as being possibly problematic by a test subject. This resulted in some valuable improvements to the wording and structure of the questionnaire as well of the test protocol itself. See Appendix 3a and 3b for usability test protocol, Appendix 4a and 4b for warm-up questions, and Appendix 5 for an example of the code form. Completing the survey while talking aloud took on average 12 minutes and 36 seconds. Talking aloud has a temporizing effect on the absorption of information. For example, for the recording of audiobooks a speed of 150 to 160 words per minute is considered to be appropriate (Williams, 1998), while the average American reads prose text at 250 to 300 words per minute (Ziefle, 1998). These observations suggested that filling out the final questionnaire would be a considerably less time consuming process than that measured during the initial usability tests.

The second usability test[46] was conducted among professionals from different departments within a large energy company. They filled out the questionnaire under the real online and distance conditions and were invited to give feedback using a text box at the end of the questionnaire. Based on the comments of a total 25 respondents (completes only), some additional content modifications were

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45   December 2010.
46   January 31 - February 2, 2011.

made. First the direct, combined trade-off question regarding rule analogy and peer comparison was removed, which turned out, both in respondents' remarks as in terms of analyses, to be very confusing and for that inconsistent with the response on prior singular questions. A second change involved the removal of the description repeated at the start of each of the five vignettes. Instead, the start situation was explained once in the general introduction to the vignette-part, and only the keywords were repeated in every single vignette. A third adjustment involved randomizing the order of the vignettes. Initially, all questions were presented in a fixed order to follow basic chronology. As a result of the pretest feedback, five questionnaire orders were created instead of one to compensate for possible first order carry-over effects, such as learning and fatigue.

Finally, the technical pre-analyses showed satisfying possibilities for regression and factor analysis, and indicated possible correlations between hole variables and rule user variables.

2.2 INSTRUMENTS

2.2.1 Vignettes
A hole as such is quite abstract and not readily communicable. For that reason, each hole under investigation is, imbedded in a set of rules, presented as a narrative - also known as vignettes. Vignettes make it possible to study interpretations by individuals and groups of a "uniform" situation (Barter & Renold, 1999). Vignettes can also be used as an instrument to present sensitive issues in a more distant way, and thus making it easier to discuss them (Neale, 2000). In that sense, vignettes take personal experiences to a less offensive, higher level of abstraction. This survey will use the vignettes to connect the abstractness of the holes with the dilemmas of real life. Comparable use of vignettes has been reported for instance in the field of whistle-blowing behaviors in an accounting context (Shawver & Clements, 2007), and in a study into attributions of responsibility in relation to active and passive actors (Zeelenberg, Van der Pligt, & De Vries, 2000).

The vignettes are based on the formalized Dutch Collection, as displayed in table 7 of Part III. In this framework, the denominator "rule" can easily be replaced by any concrete rule system that fits the purpose of the investigation. Before choosing such a replacement rule system, first it had to be decided to work with real or imaginary situational stories. In the first case the "I" is a professional with a task similar or comparable to that of the participants (the "comparable I"), and in the other case the "I" performs a very transparent, easy to understand but quite deviant task (the "different I"). The "comparable I" situation should be easy to identify with and therefore probably result in a realistic response. The disadvantage then is, because of the specialist jobs within a professional organization, that the vignette might be just not good enough, and so by that cause confusion and frustration. Using a "different I" situation may invite an intuitive response, which, according to research into judgment and decision-making seems to play an eminent role in almost every important judgment (Gladwell, 2005; Dijksterhuis, 2008), even after respondents have taken time for reasoning and deliberation (Kahnemann, 2003). A disadvantage of the "different I" situation could be its bigger appeal to imaginative capacities. For enabling possible repeated investigation later on with other groups of participants, the more neutral option of the "different I" has been chosen.

As has been noted, the standard set of holes in formal natural language is suited for translation into any simple, generally recognizable rule system, such as traffic rules. For the purpose of this survey, the standard hole problem denominator "rule" has been replaced with the term "recipe". Both the structure and the aim of such a set of instructions is commonly known. The vignettes describe a situation in which the participants still work for the same employer, but have been assigned to the catering department. More specifically, they are asked to bake a cake according to a given recipe. The relevance of their task is the fact that the company is expecting important guests who are to be given a warm welcome.

An example of the vignette creation process is based on the TC-c context variable in the Dutch Collection Hole Tree:
1. Formalized Dutch Collection = The rule contradicts another, external rule.
2. Replacement by recipe rule system = The recipe contradicts another, external rule.
3. Translation into vignette Nuts = The recipe involves preparing finely chopped hazelnuts. There is a notice on the kitchen wall that states: "It is forbidden to process nuts in this kitchen".

To validate the translations from the Formalized Dutch Collection with neutral denominator descriptions to recipe vignettes, an inter-rater agreement pilot study has been conducted among 64 15-16 year old students from three high school classes[47] (Appendix 2a and 2b). The students were asked to connect the recipe problems in Step 2 above with the constructed vignettes in Step 3 above. To avoid confusion in data processing, each vignette label carries the same initials in both English and Dutch.

To prevent order effects, three subject order versions a, b and c were distributed in the pile orders a-b-c, b-c-a and c-a-b (known as reduced Latin square) for every respectively school class. Participants were not forced to assign categories (holes translated into vignettes) one to one to a subject (holes described in the Formalized Dutch Collection), but were allowed to add multiple categories to one subject, with the restriction that each category was only to be used once. Multiple association to one subject automatically resulted in blanks for one or more other subjects; this freedom of choice may have led to a lower kappa but a stronger validity because of the prevention of possible trade-off effects for the (remaining) difficult combinations.

The 64 questionnaires resulted in 55 completes, 6 undercompletes and 3 overcompletes. Undercompletes were defined as those where not all categories had been used, but the ones that were, had only been used once. Because extra blanks do not influence the appointment of the other categories, these forms have been fully included. Overcompletes were lists in which some categories have been filled out twice. By doing this, raters increased their chances of matching on those particular categories; these repeated associations on a single form were both scored as non-matches and thus remained unused. The valid associations on the "overcomplete" forms were judged like all the others, thus no forms as a whole were excluded.

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47   Ichthus College Dronten, January 2010, havo 4h, 4j and 4k.

The study thus delivered 64 questionnaires on the given nominal scale of 12 recipe vignettes and the blank option, to all 12 recipe denominator descriptions. The data have binary scored as match or non-match, the latter as an accumulation of all nonintended combinations. Multiple vignette associations to one denominator description that did not contain the intended vignette, was scored as a nonmatch. Multiple vignette associations to one denominator description that actually included the intended vignette, was scored as an imperfect match[48] and included with the perfect matches to achieve a total match score; After all, the test focused on measuring perceived combinations regardless of the number or hierarchy of the associations.

The agreement corrected for chance (Fleiss' kappa (Fleiss, 1981, pp. 38-46)) of the individual vignettes was on average .770 (table 12). The kappa of the vignettes Chocolate pie[49], Light, Turbo oven, Quiche and Minicake were based on nonmatch concordance. In other words: the raters agreed more with the several nonintended combinations than with the single intended combination. These vignettes therefore were withdrawn from further use, leaving seven vignettes remaining for further study.

Table 12: Vignettes Inter-rater Agreement

Formalized natural language	Vignette labels in English	Vignette labels in Dutch	Fleiss' kappa
The entire recipe is absent	Absent	Absent	1.00
The recipe contradicts itself	Butter	Boter	.653
The recipe is too general	Handful	Handvol	.492
The recipe is not complete, something is missing in the description	Eggs	Eieren	.690
The recipe is on a content level complete, but too limited	Minicake	Minicake	.532
The recipe is incomprehensible	Russian	Russisch	.881
The recipe doesn't match the intention	Chocolate pie	Chocoladetaart	.604
The recipe contradicts another, external rule	Nuts	Noten	.653
The recipe doesn't cover the new situation	Turbo oven	Turbo-oven	.500
The recipe doesn't connect with a prior, different activity (start condition)	Light	Licht	.690
The output (result) of the recipe is not used	Sugar-free	Suikervrij	.510
The recipe is fine, the problem is in someone's mind	Quiche	Quiche	.494
Average			.770

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48   51 matching multiples out of 768 scores (raters x subjects), divided in 45 doubles and 6 triples.
49   Withdrawn, see footnote 20 p. 74.

Considering the kappa's of the remaining seven vignettes and the ambition to use the strongest agreements, it was decided to admit only the vignettes with an absolute individual kappa ≥ .610 into the final questionnaire[50]. According to Altman's kappa index this score is considered **Good agreement to Very good agreement** (1990). For the application of Altman, see Henningsson and Wohlin's "Monitoring fault classification agreement in an industrial context" (2005), Sinko et al.'s "The Goslon Yardstick in patients with unilateral cleft lip and palate" (2008), and Akinbam, Orimadegun, Tongo, Okafor, and Akinyinka's "Detection of fever in children emergency care" (2010). This selection resulted in only the top five of vignettes remaining; those with an average individual kappa of .775 (table 13).

Table 13: Vignettes Inter-rater Agreement Top 5

Vignette labels in English	Classification	Fleiss' kappa
Absent	TD absent	1.00
Russian	TD unclear	.881
Eggs	TD incomplete	.690
Butter	TD contradicting	.653
Nuts	TC contradicting	.653
Average		.775

2.2.2 Distance Model

In the theoretical elucidation of Part II, a functional distance has been presented (figure 7). This is based on a linear line of instructions that are connected via an output-input relationship. Measuring the effect of linear functional distance requires a presentation of holes that vary in functional distant situations. It may be already much of a challenge to create convincing situations in the rule user position 0 (direct task responsibility); creating a complete process with rule user positions 1 and 2 both forwards and backwards would be very complicated. For that reason this was omitted from the vignettes: All vignettes were presented in the formal user position 0, i.e. the closest functional distance.

In Part II a difference was established between functional distance and perceived distance. With respect for the accumulation of meanings of the latter, it was decided to accommodate all possible individual interpretations by reducing the complicated composition of responsibility to one statement: "I feel responsible for solving this situation". Just like the definition of a "perceived hole" in Part I, the conception of "perceived distance" remains in the eye of the beholder.

To facilitate the participants to express their personal perceptions of distance, a distance model was developed in which circles surround a well-known neutral pictogram of a male human, commonly used for bathroom signage (figure 18). The circles are a graphic representation of a 7-point scale, corresponding with the values from "Fully responsible" to "Not responsible". Recent research (Dawes, 2008) shows that 5-level, 7-level and 10-level items deliver data with very similar characteristics regarding mean, variance, skewness and kurtosis. Because this item does not request agreement but poses a ques-

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50   Data available on the publisher's server at accentgrave.nl/phd until at least December 31, 2014.

tion, the score cannot be treated as an authentic Likert scale score. Although no comparable graphic representations have been found, the use is supported by research among orthopedic patients (Huber, Hüsler, Zumstein, Ruflin, & Lüscher, 2007). Over 50% of the participants preferred a visual circle scale (VCS) over a visual analogue scale (VAS) and a Likert scale (LS) to express postoperative pain.

Figure 18: Distance Model
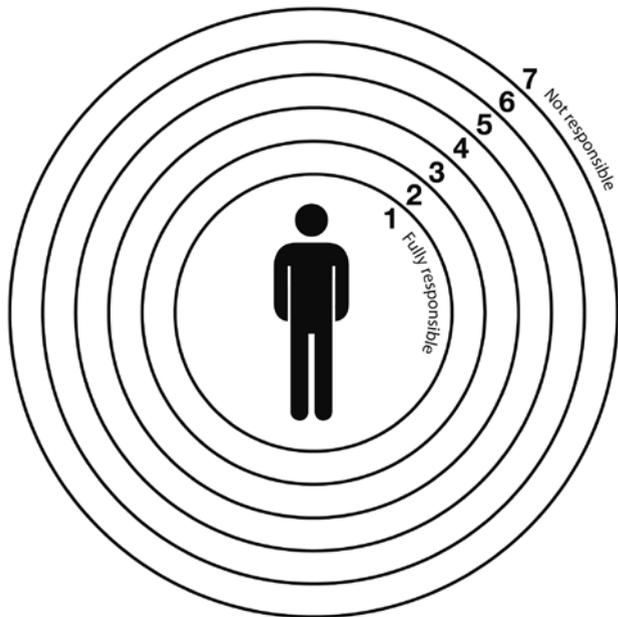
This distance model is used in the questionnaire to answer the first survey question: *Is there a relationship between the two hole characteristics "Typology" and "Perceived distance"?*

2.2.3 Questions About Acting

Since Festinger introduced the idea of social comparison in 1954, several social comparison scales have been developed. The attributes measured vary from adolescents' pregnancy (Tigges, 2009), and depressive symptoms in children and adolescents with Asperger Syndrome (Hedley & Young, 2006), to general orientation (Gibbons & Buunk, 1999), and a general desire to compare (Allan & Gilbert, 1995). The majority of the scales have been developed to deliver detailed insights into the personality of respondents to predict social comparative behavior in a specific static (health) situation. This is not the case in this thesis. Further, all social comparison scales are multi-item (10+) based and therefore not suitable for utilizing as a repeating component. Taking focus and size into consideration, it was decided to invite participants to evaluate their interactions with peers in specific plural dynamic vignette situations by weighing one simple statement only. The same single-statement strategy was followed for rule analogy as well. Thus, the following items were included:

- To decide what to do I try to imagine what my fellow cooks would do.
- To decide what to do I try to think of a similar recipe.

These questions were used in the questionnaire to answer the second and third survey question: *Does taking comparable rules into consideration relate to the two hole characteristics "Typology" and "Perceived distance"?* And: *Does peer behavior relate to the two hole characteristics "Typology" and "Perceived distance"?*

2.2.4 Questions About Telling

As argued in Part II, the matter of telling is not only an issue of yes or no, but also of when: before or after performing a related task. For that reason the survey contained a question about telling with a delay malus (manager arrives in two hours), accompanied with a threefold answer:

- Yes, before I start; so I'll wait two hours
- Yes, once I am finished; so I will continue
- No

This question is used in the questionnaire to answer the fourth and last survey question: *Does telling relate to the two hole variables "Typology" and "Perceived distance", and to the two rule user variables "Rule analogy" and "Peer comparison"?*

An extra control question about risk assessment was included:

- I prefer to stop (to be certain) than to continue on my own initiative (with all the risks this involves).

2.2.5 Socio-demographic Variables

The questions were extended based on explanatory variables in three categories: personal, job related and discretionary. The personal variables formed the classic questions used to describe the sample. The job characteristics consisted of a possible interesting mix of different consulting disciplines and variations in the workplace. This connects with specific ConQuaestor practice. The discretionary variables concerned more abstract, less measurable dimensions that increase the opportunity for perceiving holes and may affect the decision to tell; they also stimulated self-reflection in this survey to prepare the participants for the vignettes.

Personal characteristics
- Gender (radio button: 1= man, 2= woman)
- Age (blank form field)
- Education (radio button: 1 = General educational development, 2 = High school, 3 = Vocational, and so forth)

Job characteristics
- Line of Business (radio button: 1 = Process Consulting, 2 = Management Consulting, 3 = Finance Professionals, 4 = Interim Management, 5 = Outsourcing, 6 = Other)
- Workplace (5-step percentage scale: In house - secondment)

Discretionary variables

Validated scales were used to measure the discretionary variables "Own initiative", "Autonomy", and "Task transparency" (table 14).

