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Running head: VIRGIN SOIL IN IRONY RESEARCH

Virgin soil in irony research: Personality, humor, and the “sense of irony”

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Abstract

The aim of the paper is fourfold: 1) show why humor scholars should study irony; 2) explore the need for considering interindividual differences in healthy adults' irony performance; 3) stress the necessity for developing tools assessing habitual differences in irony performance; 4) indicate future directions for joint irony and humor research and outline possible applications. Verbal irony is often employed with a benevolent humorous intent by speakers, but can also serve as a means of disparagement humor. In both cases, encoding and decoding activities entailing irony need to be considered in the context of the psychology of humor. We argue that verbal irony performance can be considered a phenomenon native to the realm of humor and individual differences. We point out that research has widely neglected the meaningfulness of variance in irony performance within experimental groups when looking at determinants of irony detection and production. Based on theoretical considerations and previous empirical findings we show that this variance can be easily related to individual differences variables such as the sense of humor, dispositions towards laughter and ridicule (e.g., gelotophobia), and general mental ability. Furthermore, we hypothesize that there is an *enduring trait* determining irony performance we will label the *sense of irony*. The *sense of irony* possibly goes along with inclinations towards specific affective and cognitive processing patterns when dealing with verbal irony. As an application, novel irony performance tests can help to study psychological and neuro-physiological correlates of irony performance more feasibly, i.e., in non-clinical groups.

Keywords: Assessment, Gelotophobia, Humor, Individual Differences, Irony

Virgin soil in irony research: Personality, humor, and the “sense of irony”**Date of Resubmission: 8th of July 2015**

When we use verbal irony, we typically utter something different from what we actually want to express. For example, we utter an opposite of what we mean or use assertions that are counterfactual, oftentimes in order to communicate a critical attitude (Garmendia, 2014; Haverkate, 1990). Characteristically, we expect the listener to get the intended meaning of what we say nonetheless (Groeben & Scheele, 2003). The category of verbal irony typically entails positive evaluations of negative circumstances (e.g., ironic criticism via a mock compliment) as well as negative evaluations of positive circumstances (e.g., an ironic compliment via a mock criticism), with the latter being viewed as less prototypical for verbal irony (for an account on this asymmetry, see for example Kreuz & Link, 2002). Although a single example has to fall short of representing verbal irony in its variety, it might be illustrating to take a look at the following instance provided by Gibbs (1986, p. 8): “Gus just graduated from high school and he didn't know what to do. One day he saw an ad about the Navy. It said that the Navy was not just a job, but an adventure. So, Gus joined up. Soon he was aboard a ship doing all sorts of boring things. One day as he was peeling potatoes he said to his buddy, “This sure is an exciting life.””. Here, the reader is expected to grasp Gus’ intention to state that his life as a soldier is boring (with the possible subtext of a critical attitude toward the false promise made by the advertisement as a meta-message).

Although speakers usually want their irony to be recognized, listeners do not always detect it, i.e., they get the meaning of the ironic utterance wrong. Differences in irony detection performance were linked to characteristics of the stimuli or context, age-related developmental stages, or attributed to pathological or abnormal cognitive impairment (for an overview, see for example Colston & Gibbs, 2007). Individual differences in terms of a variation of maximal and typical irony detection (and production) performance, stable across situations and time, have been neglected. Therefore, to date, there is only scarce evidence to

answer the question of who is inclined to use ironic speech and who is inclined to get the meaning of ironic utterances wrong among healthy adults. Following the notion that schizophrenics' impaired irony comprehension may be found also in subjects with vulnerability for psychotic illness, Langdon and Coltheart (2004) linked schizotypal personality to irony detection performance in non-schizophrenic young adults. Furthermore, some of the rare studies reporting on personality constructs considering the use of irony deal with the histrionic self-presentation style (Renner, Enz, Friedel, Merzbacher, & Laux, 2008). 2008; Renner & Heydasch, 2010). Other relevant traits have been overlooked, namely the fear of being laughed at (gelotophobia; Ruch & Proyer, 2008), and the sense of humor (see Martin, 1998).

