European Journal of Social Sciences Studies
ISSN: 2501-8590
ISSN-L: 2501-8590
Available on-line at: www.oapub.org/soc

doi: 10.5281/zenodo.3242796 Volume 4 | Issue 3 | 2019

PHILOSOPHICAL INVESTIGATIONS ON INTEGRATIVE COMPLEXITY

Crister Nyberg[i]
University of Jyväskylä,
Finland

Abstract:
Integrative complexity (IC) refers to a psychological construct, a measurement, and an experience. As a construct IC refers to our less than conscious thinking style in the face of difference or disagreement, how we process information, make decisions, solve problems. The cross-culturally validated empirical measurement frame of IC has predictive values. 'Low IC' indicates a simple thinking style that is rigid and closed, a 'tunnel vision' way of thinking that cannot respect or recognize different dimensions or perspectives on a topic, predicting destructive conflict or violence. An increasingly complex thinking style is able to 'see the big picture', to differentiate and then integrate different dimensions and perspectives on topics, linking them in some way, predicting more peaceful outcomes to conflict. As an experience, IC refers to less or more awareness of thoughts, emotion, and physical states in self and others related to IC management. The IC Thinking Research Group (University of Cambridge) pioneered the 'operationalization' of the IC measure into an educational method, program and professional practices. The coding system i.e. empirical measurement frame, has been developed further to take elaborative aspects into account. The two components of complex thinking, differentiation and integration can each be broken down in two sub-components, elaborative and dialectical. In order to clarify the pros and cons of integrative complexity theory and its further developments in IC Thinking, it is useful to investigate its philosophical background. The theory and its applications are essentially dealing with language and the skill to use words or concepts. However it should be noted that besides the skills an essential part of the theory and its applications deals with our unconscious processes that are not explicitly controllable. An alternative for a philosophy of language behind the theory of integrative complexity is to consider an application of the *use theory of meaning* to explain its central components. Minimalist theory of fiction (MTF) was developed to explain the philosophical problems of fiction, but can also be applied to integrative complexity. Using words in different situations requires an ability to read contextual cues in order

[i] Correspondence: email cristerny@gmail.com

to follow the correct rules for the uses of words in particular contexts[ii]. From these philosophical grounds, the theory of integrative complexity (IC) appears as a totality of the language games people are playing. One may be limited to one game, which means separating oneself from others, considering this game to be ultimately defining the correct uses of words. When one recognizes alternative games going on, it means reaching higher levels of IC. What is crucial is that this does not require a person to reject their core beliefs, since they may still be true. This approach challenges IC theory to improve its coding system but also offers possibilities for further developments and applications.

Keywords: integrative complexity, use theory of meaning, ludwig wittgenstein, communication

1. Integrative Complexity

The origin of integrative complexity theory lies in political psychology research (Suedfeld & Rank, 1976; Suedfeld & Tetlock (1977); Suedfeld, Tetlock, & Ramirez (1977); Suedfeld, Tetlock, & Streufert, 1992). It is a measure of the way we process social information and is essentially about the complexity of the *less than conscious structure of thinking*. Thus we might use very simple language to convey a very complex structure of thought or we might use very complex language but convey a very simple structure of thought. The content of a statement is not the focus of the analysis but the underlying structure of thinking.

There is always a subjective element in assessing integrative complexity, since coders need to make interpretations[iii] of the intended meanings of the authors of the analyzed statements. This feature of IC coding is recognized and thus the coding needs to be done by trained and experienced coders. Additionally, e.g. in ICthinking® Method[iv], two trained, qualified coders independently assign IC codes to collected data and then compare their codes for statistically significant inter-coder reliability[v] (e.g., using Cohen's Kappa, or Alpha). The difficulties are often related to judging the extent to which a statement contains differentiation and integration. (Baker-Brown et al., 1992). Differentiation is about recognizing different dimensions and perspectives on a topic. For example, finding both negative and positive effects of alcohol. Integration means the recognition of links or connections among dimensions and viewpoints. Recognizing

[ii] This ability, 'sensitivity to context', is a key part of the IC management capacity.

[iii] One could claim that coders are not supposed to interpret but just rely on the words that are there. However, the background theories relied on here (Minimalist Theory of Fiction (Nyberg 2015, 2016, 2018), use theory of meaning (Wittgenstein 1999, Horwich 1998b)) imply that meanings are constituted in contexts and language games and thus we cannot avoid interpreting. Understanding is a matter of a degree and better understanding makes possible various interpretations. Interpretation means choosing some particular language game as meaning constituting.

[iv] ICthinking® Method is an educational method based on the theory of Integrative Complexity. It has been developed by the IC Thinking Research Team, Dept of Psychology, University of Cambridge.

[v] See e.g. (Boyd-MacMillan et al 2016, p. 70.)

positive effects in negative effects shows integration[vi]. Since the theory of integrative complexity is very much about inter-personal or inter-group differences and disagreements integration is about recognizing common understanding between them e.g., shared underlying values. Thus, recognizing a mutual influence among groups is a sign of higher integrative complexity. In short, "*lower integrative complexity scores indicate one-dimensional, black-and-white communication, whereas higher integrative complexity scores reflect more nuanced communication accompanied by a recognition of multiple perspectives*" (Houck, Repke, & Conway III, 2017).