For "Own initiative", the scale developed by Huiskamp, T. de Jong and Den Hoedt (2008) was used; it consists of the following four items[51] (Cronbach's Alpha .80):

- In my work I regularly suggest new ideas.
- I immediately take the initiative, even if my colleagues do not.
- I usually do more than is expected of me.
- If something goes wrong at work, I immediately try and find a solution.

The scale for autonomy (Cronbach's Alpha .86) was established in a study by Dhondt and Houtman (1992) and consists of the following three items[52]:

- I can decide when to perform a task myself.
- I can determine the sequence of my duties myself.
- I can determine how I do my job myself.

The items for both "Own initiative" and "Autonomy" were measured on a Likert scale ranging from 1 (totally disagree) to 5 (totally agree).

For measuring task transparency, the scale "Ambiguities about work"[53] was used (Cronbach's Alpha .81). This is part of the VBBA[54] (Van Veldhoven & Meijman, 1994), the leading questionnaire in the Netherlands and Belgium for psychosocial workload (Dorenbosch, 2009; Van Veldhoven, Koenders, & Dijkstra, 2009; Koenders, Van Deursen, Croon, & Dijkstra, 2008; Van de Voorde & Van Veldhoven, 2007; Nabitz, 2006; Dekker & Prins, 2006; Koenders, Dijkstra, Bouwman-Brouwer, & Konijnenberg, 2006; Van Veldhoven, 2005; Prins, Janssen, & Van Bolderen, 2005). The scale consists of the following five items:

- Do you know exactly what other people expect of you in your work?
- Do you know exactly what you are responsible for and which areas are not your responsibility?
- Do you know exactly what your superior thinks of your performance?

- Is it clear to you exactly what your tasks are?
- Do you know exactly what you can expect of other people in your department?

The items of "Task transparency" were measured on a 4-points scale in which 1 = always, 2 = often, 3 = sometimes and 4 = never.

Table 14: Survey Scale Reliabilities

Scale	Cronbach's Alpha	# Items
Own initiative	.80	4
Autonomy	.86	3
Task transparency	.81	5

Summarizing, the questionnaire consisted of socio-demographic items, and items about distance, social comparison, rule analogy, and telling; all in relation to five holes in rules, as translated into vignettes.

2.2.6 Survey Software

The survey was conducted online with the use of specialized online survey software (Van Rixtel, n.d.).

As a result of the outcomes from the pretest, the vignettes were presented in random order. The survey software automatically allocated respondents to one of the five versions. Randomization was based on a balanced Latin square according to Bradley's algorithm (Bradley, 1958). This uses an n x n table, where n is the number of conditions. The base algorithm is shown in table 15.

Table 15: Balanced Latin Square Base Algorithm

1	2	n	3	n-1

Each column is ascending to n, and 1 follows n. For the five vignettes, this results in five rows that suggest the random orders (table 16).

Table 16: Balanced Latin Square Vignette Order

1	2	n	3	n-1
1 Absent	2	5	3	4
2 Russian	3	1	4	5
3 Eggs	4	2	5	1
4 Butter	5	3	1	2
5 Nuts	1	4	2	3

Note: Orders 1-5 were represented in the questionnaires by versions A to E.

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51 Dutch: *In mijn werk kom ik regelmatig met nieuwe plannen.*
    Dutch: *Ik neem meteen initiatief, zelfs als collega's dat niet doen.*
    Dutch: *Meestal doe ik meer dan dat er van mij gevraagd wordt.*
    Dutch: *Als er iets misgaat op mijn werk, zoek ik meteen naar een oplossing.*
52 Dutch: *Ik beslis zelf op welk moment ik een taak doe.*
    Dutch: *Ik kan zelf de volgorde van mijn werkzaamheden bepalen.*
    Dutch: *Ik kan zelf beslissen hoe ik mijn werk doe.*
53 Dutch: *Onduidelijkheid over de taak.*
    Dutch: *Weet u precies wat anderen op uw werk van u verwachten?*
    Dutch: *Weet u precies waarvoor u wel, en waarvoor u niet verantwoordelijk bent?*
    Dutch: *Weet u precies hoe uw directe leiding over uw prestaties denkt?*
    Dutch: *Ligt duidelijk voor u vast, wat precies uw taak is?*
    Dutch: *Weet u wat u van andere mensen op uw afdeling mag verwachten?*
    © All rights reserved by SKB, Amsterdam.
54 Vragenlijst voor de Beleving en Beoordeling van Arbeid (Questionnaire on the Experience and Evaluation of Work).

2.3 DATA SCREENING

All data were analyzed with SPSS using t tests, ANOVA, forward stepwise linear regression, and logistic regression[55].

The procedure resulted in 72 completes. 45 of these completes involved respondents from Process Consulting, representing a response rate of 44% for Process Consulting. The remaining 27 completes came from the other Lines of Business, including management, staff and freelancers, which equaled 5.6%. Two-thirds of all respondents are male (December 31, 2010 overall: 67% (ConQuaestor, 2011, p. 19)). Of all the respondents, the oldest is 47 and the youngest is 24 years old. The average age is 32.18 years (2010 overall: 33.9 (ibid. p. 23)). Thus, the composition of the sample is representative for the ConQuaestor population.

The majority of the respondents are highly educated: 55.6% have graduated from academic higher education establishments, 30.6% have completed professional higher education, and 11.1% hold an MBA (table 17). Regarding their work place, 73% indicated mainly or always being seconded at a client's location. The Process Consulting department were the most dominant (63%) group of respondents; this is assumed to be because they were personally invited and reminded to participate. 71% ($n = 32$) of theses were Sleepers thanks to participation by a personal email with a link to the read-only version. The remaining 29% percent of the Process Consultants completed the same-day questionnaire via the Internet, and belong therefore to the Thinkers category. The other respondents (37%) represent the respective departments Management Consulting, Finance Professionals, and "Other". These are all Thinkers (table 18).

Table 17: Full Sample Education

Level	n	%
Hbo	22	30.6
Post-hbo/MBA	8	11.1
W.o.	40	55.6
Other	2	2.7
Total	72	100.0

Note. Hbo = professional higher education, post-hbo/MBA = postgraduate continuing professional education, w.o. = academic higher education.

Table 18: Sleepers and Thinkers per Department

Department	Sleepers (n)	Thinkers (n)
Management Consulting	0	9
Process Consulting	32	13
Finance Professionals	0	13
Other	0	5
Total	32	40

This low response rate for the company's general population may be caused by fatigue following an additional corporate survey having been held recently, because of personal absence or extra workload during spring holiday, or may be attributed to the fact that for internal reasons they have not been approached personally. A low response rate carries the risk of a nonresponse bias (Groves & Peytcheva, 2008). This means that the answers of the 5.6% responding general ConQuaestor employees cannot be held to represent the potential answers of the general ConQuaestor employees who did not participate.

Moreover, according to scientific insights into information processing, as described in the introduction to this section, automatic processing produces different, purer answers than deliberation. An initial analysis of the survey results indeed showed significant deviations between the two groups (table 19):

- Sleepers feel significantly less distance than Thinkers.
- Sleepers prefer significantly more to continue working on their own initiative (with all the risks this involves) than to stop (to be certain) than Thinkers.
- Sleepers tend to look at comparable rules significantly more than Thinkers do.

Table 19: Sleepers Deviant Scores

Variable	Sleepers	Thinkers	F	Significance
Distance	2.15	2.52	5.89	.016
Continuation	5.69	5.33	4.03	.045
Rule analogy	5.73	5.20	7.32	.007

For these two reasons, a low response rate and the pollution by deliberate thinking, the Thinkers group was excluded from further analyses which were then continued with $n = 32$ (average age 31.6 years). See table 20 to table 22 for relevant socio-demographic information.

55   Data available on the publisher's server at accentgrave.nl/phd until at least December 31, 2014.

Table 20: Sleepers Gender

Gender	n	%
Men	21	65.6
Women	11	34.4
Total	32	100.0

Table 21: Sleepers Education

Education	n	%
Havo	1	3.1
Hbo	6	18.8
Post-hbo/MBA	4	12.5
W.o.	21	65.6
Total	32	100.0

Note. Havo = senior general secondary education, hbo = professional higher education, post-hbo/MBA = postgraduate continuing professional education, w.o. = academic higher education.

Table 22: Sleepers Workplace

Workplace	n	%
1 (100% in house)	2	6.2
2 (75% in house, 25% secondment)	1	3.1
3 (50% in house, 50% secondment)	7	21.9
4 (25% in house, 75% secondment)	15	46.9
5 (100% secondment)	7	21.9
Total	32	100.0

3. RESULTS

The results are structured according to the variables cohesion matrix (table 8) in which vignettes are nested according to respondents (Kalaian & Raudenbush, 1996). Originally this could be viewed as a hierarchical model, but in the light of the number of respondents versus vignettes, this is not opportune. The differences in variances between nested and nonnested models are nonsignificant.

This Chapter 3, this one, presents the plain statistics. In Chapter 4, entitled "Discussion", the results will be reviewed and possible interpretations and meanings given.

3.1 DISTANCE IN RELATION TO TYPOLOGY

These results relate to the first question: *Is there a relationship between the two hole characteristics "Typology" and "Perceived distance"?*

The respondents were asked to assess the distance on a 7-point scale, where 1 represents very close, as an indicator for commitment and responsibility to each of the five vignettes presented. Table 23 shows that the Russian vignette has the highest perceived distance score while the Nuts vignette has the lowest. No statistically significant differences in perceived distances between the vignettes score were found ($F = .279$, $p = .891$; no significant post-hoc tests).

Table 23: Distance in Relation to Typology

Vignette	n	M	SD
Absent	32	2.13	1.100
Russian	32	2.34	1.234
Nuts	32	2.03	1.379
Eggs	32	2.16	1.273
Butter	32	2.09	1.304
Total	160	2.15	1.250

3.2 RULE ANALOGY IN RELATION TO TYPOLOGY AND DISTANCE

These results relate to the second survey question: *Does taking comparable rules into consideration relate to the two hole characteristics "Typology" and "Perceived distance"?*

For the analysis of this survey question and the following (see Paragraph 3.3), a forward stepwise multiple regression was conducted. During this process, one independent variable at a time was added to the model, starting with the one that has the highest correlation with the dependent variable. After each step, the effect of the independent variable added was being assessed using the increase in the explained variance of the model (R-square) as a measure for "true" prediction. In this way, the influence of the individual independent variable became visible (Nolan & Heinzen, 2007). All independent variables including socio-demographic variables (personal characteristics, job characteristics and discretionary characteristics) were incorporated into the equation.

Table 24 shows that the Nuts vignette is the only hole type that significantly relates to rule analogy ($F = 12.14$, df = 4, $p < 0.00$, $R = .488$, adjusted R-square = .21). The model thus explains 21% of the variance in the use of rule analogy. The encounter of two contradicting rules is negatively related to taking other, similar situations into consideration ($\beta = -.315$). People who judge the autonomy of their position the highest, apply rule analogy most ($\beta = .215$). The perceived distance towards the vignettes presented is negatively related to using rule analogy to solve the problem ($\beta = -.172$). Finally, women have a greater tendency to check with other rules than men do ($\beta = .160$).

Table 24: Rule Analogy in Relation to Typology and Distance

Variable	Unstandardized coefficients		Standardized coefficients			Collinearity statistics	
	B	Std. error	Beta	T	Significance	Tolerance	VIF
1 (Constant)	5.992	.148		40.615	.000		
Nuts	-1.336	.330	-.307	-4.050	.000	1.000	1.000
2 (Constant)	3.150	.706		4.463	.000		
Nuts	-1.336	.314	-.307	-4.248	.000	1.000	1.000
Autonomy[a]	.741	.180	.297	4.110	.000	1.000	1.000
3 (Constant)	4.201	.813		5.167	.000		
Nuts	-1.374	.310	-.315	-4.436	.000	.998	1.002
Autonomy[a]	.614	.185	.245	3.320	.001	.922	1.084
Distance	-.257	.104	-.184	-2.484	.014	.920	1.087
4 (Constant)	3.320	.891		3.725	.000		
Nuts	-1.372	.306	-.315	-4.486	.000	.998	1.002
Autonomy[a]	.628	.183	.251	3.442	.001	.921	1.085
Distance	-.240	.102	-.172	-2.344	.020	.915	1.092
Women	.586	.258	.160	2.272	.024	.994	1.006

a   Multi-item scale.

3.3 PEER COMPARISON IN RELATION TO TYPOLOGY AND DISTANCE

These results relate to the third survey question: *Does peer behavior relate to the two hole characteristics "Typology" and "Perceived distance"?*

The regression model shows a significant result ($F = 6.081$, df = 1, $p = 0.015$) but the explained variance is very low ($R = .193$, adjusted R-square = .031). Only 3% of the variance in peer comparison is explained by the model. The use of peer comparison does not seem to be influenced by many of the variables that were included (table 25). None of the vignettes or socio-demographic characteristics made a significant contribution to the model. The only variable related to peer behavior is perceived distance; the relation is negative: professionals who experience a larger distance show less willingness or need to practice peer comparison ($\beta = -.193$).

Table 25: Peer Comparison in Relation to Typology and Distance

Variable	Beta	T	Significance
Distance	-.193	-2.466	.015

3.4 TELLING IN RELATION TO HOLE VARIABLES AND RULE USER VARIABLES

These results relate to the fourth survey question: *Does telling relate to the two hole variables "Typology" and "Perceived distance", and to the two rule user variables "Rule analogy" and "Peer comparison"?*

The final question concerned the act of telling about an encountered hole. Respondents were given three alternatives: "Yes, now", "Yes, later", and "No". Because all 32 respondents evaluated 5 vignettes, this gave a total score of 160 values. Table 26 shows that a vast majority of the respondents stated that they would tell later.

Table 26: Telling Options Response Distribution

Variable	Option	n	%
Telling	Yes, now	14[a]	8.8%
	Yes, later	137	85.6%
	No	9[b]	5.6%
Total		160	100.0%

a   Representing 8 respondents.
b   Representing 5 respondents.

Although this broad consensus in acting strategy (Yes, later: 85.6%) may act as a positive confirmation for ConQuaestor, as the organization involved in the survey, that they have selected a heterogeneous group of professionals, it also produces some statistical difficulties. For reason of plural categories being involved, linear regression should be replaced with multinomial logistic regression. However, the remaining groups of "Yes, now" (8.8%) and "No" (5.6%) are too small for further individual regression analysis.

As an alternative, it was considered valid to combine the two low-percentage results "Yes, now" and "No" into one new variable "not-Yes, later", with a cumulative score of 14.4% of the respondents. This means that in a logistic regression, the "Yes, later" option can be compared with the "not-Yes, later" option to predict when a respondent chooses the "Yes, later" option. However, because the two low-percentage results represent opposite extremes of the spectrum of telling strategies, there was no indication that the respondents would share comparable constellations of characteristics. A merge would therefore endanger the model fit. This supposition was actually tested, and as predicted it led to problematic values of the beta.