The question arises, whether there is stable variance in irony performance that cannot be associated with known traits and abilities. In this case, a trait-like *sense of irony* can be hypothesized as an antecedent of irony performance¹. Furthermore, the "sense of irony" can be reasoned to moderate the impact of the sense of humor on irony performance. For example, without a repertoire of acts of verbal irony (i.e., irony production), humorous intent cannot express itself via verbal irony.

The aim of the current theoretical position paper is fourfold: First, we show why it is worthwhile for humor scholars to study irony. Second, we explore the need for considering interindividual differences in irony performance in the light of the literature. Third, we stress the necessity for developing assessment tools tapping into the variance in healthy adults' irony performance in terms of both, the typical level of irony activities as well as maximal irony performance in its different facets (i.e., misses and false alarms). Forth, we indicate future directions for joint irony and humor research and outline possible applications of the consequences of assuming an individual differences perspective in irony research.

Why bother about verbal irony in the psychology of humor?

Humor frequently results as a (by-) product of irony (Garmendia, 2014) and irony is viewed as used when people want to be humorous (Roberts & Kreuz, 1994). Thus –albeit humor is not necessarily involved in every instance of verbal irony (and vice versa)– humor-related individual differences possibly explain differences in irony performance. In an early analysis of the English and German language, irony was shown to emerge as a pin in a framework of terms constituting the lexical field of *the comic*, along with humor in its narrow aesthetic meaning (Schmidt-Hidding, 1963). In the academic tradition of the aesthetic, humor “is simply one element of the comic –as are wit, fun, nonsense, sarcasm, ridicule, satire, or irony– and basically denotes a smiling attitude toward life and its imperfections: an understanding of the incongruities of existence” (Ruch, 1998, p. 6). It is noteworthy that *the comic* here is defined as the faculty able to make one laugh or to amuse whereas the “other major terminological system, largely endorsed by current Anglo-American research (and in everyday language) uses humor as the umbrella-term for all phenomena of this field” (Ruch, 1998, p. 6). In other words, the term humor replaced *the comic* in language use. There are two conclusions to draw from this: first, in the terminological system of the aesthetic, irony and humor belong to the same faculty –*the comic* (as distinguished from other aesthetic qualities, such as the tragic); second, if the term humor delineates what used to be subsumed under the term of *the comic*, irony can be viewed as a humor phenomenon able to make us laugh or to amuse. Hence, irony performance may be both constituting humor as well as depend on a sense of humor. Furthermore, we argue that irony is structurally similar to humor, as both entail ability and preference components. In support of these ideas, studies aiming at assessing discourse goals or pragmatic functions of ironic communication characteristically provide humor as a rating category. For example, Dews, Kaplan, and Winner (1995) defined humor along with status elevation, aggression, and emotional control as a social function of irony and found ironic criticisms and compliments to be rated as funnier than their literal counterparts. In a similar vein, Gibbs (2000) found jocularity (“where speakers teased one

another in humorous ways”, p. 12) to be more frequent (50%) than sarcasm (28%; “where speakers spoke positively to convey a more negative intent”, p. 12) in five types of irony deducted from a corpus of recorded ironic conversational turns. In line with these scholars’ ideas and findings, also laypeople indicated in interviews that humor is a component of verbal irony: when Roberts and Kreuz (1994) asked their participants to indicate the reasons why an individual might use irony, 65% generated a response falling into the category “to be humorous”.

From the *listener’s* perspective, verbal irony is often involved in speech acts experienced as humorous: when Akimoto et al.’s (2014) subjects indicated the degree of experienced humor in different kinds of target statements, utterances were rated as more humorous when they were ironic rather than literal. Furthermore, ironic turns in conversations were viewed predominantly as humorous and regularly responded to with laughter (Gibbs, 2000). Thus, humor is frequently targeted in studies on irony and non-literal speech.