The basis for scoring the written or oral communications communication is set in the coding manual (Baker-Brown et al., 1992). Integrative complexity is scored on a 1-7 scale. A score of 1 indicates no evidence of either differentiation or integration. A score of 3 indicates moderate or even high differentiation but no integration. The author relies on at least two distinct dimensions of judgement, but fails to consider possible conceptual connections between these dimensions. A score of 5 indicates moderate to high differentiation and moderate integration. The author notes the existence of conceptual connections between differentiated dimensions of judgement. These integrative cognitions can take a variety of forms: the identification of a superordinate category linking two concepts, insights into the shared attributes of different dimensions, the recognition of conflicting goals or value trade-offs, or the specification of interactive effects and causes of events. A score of 7 indicates high differentiation and high integration.

For example, a statement such as "*Rules can be both positive and negative for society. On the one hand, rules can make individuals feel safe. But on the other hand, they are sometimes unnecessarily suppressive,"* contains both negative and positive perspectives, thus there is differentiation. When the statement contains connections between these perspectives, there is integration which implies a score above 3 (Baker-Brown et al., 1992). Thus finding e.g. solutions where rules make most of the individuals feel safe while suppressive elements are minimized and special solutions are developed in order to avoid suppressive elements.

The original coding system has been supplemented by breaking down differentiation and integration into two further parts each, dialectical and elaborative. (Conway et al., 2008). The original coding system recognizes less or more complexity regarding a particular topic, with a high score indicating a complex view that integrates more than one viewpoint or a single viewpoint that is elaborated in a complex way. The Dialectical and Elaborative Supplement to the original coding system divides scores into two parts. Dialectical complexity means the presence of competing themes in a statement. Thus one may have a complex view of the discussed topic at a broad level. Elaborative complexity is about the justification of a single viewpoint. Thus, for example, a statement can score 1 for dialectical complexity and 3 for elaborative complexity (e.g. "*French fries are unhealthy because they are fried in oil and they contain no*

[vi] For example suggesting that moderate use of alcohol lowers the negative effects and stresses the positive effects. E.g. tasting good vines offers nice occasions for both enjoying quality vines and a social event with low stress.

vitamins" elaborates a single viewpoint, but does not include competing themes, e.g., French fries can also be healthy if….").

Based on integrative complexity theory, the ICThinking® educational method, educational programs and professional practices, have been developed to reduce and prevent destructive conflict by increasing cognitive complexity management amongst those going through the intervention. This is based on the predictive values of IC scores; generally, low IC predicts destructive conflict or violence between conflicted groups, while higher IC predicts more peaceful outcomes to conflict (Boyd-MacMillan et al., 2016, 111.) IC Thinking interventions are run as courses designed for different contexts; course participants must recognize the cultural 'clothing' of their context in order to inhabit the course activities (e.g., role plays and other group learning activities). Measurement of integrative complexity is often used for analyzing texts, speeches, personal letters etc. but in the IC Thinking courses[vii] the contexts are closer to everyday communication[viii]. Generally, the presence of high integrative complexity can be described as openness to new ideas and recognizing diverse opinions, along with flexibility and resilience. Low integrative complexity in turn appears as rapid and inflexible thinking that does not recognize the legitimacy of different viewpoints. (Boyd-MacMillan et al., 2016, 58) There are pros and cons to high IC. It is more deliberate but can sometimes be indecisive if one is distracted by too much information and can lead to moral compromises. (Boyd-MacMillan et al., 2016).

2. Philosophical Analysis of Integrative Complexity

In my philosophical analysis of Integrative Complexity I take the perspective of philosophy of language which turns the attention to the use of words and concepts. It has already been mentioned that the IC coding system includes a subjective element because of the interpretations of the intended meanings of the authors of texts[ix]. However, the point should not be in the content of thinking but in the structure, the thinking style. While the content does matter, it is the structure of thinking that we are interested in. Content matters because we are dealing with meanings and understanding meanings is dependent on our skills in using language. In the end, the meanings are constituted in contexts. Our background knowledge and our ability to read contextual cues are essential in order to successfully join the discussion. This applies to both the participants of IC Thinking courses and the IC coder.

Some words are more likely to be used similarly in different contexts than others. Concepts of mathematics belong to this category. Words like good or god are much

[vii] IC Thinking uses pre-post paragraph completion tests (PCTs) that ask participants to identify their own group and those who are other to their group and then to write about them in a freely flowing way. IC Thinking also audio records presentations made by participants at the end of the course as a second end of course IC measure. E.g. Boyd-MacMillan et al., 2016)

[viii] IC coding manual framework is based on analyzing a wide range of written communications, everyday communications as well as more formal, e.g., diplomatic, communications.

[ix] In the theory I promote, Minimalist Theory of Fiction, understanding words and language is always a matter of a degree. Better understanding makes it possible to recognize alternative meanings.

more complex in this sense. The more possibly complex uses a word has, the more likely we are to be confused by different contexts. We might be using the concepts differently from others without realizing it, and this is often a cause of lack of mutual understanding[x]. This often means that in a discussion, the participants are implicitly using words[xi] in a conflicting way[xii]. These aspects of language are not explicitly taken into account by current IC coding systems. The facilitator and the coder should have the adequate knowledge on the right uses of the words in the contexts in question. Otherwise the given IC-scores might be high despite a confusion between language games. E.g. knowing whether an argument concerning the rules of boxing is adequate requires knowing the differences between amateur and professional boxing. In addition, a use of language that shows recognition of confusion between contexts shows more complexity than merely recognizing pros and cons of certain topic. By taking these phenomenon into account it may be possible to reveal more complex thinking and also show over valued dialectical or elaborative complexity scores. However, it should be noted already at this point that fully exhausted account of relevant knowledge is not possible. We are always in a position that some meanings are beyond reach.

