Emotional processing of ironic *vs.* literal criticism in autistic and non-autistic adults: Evidence from eye-tracking

RUNNING TITLE: Emotional processing of irony in autism

Mahsa Barzy [1]

Ruth Filik [2]

David Williams [1]

Heather J Ferguson [1]

[1] School of Psychology, University of Kent, UK

[2] School of Psychology, University of Nottingham, UK

Correspondence to:
Heather Ferguson
School of Psychology
Keynes College
University of Kent
Canterbury
Kent CT2 7NP
England, UK

Email: h.ferguson@kent.ac.uk

Lay Summary: In line with research showing that autistic people have difficulties considering others' mental states, we found autistic adults were impaired at distinguishing the emotions and intentions experienced by story characters who received sarcastic comments (e.g. "That was fantastic parking" in a context where someone's parking was particularly bad). These findings highlight the difficulties that autistic people experience taking into account other peoples' intentions during communication to appropriately anticipate their emotional responses.

Abstract

Typically developing (TD) adults are able to keep track of story characters' emotional states online while reading. Filik et al. (2017) showed that initially, participants expected the victim to be more hurt by ironic comments than literal, but later considered them less hurtful; ironic comments were regarded as more amusing. We examined these processes in autistic adults, since previous research has demonstrated socio-emotional difficulties among autistic people, which may lead to problems processing irony and its related emotional processes despite an intact ability to integrate language in context. We recorded eye movements from autistic and non-autistic adults while they read narratives in which a character (the victim) was either criticised in an ironic or a literal manner by another character (the protagonist). A target sentence then either described the victim as feeling hurt/amused by the comment, or the protagonist as having intended to hurt/amused the victim by making the comment. Results from the non-autistic adults broadly replicated the key findings from Filik et al. (2017), supporting the two-stage account. Importantly, the autistic adults did not show comparable two-stage processing of ironic language; they did not differentiate between the emotional responses for victims or protagonists following ironic *vs.* literal criticism. These findings suggest that autistic people experience a specific difficulty taking into account other peoples' communicative intentions (i.e. infer their mental state) to appropriately anticipate emotional responses to an ironic comment. We discuss how these difficulties might link to atypical socio-emotional processing in autism, and the ability to maintain successful real-life social interactions.

Keywords: Language comprehension, irony, sarcasm, perspective, emotion, eye-tracking, autism

Emotional processing of ironic *vs.* literal criticism in autistic and non-autistic adults: Evidence from eye-tracking

Figurative language is widely used in social situations to describe different emotions (Fussell & Moss, 1998). Irony is a form of figurative language that incorporates cues from context (e.g. facial expressions, body language, nature of the situation etc.) to convey a meaning that is opposite to the literal meaning of what is being said (Grice, Cole, & Morgan, 1975). One of the most common social functions of using irony is delivering a criticism using positive words, known as *ironic criticism* or *sarcasm*, a type of irony that is targeted towards an individual and is tightly bound to emotions (Boylan, & Katz, 2013; Shamay-Tsoory, Tomer, & Aharon-Peretz, 2005). For example, a superficially positive comment such as, "You are such a punctual person", uttered in a situation in which you are late to meet a friend actually criticises your undesirable behaviour of being late in an indirect manner. In this paper, we report a pre-registered experiment that explores the real-time processing of socio-emotional responses to verbal irony in autistic and non-autistic individuals[1] - a developmental disorder that is characterised by deficits in social functioning and emotional processing.

Ironic criticism seems to serve a set of complex and mixed social and emotional functions that go beyond simple criticism. For example, it has been suggested that through ironic criticism the speaker may also intend to evoke other emotions in the audience, such as amusement (see e.g., Filik, Brightman, Gathercole, & Leuthold, 2017, for a recent overview). The existing literature offers mixed results about the communicative functions of ironic criticism, and about the kinds of emotional response to ironic criticism expressed by both the protagonist and the victim. For example, the *tinge hypothesis* suggests that ironic criticism decreases the negative aspect of condemnation compared to literal criticism (Dews, & Winner, 1995; Dews, Winner, & Kaplan, 1995). According to this hypothesis, irony not only moderates the level of criticism expressed, but it also lessens the level of praise when giving compliments. This hypothesis has been supported in two studies by Dews and Winner (1995), who found that individuals perceived ironic compliments as less positive and ironic criticism as less negative, compared to literal compliments and literal criticism. Other researchers, however, have proposed that the level of condemnation can actually be *increased* in a more socially acceptable manner through ironic criticism (Brownell, Jacobs, Gardner, & Gianoulis, 1990; Colston, 1997). For example, Bowes and Katz (2011)

---

[1] We acknowledge recent debates about the terminology used to describe autism, and in this paper adopt the identity-first language recommended by autistic adults and parents in Kenny, Hattersley, Molins, Buckley, Povey, and Pellicano (2016).

demonstrated that sarcastic arguments were rated as more relationally aggressive and the recipients of these arguments were perceived as being more victimised. Interestingly, they found that the perspective that individuals adopted modulated these ratings. For example, participants rated the ironic comments as more entertaining or humorous when they were adopting the perspective of the protagonist rather than the victim.