In psychological humor research, on the other hand, verbal irony is still neglected. Although Ruch (1998) suggested that for research purposes humor can be used “as an umbrella term [...] including negative forms of humor, since the term now tends to exclude less benevolent forms of the comic like sarcasm, mock, ridicule, satire, irony” (p. 11), irony is seldom included in humor studies. Yet, as Garmendia (2014) reasons, ironic utterances follow the structure or processes described in humor theories. Ironic utterances can be argued to entail elements of incongruity and resolution (see Suls, 1972, for accounts on incongruity), or also superiority (see Ferguson & Ford, 2008, for an overview). It was also discussed whether the humorous quality of irony roots in the “incongruity between what speakers semantically state and what they ironically imply” (Gibbs, Bryant, & Colston, 2014, p. 585). This links irony to elements of incongruity-resolution theories in humor. Supporting the assumption of superiority mechanisms, Schmidt-Hidding (1963) characterized irony by the speaker’s intent to create a mutual sense of superiority towards a third with an initiated audience and a

behavior towards the next that is described as “mocking the stupid” (p. 51). In the face of these considerations, it is thus highly surprising that irony is largely absent from accounts on humor production or as a style to be humorous (i.e., “I make ironic criticisms to tease my friends”). In similar vein, irony is rarely represented in tools assessing the sense of humor².

Moreover, verbal irony can be reasoned to be one tool in disparagement humor (Zillmann, 1983), aiming at ridiculing, humiliating, or putting others down (i.e., target its objects with biting criticism and make others laugh at the same time). As an empirical support for this view, Leggitt and Gibbs (2000) found their participants to rate a speaker feeling more „scornful, disdainful, and contemptuous“ (p. 6) when making statements classified as sarcastic and ironic, compared to other types of statements. Colston (1997) presents findings demonstrating that ironic criticism enhances condemnation compared to literal criticism, further indicating that irony can serve as a means of “salting a wound” and making it a form of speech suitable to ridicule others. Given that ridicule typically also employs disparaging humor to critically point to or even punish social transgressions (e.g., Bergson, 1924; Titze, 2009), the “clash” of a critical attitude and humor in irony (Garmendia, 2014) can be reconciled by separating the addressees of the critical and the receivers of the humorous component. Supporting this notion, Gibbs (2000, p. 10) states: “In some cases, then, ironic comments can be both humorous and negative, precisely because people find amusement in disliked targets being disparaged”. Furthermore, if listeners do not get the irony in a conversation, this can lead to taunting amusement in the person making the ironic statement as well as bystanders.

To conclude, irony can be a *tool* to produce humorous remarks, which can be of benevolent or disparaging nature. In other words, it may depend on a person’s sense of humor how inclined he or she is to use irony or to get the meaning wrong in humorous ironic utterances. Consequently, not all of us may be able or prone to use irony to the same extent, just as not everyone may have the same inclination to detect verbal irony. However, little is

known about how typical and maximal verbal irony behavior varies across individuals.

Therefore, we next explore the conceptualization of irony from an individual differences perspective.

Is there individual differences variance in irony detection and production?

Verbal irony has been studied in a variety of experimental settings as regards the *comprehension* (see Colston & Gibbs, 2007, for an overview) and to a lesser extent also the *production* (Averbeck & Hample, 2008; Hancock, 2004; Rockwell & Theriot, 2001) of ironic utterances. The typical experimental approach consists of systematically varying target sentences in vignettes (Kreuz, 2000). As Kreuz (2000) points out, this has been used to test narrow predictions made by competing theories on irony processing. Still, "... variables such as personality and culture remain largely unaddressed" (Kreuz, 2000, p. 105). In an outlook on the future of irony studies Gibbs and Colston (2007) state that it is not yet clear "as to what personality characteristics make someone more prone to speaking ironically" (p. 590). The authors point to the finding that participants used speaker occupation as a cue when assessing speaker's tendency to use ironic speech (Pexman & Katz, 2001, cited in Gibbs & Colston, 2007). There is even more literature dealing with the role of speaker characteristics in listeners' interpretation of verbal irony (for an overview, see Pexman, 2005). We agree that these findings –that Pexman (2005) explains using theories of irony– are a starting point for building hypotheses on who is more inclined to use irony; however they were not a strict or direct test of who uses irony. Rather, in the studies reviewed by Pexman (2005) speaker characteristics usually were either treated as an experimentally varied cue, or participants were asked to rate how likely they think speakers of different occupations are to use ironic speech. Supporting the view that not all of us are equally likely to use verbal irony, Gibbs and Colston (2007) suggest conducting case study analyses of individuals who are renowned for their use of irony in order to explore the qualities of what they call "the ironic mind" (p. 590). Following this notion, we assume that irony performance has a stable variance across

individuals with some more prone to use and understand verbal irony and some less. In other words: “the ironic mind” can be hypothesized to be an individual differences variable to be found in all of us to a varying degree.