Language skills are essential in reaching mutual understanding on complicated issues. In very complicated situations, it is good to choose topics that are neutral and familiar to all participants. This lowers the risk of situations becoming difficult to control and reduces the role of language skills. My point of view stresses the importance of language skills, especially the skills to use particular words and concepts. This is very much the target of this study. The philosophical starting points of integrative complexity are such that the skill to use words differently in different contexts is crucial[xiii]. Context sensitivity is a somewhat self-evident starting point but the theory I use, Minimalist Theory of Fiction (MTF) takes this principle further. My purpose is not to question or to over emphasize the role of language but to bring up some points that help to sharpen both coding system and IC courses and in addition to find further applications of the IC theory.

In order to underline the philosophical underpinnings from the perspective of The Minimalist Theory of Fiction, we should refer to the basics of the use theory of meaning. It is easy to accept that the meanings of words originate from their use, but the *use theory of meaning* takes a step further in claiming that the meaning *is* use. This idea, as well as the idea of language games, originates with Ludwig Wittgenstein (1999). However, these ideas have been developed further and Paul Horwich's (1998a; 1998b) account of *use theory of meaning* is in an essential position.

[x] Awareness of this is part of IC management. E.g., One might deploy active listening skills to ensure one is understanding what the other is saying.

[xi] I will use the Wittgenstein's idea of language games to describe this (Wittgenstein 1999).

[xii] Lack of awareness of this—a lack of metacognition in this area- might (although not necessarily) lead to a 'low IC' impasse between conflicting parties.

[xiii] This is not to say that less skilled language users are unable to manage IC or that e.g. IQ correlates with IC management. Quite the opposite. If language games are not taken into account properly both coding system and authors are more disposed to unwarranted results, for better or worse.

MTF is a theory that has been developed to explain the philosophical problems of fiction, but it can also be applied to all social situations. Using words in different situations requires an ability to read contextual cues in order to follow the correct rules for the uses of words in particular contexts. *The meanings of words are constituted in these so-called language games. Along with language games goes the use theory of meaning and the minimalist theory of truth. According to these theories truth is defined implicitly in its use. This means also that truth of a sentence* is context dependent i.e. dependent on the language game where it is used. This requirement stresses the challenges of integrative complexity and thus IC Thinking practices. Words differ in their rigidity of meanings. Some words are more likely to be used similarly in different contexts than others. Concepts of mathematics belong to this category (see e.g. Nyberg 2015, 2016). Words like good or god are much more complex in this sense. The more possibly complex uses the words have, the more likely we are to be confused by different contexts. We might be using concepts differently without realizing it, and this is often the cause of a lack of mutual understanding. These aspects of language are not taken enough into account by current IC coding systems. It is self-evident that the context is stressed but my focus is in particular language games inside the bigger context. Recognizing these aspects can reveal more complex thinking and also show over valued dialectical or elaborative complexities. As a result we may gain a deeper picture of cognitive complexity. This will be explained in what follows.

The philosophical problem of fiction is very much about the ontology of fictional objects and the truth of sentences referring to fictional objects. Bertrand Russell (1890) and Gottlob Frege (1898) are guilty of rejecting the possibility to apply the concept of truth to fictional contexts. For them, statements concerning fictional entities are either simply false or lack truth-value completely. Pretense theories are probably the most widely accepted solution to the problem posed by fictional entities (e.g. Walton, 1990, and Currie 1990).

MTF stresses that the difference between reality and fiction is not clear. Theoretical physics is an obvious example of a use of language that deals with matters whose ontological status is vague. Fiction is a distant way of talking about reality[xiv]. Recognizing contexts and different uses of words turns out to be crucial. A sentence is not true because it corresponds to a fact but because it is used in the appropriate way in certain circumstances. Taking the position of use theory of meaning and in addition the points stressed by MTF means using concepts in different ways in different contexts. Instead of looking for definitions or a particular absolute meaning or correct use of a term, we should concentrate on the context, i.e. the language game being played. The use theory of meaning relies on the idea that the meaning property of a word is reduced to its use regularities. This view stresses the skill to use words. It also means that explicit knowledge is not needed in order to use a word correctly. Understanding a word or a sentence is thereby a form of knowing how instead of knowing that. According to Paul Horwich, a member of a language community knows implicitly what

[xiv] See Nyberg 2015, 2016 and 2018. Following Kristeva (1993) All texts contain endless references to other texts.

words mean when use of the word stems from the word having a certain use property in the communal language[xv]. (Horwich, 1998b: 44–45).