Due to the low percentages (and low absolute numbers) negatively affecting any regression, the focus has been shifted to correlation analysis, which may later be elaborated on in future research. The data (table 27) show that respondents in the large group, expressing the telling strategy "Yes, later" (meaning: first finishing the task, then telling), score without exception on all significant variables the opposite in comparison to the groups "Yes, now" (first telling, then (re)commencing the task) of "No" (no telling at all). "Yes, later" respondents are characterized by a positive correlation with a proactive, enterprising personality (.262) and the willingness to achieve (.380). Although no causal conclusions may be drawn from these correlations, such a combination of characteristics could have been anticipated. Interesting though, is the strong correlation with applying rule analogy (.406). Obviously, the "Yes, now" option contradicts with the continuation of the task at hand (-.597). The respondents in this group are characterized by low initiative (-.162) and lack of interest in looking at similar rules (-.230). This applies also to the respondents that would not tell at all ("No"), with scores

on initiative (-.201) and rule analogy (-.335). Finally, it can be concluded that respondents who consider themselves as persons with less initiative, prefer to wait and tell beforehand, or not to tell at all.

Table 27: Telling Options Correlation Matrix

Variable	Yes, now	Yes, later	No
Initiative[a]	-.162*	.262**	-.201*
Continuation	-.597**	.380**	
Rule Analogy	-.230**	.406**	-.335**

a   Multi-item scale.
*   Correlation is significant at the 0.05 level (2-tailed).
**   Correlation is significant at the 0.01 level (2-tailed).

4. DISCUSSION

Professionals encounter holes in rules all the time. Whether or not acting upon and telling about them, and under what conditions, is the central theme of this survey specifically, and of this thesis in general. There are some critical remarks to make about both the set-up of the survey and the interpretation of the results.

4.1 SURVEY SET-UP

The questionnaire was set out within a single organization. Although some results are very significant, it is wise to be cautious when extrapolating the results from this single case study to ConQuaestor as a whole, professionals in general, consultancy agencies in general, or people in general.

It became apparent that the read-only S1 questionnaire caused some confusion; several people indicated that they assumed that the inability to answer the questions was in fact an error. Presumably, they might then have stopped reading this version. For that reason, the reminder email was adapted by adding a confirmation of this impossibility and a request to look again. For future use of a Sleepers questionnaire, it may be desirable to announce the specifications of S1 already in the prenotification email, although this could decrease the respondents' participation rate in this first, more passive stage.

4.2 INTERPRETATION OF RESULTS

Background information can be very useful when interpreting results about attitude and behavior. The quantitative character of the survey does not supply this information. The results therefore may require further investigation to guarantee a firm explanation. There are however interesting possible explanations, that may be discussed.

4.2.1 Survey Question Distance and Typology

Survey question 1 showed no significant difference in distance in relation to the five types of holes. One explanation could be that the differences between the holes presented were not clear enough; this is however not in accordance with the results of the pretest (Fleiss kappa study) where the differences between the holes presented seemed more than adequate. Another explanation can be found in the fact

that all vignettes were presented from the rule user "position 0"-problem at situation A (figure 6). The functional distance therefore was for all underlying holes to be the same: directly related to the rule user. From this perspective (and with the benefit of hindsight) these close scores could have been predicted.

4.2.2 Survey Question Rule Analogy

It is good to recall that rule analogy is to be seen primarily as a tool to uncover what a rule maker may have meant, and not so much to make a decision as to what action to take. Survey question 2 data indicates that the Nuts vignette is the only hole type that relates to rule analogy; this in the sense that it is negatively related to taking other, similar examples into consideration. The Nuts vignette is, according to the Dutch Collection Hole Tree, a translation of a situational context variable; wherein a contradiction with another rule is the most specific feature. Because there is no unfitting coverage of a rule at stake, the questionnaire asked specifically for the Nuts vignette items about "situation analogy" as a variant of "rule analogy". In survey question 1 it was revealed that the Nuts vignette received the lowest score in terms of perceived distance; this means that the respondents felt most responsible for the situation. This could be because one does not have to analyze a problem within the rule, but instantly recognizes the problem as a matter of opposing instructions. The strategic options seem therefore rather simple: follow instruction A or B. This explanation may be an indication that for the Nuts vignette respondents have interpreted "How responsible" (also) as "How easy to fathom". If this is the case, then it would make sense why rule/situation analogy is not needed here.

Another outcome of this survey question is the statement that respondents who judge the autonomy of their position as the highest, apply rule analogy the most. It does not seem logical to assume that people in autonomous positions are the most uncertain professionals who need a more than average support. On the contrary: professionals who have proven to be able to work autonomously probably just have fewer ways of discussing how to act at hand, such as colleagues and managers, and/or encounter more unique situations that often ask for "first time", improvised solutions.

A third conclusion that has been drawn is that the greater the distance towards the vignettes presented, the lesser the use of rule analogy. As stated earlier in Part II, performing rule analogy is time and energy consuming. It might well be that this result shows that the less one cares, the less one wants to put any effort into a situation.

Finally, women tend more often to check with other rules than men do. Such a conclusion is too broad for simple explanations. No conclusions can be drawn based on the theoretical explorations in this thesis. Thus, future research is recommended.

4.2.3 Survey Question Peer Comparison

Peer comparison does not relate to any of the explanatory variables, the hole types, or to applying rule analogy. Such an overwhelming absence of stimuli introduces the question of whether peer comparison plays a role at all. The survey was conducted among highly educated professionals who may have been trained to deal with things themselves. From that perspective, this outcome can even be considered as one of possible risk.

The only related variable is distance; professionals who experience a greater distance show the least willingness or need to practice rule analogy. As far as professionals are prepared to copy or consult with colleagues, this only works for problem situations very close to them.

4.2.4 Survey Question Telling

The broad consensus involves the acting strategy "Yes, later" of 85.6%, that may well reflect reality. It should be noted however, that the telling strategy "Yes, later" can also be used as an escape route. In other words: Because no time limit was set on the meaning of "later", the answer might be interpreted as a concealed "No".

From the four variables that were delivered via the theoretical framework only rule analogy is significant with regards to telling strategies. Respondents with a positive correlation regarding rule analogy, are limited to the "Yes, later" group; professionals who continue and tell later. To rephrase inversely, not using review frameworks seems to relate to sitting on the fence or keeping a problem to one's self. A possible explanation of the correlation between telling later and applying rule analogy may be that that professionals who are experienced enough to have an arsenal of prior relevant examples at their disposal, also feel the maturity to solve situations themselves and understand the importance to the organization of reporting the holes in rules they encountered.

Of course it helps when professionals do not have to search for relevant examples themselves, but if these kinds of review frameworks are available within the organization. Organizations that want to make use of professionals' passion to achieve might, therefore, provide a kind of corporate general calibration rules; Examples of "how we deal with it", either recorded in strict rules or organic values. Further elaboration strongly depends on the cultural profile of the organization concerned.

Some scores from the "No" respondents are quite remarkable, that is regarding "Continuation" and "Rule analogy". "No" respondents have no significant correlation with "Continuation". There is however a supposed logical relationship between not-telling and continuing one's task. One can suspend his or her tasks for a good reason, for instance when waiting for consultation. This is in fact the "Yes, now" telling option. But one cannot defend an unlimited suspension without explanation. The "No" respondents state that they will not tell regarding an encountered problem; logically, they must always continue with their tasks. However, there is no significant positive score for "Continuation". Why is it that "No" respondents do not indicate in the survey that they continue their tasks while in practice they do continue? The present data do not provide a conclusive answer to this question or even offer a direction towards an explanation.

Then there is the issue that arises in reference to the score on rule analogy. Although "No" respondents, by continuing their tasks follow the same acting strategy as the "Yes, later" respondents, they seem to have a clear aversion to rule analogy (-.335) while "Yes, later" respondents indicate rule analogy to be a frequently used instrument (.406) when choosing continuation despite of a problem situation. Why would two groups that follow the same acting strategy, take such opposite positions in relation to applying rule analogy (respectively .406 and -.335)? Could it be because looking at possible similar rules must be considered an initiative, a personal characteristic to which "No" respondents negatively correlate (-.201)? This unclear outcome is still an interesting path to explore.

Also one discretionary characteristic shows correlation with telling strategies: Actor's initiative. "Yes, later" respondents are characterized by a positive correlation with a proactive, enterprising personality (.262), while respondents who consider themselves as persons with less initiative typically prefer to wait and tell beforehand, or to not tell at all.

5. RECAPITULATION

In a survey, a group of consulting professionals were asked to indicate their attitude towards several problem situations and predict their own actions upon encountering them. The questions about acting were based on the four variables; typology, distance, rule analogy and peer comparison (Part II). The problem situations were derived from the Dutch Collection of Holes in Rules (Part III) and then translated into vignettes. The survey was set up as a split run: One group followed a "same day" route for reading and answering the questions (Thinkers), while the second group received a survey read-only version one day, and was forced to sleep on the questions before (rereading and) answering them the next day (Sleepers). Because of significant deviations between the two groups and the results from prior studies, the decision was taken to exclude Thinkers and to continue analyses with Sleepers only ($n = 32$).

No statistically significant difference in distances between the vignettes' average score (F = .279, p = .891; no significant post-hoc tests) was found.

Regarding rule analogy, a forward stepwise linear regression delivered four results:
- The encounter of two contradicting rules is negatively related to taking other, similar situations into consideration.
- Respondents, who judge the autonomy of their position as the highest, apply rule analogy the most.
- The greater the perceived distance, the lesser the use of rule analogy.
- Women tend to use rule analogy more than men do.

The use of peer comparison is only influenced by distance; professionals who experience a greater distance show the least willingness or need to practice peer comparison.

Regarding the three telling strategies, correlation analysis shows five results:
- 94.4% of the professionals in this study indicate an intention to tell; 8.8% before starting or continuing the task, 85.6% afterwards.
- "Yes, later" respondents are characterized by a positive correlation with initiative (.262), the willingness to accomplish (.380), and applying rule analogy (.406).
- "Yes, now" respondents are characterized by a negative correlation with initiative (-.162), the willingness to accomplish (-.597), and applying rule analogy (-.230).
- "No" respondents are characterized by a negative correlation with initiative (-.201) and applying rule analogy (-.335).
- Respondents who consider themselves as persons with less initiative typically prefer to wait and tell beforehand, or to not tell at all.

Part V
Completion

1. CONCLUSIONS

This thesis contains a response to the main research question, which focuses on how rule users' behavior affects the life cycle of holes in rules. To answer this question and the related sub-questions several studies were conducted: a literature study debating life cycle concepts and telling strategies, a qualitative research related to perceived holes in rules in the Netherlands, and a quantitative survey regarding rule users' actions in response to encounters with holes in rules (including a sub-study concerning inter-rater agreement).

1.1 SUB-QUESTION LIFE CYCLE OF HOLES

The first sub-question is: *How do rule users relate to the life cycle of holes?* Rules users have not, like rule makers, direct formal power to change the life cycle of holes. They have an indirect power, however, which will realize effectiveness when a hidden $HOLE_1$ is exposed as a visible $HOLE_2$. From this moment on rule users can observe and encounter the hole. The consequence of discovery then completely depends on the rule user's reaction to this unexpected and often undesired appearance of the "unfitting". Rule users telling rule makers is postulated in this thesis as a crucial intervention in the holes' life cycle, because its may lead to rule repair and consequently hole closure.

1.2 SUB-QUESTION ACTING ON ENCOUNTER

The second sub-question is: *Do rule users continue or omit acting when encountering a perceived hole?* In this thesis, acting upon holes has been related to the task at hand. Professionals turn out to be accomplishers, who work to complete the job that they have been employed for. This includes dealing with a variety of difficulties that come with these often responsible tasks, among which are handling holes. And that is what they do, without delay – at least the 85.6% that responded "Yes, later".

1.3 SUB-QUESTION TELLING ABOUT HOLE

The third sub-question is: *Do rule users tell about an encountered perceived hole?* Telling rule makers (and their representatives) could initiate repair activities towards the rule(s) involved, leading to the closing (mortality) of the hole. With 94.4% the answer is convincingly "Yes". This supports the predictions of the prisoner's dilemma, which states that a rational balancing of options should lead to speaking out.

1.4 SUB-QUESTION VARIABLES FOR TELLING

The fourth and last sub-question is: *Which variables correlate with the decision whether or not to act and tell?* From the four variables that were delivered by the theoretical framework only "Rule analogy" is significant, both positively ("Yes, later" respondents) and negatively ("Yes, now" and "No" respondents). No explanation has been found as to why two groups ("Yes, later" and "No" respondents) that following the same acting strategy ("Continuation"), would take such opposite positions in applying rule analogy (respectively .406 and -.335). Also a subject of further study could be the lack of a significant correlation between "No" respondents and "Continuation" according to the answers in the survey, which is found to contradict the logical reality.

Finally, also one discretionary characteristic shows correlation with telling strategies: Actor's initiative. "Yes, later" respondents are characterized by a positive correlation with a proactive, enterprising personality (.262), while respondents who consider themselves as persons with less initiative typically prefer to wait and tell beforehand, or to not tell at all.

1.5 MAIN RESEARCH QUESTION

Based on the above, there is evidence that rule users' behavior can and will affect the life cycle of holes by telling rule makers about holes, which will be done almost always afterwards.

1.6 SLEEPERS VERSUS THINKERS

All four survey questions have been analyzed for the influence of sleeping on rule users' behavior in relation to a hole in a rule. Sleepers feel less distance than Thinkers. This suggest it would be of benefit for organizations to encourage their professionals to let problems rest for a while and concentrate on another part of the job. That strategy enables the professional – and the work that is – to continue, without squandering personal involvement and the possible positive effects that may bring, such as the urge to achieve. Taking up the problem again later again increases the probability that the professional, feeling even closer to the situation over time, with a greater effort will search for a solution.

Second, it seems that Sleepers significantly more often look at comparable rules than Thinkers. This emphasizes the value of corporate general calibration rules as mentioned in paragraph 1.2.4 here above.

1.7 DUTCH COLLECTION OF HOLES IN RULES

With regard to the Dutch Collection, it was expected to find a limited diversity because the perception of the typology of holes was shown to be locally colored. The eleven classified types of holes can therefore be seen as typical for the Netherlands. It might be interesting to repeat this study for other countries to see how those inventories agree with or differ from the Dutch results. Especially in those countries that from a juridical point of view claim not to have holes, it could be very intriguing to see what holes the people indicate; and how they respond to a legal system that could be described as in denial.

Another point of interest concerns the numbers. The purpose of the composition of the Dutch Collection was strictly qualitative, to provide a solid typological base for the consecutive quantitative survey. For this reason, frequencies of appearances of the perceived holes in rules have not been registered. Thus no numeric conclusions can be drawn. During the composition of the Dutch Collection for instance, a hole that indicates unfitting between (a perfect) rule and situation has not been often observed. It is unclear whether this is caused by low numbers in absolute sense (reality) or by rule users having difficulties in recognizing or labeling this type of hole (perception). Later studies of perceived holes in rules could focus on extensive quantitative analyses.

1.8 THE CASE OF THE ZEROS AND THE CASE OF THE GUESTS

The two cases that were presented in the Prologue to this thesis have already been classified in Part III paragraph 4.1 as **two different hole types in** accordance with the Dutch Collection Hole Tree. The proactive attitude of the civil servants is in line with the survey results, in the way that they have acted upon the problematic situation. Within the span of this thesis it is not possible to see whether they also (try to) inform people that have a direct influence on the rule making. It is assumed that they have not and will not, because these cases relate to national laws as enacted by local professionals. The distance might be simply too great to (attempt to) exercise even indirect influence.