To our knowledge, only two studies have investigated interindividual variance in irony production behavior in a targeted fashion (Ivanko, Pexman, & Olineck, 2004; Renner et al., 2008). Ivanko et al. (2004) employed a scale for self-reported use of sarcasm³ to account for interindividual variance in an irony production task (choice of either ironic or literal responses) and also an irony interpretation task (rating the speaker’s intent). Interestingly, self-reported use of sarcasm not only explained ironic statement choice in the production task but also the ratings of speaker’s attributes in the interpretation task. Although the study by Ivanko et al. (2004) is encouraging, the informative value of the findings needs to be seen as limited, most of all because irony production tendencies were assessed via self-reports and also because the interpretation task was evaluated in terms of ratings of speaker’s attributes (rather than scored with an irony detection performance criterion).

When assuming an individual differences perspective, we look at persons’ tendencies across a wide range of different situations involving verbal irony. We are interested in verbal irony behavior in terms of inclinations across measurement points in time and across situations. Therefore, for our approach, specifics of the situation (e.g., context or social factors) will be considered as “noise” because they add variance to the expression of underlying traits in behavior that is not specific to the person and hence distort the true influence of a person’s behavioral tendency (just like the variance accounted for by person characteristics is commonly treated as error variance in experimental studies on irony testing predictions by varying characteristics of the situation). In the remaining part of the current section, existing findings on irony performance will be explored with respect to two aspects. First, they will be evaluated in terms of the reported variance between individuals within the same experimental groups looking at standard deviations (*SDs*)⁴. Second, the attention will be

turned to explained variance in irony performance. The rationale behind considering this aspect is that meaningful variance in irony performance is a necessity for explaining it as a dependent variable by independent person-specific variables.

Akimoto et al. (2014) asked their participants' to decide whether the intention of a speaker in 80 scenarios was ironic or not. The chance accuracy rate alone can be expected to be 50%. They report an average accuracy rate of 96.2% with 5.3% *SD* in their irony detection task. This is a much higher hit-rate than the accuracy found in a preliminary survey the authors conducted (80%). So in face of the fact that tasks were rather easy to solve (indicated by the high means, i.e., subjects were detecting the irony in most of the tasks) there were still noteworthy differences between subjects' performances. These findings are consistent with a further study employing a dichotomous interpretation task: Winner, Brownell, Happé, Blum, and Pincus (1998) found an average error rate of .22 with a considerable variance ($SD = .28$) among healthy controls when they had to detect whether a target utterance was a joke (involving irony) or a lie. So in this study some participants detected the irony in all items whereas some were not performing above chance level.

In one of the few studies assessing irony *production*, Matthews, Hancock, and Dunham (2006) found considerable interindividual variance (*SDs*): when their participants had to choose between a literal and an ironic communicative response to eight situations, on average around half of the criticisms ($M = 4.31$, $SD = 1.14$) and one fourth ($M = 2.00$, $SD = 1.75$) of the compliments were delivered ironically, that is, by mock compliments and mock criticisms, respectively. Hence, also the use of ironic utterances varies between individuals. In a comparable paradigm used by Ivanko et al. (2004) the resulting individual differences in statement selection in a forced choice production task were meaningful in terms of self-reported use of sarcasm explaining variance in the choices made (self-reported use of sarcasm was positively related to the frequency of choosing sarcastic statements). To summarize, there appears to be a pattern in the results reported in studies investigating irony detection

performance. First, performance means are usually rather high (i.e., low error rates or high hit rates), pointing to a low difficulty of the tasks employed or selective sampling. Second, despite low difficulty (and possibly resulting ceiling effects) there is still variance that can be possibly made sense of in terms of explaining it by variables specific to the person. Furthermore, there is interindividual variance in irony production performance.