In practice, it is crucial that understanding is a matter of degree. We master a language to different degrees. Skill to use words ranges from minimal understanding to full expert knowledge of the use of the word (Horwich, 1998: 16–18). MTF puts this into practice in loosely applying Wittgenstein's idea of the language game. There are different ways to describe language games, but I take the rule-governed character of language as central in using that concept. There are no strict and definite systems of rules for each and every language game, but each game has some contextual roots. As Wittgenstein pointed out, we cannot give a final, essential definition of 'game', so we cannot find "*what is common to all these activities and what makes them into language or parts of language*" (PI 65). Every game has a context and the participants are required to find out the correct uses of words in that particular context. The meaning constituting game thus consists in having some background information about the context, the skill to use the words in question plus the contextual factors, i.e. the way in which the participants implicitly define the right ways to use words[xvi].

If meanings are constituted in contexts, this means something concerning the role of truth. In fact, the use theory of meaning goes hand in hand with the minimal theory of truth (Horwich, 1998a, 1998b). According to the minimal theory of truth, saying "it is true that snow is white" is the same as saying "snow is white". Thus, calling a sentence true does not add anything substantial. This condition was originally called the adequacy condition for a theory of truth and was stated by the logician Alfred Tarski (1944). Tarski offered the so-called semantic definition of truth, which was meant for formal languages. Tarski thus saved his model's theoretical ambitions, and could still rely on the context-independence of words and sentences. However, context-independence does not work in the context of natural languages. Syntax is more complicated and context-dependent features of language raise impossible barriers. In some philosophical debates, 'indexicals' mean context-dependent elements. Indexicals (or demonstratives as they are sometimes called) are, for example, words such as 'I', 'now', 'here', 'this' etc. Homonyms belong to this group of words, since the context shows whether e.g. 'bank' refers to a financial institution or a riverside. It is debated whether Tarski's semantic theory of truth has a deflated concept of truth, but the actual minimalist or deflationist theories of truth state that Tarski's equivalence schema tells everything there is to say about truth[xvii]. Together with the use theory of meaning, minimalism on truth opens new insights into the problem of context-independence or -dependence. In MTF, the focus is on the meanings created in contexts i.e. language

[xv] There is nothing about IC as a concept or measure that contradicts this.

[xvi] See Nyberg 2015

[xvii] Deflationism admits different versions. The views that deflated truth may still be useful usually go under the names "minimalism" or "disquotationalism". Redundancy theories of truth", (Gottlob Frege (1956), F. P. Ramsey (1931) and A. J. Ayer (1936)) maintain that truth is always eliminable and thus fully redundant notion.

games. Indexicals is one narrow feature of language, but much more far-reaching is the idea of intertextuality.

Julia Kristeva's description of intertextuality highlights the history of the uses of words and the numerous other contexts present when we are reading a text. According to Kristeva, every text is built on mosaic of citations, every text has absorbed other texts and every text is a variant of other texts (Kristeva, 1993). This makes reading a process in which we move between texts and try to discover potential meanings (Kalogirou & Economopoulou, 2012: 180). If we think about all the dimensions present in a reading process, i.e., the author's intended and unintended meanings, the time and place, relations between fiction and reality (many things in a fictional text are true in reality), the reader, intentional or unintentional references to other texts, etc., we may grasp the multiple interpretations available. In contrast to many literary theorists, I consider understanding to precede interpretations. This is because of the use theory of meaning and MTF. Understanding a word, a sentence or a story is always a matter of degree. Thus, understanding a word, even minimal understanding, makes some interpretation possible. Better understanding makes more interpretations possible. A crucial question concerning different interpretations is which one is true. Although this discussion stems from literary theory, language works similarly in everyday use. Following the minimal theory of truth, let us consider the idea that calling a sentence true is the same as repeating the sentence. It is about saying the sentence in the appropriate circumstances. It is not about the correspondence relation between a sentence and reality but the correct use of the words. If the contextual factors are decisive and there is always a context, the truth of a sentence depends on the particular rules of the language game being played.

In order to illuminate the early two-dimensional philosophical alternatives to solving problems concerning the truth of alleged fictional sentences, we should take a look at Gottlob Frege's (1898) views. Frege introduced a special assertion sign '⊢' to indicate the act of judgement. In Frege's formal system, an assertion sign marks the difference between assertion and predication. This is illustrated by the following remark by Frege: "*'2+3=5' merely designates a truth value whereas, '⊢ 2+3=5' does not designate anything; it asserts something*" (Frege, 1898). Wittgenstein argues in Tractatus that Frege's assertion sign is "*logically altogether meaningless*". He claims that an assertion cannot give a proposition a sense and merely shows that the author holds as true those propositions followed by it. However, Frege claims that an assertion sign merely indicates the act of assertion, which means the sense of the proposition remains the same. Thus he makes a difference between entertaining a supposition and making an assertion. However, if we follow Frege's thinking, the act of assertion in practice precedes entertaining a supposition. In the context of fictional discourse, the act of pretense is a more adequate description than entertaining a supposition to describe what is at stake, since it acknowledges that sentences have failed in their alleged essential task, i.e. stating something true about reality. In other words, if understanding a sentence stems from recognizing its truth-value, sentences of fiction are not understandable unless they are first noticed to lack a truth-value and then pretended to

have one. When it comes to using the assertion sign as a precedent for an ordinary sentence, one may wonder whether the sentence preceding the assertion sign should be taken seriously. In this early discussion concerning the demarcation of assertion and just entertaining the supposition, we can see signs of language games. Words are considered to have different meanings depending on their uses. Wittgenstein was at that time still tied to his picture theory (Wittgenstein 1922) and did not follow use theory of meaning.