1.9 LIMITATIONS

Concerning some key parts in this thesis, no evidence is found that similar work has been done before. Novel elements are applying life cycle concepts to holes in rules; creating the Morse Model of Discretion out of a combined visualization of hole typology and hole distance; composing a Dutch Collection of Holes in Rules; translating these holes in vignettes to have rule users in a specific organization them assessed; and incorporating a split run of Thinkers and Sleepers in the execution and analyses of a questionnaire. As a consequence all these new approaches carry the attendant risk of immaturity.

Second, the results are restricted to place and time. The survey has to be considered as a single case study in a very specific organization, and within Dutch culture. The statement that holes in rules are to be seen as local phenomena cannot be verified in this thesis since this requires at least one more national collection to compare outcomes. Finally, the perception of holes can change over time, as can the behavior upon them. A replication of this study a few years from now may show swings in results.

1.10 FOLLOWING THE WHITE RABBIT

Part I introduced Alice, the white rabbit, and a hole. The rabbit is a metaphor for a remarkable situation that comes along and draws attention to the existence of a hole. Professionals stand figuratively in Alice's shoes, deciding what to do: ignore or follow? The study shows strong evidence that professionals are prepared to follow the white rabbit, feeling very much concerned about hole situations, and committed to fixing them themselves or helping them get fixed. Again: Organizations who expect that some discretionary action is beneficial or inevitable, create an ethical frame of reference that contains joint values and norms as well as organizational possibilities and limitations. Because every rabbit needs a landscape.

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4. CURRICULUM VITAE

Kerstin Barbara van Tiggelen
April 15, 1965
Breda, the Netherlands

EDUCATIONAL CAREER

2008 - 2012	Ph.D., University of Humanistic Studies, Utrecht
2006 - 2007	MBA, NTI University/Business School Nederland, Leiden/Buren (cum laude)
1988 - 1990	Dutch Language and Literature, Utrecht University, Utrecht (discontinued)
1977 - 1984	University-preparatory school/gymnasium, Alkwin Kollege, Uithoorn

PROFESSIONAL CAREER

2009 - present	Lead auditor and examiner, several organizations
2009 - present	Founder and board member, NIDAA
1989 - present	Founder, co-owner and creative director, Accent Grave : copywriters, Dronten
2001 - 2009	Legal guide (volunteer work), Dutch Council for Refugees, AZC Dronten
1987 - 1989	Copywriter and screenwriter, Van Assendelft & Kroone bv, Amsterdam
1986 - 1987	Freelance copywriter, Kudelstaart
1985 - 1986	Editor, Hermes Media bv, Amsterdam
1984 - 1985	Assistant accountant, Pandair, Schiphol-Oost

5. APPENDICES

APPENDIX 1

TRANSCRIBED FRAGMENTS INTERVIEW CIVIL SERVANT (DUTCH)

[A 08'18" – 08'35"]
Nou ja, dat je met een gezin zat waar van je vond dat het heel urgent was, en dat eigenlijk uh…
Dat ze nergens geaccepteerd werden, dat er nergens een woning was, en dat we samen vonden dat
Den Haag niet alleen A had moeten zeggen, maar ook B in dit geval.

[A 20'14" – 20'22"]
Ja, maar ja, goed je weet ook als overheid, maar dat weten ze dan misschien niet, dat er geen
woning heel simpel beschikbaar is voor die mensen.

[B 00'28" – 00'33"]
Ik zal het even uitleggen, want je hebt een unitmanager, en ik zit daaronder. Ik ben operationeel
manager. En dat betekent dat alle hiaten, alle hobbels en bobbels worden, is de bedoeling, door mij
geslecht.

[B 02'55" – 03'06"]
Ja… Luister, er zijn regels, maar er zijn voor heleboel dingen geen regels, dus dan moet je zelf
binnen de regels die er wel zijn uh… de grenzen maar opzoeken. Nou, dat heb ik gedaan.

[B 00'08" – 00'09"]
Tuurlijk vond ik het wel eng.

[B 01'35" – 01'49"]
Nou ja echt spannend… Een spannend gevoel. Van God uh… Weet je, omdat je dingen ging
omzeilen, wat jij zegt. Je gaat Wmo-middelen inzetten voor mensen die hier nog niet wonen. En
véél.

[A 12'19" – 12'46"]
Waar we tegenaan zouden kunnen lopen is als er een controle plaatsvindt door een accountant hè,
dat gebeurt elk jaar, dan zou het kunnen zijn dat hij zegt "Ja, dat klopt niet want toen het gestart
werd, woonden die mensen hier niet."

[A 12'47" – 12'58"]
Dus ja, we hebben te voldoen aan de taakstelling en we hebben geen restrictie dat er wordt gezegd
van als iemand invalide is hè… dan zeggen we daar nee tegen, want dat gaat uit een ander budget.

[A 13'11"– 13'22"]
…Inmiddels negen mensen. Dus het was een mooie vette buit. Zo kan je het ook nog zien. Als je
alle emoties uitschakelt, kan je zeggen van nou, dat is een mooie vette buit. Huppekee, dat gaat lekker.

[A 21'23"- 21'45"]

Dus ik heb het eigenlijk geheel op emotie gedaan. Als jij wel weten op basis ik heb besloten en heb geijverd ook dat iedereen achter me stond: emotie. Dat is het eigenlijk geweest. Uh… ja. Want natuurlijk die taakstelling, nou ja, prachtig, maar ik wist wel wat er allemaal achter aan kwam.

[B 03'12" - 03'27"]

Als je bij die eerste, ene collega terecht was gekomen die had gezegd: "Nee, die mensen wonen hier niet, daar zijn we niet verantwoordelijk voor, dus daar gaan we niks voor doen."

[A 03'38" - 04'02"]

Gisteren zat ik met uh… Bob, mijn vriend, al erover te praten dat je zou komen. Zo van goh, je komt, en ik ben benieuwd waarom, en toen heb ik weer aan hem verteld - nog even weer, hij weet wist er wel van - want het was voor mij een heel emotionele kwestie, uh… ik was heel boos op Den Haag dat ze daar…

[A 11'07" - 11'12"]

Ik heb toen ook nog overleg gehad met mijn unitmanager Anne, zo van "Ik vind het een mensonterende zaak."

[B 04'55" – 08'08"]

Er is een meneer van mijn leeftijd, dus die is ergens in de veertig, en die is visueel gehandicapt geraakt. Hij komt nog wel buiten, maar hij wil 's avonds ook graag naar zijn dochter en vrienden en zo… Dus die mijnheer vraagt om een taxipas, en die wordt afgewezen. Als je dan het indicatierapport leest, dan beginnen ze eerst met dat is de beperking blablabla. En dan denk je "Oh, die mijnheer krijgt een taxipas." Maar dat zijn dus de bevindingen die ze hebben genoteerd die meneer heeft aangegeven. Dan komt vervolgens hun visie, en die is van "Nou, meneer is nog niet uitbehandeld." Daar bedoelen ze mee: hij heeft nog niet geprobeerd of hij een blindengeleidehond kan gebruiken, hij heeft nog nooit met een stok gelopen… Dus die zaken moet ie eerst maar eens gaan uitzoeken. En dan, als dat allemaal blijkt niet te kunnen, uh… Dan gaan we zeggen van "Nou, we gaan kijken of die taxipas noodzakelijk is". Een taxipas als je die hebt, betekent dat je ook voor buitenregionaal vervoer van een gereduceerd tarief en begeleiding gebruik kan maken. Daar kan je geen gebruik van maken als je die taxipas niet hebt, dus dat hangt aan elkaar vast. En eigenlijk, als ik het goed inschat, denk ik dat die mijnheer vooral daar graag gebruik van wil maken, want hij had wat vrienden in de stad, zijn dochter woont daar. Dus ik denk van: "Ja, hij moet gewoon die taxipas hebben," vind ik, en uh… 'Uitbehandeld' dat klinkt een beetje rottig want zijn visuele handicap wordt alleen maar slechter. Dus toen ben ik nog eens met het CIZ in conclaaf gegaan. Ik zeg: "Nou oké, natuurlijk moet ie eerst uitzoeken van die uh… hond en van die stok." Wat natuurlijk heel naar is want dan ben je heel zichtbaar visueel gehandicapt, wat ik kan me voorstellen dat je daar op mijn leeftijd, en op zijn leeftijd helemaal geen behoefte en zin in hebt. Maar goed, de Wmo is bedoeld om ervoor te zorgen dat mensen zelfstandig kunnen blijven functioneren, en dat kan dus ook keurig met een hond en met een stok. En dat zijn nu eenmaal de middelen die d'r voor zijn. Allemaal heel plausibel en heel keurig

geïndiceerd. Nou, hebben we een tussenoplossing gezocht. Ik zeg: "Voor de time being heeft die man geen hond en heeft die man geen stok. En die man mag gewoon 's avonds ook als ie dat wil, dus uh… Mag die meneer alsjeblieft de taxi pakken, maar dan voor een tijdelijke periode, en dan gaan we daarna opnieuw indiceren. Nou, dat gaan we 'm vanmiddag vertellen. Weet je, en dat is dan zoeken naar een oplossing die… Want ze hebben gelijk. Er zijn voorzieningen, volkomen terecht geïndiceerd. Alleen vind ik dat ze een stukje hebben vergeten. Maar hoe moet het dan nu? Dat stukje… Want hij heeft niet zomaar… Ja, die stok zal hij misschien wel snel hebben, maar dan moet je eerst nog lessen hebben. En met zo'n hond zeker, dat is een heel traject. En misschien vindt die man een hond in huis wel heel naar, of is ie allergisch voor hondenhaar, of weet ik veel. Ik noem maar een dwarsstraat op. En zo ben je elke dag bezig om te kijken naar oplossingen.

VIGNETTES INTER-RATER AGREEMENT TEST (DUTCH)

TEST BEGRIJPEND LEZEN (A)

- Deze test gaat over begrijpend lezen en overeenkomsten zien.
- Het gaat over een recept, en de problemen die daarmee en daaromheen kunnen optreden.
- Je ziet hieronder een lijst van twaalf soorten problemen met en rond recepten.
- Lees daarna de situaties en geef aan welke situatie bij welk probleem hoort.
- Je mag iedere situatie slechts één keer invullen, maar je mag wel meerdere situaties bij één probleem noteren.
- Je mag wijzigingen aanbrengen.

PROBLEEM MET HET RECEPT	PAST BIJ SITUATIE
Het hele recept ontbreekt	
Het recept is in strijd met zichzelf	
Het recept is te algemeen	
Het recept is niet compleet, er ontbreekt iets in de beschrijving	
Het recept is inhoudelijk compleet, maar te beperkt	
Het recept is onbegrijpelijk	
Het recept sluit niet aan op de bedoeling	
Het recept is in strijd met een andere, externe regel	
Het recept sluit niet op de nieuwe situatie aan	
Het recept sluit niet aan op een eerdere, andere activiteit (startsituatie)	
De output (het resultaat) van het recept wordt niet gebruikt	
Het recept is in orde, het probleem zit in iemands gedachten	

SITUATIES

DE ALGEMENE SITUATIE

- Je werkt als weekend- en vakantiebaan in de catering van een groot bedrijf. Deze baan is belangrijk voor je, dus je wilt 'm niet verliezen.
- Omdat er vandaag belangrijke gasten komen die een warm welkom moeten krijgen, krijg je de opdracht om een cake te bakken.
- Het recept dat je moet volgen, ligt klaar in de keuken.
- Je werkt alleen.
- Iedere situatie staat op zichzelf. Houd dus geen rekening met de situatie ervoor.

Situatie 'Licht'

Je loopt naar de keuken en uit de omroepinstallatie klinkt de mededeling dat er vanwege bezuinigingsmaatregelen geen verlichting aan mag.
Instructie: ga naar de lijst met receptproblemen en vul 'Licht' in bij het probleem waar het hier om gaat.

Situatie 'Absent'

Je komt de keuken in en ziet dat het recept niet aanwezig is.
Instructie: ga naar de lijst met receptproblemen en vul 'Absent' in bij het probleem waar het hier om gaat.

Situatie 'Russisch'

Je wilt aan de slag, maar ziet direct dat het recept in het Russisch is geschreven.
Instructie: ga naar de lijst met receptproblemen en vul 'Russisch' in bij het probleem waar het hier om gaat.

Situatie 'Quiche'

Voor je ligt een recept om de cake te bakken. Jij vindt echter dat een quiche beter past bij de gelegenheid.
Instructie: ga naar de lijst met receptproblemen en vul 'Quiche' in bij het probleem waar het hier om gaat.

Situatie 'Chocoladetaart'

Bovenaan het recept staat met grote letters 'CHOCOLADETAART'. Vanaf de eerste regel gaan alle aanwijzingen inderdaad over het bakken van een chocoladetaart.
Instructie: ga naar de lijst met receptproblemen en vul 'Chocoladetaart' in bij het probleem waar het hier om gaat.

Situatie 'Boter'

Het recept schrijft totaal 250 gram boter voor. Even verderop lees je in hetzelfde recept dat je totaal 100 gram boter moet gebruiken.
Instructie: ga naar de lijst met receptproblemen en vul 'Boter' in bij het probleem waar het hier om gaat.

Situatie 'Handvol'

Het recept schrijft ongeveer een handvol bloem voor.

Instructie: ga naar de lijst met receptproblemen en vul 'Handvol' in bij het probleem waar het hier om gaat.

Situatie 'Eieren'

Je hebt volgens de aanwijzingen alle ingrediënten gemengd. Het deeg blijft echter erg droog. Je ziet dat er nog een doosje met zes eieren is klaargezet. Maar het recept noemt nergens eieren.

Instructie: ga naar de lijst met receptproblemen en vul 'Eieren' in bij het probleem waar het hier om gaat.

Situatie 'Minicake'

Je hebt alle aanwijzingen van het recept zonder problemen kunnen uitvoeren. Als je de cakevorm pakt, zie je dat er veel te weinig deeg is voor de vorm.

Instructie: ga naar de lijst met receptproblemen en vul 'Minicake' in bij het probleem waar het hier om gaat.

Situatie 'Noten'

Het recept omvat fijngehakte hazelnoten; je ziet dat er inderdaad een bakje hazelnoten klaarstaat. Dan ontdek je plotseling een bordje aan de muur met het opschrift: 'Verboden om in deze keuken noten te verwerken'.

Instructie: ga naar de lijst met receptproblemen en vul 'Noten' in bij het probleem waar het hier om gaat.

Situatie 'Turbo-oven'

Het recept besluit met de aanwijzing om de cake tachtig minuten in de houtgestookte oven te zetten. In de moderne elektrische turbo-oven is de cake na zestig minuten al erg donkerbruin.

Instructie: ga naar de lijst met receptproblemen en vul 'Turbo-oven' in bij het probleem waar het hier om gaat.

Situatie 'Suikervrij'

Je cake is perfect gelukt en staat klaar voor een warm welkom aan de bezoekers. Deze blijken echter allemaal diabetes te hebben en niet van de cake te mogen eten.