The question arising now is whether the individual difference variance can be fully explained by established traits, or whether there is something beyond. We argue that individual differences are linked to irony in two ways: First, the detection and production of verbal irony will be subject to established traits. Second, we expect individual differences in the extent to which people detect irony, produce irony, seek irony or enjoy irony (i.e., the *sense of irony*) over and above the variance shared with known variables. We will next present a set of hypotheses concerning those two notions.

Explaining differences in irony performance by known traits and ability

It can be assumed that established traits and abilities to a certain degree impact on the typical level of irony performance (i.e., in unobtrusive tasks), whereas general mental ability restricts the maximal level of performance (when being explicitly instructed to detect or produce irony). Involving cognitive and emotional processes, such as inferring another person's belief about the current state of affairs and inferring, identifying and understanding emotions (Ziv, Leiser, & Levine, 2011), irony detection can be argued to be subject to personality traits with cognitive and emotional components, such as biased beliefs or emotional responses. The production of irony may be subject to traits influencing interpersonal and humorous behavior, such as teasing, acting, and joking (e.g., Keltner, Capps, Kring, Young, & Heerey, 2001). As one of these traits, the histrionic self-presentation style was conceptualized to also go along with irony production (Renner et al., 2008). Histrionic self-presentation is defined as "a way of shaping everyday interactions by explicit As-If-behaviors" (Renner et al., 2008, p. 1303). As-If-behaviors, typically employed in order

to “gain attention, entertain others, liven up a situation, create good mood and to relieve stress and tension in oneself and others” (Renner et al., 2008, p. 1305), also encompass verbal irony.

Once more bridging irony and humor, we would like to hypothesize a link between the mis-detection of verbal irony and the fear of being laughed at (gelotophobia, Ruch & Proyer, 2008). The fear of being laughed at is a personality trait characterized by the bias to experience a broad range of social interactions involving humor (which gelotophobes generally misperceived as put-down humor if directed at them) and laughter (generally perceived as victimizing) as hurtful attacks, ridicule and contempt (see Ruch, Hofmann, Platt & Proyer, 2014, for a review). There are several reasons why gelotophobes can be assumed to be prone to misses but also false alarms in irony detection whereas non-gelotophobes do not. First, gelotophobes are characterized by having a strong sensitivity towards offense (Titze, 2009) and a low self-esteem (see Ruch et al., 2014). Being convinced to be deficient they can be considered to have a tendency to expect being criticized by others, especially in a derisive way, making them prone to suspect ironic compliments to be literal criticism. Secondly, given that “biting sarcasm” can be employed to ridicule others, gelotophobes may suspect irony when being addressed by compliments, because they have a bias to expect being ridiculed. Furthermore, irony can be used when putting down others in a derisive or sarcastic way. Hence, as a third possible explanation, gelotophobes may have experienced traumatizing events with ridicule conveyed by ironic compliments and thereupon –with a paranoid tendency to anticipated ridicule (Platt, Ruch, Hofmann, & Proyer, 2012)– view others as likely to address them with sarcasm. Hence, we assume that gelotophobia affects verbal irony detection, specifically when dealing with ironic compliments expressed via a mock criticism and also when dealing with literal compliments (in terms of a false positive irony detection).

Aside from gelotophobia and still staying in the realm of humor, there is reason to expect that the temperamental basis of humor affects irony performance. High-scorers in seriousness (as assessed with the State-Trait Cheerfulness Inventory–STCI, Ruch, Köhler, &

van Thriel, 1996) are described by “the preference for a sober, object-oriented communication style (for example, saying exactly what one means without exaggeration or ironic/sarcastic undertones)” (Ruch et al., 1996, p. 308). Thus, serious individuals, preferring a *bona fide* communication mode, may be inclined to miss out on irony when expecting pragmatic communication. Furthermore, seriousness might go along with a reduced readiness to process play signals typically going along with ironic teasing (Keltner et al., 2001).