However, what is essential from my point of view is that the presumed 'entertaining a supposition' or fictional discourse does not differ from our everyday discourses. It is not necessary to acknowledge that a sentence is false when compared to reality in order to understand the sentence. According to MTF, understanding is a matter of degree and related to contexts and language games. Recognizing truth in some particular language game is one thing and realizing links to other games shows better understanding of concepts in question.

3. Practical Implications

From the point of view of integrative complexity, the preceding analysis means two separate things. As pointed out, differentiation means recognizing more than one dimension or finding some legitimacy in different viewpoints. Thus, from a philosophical point of view, the process of differentiation is about recognizing various relevant meanings, and understanding is increased or greater when more meanings are observed. Integration and higher IC mean identifying links among the different dimensions or viewpoints[xviii]. When using words is considered as a skill, the knowledge is implicit. Thus it is not necessary for us to be consciously moving from one language game to another. Children can play games without knowingly stating false statements as reality.[xix] When we are consciously claiming truth or falsehood for sentences, we are taking a step towards metalanguage (language about language). Thus, claiming the sentence, "Sherlock Holmes solved the riddle of Baskerville" to be false, we are comparing a sentence of a novel to reality, which means taking a metalevel where we are comparing two language games i.e. 'Sherlock Holmes stories' and 'scientific discourse'. That shows differentiation. Integration comes into the picture when we are analyzing Sherlock Holmes stories by showing details of stories that are also true in reality. It has already been noted that the original coding manual has been joined by a supplementary manual because the two main components of cognitive complexity, differentiation and integration, can each be broken down into two sub-parts, dialectical and elaborative. The features of MTF suggest that the IC coding involves judgements that are to some extent context-dependent ('The person who is coding the data set should be familiar with the topics expressed in the paragraphs but need not be an expert' (Baker-Brown et al., 1992, 7). However, despite the supposition that the coder

[xviii] In other words, integration and higher IC mean recognizing links among the different meanings and thereby deepening or expanding meaning further.
[xix] See e.g. Nyberg 2018

need not to be an expert one should be aware that there might be micro-language games going on that are beyond reach unless one is an "expert" in that particular area. When understanding is considered as a matter of a degree there is always a possibility that some interpretations and thus potential meanings are not grasped.

By loosely using Wittgenstein's (1999) concept of the language game, I follow the principle that words may be used differently in different situations and the decisive rules might be defined in the game. This in turn implies that one should be able to follow the cues available in order to play the language game successfully. Texts differ greatly in their difficulty to recognize dimensions. Informational texts are more explicit than fictional ones. Mathematics and physics belong to the category of informational texts and their terms are very likely used similarly in different situations. In fiction, it is more likely that multiple language games may be played simultaneously. The same applies to everyday language. Jokes, sarcasm, irony, metaphors, etc., play with meanings that might be difficult to grasp because their meanings differ from the basic acceptance property. Everyday language use contains endless amounts of situations where uses of words differ from their basic acceptance properties to various degrees. Irony and metaphors are more explicit examples of use of language that require an advanced level of understanding of a language. One could claim that they even contain a conceptual structure with both differentiation and integration (IC score 4 or above), since there are different dimensions present, but still the uniting element is the requirement to understand them[xx]. However this is too harsh since irony and metaphors are of course also context dependent and can be used in a way that is low IC. Generally irony and metaphors are difficult to grasp because their meanings are far from their words' basic acceptance properties. Thus their use requires recognizing resemblances in their use in different contexts. People with autism spectrum disorder (ASD) typically have difficulties in using metaphors, etc. In contrast, they can be good at mathematics. It is often claimed that people with ASD have difficulties in imagining things. I have argued[xxi] that the difficulties people with ASD have in using language do not stem from

[xx] A crucial point here is that understanding a meaning is the ability to use concepts in a right way in different circumstances. Meaning *is* use. It is the way concepts are used in particular language games that determines whether the IC score is high or low. This applies of course to metaphors, irony etc. as well. Some might be a 2 or 3 elaboratively, but 1 dialectically. Some might be a 1 elaboratively and dialectically. E.g consider the following statement, in a language game which is about decision making: 'That proposition on the ballot died a long, lingering, painful death and was buried six feet under without a tombstone'. This statement is a metaphor but it is a 1 elaboratively and dialectically and overall. There is one valence and one dimension, and one perspective. However in another language game it can be a manifestation of radically different uses of those concepts and an example of a new point of view. This phenomenon is described as intertextuality (e.g. Kristeva 1990). In short it means that uses of words have similarities in different contexts and sometimes it is relevant to recognize references to other contexts where similar expressions have different meanings. For example sayings that are made popular by some famous person. Consider e.g. "Ich bin ein Berliner" or "Hasta la vista, baby" are such that proper understanding requires recognizing reference to other context. However, the final meaning is constituted in the context where these idioms are uttered.

[xxi] Nyberg 2015

lack of imagination[xxii], but rather a difficulty using words differently to how they have learnt them. Thus, the acceptance property of words is then under strict control. It is often so that those with special learning difficulties often bring focus on difficulties experienced not only by themselves but by all. If we are unable to recognize different ways to use the same word, we might miss the particular language game in question. If we fail to read the cues for the correct uses of words, we are not talking about the same thing.