Instructie: ga naar de lijst met receptproblemen en vul 'Suikervrij' in bij het probleem waar het hier om gaat.

VIGNETTES INTER-RATER AGREEMENT TEST (ENGLISH)

TEST COMPREHENSIVE READING (A)

- This test involves reading comprehension and agreement recognition.
- The situation involves a recipe and the problems that are involved within and around the recipe.
- Below is a list of twelve types of problems involved within and around a recipe.
- Read the following scenarios and then record which scenario is associated with the listed problem.
- Each scenario can be recorded only once. You may associate more than one scenario to a particular problem.
- You may make corrections.

PROBLEM WITH THE RECIPE	ASSOCIATED SITUATION
The entire recipe is absent	
The recipe contradicts itself	
The recipe is too general	
The recipe is not complete, something is missing	
The recipe is on a content level complete, but is too limited	
The recipe is incomprehensible	
The recipe doesn't match the intention	
The recipe contradicts another, external rule	
The recipe doesn't cover the new situation	
The recipe doesn't connect with a prior, different activity (start condition)	
The output (result) of the recipe is not used	
The recipe is fine, the problem is in someone's mind	

SCENARIOS

THE GENERAL SITUATION

- You work for a large company in catering during weekends and holidays. This job is important to you and you do not want to lose it.
- Because today there will be some important guests who must be given a warm welcome, you are given the task of baking a cake.
- The recipe you must follow has been placed in the kitchen.
- You work alone.
- Every scenario is independent. Do not consider any information from the previous scenario.

Scenario "Light"

You walk to the kitchen and hear a message broadcast from the intercom system that no lights may be turned on because of budgetary constraints.

Instruction: go to the list with the recipe problems and record "Light" in the space next to the associated problem.

Scenario "Absent"

You enter the kitchen and see that the recipe is missing.

Instruction: go to the list with the recipe problems and record "Absent" in the space next to the associated problem.

Scenario "Russian"

You want to get started but immediately notice that the recipe is written in Russian.

Instruction: go to the list with the recipe problems and record "Russian" in the space next to the associated problem.

Scenario "Quiche"

Before you lies a recipe to bake a cake. You think that a quiche is more suitable for the occasion.

Instruction: go to the list with the recipe problems and record "Quiche" in the space next to the associated problem.

Scenario "Chocolate pie"

At the top of the recipe, the word 'CHOCOLATE PIE' is printed in bold letters. From the first line, all instruction is indeed to bake a chocolate pie.

Instruction: go to the list with the recipe problems and record "Chocolate pie" in the space next to the associated problem.

Scenario "Butter"

The recipe tells you to use 250 grams of butter. You read on to discover that the same recipe explains at a later stage that you must never use more than 100 grams of butter.

Instruction: go to the list with the recipe problems and record "Butter" in the space next to the associated problem.

Scenario "Handful"

The recipe calls for about a handful of flour.

Instruction: go to the list with the recipe problems and record "Handful" in the space next to the associated problem.

Scenario "Eggs"

You have mixed all the ingredients together according to the recipe. The mixture is really dry. You notice an unused box of eggs. The recipe doesn't include eggs.

Instruction: go to the list with the recipe problems and record "Eggs" in the space next to the associated problem.

Scenario "Minicake"

You have completed all the instructions in the recipe without problem. As you reach for the cake form, you see that there is not enough batter for the form.

Instruction: go to the list with the recipe problems and record "Minicake" in the space next to the associated problem.

Scenario "Nuts"

The recipe involves preparing finely chopped hazelnuts; you see that there is indeed a dish of hazelnuts ready for use. You suddenly discover a notice on the kitchen wall that states: "It is forbidden to process nuts in this kitchen".

Instruction: go to the list with the recipe problems and record "Nuts" in the space next to the associated problem.

Scenario "Turbo oven"

The recipe instructs for the cake to be baked in a wood-burning stove for eighty minutes. In the modern electric turbo-oven, the cake is already brown after sixty minutes.

Instruction: go to the list with the recipe problems and record "Turbo oven" in the space next to the associated problem.

Scenario "Sugar-free"

Your cake has turned out perfectly and is ready to offer a warm welcome to the visitors. It appears that all of the visitors have diabetes and are not allowed to eat the cake.

Instruction: go to the list with the recipe problems and record "Sugar-free" in the space next to the associated problem.

APPENDIX 3A
QUESTIONNAIRE USABILITY TEST PROTOCOL (DUTCH)

PROTOCOL GEBRUIKERSVRIENDELIJKHEIDSTEST

RICHTLIJNEN OM DE DEELNEMER OP DE TEST VOOR TE BEREIDEN

De deelnemer zit voor een computer. De voorpagina van de online vragenlijst, te weten een foto met een doorklikinstructie, is afgebeeld. De testleider zit ten minste op een meter afstand, bij voorkeur niet achter de deelnemer om de suggestie van over iemands schouder meekijken te voorkomen. De testleider beschikt over een uitdraai van dit testprotocol en een memorecorder.

[Testleider zet memorecorder aan]

Dag *[Naam deelnemer]*, Je helpt mee een onderzoek te testen.
Geef je toestemming dat ik deze test opneem?

[Antwoord deelnemer]

Ik heb een online vragenlijst gemaakt.
Daarvan wil ik weten of hoe duidelijk die is voor iemand die hem invult.
Daarom vraag ik je om ook deze vragenlijst in te vullen, en daarbij hardop te praten.

Bij het hardop praten, is het de bedoeling dat je alles zegt wat je denkt, voelt, ziet, of op een andere manier ervaart.

Ga niet eerst bedenken wat je gaat zeggen. En je hoeft ook niets uit te leggen. Zeg gewoon direct wat je denkt, voelt, ziet, of op een andere manier ervaart.

Als je even vergeet om hardop te praten, dan krijg je van mij een seintje.
Heb je nog vragen?

[Antwoord deelnemer + eventuele reactie testleider]

Goed. Om te wennen aan het hardop praten, heb ik twee oefenvragen voor je.
Klik op de startknop voor de eerste.

[Officiële inleiding op de vragenlijst + doorklik naar eerste oefenvraag]

Hoe vond je dit gaan? *[+ indien nodig aanvullende instructies over verbaliseren]*

Klik op de startknop voor de tweede oefenvraag.
[Tweede oefenvraag verschijnt]

Hoe vond je dit gaan? *[+ indien nodig aanvullende instructies over verbaliseren]*

We gaan nu met de echte vragenlijst beginnen. Klik op de startknop.

RICHTLIJNEN VOOR COMMUNICATIE MET DE DEELNEMER GEDURENDE DE TEST

Situatie: de deelnemer stopt met verbaliseren
Testleider: "En nu?"

Situatie: de deelnemer begrijpt de vraag niet
Testleider: "Lees de vraag opnieuw. Hiermee help je me om de vragen te verbeteren."

Situatie: de deelnemer begrijpt niet hoe of waar hij moet antwoorden
Testleider: "Kijk nog eens. Hiermee help je me om de opzet te verbeteren."

Situatie: de deelnemer krijgt te maken met een technische storing
Testleider: Er is blijkbaar een technisch probleem. Dat helpt me om inzicht in de kwetsbaarheid van de vragenlijst te krijgen. Ik zal de vragenlijst opnieuw opstarten. *[Onderbreking om het system te herstellen]*. Je kunt nu weer verder.

Situatie: de deelnemer heeft andere vragen
Testleider: Probeer het nog eens.

QUESTIONNAIRE USABILITY TEST PROTOCOL (ENGLISH)

PROTOCOL USER FRIENDLINESS TEST

GUIDELINES TO PREPARE THE PARTICIPANT FOR THE TEST

The participant sits in front of a computer. The cover page of the online questionnaire features a photograph with click through instructions. The test monitor sits at least a meter away, preferably not behind the participant to prevent the suggestion that he/she is looking over the person's shoulder. The test monitor has a printout of this test protocol and a memo recorder.

[Test monitor switches on the memo recorder]

Hello *[Name of the participant]*, You are helping to test a study.
Do you give your permission for me to record this test?

[Participant's answer]

I have compiled an online questionnaire.
I would like to know how unambiguous it is for the person completing it.
This is why I am also going to ask you to complete the questionnaire and speak aloud.

When you speak aloud, our intention is for you to say everything that you think, feel, see or experience in another way.

Don't think about what you are going to say in advance. You don't need to explain anything either.
Just say what you think, feel, see or experience in another way.

If you forget to speak aloud, I will give you a sign.
Do you have any questions?

[Participant's answer + possible reply from the test monitor]

Good. In order for you to get used to speaking aloud, I have two practice questions for you.
Click on the start button for the first one.

[Official introduction to the questionnaire + click through to the first practice question]

How did you feel that went? *[+ if necessary additional instructions on verbalization]*

Click on the start button for the second practice question.
[Second practice question appears]

How do you feel that went? *[+ if necessary additional instructions on verbalization]*

We are now going to begin with the actual questionnaire. Click on the start button.

GUIDELINES FOR COMMUNICATING WITH THE PARTICIPANT DURING THE TEST

Situation: the participant stops verbalizing
Test monitor: "And now?"

Situation: the participant doesn't understand the question
Test monitor: "Read the question again. This will help me to improve the questions."

Situation: the participant doesn't understand how or where he must answer
Test monitor: "Look again. This will help me to improve the questionnaire's design."

Situation: the participant encounters a technical issue
Test monitor: There seems to be a technical problem. This helps me get insights into the questionnaire's weaknesses. I will restart the questionnaire. *[Interruption in order to restore the system]*. You may now continue.

Situation: the participant has other questions
Test monitor: Please try again.

QUESTIONNAIRE USABILITY TEST WARM-UP QUESTIONS (DUTCH)

Pagina: 1

(Start)

Pagina: 2

1.

OEFENVRAAG 1
Algemene informatie:
- U bent uzelf, maar werkt tegenwoordig als buschauffeur.
- Het is belangrijk om op tijd bij de volgende halte te zijn.

Situatie 'Verkeerslicht':
U nadert een kruispunt. Uw verkeerslicht staat op rood. Terwijl u staat te wachten, valt het u op dat ook al het verkeer vanuit de andere richtingen een rood verkeerslicht heeft. Na tien minuten staat nog steeds iedereen vanuit alle richtingen stil.

Ik blijf liever staan (voor alle zekerheid) dan doorgaan naar eigen inzicht (met alle risico's van dien).

Ik blijf staan   ○ ○ ○ ○ ○ ○   Ik ga door

Einde oefenvraag 1. Wacht even.

(Ga verder naar oefenvraag 2)

Pagina: 3

2.

OEFENVRAAG 2
Algemene informatie:
- U bent uzelf, maar werkt tegenwoordig als buschauffeur.
- Het is belangrijk om op tijd bij de volgende halte te zijn.

Situatie 'Gebroken been':
Een passagier met een gebroken been vraagt of u haar halverwege twee haltes kunt laten uitstappen.

Om te bepalen wat ik doe, probeer ik me voor te stellen wat mijn collega-chauffeurs zouden doen.

Ik kijk niet naar collega-   ○ ○ ○ ○ ○ ○   Ik kijk wel naar collega-
chauffeurs.   chauffeurs.

Einde oefenvraag 2. Wacht even.

(Ga naar het echte onderzoek)

QUESTIONNAIRE USABILITY TEST WARM-UP QUESTIONS (ENGLISH)

Page: 1

(Begin)

Page: 2

1.

PRACTICE QUESTION 1
General information:
- You are yourself but are currently working as a bus driver.
- It is important for you to arrive at the next stop on time.

"Traffic light" scenario:
You approach an intersection. The traffic light is red. While you are waiting you notice that the traffic coming from the opposite direction is also waiting at a red light. After ten minutes everyone is still waiting in all directions.

I prefer to stay where I am (to be certain) rather than continue on my own initiative (with all the risks this involves).

I stay where I am   ○ ○ ○ ○ ○ ○   I continue

End of practice question 1. Please wait a moment.

(Continue to practice question 2)

Page: 3

2.

PRACTICE QUESTION 2
General information:
- You are yourself but are currently working as a bus driver.
- It is important for you to arrive at the next stop on time.

"Broken leg" scenario:
A passenger with a broken leg asks whether you can let her get off the bus half way between two stops.

To decide what I will do I try to imagine what other drivers would do.

I don't consider other drivers.   ○ ○ ○ ○ ○ ○   I do consider other drivers.

End of practice question 2. Please wait a moment.

(Continue to the actual study)

QUESTIONNAIRE USABILITY TEST QAS-99 CODE FORM

QUESTION APPRAISAL SYSTEM (QAS-99):
CODING FORM

INSTRUCTIONS.   Use one form for EACH question to be reviewed.   In reviewing each question:

1)   *WRITE OR TYPE IN QUESTION NUMBER. ATTACH QUESTION.*

Question number or question here:

2)   *Proceed through the form - Circle or highlight YES or NO for each Problem Type (1a... 8).*

3)   *Whenever a YES is circled, write detailed notes on this form that describe the problem.*

STEP 1 - READING: Determine if it is difficult for the interviewers to read the question uniformly to all respondents.

1a. **WHAT TO READ**: Interviewer may have difficulty determining what *parts* of the question should be read.	YES NO
1b. **MISSING INFORMATION**: Information the interviewer needs to administer the question is *not* contained in the question.	YES NO
1c. **HOW TO READ**: Question is *not* fully scripted and therefore difficult to read.	YES NO

STEP 2 - INSTRUCTIONS: Look for problems with any introductions, instructions, or explanations from the *respondent's* point of view.

2a. **CONFLICTING OR INACCURATE INSTRUCTIONS**, introductions, or explanations.	YES NO
2b. **COMPLICATED INSTRUCTIONS**, introductions, or explanations.	YES NO

STEP 3 - CLARITY: Identify problems related to communicating the *intent or meaning* of the question to the respondent.

3a. **WORDING**: Question is lengthy, awkward, ungrammatical, or contains complicated syntax.	YES NO
3b. **TECHNICAL TERM(S)** are undefined, unclear, or complex.	YES NO
3c. **VAGUE**: There are multiple ways to interpret the question or to decide what is to be included or excluded.	YES NO
3d. **REFERENCE PERIODS** are missing, not well specified, or in conflict.	YES NO

STEP 4 - ASSUMPTIONS: Determine if there are problems with assumptions made or the underlying logic.

4a. **INAPPROPRIATE ASSUMPTIONS** are made about the respondent or about his/her living situation.	YES NO
4b. **ASSUMES CONSTANT BEHAVIOR** or experience for situations that vary.	YES NO
4c. **DOUBLE-BARRELED**: Contains more than one implicit question.	YES NO

STEP 5 - KNOWLEDGE/MEMORY: Check whether respondents are likely to *not know* or have trouble *remembering* information.

5a. **KNOWLEDGE** may not exist: Respondent is unlikely to *know* the answer to a factual question.	YES NO
5b. **ATTITUDE** may not exist: Respondent is unlikely to have formed the attitude being asked about.	YES NO
5c. **RECALL** failure: Respondent may not *remember* the information asked for.	YES NO
5d. **COMPUTATION** problem: The question requires a difficult mental calculation.	YES NO

STEP 6 - SENSITIVITY/BIAS: Assess questions for sensitive nature or wording, and for bias.