When looking at irony *production*, two different dispositions towards laughter and ridicule can be expected to be relevant: interindividual tendencies to either a) *enjoying being laughed at* (i.e., gelotophilia; Ruch & Proyer, 2009), or b) *enjoying to laugh at others* (katagelasticism; Ruch & Proyer, 2009). While for example ironically criticizing oneself (by mock self-praise) might be a behavior aiming at making others laugh at one’s expense, ironic criticisms directed at others may serve to expose the reasons why others can be laughed at. Furthermore, bad mood (assessed with the STCI, Ruch et al., 1996) and especially the facet *ill-humoredness* (sullen, grumpy, grouchy feelings; Ruch et al., 1996) can be reasoned to go along with the expression of a negative attitude, hence making ironic criticisms more likely.

General mental ability in terms of intelligence has been assessed in several of the studies comparing patients and healthy controls as to their irony detection performance. Gaudreau et al. (2013) for example report a substantial association between irony detection and executive functions (with 21% shared variance). Mitchley, Barber, Gray, Brooks, and Livingston (1998) found a comparable correlation between the rate of errors made when cognitively appraising the meaning of sarcastic utterances and a non-verbal measure of general intellectual ability (28% shared variance) but not with a measure of premorbid verbal intelligence among $n = 13$ patients with schizophrenia. The authors explain the absence of a homologous relationship among healthy controls by the lack of variance in the irony performance task in this group (i.e., all controls answered all of the sarcastic items correctly). This implies that more difficult tasks are needed in order to avoid ceiling effects among

healthy adults. Varga et al. (2014) report similar results when looking at the association between irony comprehension performance and general intelligence (27% shared variance). The strength of these relationships can be viewed as sufficiently high to demonstrate that there is meaningful variance in irony comprehension performance that relies also on intellectual ability, but sufficiently low to discriminate irony comprehension from general intellectual ability. As regards irony *production*, there is not more than a weak hint at the role of general mental ability with intelligence being slightly correlated (i.e., indicating 14% shared variance) to self-reported use of irony as assessed with one item (Milanowicz, 2013).

To conclude, our position is that there are meaningful differences in irony performance that we can make sense of in terms of explaining it by personality or general mental ability (intelligence). Although irony performance is argued to rely on processes and mechanisms that are subject to personality and intelligence, meaningful individual differences in irony performance may not be fully accounted for by established traits. This consideration leads us to hypothesize that there may be a trait that we label the *sense of irony*. Next to entailing an ability component (as assessed by the maximal performance), the *sense of irony* can be reasoned to have a habitual component (as assessed by the typical performance). Thus, we next look into how the “sense of irony” could be conceptualized and eventually measured.

What is the *sense of irony*?

We would like to bring to discussion that person-specific affective and cognitive processing patterns important for irony performance culminate in a trait that we label the *sense of irony*. Traits are relatively stable over time and consistent across situations. We hypothesize that when dealing with ironic utterances and situations eliciting the production of irony, a person’s irony performance also depends on his or her *sense of irony*. For a more complete understanding of irony (and for successful experimenting or assessment) we want to distinguish among the following components: First, maximal irony behavior must be distinguished from typical irony behavior. Maximal irony behavior refers to a person’s

capacity to produce or detect irony. It determines the upper limit of possible performance in the sense of ability. Characteristically, the maximal irony behavior would be assessed with a performance test, just like intelligence. Typical irony behavior denotes a person's habitual level of irony production and detection. If not explicitly instructed to watch out for irony (or produce such; i.e., in an unobtrusive test), the rate at which individuals detect (or produce) irony would resemble this habitual component. For example, cultural rules, habits and expectations may explain why a person can score high in an explicit irony production test but at the same time hardly ever uses irony in real life. Apart from these factors, we argue that the *sense of irony* encompasses enduring tendencies toward a certain level of irony performance in relation to the upper limit of one's full capacity. Furthermore, the *sense of irony* may predict the emergence of mind-sets facilitating or impeding irony detection and production. Therefore, individuals high in *sense of irony* may be inclined to get into a state (e.g., bad mood) where they are prone to produce irony more readily when joining a group and also have a higher readiness to detect playful signals cueing irony (facilitating irony detection).

Assessment of the *sense of irony*

There is a need to develop means of assessment that make variance in irony performance measurable. In general, tests are needed that allow for the assessment of habitual levels of irony performance (i.e., the typical behavior rather than only maximal behavior). This could be attained by unobtrusive tests or by means of utilizing more ambiguous stimuli.