An essential feature of MTF is that different language games are principally equally valued, since they have their own meanings whose truth is tied to their context. The confusion comes from being unable to distinguish different word uses. As already stressed, being aware of the different ways a word can be used and selecting the proper usage for a particular context is a matter of degree. Understanding is thus also a matter of degree. The more we have relevant knowledge and master the language and words in question, the better we understand the alleged reality. For example, in the context of physics it is a physicist who has the best knowledge of the use of the word 'quark'. This is a particular language game where rules are introduced following the scientific inquiry of physics. This also means that physicists are implicitly in a process of constructing the correct ways to use words in certain contexts. They are thus masters in using concepts of physics in the 'scientific' context. They might be in a position to recognize alternative uses of concepts of physics, but not necessarily. Just like mathematics, physics uses concepts that are 'rigid' in a sense that their uses do not differ in different contexts. Much more challenging concepts in this sense are those like 'good' and 'beautiful'. Really hard problems arise when the word 'god' is used. The starting point in an IC Thinking course discussion might be such that each participant is using the same word to talk about a different thing (or just in general?). With these considerations in mind, the theory of integrative complexity, IC Thinking practices and the coding system develop new dimensions.

The basis of MTF lies in the twofold approach to texts. Firstly, what is required is recognizing the multiple ways words may be used. This means that one should recognize both the relevant and also more distant but still meaningful interpretations of a text. This is the first phase of the process, i.e. differentiation. Secondly, there is a difference in comparison to the principles of the IC coding system. We are supposed to find the relevant and meaningful interpretations. In IC coding, differentiation is about recognizing the conceptual structure in a statement, either dialectical (different viewpoints) or elaborative (one viewpoint). This might involve a number of possible structures—temporal perspectives (change over time), different dimensions to one viewpoint, different perspectives on a topic, multiple causality, ambiguity, exceptions to the rule, qualifications, etc. However there is no guarantee that those interpretations, i.e. the alleged language games, are relevant. Consider for example a simple discussion about Formula 1 cars. If the rules for the correct uses of words are based on a language game concerning Formula 1 cars on the 2017 circuit and especially in Monaco GP, then a viewpoint that "*Ferrari is a good car but it is also a bad one because it does not work on rocky*

[xxii] Much of this discussion originates in Baron-Cohen, S., Leslie, A. M., & Frith, U. (1985).

roads" is failing to take part in the language game in question. Formula 1 cars are not made for rocky roads. Despite the confusion, the author gets a score for differentiation[xxiii]. One purpose of IC thinking is that one recognizes different viewpoints and this cannot be done if one is not able to understand or recognize the difference between conflicting language games. Thus what is stressed here is the role of language games as units inside larger language games and all these language games are waiting to be discovered[xxiv].

Integration means recognition of common features between different viewpoints or a much elaborated single viewpoint. Since the theory of integrative complexity is very much about possible conflicts between groups, integration is about recognizing common understanding between individuals or between ideas. Thus, recognizing mutual influence among groups is a sign of higher integrative complexity. From the point of view of MTF, what is required in various degrees is finding the common ground for different language games and finding uniting rules. This is the phase of integration. These separate games are part of a larger language game, a larger story. This is of course a simplified account of what is going on, but the point is in recognizing differences and resemblances in uses of words and in then constructing a bigger picture, e.g. a story that incorporates them all. The concept of truth is a tool and marker for understanding words, language games and stories. In the context of integrative complexity truth works similarly. It shows how different language games are equally valid in a sense that they are played by their own rules.

4. Summary

Minimalist Theory of Fiction (MTF) and theories behind it, use theory of meaning and minimal theory of truth, can be seen as totality of language games going on in written or spoken communication. The theory of Integrative complexity and IC Thinking practices are dealing with language games since they are the manifestations of structures of thinking. Limiting oneself to one game means taking this game to define the ultimately right way to use words. Recognizing alternative games going on means that one is reaching higher levels of IC. It is essential that this does not require a person to reject their own core beliefs. They may still be true. The result of the process of integration is that we can accept that from certain rules in a particular language game it is implied that certain propositions are true in that particular game. Thus for example in a simple language game where Santa Claus has flying reindeer, it is true that Santa Claus has flying reindeers. Someone might argue that it is not 'really' true that there is

[xxiii] IC coding is not measuring the veracity of a person's belief or statement, or whether the person has all the information they need on a particular topic. The coding frame is neutral regarding the truth of statements or else the coding frame could be used to try to enforce uniformity in beliefs. Thus it is the structure of thinking that is decisive. [And this is what gives us (ICT) an entry into a variety of groups; we are not viewed as having an agenda or being biased in favour of one belief system. It is up to participants to think for themselves, decide what is relevant or true, and what is ambiguous. IC interventions equip them to make these decisions themselves.]

such a character as Santa Claus and there are no flying reindeer. Intuitively we are of course willing to accept this claim. However such a claim has a presupposition that truth is limited to the language game 'really'. My claim is that this game is only one of multiple games. We may call it the 'scientific' game, since it is about a scientific account of what exists. It is perfectly right to argue that Santa Claus has flying reindeer in a context where Santa Claus has flying reindeer. If someone disagrees, she might be playing the 'scientific' game or another game where Santa Claus has reindeer but they are not able to fly.