6a. **SENSITIVE CONTENT** (general): The question asks about a topic that is embarrassing, very private, or that involves illegal behavior.	YES NO
6b. **SENSITIVE WORDING** (specific): Given that the general topic is sensitive, the wording should be improved to minimize sensitivity.	YES NO
6c. **SOCIALLY ACCEPTABLE** response is implied by the question.	YES NO

STEP 7 - RESPONSE CATEGORIES: Assess the adequacy of the range of responses to be recorded.

7a. **OPEN-ENDED QUESTION** that is inappropriate or difficult.	YES NO
7b. **MISMATCH** between question and response categories.	YES NO
7c. **TECHNICAL TERM(S)** are undefined, unclear, or complex.	YES NO
7d. **VAGUE** response categories are subject to multiple interpretations.	YES NO
7e. **OVERLAPPING** response categories.	YES NO
7f. **MISSING** eligible responses in response categories.	YES NO
7g. **ILLOGICAL ORDER** of response categories.	YES NO

STEP 8 - OTHER PROBLEMS: Look for problems not identified in Steps 1 - 7.

8. Other problems not previously identified.	YES NO

2-4

Questionnaire Appraisal System
QAS-99
Research Triangle Institute

2-5

Questionnaire Appraisal System
QAS-99
Research Triangle Institute

QUESTIONNAIRE EMAIL PRENOTIFICATION LETTER (DUTCH AND ENGLISH)

Subject Study participation Kerstin van Tiggelen

Dear Colleague,
Tomorrow you will receive an invitation from Kerstin Van Tiggelen to participate in a study. I would like to ask you to take part in this research. It is part of Kerstin's promotion study and also contributes to the further development of our group. One of the most important aspects in the people survey is the experienced role ambiguity. This study contributes to the understanding of and assistance with role ambiguity. By participating in this study you are not only performing a service to Kerstin and her scientific research but also to PC and yourself! Thank you in advance for your participation. Yours sincerely, Jan Bosman

Study by Kerstin van Tiggelen
In 2000 a theory was developed at Stanford University about the "ecology of rules" (March, Schulz & Zhou). It is a study of the life cycle of rules through the influence of rule makers and changes in the environment. Kerstin is expanding this ecology with holes in the rules and rule users. Her research is centered on the influence of rule users on the life cycle of holes in rules. This study looks at the behavior and the considerations of professionals in particular when they encounter a situation in which they cannot rely on rules (because there is a lack of rules, because they are unclear and so on); a highly topical theme, particularly in organizations such as ConQuaestor where employees operate with a high degree of autonomy and values that correspond to their ambitions.

QUESTIONNAIRE EMAIL INVITATION "S1" (DUTCH AND ENGLISH)

Subject Urgent: open the questionnaire

Good afternoon everyone,
As mentioned by Jan please see attached for the link to the questionnaire:
http://www.thesistools.com/web/?id=173386

If the link doesn't work please copy and paste or type the address into your browser.

Please open it right away!

Thanks in advance, Vianey.

APPENDIX 8

QUESTIONNAIRE EMAIL REMINDER "S1" (DUTCH AND ENGLISH)

E-mail Tonen

van	Vianey Zwezerijnen < @conquaestor.nl>	relatie:	ConQuaestor
naar	@conquaestor.nl	businesscard	Vianey Zwezerijnen
onderwerp	FW: Herinnering: vragenlijst openen!	project:	geen
cc	kerstin@accentgrave.nl	map:	
status	gelezen		Postvak-In
datum ontvangen	24-02-2011 13:48	publiek:	deze e-mail is publiek toegankelijk
bijlagen	image003.jpg (1,93 KB)		
alle bijlagen			
forward/reply met	<kerstin@accentgrave.nl> standaard e-mailadres		
acties	- meer acties -		

De vragenlijst van afgelopen dinsdag was bedoeld om alleen DOOR TE LEZEN. Je kon dus niets invullen, behalve de datum en je mailadres om de link naar de echte vragenlijst te krijgen.

Deze volgorde is bijzonder belangrijk voor het onderzoek. Dus graag alsnog even doen: http://www.thesistools.com/web/?id=173386
Lees de tekst (inclusief de inleiding!) zorgvuldig door, en vergeet vooral niet om je mailadres in te vullen.

Als de link werkt, kopieer of typ dit adres dan in de adresbalk van je browser.

Hieronder staat ook nog de mail die Jan naar je heeft gestuurd om aan te geven dat het op prijs wordt gesteld als je aan dit onderzoek meewerkt.

Alvast bedankt voor de medewerking!

Vianey Zwezerijnen

Beste Collegae,

Morgen ontvangen jullie een uitnodiging van Kerstin Van Tiggelen voor het deelnemen aan een onderzoek. Graag wil ik jullie vragen om mee te doen aan dit onderzoek. Dit onderzoek is in het kader van het promotieonderzoek van Kerstin en levert daarnaast een bijdrage aan de verdere ontwikkeling van onze groep. Een van de belangrijkste aandachtspunten vanuit de people survey is de ervaren rolonduidelijkheid. Dit onderzoek levert een bijdrage aan het begrijpen en verhelpen van deze rolonduidelijkheid. Door deelname aan het onderzoek bewijs je daarom niet alleen een dienst aan Kerstin en haar wetenschappelijke onderzoek, maar ook aan PC en jezelf! Alvast bedankt voor jullie deelname.

Met vriendelijke groeten,

Jan Bosman

Subject Reminder: open the questionnaire!

The questionnaire I sent you last Tuesday was only intended to be READ THROUGH. You were not able to fill anything in except the date and your email address to receive the link to the actual questionnaire.

This sequence is important for the study, so please follow the procedure:
http://www.thesistools.com/web/?id=173386
Read the text through carefully and please don't forget to enter your email address.

If the link doesn't work please copy and paste or type the address into your browser.

Thanks in advance for your cooperation!

APPENDIX 9

QUESTIONNAIRE EMAIL INVITATION "S2T1" (DUTCH AND ENGLISH)

E-mail Tonen

van	Jan Bosman < @conquaestor.nl>	relatie:	ConQuaestor
naar	users @conquaestor.nl	businesscard	Jan Bosman
	users @conquaestor.nl	project:	geen
	users @conquaestor.nl	map:	
	community @conquaestor.nl		Archief
	community @conquaestor.nl		
	community @conquaestor.nl	publiek:	deze e-mail is publiek toegankelijk
	@conquaestor.nl		
	@conquaestor.nl		
onderwerp	Deelname onderzoek Kerstin van Tiggelen		
cc	@conquaestor.nl, kerstin@accentgrave.nl		
status	gelezen		
datum ontvangen	21-02-2011 21:51		
forward/reply met	<kerstin@accentgrave.nl> standaard e-mailadres		
acties	- meer acties -		

Beste Collega,

Morgen ontvangen jullie een uitnodiging van Kerstin Van Tiggelen voor het deelnemen aan een onderzoek. Graag wil ik jullie vragen om mee te doen aan dit onderzoek. Dit onderzoek is in het kader van het promotieonderzoek van Kerstin en levert daarnaast een bijdrage aan de verdere ontwikkeling van onze groep. Een van de belangrijkste aandachtspunten vanuit de people survey is de ervaren rolonduidelijkheid. Dit onderzoek levert een bijdrage aan het begrijpen en verhelpen van deze rolonduidelijkheid. Door deelname aan het onderzoek bewijs je daarom niet alleen een dienst aan Kerstin en haar wetenschappelijke onderzoek, maar ook aan PC en jezelf! Alvast bedankt voor jullie deelname.

Met vriendelijke groeten,

Jan Bosman

Onderzoek van Kerstin van Tiggelen
In 2000 is aan Stanford University een theorie ontwikkeld over de 'ecology of rules' (March, Schulz & Zhou). Hierin wordt de levenscyclus van regels bestudeerd aan de hand van de invloed van regelmakers en veranderingen in de omgeving. Kerstin breidt deze ecologie uit met gaten in regels en regelgebruikers. Het onderwerp van haar onderzoek richt zich daarmee op de invloed van regelgebruikers op de levenscyclus van gaten in regels. Dit onderzoek kijkt met name naar het gedrag en de afwegingen van professionals als ze een situatie tegenkomen waarbij ze niet kunnen terugvallen op regels (wegens ontbreken, onduidelijkheid enzovoort). Een zeer actueel thema, zeker in organisaties zoals ConQuaestor waar medewerkers met een hoge mate van autonomie opereren, en sturen op waarden tot de ambities behoort.

Subject Please complete the questionnaire today!
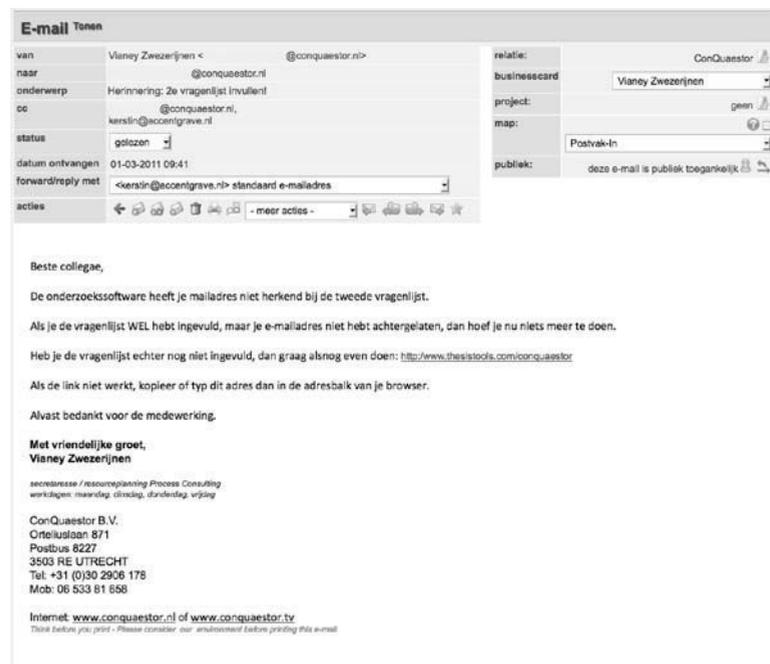
Good afternoon colleagues,

Thank you for reading through the first questionnaire. Please complete the questionnaire today at http:/www.thesistools.com/conquaestor

If the link doesn't work please copy and paste or type the address into your browser.

Thanks in advance for your cooperation!

APPENDIX 10

QUESTIONNAIRE EMAIL REMINDER "S2T1" (DUTCH AND ENGLISH)

Subject Reminder: Complete the 2nd questionnaire!

Dear colleagues,

The study software did not recognize your email address for the second questionnaire.

If you have completed it but didn't enter your email address then you do not need to take any further action.

If you haven't yet completed the questionnaire, please do so: http:/www.thesistools.com/conquaestor

If the link doesn't work please copy and paste or type the address into your browser.

Thanks in advance for your cooperation.

APPENDIX 11

QUESTIONNAIRE BANNER INVITATION "S2T1" (DUTCH AND ENGLISH)

PARTICIPATE! PEOPLE SURVEY ON ROLE AMBIGUITY

You have received an invitation from Kerstin Van Tiggelen to participate in a study. We would like you to take part in this research!

This study is part of Kerstin's promotion study and also contributes to the further development of ConQuaestor. One of the most important aspects in the people survey is the experienced role ambiguity. This study contributes to the understanding of and assistance with role ambiguity. By participating in this study you are not only performing a service to Kerstin and her scientific research but also to ConQuaestor and yourself!

Thank you in advance for your participation! To participate please click on the following link:

QUESTIONNAIRE @INC INVITATION "S2T1" (DUTCH AND ENGLISH)

Role ambiguity study

You have received an invitation to take part in a study that relates to an aspect in our People survey: role ambiguity. We would like to ask you to participate in this research!
This research is part of Kerstin van Tiggelen's promotion study (Kerstin is the editor of various ConQuaestor productions) and also contributes to the further development of ConQuaestor.

One of the most important aspects in the people survey is the experienced role ambiguity. This study contributes to the understanding of and assistance with role ambiguity. By participating in this study, you are not only performing a service to Kerstin and her scientific research but also to ConQuaestor and yourself; furthermore the study also supports KiKa, the fund for children suffering from cancer.

Thanks in advance for your cooperation!
To participate please click on the following link: http://www.thesistools.nl/conquaestor

QUESTIONNAIRE "S1" INTRODUCTION AND CLOSING (DUTCH)

Pagina: 1

Welkom,

Dit is een onderzoek van de Universiteit voor Humanistiek. Hierover heeft u van Jan Bosman recent een aankondiging ontvangen. Deelnemen aan wetenschappelijk onderzoek sluit aan op de kennisambities van ConQuaestor. Veel collega's doen mee. Als dank wordt een bedrag aan KiKa, het fonds voor kinderen met kanker, overgemaakt.

In dit onderzoek beoordeelt u situaties. Het komt vooral aan op uw inlevingsvermogen.
De vragenlijst bestaat uit twee korte delen: deel I en deel II. Lees alle vragen aandachtig door. Maar: u kunt vandaag nog niets beantwoorden. U ontvangt morgen een nieuwe link per e-mail.

Belangrijk:
- Lees VANDAAG de vragenlijst goed door.
- Ontvang en gebruik MORGEN de link naar de vragenlijst die u kunt invullen.
- Waar 'NU INVULLEN!' staat, kunt u nu toch antwoorden.

Alvast bedankt. Kerstin van Tiggelen

(Start)

Pagina: 2

| 1. | **NU INVULLEN! De datum van vandaag is (bijvoorbeeld 16-02-2011):** |

(Naar DEEL I)

Pagina: 10

NU INVULLEN! Vult u hier uw e-mailadres in, dan ontvangt u morgen niet ten onrechte een herinneringsmail:

(Versturen)

Pagina: 11

Bedankt voor nu, en let u morgen op de link om de vragenlijst in te vullen.

QUESTIONNAIRE "S1" INTRODUCTION AND CLOSING (ENGLISH)

Page: 1

Welcome,

This is a study from the University for Humanistics. You have recently received some information from Jan Bosman concerning this research. Participating in scientific studies is consistent with ConQuaestor's knowledge goals. Many of your colleagues are taking part. To show our appreciation a contribution will be made to KiKa, the fund for children suffering from cancer.

In the study you are asked to assess different situations, especially as they pertain to your empathy. The questionnaire is comprises of two short sections: Part I and Part II. Read all the questions through carefully. However: you may not answer any of them today. Tomorrow you will receive a new link by email.

Important:
- Read the questions through carefully TODAY.
- Receive and follow the link to the questionnaire TOMORROW to complete it.
- Where it says 'FILL IN NOW!' you can enter your answers.

Thank you in advance, Kerstin van Tiggelen

(Begin)

Page: 2

| 1. | **FILL IN NOW! Today's date is (for example 16-02-2011):** |

Page: 10

| 2. | **FILL IN NOW! Enter your email address here so we can send you the link to the subsequent questionnaire tomorrow and you will not be sent an unnecessary reminder email:** * |

(Send)

Page: 11

Thanks, that's all for now, watch for the link that we will send you tomorrow so you can complete the questionnaire.