A test for the assessment of the *sense of irony* needs to employ items that are more difficult than the performance tasks and ad-hoc tests developed so far. Item difficulties should show a range allowing for a differentiation between subjects on the whole spectrum of the variable. Also, the evaluation of non-ironic distractor items is essential in order to cover false positive detection of irony (cf. Kreuz, 2000). In terms of signal detection theory (Green & Swets, 1966), research on verbal irony detection has –to our knowledge without exception– focused on factors leading to false negative detection of verbal irony, neglecting the

investigation of false positive detection; i.e., taking literal language for verbal irony (false alarms). We hypothesize that the presumed phenomenon of false positive irony detection is not limited only to individuals with the fear of being laughed at (gelotophobia). Also non-gelotophobes can be assumed to differ in their inclination to falsely detect irony in literal utterances. Given that situations involving literal language can be ambiguous and, therefore, misperceived, false positive irony detection can be considered to also have high relevance in social and professional functioning (such as joking, flirting, teasing, negotiating, debating, etc.). Literal language is far more frequent than verbal irony, which according to Gibbs's (2000) findings can be estimated to occur with a frequency of 8% of turns taken (in conversations among friends). Hence, the possibilities provided for mistaking literal utterances as irony are by nature more frequent than instances when ironic language could remain unrecognized.

Outline of future directions and possible applications

To summarize, we argued that irony can be described to get frequently used with a humorous intent, both in benevolent and disparaging ways. Furthermore, we reviewed evidence stressing the need for considering interindividual differences in irony performance. Also, we recommend developing assessment tools for both, the typical and maximal irony behavior in its different facets (i.e., considering also false positive irony detection).

We propose that there are at least three ways to apply the assessment of individual differences in irony performance to new research questions. First, focusing on individual differences in irony performance is a prerequisite to study who is able (and inclined) to produce and experience the humor in irony (also in the disparaging part). Second, in the face of first evidence for regional differences in self-reported use of sarcasm (Dress, Kreuz, Link, & Caucci, 2008), new standardized tests can fuel cross-cultural research on irony. Third, correlates and mechanisms of irony performance can be studied in a more targeted (and more

controlled) fashion if we develop tests tapping into interindividual variance in irony performance among healthy adults instead of resorting to subjects with disorders.

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Footnotes

1 Accordingly, irony performance can have both, the status of a dependent or independent variable, reliant on whether it is treated as a criterion predicted by known personality traits or as an indicator of the *sense of irony*.

2 For an exception, see items of the State-Trait-Cheerfulness Inventory (trait form, STCI-T<106>; Ruch et al., 1996, item 86: “Irony doesn’t suit me”) as well as the Humorous Behavior Q-sort Deck (HBQD; Craik, Lampert, & Nelson, 1996, item 57: “Is sarcastic.”). Furthermore, the As-If-Scale (Renner et al., 2008) accounts for both humor and irony when paraphrasing use and employment of cues for verbal irony (e.g., item 2: “When I say something I often change my voice to indicate that I do not really mean what I say”).

3 The terms “irony” and “sarcasm” are often used interchangeably in the existing literature. Here, we say “sarcasm” rather than “irony” if the authors used this term. However, we generally use the term “irony” as it was defined as a superordinate category entailing also sarcasm. Following Schmidt-Hidding (1963), irony is characterized by saying something differently than what is meant (but with an in-group-serving intent), whereas sarcasm indeed employs the figure of irony but in the context of hostile behavior. In line with this distinction, Gibbs (1986) refers to *The Oxford English Dictionary* when he defines that “sarcasm depends for its effect on ‘bitter, caustic, and other ironic language that is usually directed against an individual’” (p. 3). However, he specifies that “it is possible to make sarcastic remarks without being ironic” (Gibbs, 1986, p. 3). Hence, not least in the context of humor, “irony” rather than “sarcasm” appears to be the term covering the broad spectrum of ironic language.

4 Low *SDs* (in relation to the possible range of the variable) indicate that individuals do not disperse much in terms of the deviation of their performance from the sample mean. High *SDs* indicate a broad distribution of individuals’ performance scores along the possible range of the variable.