When we realize how truth is involved in contexts, we realize how people are committed to the truth of their views. Their views may be justified in a particular language game. However it should be remembered that claims can be wrong, irrational and contradictory in an intended game. One can also ask clarifying questions about the intended game; for example. "*Are you talking about the legend of Loch Ness or a scientific account of the Loch Ness Monster? Or maybe about some children's book about the Loch Ness monster? Or the way your parents told it?*" This is somewhat the position that David Lewis (1980) suggests by introducing a 'prefix operator'; "*in such and such fiction*"[xxv]. However, as pointed out, all texts have elements that may be considered fictional. Calling texts or all uses of language 'games' helps us to leave fiction at this point. The concept of the language game is problematic since it is loosely defined. But this does not mean it is not useful. Using the phrase 'language games' to refer to contextual uses of language where the truth of a sentence is determined by those who are expert in that particular use of the word in question enables us to analyze the philosophical assumptions behind IC Thinking. The process of measuring the structure of thinking uses the concepts of differentiation and integration. The coding system of IC is based on scoring the signs of finding different points of view, and further, integration is measured in terms of finding more than one elaborated dimension in a viewpoint or things that are common to competing views.

One feature of IC Thinking courses is that the participants are required to take positions that might oppose their personal opinions[xxvi]. This is reminiscent of the way in which most philosophical theories about fiction deal with situations that are in contrast with reality; we are supposed to make believe or pretend. According to MTF, taking part in the on-going language game is not a matter of make believe. Adjusting our behavior to different social situations is constantly present and not a necessary precondition for understanding fiction[xxvii]. We should thus differentiate between using language and pretending feelings. In taking part in an IC Thinking course, the participants join games in which the roles played gradually get them immersed in the game. Words carry personal history and feelings are thus involved. As the understanding of words is a matter of degree, so is the strength of the feelings aroused.

[xxv] This "true in fiction" approach rests on the idea of possible worlds.

[xxvi] Taking different positions is extremely useful in educational practices like drama education. See Nyberg 2015.

[xxvii] About pretence see Randell, A & Nielsen, M. (2007), Leslie, A. M. (1987), Lillard, A. S. (1993), Nyberg 2015, 2016, 2018.

In other words, the game's emotive influence is dependent on personal experiences. As pretense is commonly defined as consciously acting in a way that is contrary to reality, this also means that understanding has to precede pretending.

MTF implies that meanings are constructed in contexts and this requires an ability to use words differently in different contexts. Limited vocabulary or knowledge of meanings restricts the possibilities to recognize different viewpoints in a language game where the rules of the game are recognized, but they also restrict the possibilities to recognize if people are not playing the same language games. As noted earlier use of language that shows recognition of confusion between contexts shows more complexity than merely recognizing pros and cons of certain topic. Recognition of confusion is not possible without understanding conflicting uses of words. The context dependency is thus always there and the structure of thinking cannot be revealed without taking this into account.

In autism spectrum disorder the tendency to consider meanings as rigid restricts the possibilities to deal with multiple language games at the same time. These findings are not flaws of the theory of integrative complexity or IC Thinking but rather showing the parts where they can be fine-tuned to take into account situations where language is an extra barrier in order to find common understanding and respect of diverse opinions. Not all communication and understanding is tied to language, and it is a challenge for IC Thinking courses to incorporate more physically active methods where role of language is not so decisive. However non-verbal communication can as well be thought via language games since rules of the communication are similarly constructed in contexts. When training is more language-based and the content is more conceptually challenging, the dimensions of cognitive complexity become more difficult to evaluate. On the other hand, developing conceptually challenging or specialized themes with carefully chosen vocabularies for IC courses opens up possibilities to use them with more specialized groups, for example in special education or with very complex specialized themes. In order to use these findings to develop IC-Thinking the coding manual should be edited in two ways. Firstly, the low IC-scores may be the result of still developing language skills or rigid uses of words. In practice this means that the first requirement is a platform that ensures a common ground. A platform that minimizes the risk of playing a language game with different rules. Secondly, a platform that minimizes the risk of confusion in the game is syntactically and semantically as simple as possible when it comes to language. This leads to methods that are more pictorial or movement based. When the role of use of language decreases the new challenge is to find new ways of measurement. In movement or action based methods the measuring should thus concentrate more on the choices and actions the participants make during the trainings.

References

Ayer, A. J. 1936. *Language, Truth and Logic*. London: Victor Gollancz. 1936. Published in Pelican Books.

Baker-Brown, G., Ballard, E. J., Bluck, S., de Vries, B., Suedfeld, P., & Tetlock, P. E. (1992). The conceptual/integrative complexity scoring manual. In C. P. Smith, J. W. Atkinson, D. C. McClelland, & J. Veroff (Eds.), *Motivation and personality: Handbook of thematic content analysis* (pp. 401-418). New York: Cambridge University Press.

Baron-Cohen, S., Leslie, A. M., & Frith, U. (1985). Does the autistic child have a `theory of mind'? *Cognition, 21*, 37-46.