APPENDIX 14A
QUESTIONNAIRE "S2T1" (DUTCH)

Welkom,

Dit is een onderzoek van de Universiteit voor Humanistiek. Deelnemen aan wetenschappelijk onderzoek sluit aan op de kennisambities van ConQuaestor. Veel collega's doen mee. Als dank wordt een bedrag aan KiKa, het fonds voor kinderen met kanker, overgemaakt.

In dit onderzoek beoordeelt u situaties. Het komt vooral aan op uw inlevingsvermogen. De vragenlijst bestaat uit twee korte delen: deel I en deel II. Lees alle vragen aandachtig door. Invullen vraagt in totaal niet meer dan ongeveer tien minuten van uw tijd.

Belangrijk: uw antwoorden blijven anoniem.

Alvast hartelijk dank. Kerstin van Tiggelen

(Start)

1.

DEEL I: Over u en uw werk

Ik ben een:

○ Man
○ Vrouw

2.

Mijn leeftijd is:

[ ]

3.

Mijn hoogste opleiding is:

○ vmbo   ○ mbo   ○ post-hbo/MBA
○ havo   ○ hbo   ○ w.o.
○ vwo

4.

In mijn werk kom ik regelmatig met nieuwe plannen.

Helemaal oneens ○ ○ ○ ○ ○ Helemaal eens

5.

Ik neem meteen initiatief, zelfs als collega's dat niet doen.

Helemaal oneens ○ ○ ○ ○ ○ Helemaal eens

6.

Meestal doe ik meer dan dat er van mij wordt gevraagd.

Helemaal oneens ○ ○ ○ ○ ○ Helemaal eens

7.

Als er iets misgaat op mijn werk, zoek ik meteen naar een oplossing.

Helemaal oneens ○ ○ ○ ○ ○ Helemaal eens

8.

Ik werk binnen ConQuaestor bij:

○ Management Consulting
○ Process Consulting
○ Finance Professionals
○ Interim Management
○ Outsourcing
○ Anders

9.   **Mijn werkplek bevindt zich:**

Bij ConQuaestor   ○ ○ ○ ○ ○   Bij klanten

10.   **Ik kan zelf beslissen op welk moment ik een taak doe.**

Helemaal oneens   ○ ○ ○ ○ ○   Helemaal eens

11.   **Ik kan zelf de volgorde van mijn werkzaamheden bepalen.**

Helemaal oneens   ○ ○ ○ ○ ○   Helemaal eens

12.   **Ik kan zelf beslissen hoe ik mijn werk doe.**

Helemaal oneens   ○ ○ ○ ○ ○   Helemaal eens

13.   **Tot slot van deel I nog enkele vragen over de duidelijkheid van uw taken.**

	Altijd	Vaak	Soms	Nooit
Weet u precies wat anderen op uw werk van u verwachten?	○	○	○	○
Weet u precies waarvoor u wel, en waarvoor u niet verantwoordelijk bent?	○	○	○	○
Weet u precies hoe uw directe leiding over uw prestaties denkt?	○	○	○	○
Ligt duidelijk voor u vast, wat precies uw taak is?	○	○	○	○
Weet u wat u van andere mensen op uw afdeling mag verwachten?	○	○	○	○

14.   **Wat vindt u het minst duidelijk aan uw huidige rol en/of taken?**

[Naar deel II]

DEEL II: Situaties

U krijgt vijf situaties met een probleem voorgelegd. Daarin speelt u steeds zelf de hoofdrol.

Ieder situatie eindigt met dezelfde vijf stellingen.

Probeer uzelf zoveel mogelijk in te leven in de situatie en uw positie.

Dit is de situatie die iedere keer terugkomt:
- U bent uzelf, maar werkt tegenwoordig in de catering van ConQuaestor.
- Er komen vandaag belangrijke gasten, die een warm welkom moeten krijgen.
- U krijgt de opdracht om een cake te bakken.
- Het recept dat u moet volgen, ligt klaar in de keuken.

[Naar situatie 1 van 5]

15.   **Situatie: Russisch**

In het kort: belangrijke gasten, warm welkom, cake bakken, recept in de keuken.

U wilt aan de slag, maar ziet direct dat het recept in het Russisch is geschreven.

Ik voel me verantwoordelijk voor het oplossen van deze situatie.
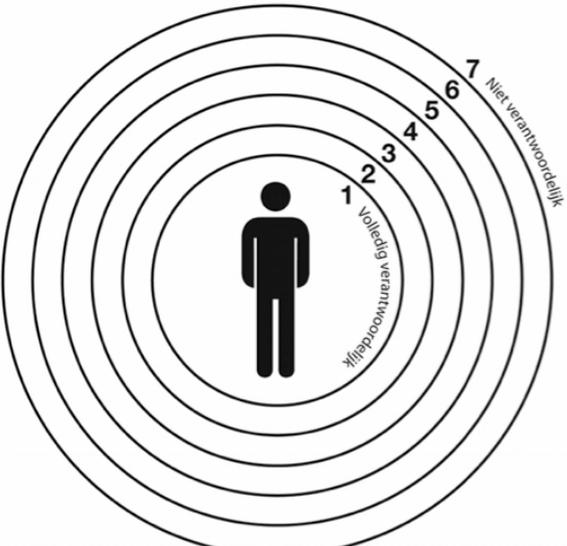
Volledig verantwoordelijk   ○ ○ ○ ○ ○ ○ ○   Niet verantwoordelijk

16.   **Ik stop liever (voor alle zekerheid) dan doorgaan naar eigen inzicht (met alle risico's van dien).**

Ik stop   ○ ○ ○ ○ ○ ○ ○   Ik ga door

17.   **Om te bepalen wat ik doe, probeer ik me een vergelijkbaar recept te herinneren.**

Ik kijk niet naar een vergelijkbaar recept   ○ ○ ○ ○ ○ ○ ○   Ik kijk wel naar een vergelijkbaar recept

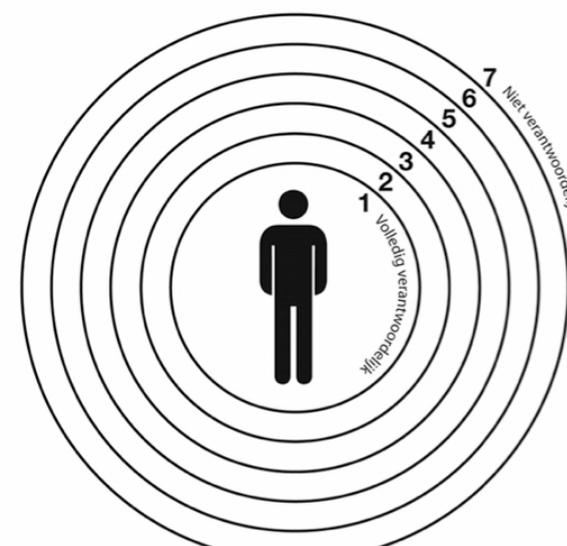18.   **Om te bepalen wat ik doe, probeer ik me voor te stellen wat mijn collega-koks zouden doen.**

Ik kijk niet naar collega-koks   ○ ○ ○ ○ ○ ○ ○   Ik kijk wel naar collega-koks

19.   **Mijn manager komt over twee uur. Ik vertel hem over het probleem.**

○ Ja, voordat ik begin, dus ik wacht twee uur
○ Ja, achteraf als ik klaar ben, dus ik ga nu door
○ Nee

(Naar situatie 2 van 5)

20.   **Situatie: Eieren**

In het kort: belangrijke gasten, warm welkom, cake bakken, recept in de keuken.

U heeft volgens de aanwijzingen alle ingrediënten gemengd. Het deeg blijft echter erg droog. U ziet nog een ongebruikt doosje eieren staan. Het recept noemt nergens deze eieren.

Ik voel me verantwoordelijk voor het oplossen van deze situatie.

Volledig verantwoordelijk   ○ ○ ○ ○ ○ ○ ○   Niet verantwoordelijk

21.   **Ik stop liever (voor alle zekerheid) dan doorgaan naar eigen inzicht (met alle risico's van dien).**

Ik stop   ○ ○ ○ ○ ○ ○ ○   Ik ga door

22.   **Om te bepalen wat ik doe, probeer ik me een vergelijkbaar recept te herinneren.**

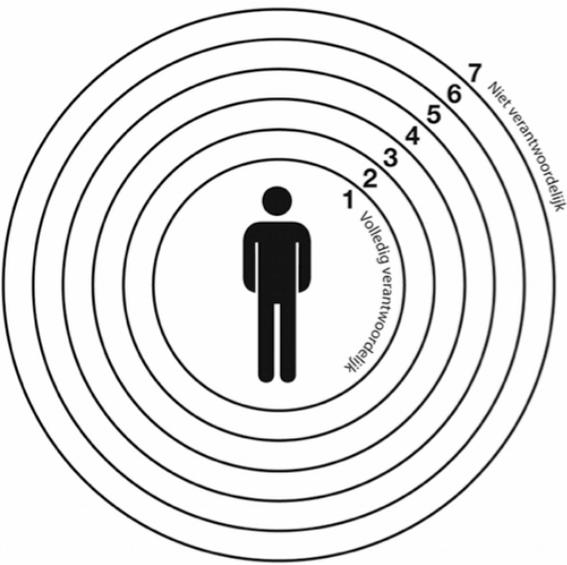Ik kijk niet naar een vergelijkbaar recept   ○ ○ ○ ○ ○ ○ ○   Ik kijk wel naar een vergelijkbaar recept

23.   **Om te bepalen wat ik doe, probeer ik me voor te stellen wat mijn collega-koks zouden doen.**

Ik kijk niet naar collega-koks   ○ ○ ○ ○ ○ ○ ○   Ik kijk wel naar collega-koks

24.   **Mijn manager komt over twee uur. Ik vertel hem over het probleem.**

○ Ja, voordat ik begin, dus ik wacht twee uur
○ Ja, achteraf als ik klaar ben, dus ik ga nu door
○ Nee

(Naar situatie 3 van 5)

25.

Situatie: Absent

In het kort: belangrijke gasten, warm welkom, cake bakken, recept in de keuken.

U wilt beginnen, maar u ziet dat er geen recept is.

Ik voel me verantwoordelijk voor het oplossen van deze situatie.

Volledig verantwoordelijk   ○ ○ ○ ○ ○ ○ ○   Niet verantwoordelijk

26.   **Ik stop liever (voor alle zekerheid) dan doorgaan <u>naar eigen inzicht</u> (met alle risico's van dien).**

Ik stop   ○ ○ ○ ○ ○ ○ ○   Ik ga door

27.   **Om te bepalen wat ik doe, probeer ik me een vergelijkbaar recept te herinneren.**

Ik kijk niet naar een   ○ ○ ○ ○ ○ ○ ○   Ik kijk wel naar een
vergelijkbaar recept   vergelijkbaar recept

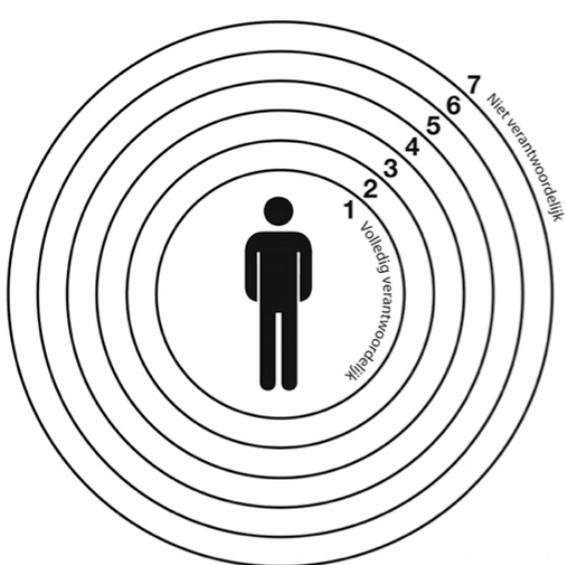**28.**   **Om te bepalen wat ik doe, probeer ik me voor te stellen wat mijn collega-koks zouden doen.**

Ik kijk niet naar collega-koks   ○ ○ ○ ○ ○ ○ ○   Ik kijk wel naar collega-koks

29.   **Mijn manager komt over twee uur. Ik vertel hem over het probleem.**

○ Ja, voordat ik begin, dus ik wacht twee uur
○ Ja, achteraf als ik klaar ben, dus ik ga nu door
○ Nee

(Naar situatie 4 van 5)

30.

Situatie: Boter

In het kort: belangrijke gasten, warm welkom, cake bakken, recept in de keuken.

Het recept zegt dat u 250 gram boter in de mengbak moet doen. Even verderop leest u in hetzelfde recept dat u nooit meer dan 100 gram boter mag gebruiken.

Ik voel me verantwoordelijk voor het oplossen van deze situatie.

Volledig verantwoordelijk   ○ ○ ○ ○ ○ ○ ○   Niet verantwoordelijk

31.   **Ik stop liever (voor alle zekerheid) dan doorgaan <u>naar eigen inzicht</u> (met alle risico's van dien).**

Ik stop   ○ ○ ○ ○ ○ ○ ○   Ik ga door

32.   **Om te bepalen wat ik doe, probeer ik me een vergelijkbare situatie te herinneren.**

Ik kijk niet naar een   ○ ○ ○ ○ ○ ○ ○   Ik kijk wel naar een
vergelijkbare situatie   vergelijkbare situatie

33.   **Om te bepalen wat ik doe, probeer ik me voor te stellen wat mijn collega-koks zouden doen.**

Ik kijk niet naar collega-koks   ○ ○ ○ ○ ○ ○ ○   Ik kijk wel naar collega-koks

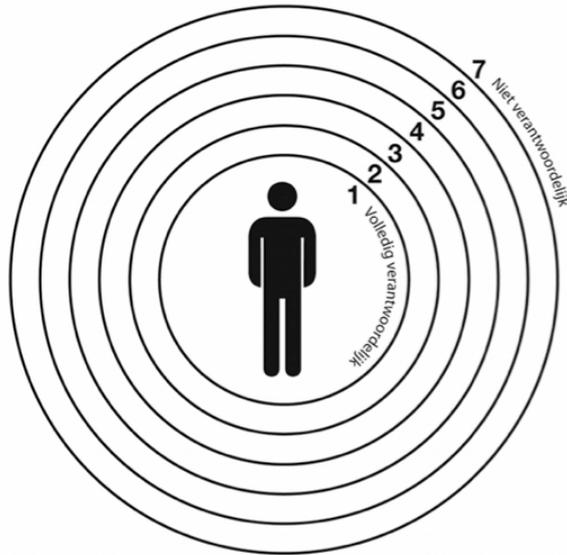**34.**   **Mijn manager komt over twee uur. Ik vertel hem over het probleem.**

○ Ja, voordat ik begin, dus ik wacht twee uur
○ Ja, achteraf als ik klaar ben, dus ik ga nu door
○ Nee

(Naar situatie 5 van 5)

35.   **Situatie: Noten**

In het kort: belangrijke gasten, warm welkom, cake bakken, recept in de keuken.

U leest in het recept dat u hazelnoten moet fijnsnijden. Een bordje op de muur van de keuken vermeldt echter: 'Verboden om in deze keuken noten te verwerken'.

Stelling: ik voel me verantwoordelijk voor het oplossen van deze situatie.