Boyd-MacMillan, E., Campbell, C., & Furey, A. (2016). An IC Intervention for Post-Conflict Northern Ireland Secondary Schools. *Journal of Strategic Security*, *9*(4), 111–124. https://doi.org/10.5038/1944-0472.9.4.1558

Boyd-MacMillan, Eolene M.; Andrews Fearon, Patricia; Ptolomey, Amanda M.; and Mathieson, Laura J.. "I SEE! Scotland: Tackling Sectarianism and Promoting Community Psychosocial Health." *Journal of Strategic Security 9, no. 4* (2016): : 53-78. Available at: http://scholarcommons.usf.edu/jss/vol9/iss4/5

Conway, L. G. III, Thoemmes, F., Allison, A. M., Towgood, K. H., Wagner, M. J., Davey, K., . . . Conway, K. R. (2008). Two ways to be complex and why they matter: Implications for attitude strength and lying. *Journal of Personality and Social Psychology, 95*(5), 1029-1044.

Currie, G. (1990). *The Nature of Fiction*. Cambridge: Cambridge University Press.

Frege, G. 1956. The Thought: A logical Inquiry. Reprinted in Blackburn, S & Simmons, K (eds.) 1999. *Truth*. Oxford University Press.

Frege, G. 1892 'Über Sinn und Bedeutung', in *Zeitschrift für Philosophie und philosophische Kritik*, 100: 25-50. Translated as 'On Sense and Reference' by M. Black in *Translations from the Philosophical Writings of Gottlob Frege*, P. Geach and M. Black (eds. and trans.), Oxford: Blackwell, third edition, 1980.

Horwich, P. 1998a. *Truth*. Second Edition. Oxford: Clarendon Press.

Horwich, P. 1998b. *Meaning*. Oxford: Clarendon Press.

Houck, S. C., Repke, M. A., & Conway, L. G. (2017). Understanding what makes terrorist groups' propaganda effective: an integrative complexity analysis of ISIL and Al Qaeda. *Journal of Policing, Intelligence and Counter Terrorism,* 12(2), 105-118.

Kalogirou- V. & Economopoulou, V.(2012) Building bridges between texts: From Intertextuality to intertextual reading and learning. Theoretical challenges and classroom resources. *Exedra Journal, The Turkish Online Journal of Design, Art and Communication* - TOJDAC April 2015 Volume 5 Issue 2Copyright © The Turkish Online Journal of Design, Art and Communication 17 Retrieved

Kristeva, J. 1993. *Puhuva subjekti*. Tekstejä 1967-1993. Tampere: Gaudeamus

Leslie, A. M. (1987). Pretence and representation: the origins of "theory of mind". *Psychological Review, 94*, 412-426.

Lillard, A. S. (1993). Pretend play skills and the child's theory of mind. *Child Development, 64*, 348–371.

Nyberg, C. 2015. Fiction in Drama Education Offers Learning Opportunities for All, Philosophical Perspectives in Drama Education. *The European Journal of Social and Behavioural Sciences. EJSBS Volume XII* (eISSN: 2301-2218)

Nyberg, C. (2016) Fiction, Truth and Reference. Minimalist Theory of Fiction. In P. Stalmaszczyk (Ed), *From Philosophy of Fiction to Cognitive Poetics. Studies in Philosophy of Language and Linguistics, Volume 4.* Peter Lang Edition.

Nyberg, C. (2018) Truth in Fiction Reconsidered. In S. H. Klausen (Ed), *Res Cogitans. Vol 13, No 1. Frontiers in the philosophy of literature.*

Ramsey, F.P. 1931. On Facts and Propositions. In Blackburn, S & Simmons, K (eds.) 1999. Oxford: Oxford University Press.

Randell, A & Nielsen, M. (2007). Children's Communication of Pretend Acts Using Social Cues, In M. A. Vanchevsky (Ed), *Frontiers in Cognitive Psychology*, Nova Science Publishers

Russell, B., (1905), 'On Denoting', *Mind* 14 (October): 479-493

Suedfeld, P., & Rank, A. D. (1976). Revolutionary leaders: Long-term success as a function of changes in conceptual complexity. *Journal of Personality and Social Psychology, 34*, 169178.

Suedfeld, P., & Tetlock, P. (1977). Integrative complexity of communications in international crises. *Journal of Conflict Resolution, 21*, 169-184.

Suedfeld, P., Tetlock, P. E., & Ramirez, C. (1977). War, peace, and integrative complexity. *Journal of Conflict Resolution, 21*, 427-442.

Suedfeld, P., Tetlock, P. E., & Streufert, S. (1992). Conceptual/integrative complexity. In C. P. Smith, J. W. Atkinson, D. C. McClelland, & J. Veroff (Eds.), *Motivation and personality: Handbook of thematic content analysis*. (pp. 393-400). New York: Cambridge University Press.

Tarski, A. 1944. The semantic conception of truth and the foundations of semantics. Reprinted in Blackburn, S. & Simmons, K. (eds.) 1999. *Truth*. Oxford: Oxford University Press.

Walton, K. 1990. *Mimesis as Make-Believe*. Cambridge, Harvard University Press

Wittgenstein, L. (1922). *Tractatus logico-philosophicus*. London: Routledge & Kegan Paul.

Wittgenstein, L. 1999. *Filosofisia tutkimuksia*. Transl. Heikki Nyman. Porvoo: WSOY. (originally *Philosophische Untersuchungen* 1953)