Volledig verantwoordelijk   ○ ○ ○ ○ ○ ○   Niet verantwoordelijk

36.   **Ik stop liever (voor alle zekerheid) dan doorgaan naar eigen inzicht (met alle risico's van dien).**

Ik stop   ○ ○ ○ ○ ○ ○   Ik ga door

37.   **Om te bepalen wat ik doe, probeer ik me een vergelijkbaar recept te herinneren.**

Ik kijk niet naar een
vergelijkbaar recept   ○ ○ ○ ○ ○ ○   Ik kijk wel naar een
vergelijkbaar recept

38.   **Om te bepalen wat ik doe, probeer ik me voor te stellen wat mijn collega-koks zouden doen.**

Ik kijk niet naar collega-koks   ○ ○ ○ ○ ○ ○   Ik kijk wel naar collega-koks

39.   **Mijn manager komt over twee uur. Ik vertel hem over het probleem.**

○ Ja, voordat ik begin, dus ik wacht twee uur
○ Ja, achteraf als ik klaar ben, dus ik ga nu door
○ Nee

(Naar afsluiting)

40.   **De datum van vandaag is (bijvoorbeeld 16-02-2011):** *

41.   **Ik heb deze vragenlijst bereikt via een:**

○ e-mail met link (graag mailadres invullen om herinneringsmail te voorkomen)
○ banner op ConQuaestor-intranet (ConneCQtor)

(Versturen)

QUESTIONNAIRE "S2T1" (ENGLISH)

Welcome,

This is a study from the University of Humanistic Studies. Participating in scientific studies is consistent with ConQuaestor's knowledge goals. Many of your colleagues are taking part. To show our appreciation, a contribution will be made to KiKa, the fund for children suffering from cancer.

In the study you are asked to assess different situations, especially as they pertain to your empathy. The questionnaire comprises two short sections: Part I and Part II. Read all the questions through carefully. It will take you only about ten minutes in all.

Important: your answers will remain anonymous.

Thank you very much in advance, Kerstin van Tiggelen

[Start]

---

1.   **PART I: About yourself and your work**

I am a:

○ Man
○ Woman

---

2.   **My age is:**

[ ]

---

3.   **My highest level of education is:**

○ vmbo   ○ mbo   ○ post-hbo/MBA
○ havo   ○ hbo   ○ w.o.
○ vwo

---

4.   **In my work I regularly suggest new ideas.**

Totally disagree   ○ ○ ○ ○ ○   Totally agree

---

5.   **I immediately take the initiative even if my colleagues don't.**

Totally disagree   ○ ○ ○ ○ ○   Totally agree

---

6.   **I usually do more than is expected of me.**

Totally disagree   ○ ○ ○ ○ ○   Totally agree

---

7.   **If something goes wrong at work I immediately try and find a solution.**

Totally disagree   ○ ○ ○ ○ ○   Totally agree

---

8.   **I work at ConQuaestor in:**

○ Management Consulting
○ Process Consulting
○ Finance Professionals
○ Interim Management
○ Outsourcing
○ Other

9.   **My workplace is located:**

At ConQuaestor   ○ ○ ○ ○ ○   At a customer's location

10.   **I can decide when to perform a task myself.**

Totally disagree   ○ ○ ○ ○ ○   Totally agree

11.   **I can determine the sequence of my duties myself.**

Totally disagree   ○ ○ ○ ○ ○   Totally agree

12.   **I can determine how I do my job myself.**

Totally disagree   ○ ○ ○ ○ ○   Totally agree

13.   **To conclude Part I there are just a few more questions about the unambiguity of your tasks.**

	Always	Often	Sometimes	Never
Do you know exactly what other people expect of you in your work?	○	○	○	○
Do you know exactly for what you are responsible and which areas are not your responsibility?	○	○	○	○
Do you know exactly what your superior thinks of your performance?	○	○	○	○
Is it clear to you exactly what your tasks are?	○	○	○	○
Do you know exactly what you can expect of other people in your department?	○	○	○	○

14.   **What do you think is most ambiguous about your current role and/or tasks?**

[   ]

(To Part II)

PART II: Scenarios

You will be presented with five situations that involve a problem. In each situation you play the main role.

Each situation ends with the same five statements.

Try to imagine yourself as much as possible in the situation and your position.

This is the recurring situation:
- You are yourself but are currently working in the catering division at ConQuaestor.
- Today there will be some important guests who must be given a warm welcome.
- You are given the task of baking a cake.
- The recipe you must follow has been placed in the kitchen.

(To situation 1 of 5)

15.

Scenario: Russian

To summarize: important guests, warm welcome, bake a cake, recipe is in the kitchen.

You want to get started but immediately notice that the recipe is written in Russian.

I feel responsible for solving this situation.
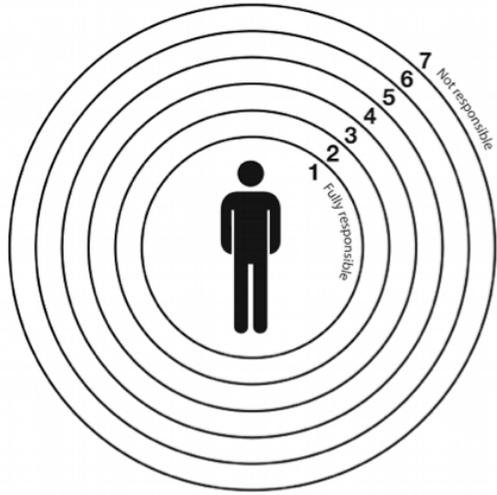
Totally responsible   ○ ○ ○ ○ ○ ○ ○   Not responsible

16.   **I prefer to stop (to be certain) than to continue on my own initiative (with all the risks this involves).**

I stop   ○ ○ ○ ○ ○ ○ ○   I continue

17.   **To decide what to do I try to think of a similar recipe.**

I don't look for a similar recipe   ○ ○ ○ ○ ○ ○ ○   I do look for a similar recipe

18.   **To decide what to do I try to imagine what my fellow cooks would do.**
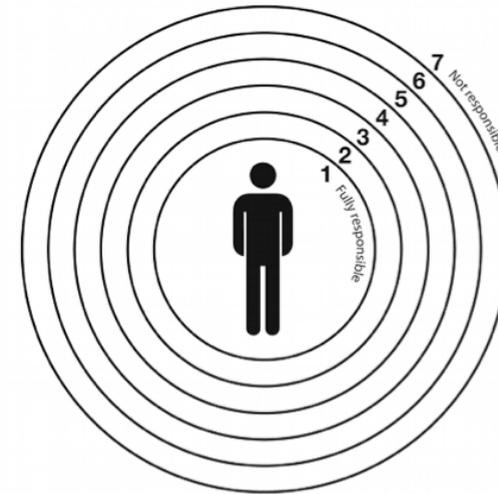
I don't consider what my fellow cooks would do   ○ ○ ○ ○ ○ ○ ○   I do consider what my fellow cooks would do

19.   **My manager will be back in about two hours. I will tell him about the problem.**

○ Yes, before I start, so I'll wait two hours
○ Yes, once I am finished, so I will continue
○ No

(To scenario 2 of 5)

20.

Scenario: Eggs

To summarize: important guests, warm welcome, bake a cake, recipe is in the kitchen.

You have mixed all the ingredients together according to the recipe. The mixture is really dry. You notice an unused box of eggs. The recipe doesn't include eggs.

I feel responsible for solving this situation.

Totally responsible   ○ ○ ○ ○ ○ ○ ○   Not responsible

21.   **I prefer to stop (to be certain) than to continue on my own initiative (with all the risks this involves).**

I stop   ○ ○ ○ ○ ○ ○ ○   I continue

22.   **To decide what to do I try to think of a similar recipe.**

I don't look for a similar recipe   ○ ○ ○ ○ ○ ○ ○   I do look for a similar recipe

23.   **To decide what to do I try to imagine what my fellow cooks would do.**
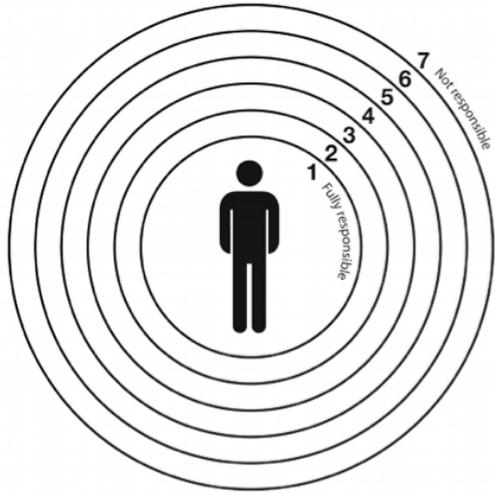
I don't consider what my fellow cooks would do   ○ ○ ○ ○ ○ ○ ○   I do consider what my fellow cooks would do

24.   **My manager will be back in about two hours. I will tell him about the problem.**

○ Yes, before I start, so I'll wait two hours
○ Yes, once I am finished, so I will continue
○ No

(To scenario 3 of 5)

25. **Scenario: Absent**

To summarize: important guests, warm welcome, bake a cake, recipe is in the kitchen.

You want to get started but you cannot find the recipe.

I feel responsible for solving this situation.

Totally responsible   ○ ○ ○ ○ ○ ○ ○   Not responsible

26. **I prefer to stop (to be certain) than to continue on my own initiative (with all the risks this involves).**

I stop   ○ ○ ○ ○ ○ ○ ○   I continue

27. **To decide what to do I try to think of a similar recipe.**

I don't look for a similar recipe   ○ ○ ○ ○ ○ ○ ○   I do look for a similar recipe

28. **To decide what to do I try to imagine what my fellow cooks would do.**
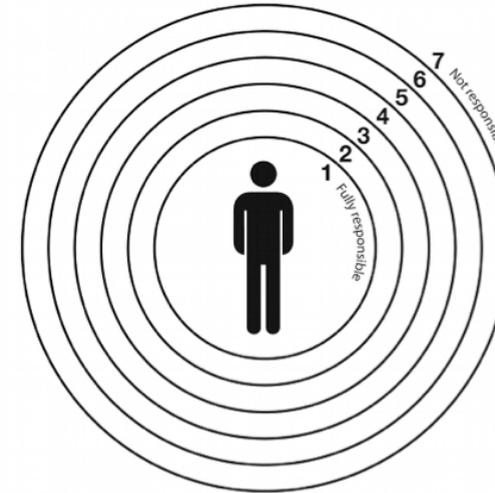
I don't consider what my fellow cooks would do   ○ ○ ○ ○ ○ ○ ○   I do consider what my fellow cooks would do

29. **My manager will be back in about two hours. I will tell him about the problem.**

○ Yes, before I start, so I'll wait two hours
○ Yes, once I am finished, so I will continue
○ No

(To scenario 4 of 5)

30. **Scenario: Butter**

To summarize: important guests, warm welcome, bake a cake, recipe is in the kitchen.

The recipe tells you to use 250 grams of butter. You read on to discover that the same recipe explains at a later stage that you must never use more than 100 grams of butter.

I feel responsible for solving this situation.

Totally responsible   ○ ○ ○ ○ ○ ○ ○   Not responsible

31. **I prefer to stop (to be certain) than to continue on my own initiative (with all the risks this involves).**

I stop   ○ ○ ○ ○ ○ ○ ○   I continue

32. **To decide what to do I try to think of a similar recipe.**

I don't look for a similar recipe   ○ ○ ○ ○ ○ ○ ○   I do look for a similar recipe

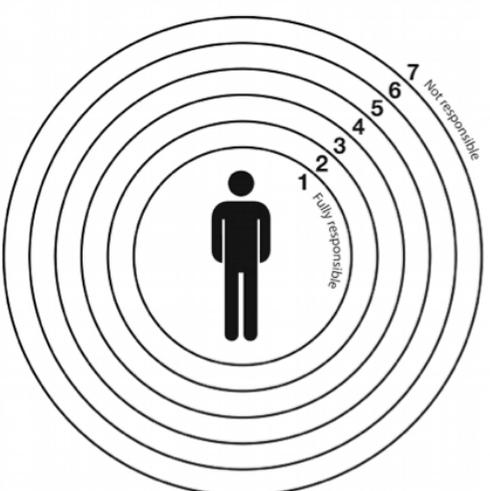**33.** **To decide what to do I try to imagine what my fellow cooks would do.**

I don't consider what my fellow cooks would do   ○ ○ ○ ○ ○ ○ ○   I do consider what my fellow cooks would do

34. **My manager will be back in about two hours. I will tell him about the problem.**

○ Yes, before I start, so I'll wait two hours
○ Yes, once I am finished, so I will continue
○ No

(To scenario 5 of 5)

35. **Scenario: Nuts**

To summarize: important guests, warm welcome, bake a cake, recipe is in the kitchen.

The recipe involves preparing finely chopped hazelnuts. There is a notice on the kitchen wall that states: 'It is forbidden to process nuts in this kitchen'.

I feel responsible for solving this situation.

Totally responsible ○ ○ ○ ○ ○ ○ ○ Not responsible

36. **I prefer to stop (to be certain) than to continue on my own initiative (with all the risks this involves).**

I stop ○ ○ ○ ○ ○ ○ ○ I continue

37. **To decide what to do I try to think of a similar recipe.**

I don't look for a similar recipe ○ ○ ○ ○ ○ ○ ○ I do look for a similar recipe

38. **To decide what to do I try to imagine what my fellow cooks would do.**

I don't consider what my fellow cooks would do ○ ○ ○ ○ ○ ○ ○ I do consider what my fellow cooks would do

39. **My manager will be back in about two hours. I will tell him about the problem.**

○ Yes, before I start, so I'll wait two hours
○ Yes, once I am finished, so I will continue
○ No

(To close)

40. **Today's date is (for example 16-02-2011):** *

41. **I accessed this questionnaire via an:**

○ Email with a link (please enter email address to avoid being sent a reminder email)
○ Banner on ConQuaestor-intranet (ConneCQtor)

(Send)

Professionals encounter problems in their work environments that can be attributed to a generally perceived friction between rules and practice. At the same time, for many autonomously working professionals it is an inevitable part of their practice that they must deal with situations that are not covered by specific rules. What do all these professionals do if a structure of rules is perceived not to offer conclusive direction and discretionary authority is not explicitly given? Will they continue on their paths or will they suspend their tasks? What deliberations play a role? And how do they solve these problems with the rules to suit future situations?

This thesis defines such problems as holes in rules. The research is based on the assumption that holes, like rules, have a life cycle. It is also assumed that professionals in their role as rule users – thus not rule makers – can affect this life cycle of opening, aging and closing of holes in rules. It will be shown that the act of telling about an encounter with a hole is a crucial intervention, affecting both hole life cycle and organizational performance. Furthermore, the weights of hole typology, hole distance, rule analogy and peer comparison are explored as strong mechanisms determining one's position and view of how to act. For this purpose, some innovative conceptual and methodological ideas are introduced, among which are the Morse Model of Discretion and the Dutch Collection of Holes in Rules.

Organizations are increasingly tending to steer on values, inspired by the thought leaders in the arena of management. This study will show that professionals already act on values, and will convince organizations that want holes in rules to be structurally solved or dealt with appropriately, to create conditions that encourage thorough balancing, sharing and reporting. This behavior would improve the quality of the organization's performance, either by taking away the incongruity, or by collating a (competitive distinctive) maturing collective experience to act upon them.