The majority of previous research has applied 'offline' measures, such as questionnaires, to study the emotional aspects of processing irony in a victim *vs.* protagonist (e.g. Akimoto, & Miyazawa, 2017; Dews, et al., 1995; Leggitt, & Gibbs, 2000; Milanowicz, 2013). While these explicit measures have provided a useful means of assessing the broad emotional consequences of verbal irony, they can be limited by response biases and errors, necessarily involve disruption to processing, and do not assess processing in real-time. In contrast, recording eye-movements provides moment-to-moment reading time measures, which can be used to understand what influence the manipulated variable has on individuals' reading behaviours, for example whether any anticipatory processes are involved or whether readers struggle with comprehending certain words/sentences by making regressions or having longer reading times (Rayner, Chace, Slattery, & Ashby, 2006). More recently, a few studies have applied online measures, such as eye-tracking and event -related brain potentials (ERPs), to investigate how readers keep track of temporal and emotional shifts in stories, and have demonstrated that readers are sensitive to mismatches between a character's expected and described emotional states (Carminati, & Knoeferle, 2013; Carminati, & Knoeferle, 2016; Komeda, & Kusumi, 2006; Leuthold, Filik, Murphy, & Mackenzie, 2012; Munster, Carminati, & Knoeferle, 2014; Ralph-Nearman & Filik, 2018; Rinck, & Bower, 2000; Vega, 1996; Zwaan, 1996). Moreover, some researchers have examined the online processes underlying sarcasm comprehension using eye-tracking (e.g. Au-Yeung, Kaakinen, Liversedge, & Benson, 2018; Deliens, Antoniou, Clin, Ostashchenko, & Kissine, 2018; Filik, Howman, Ralph-Nearman, & Giora, 2018; Filik, Leuthold, Wallington, & Page, 2014; Filik, & Moxey, 2010; Kaakinen, Olkoniemi, Kinnari, & Hyönä, 2014; Olkoniemi, Ranta, & Kaakinen, 2016; Olkoniemi, Johander, & Kaakinen, 2019; Olkoniemi, Strömberg, & Kaakinen, 2019; Țurcan & Filik, 2016; 2017). These studies generally find that comprehending irony incurs higher processing costs than comprehending literal language, suggesting that the salient meaning (i.e. the most familiar, frequent and conventional meaning) is activated by default and must be overridden to interpret ironic statements, irrespective of how biasing the context is (Giora, 1997; Giora, 2003).

Only one study to date has used eye-tracking methods to examine how emotional responses to verbal irony unfold online, and how perspective modulates these emotional responses (protagonist *vs.* victim). Filik et al. (2017) conducted two experiments: In the first experiment, participants were presented with short narratives (as in (1) below), in which a character (the victim) was either criticised in a sarcastic or a literal manner by another character (the protagonist). This was followed by a target sentence, in which either the victim was hurt by the comment (as in 2a) or in which the protagonist intended to hurt the victim by making the comment (as in 2b, i.e., encouraging participants to switch between perspectives).

(1) Sandra had misjudged the distance when reversing into the space and bumped into the car behind her. Harriet said to her, "That was fantastic/horrendous parking".

(2a) Sandra was really hurt/amused by what she said.

(2b) Harriet had intended this to be a very hurtful/amusing thing to say.

Participants' eye movements were recorded while reading the narratives. Filik et al.'s (2017) second experiment was almost identical to the first, but here the target sentence described the victim finding the comments amusing/entertaining or the protagonist intending for the comments to be amusing/entertaining. The aim was to investigate how individuals integrate the emotional responses of hurtful *vs.* amusing, when processing ironic *vs.* literal criticism. Results from Experiment 1 showed that participants initially expected the characters to be more hurt by ironic *vs.* literal comments (i.e. they experienced greater processing difficulties, as evidenced through longer reading times, when reading about a 'hurt' response following literal than ironic criticism), but eventually integrated the hurt response more easily in the literal *vs.* ironic context (i.e. had shorter reading times on reaching the end of the sentence that described the emotional response). In addition, when the character was described as having an amused response to the comment (Experiment 2), on reaching the end of the sentence which described the emotional response, participants made fewer regressions and had shorter reading times following the ironic comments compared to the literal ones, meaning that ironic comments were later perceived as more amusing compared to literal comments. Based on these results, Filik et al. proposed a two-stage account where comprehending emotional responses to ironic criticism includes 1) an initial stage in which ironic criticism (sarcasm) increases the anticipated 'sting' of a critical comment, and 2) a later stage in which readers ultimately rationalize criticism that is delivered ironically as being less hurtful and more amusing. These findings demonstrate that readers keep track of the story characters' emotions in real-time; ironic comments were deemed harsh at first, but were later

integrated with the protagonist's true intentions (i.e., to be amusing). Importantly, readers were also sensitive to perspective; they found it easier to integrate an amused response following a critical comment when adopting the perspective of the protagonist *vs.* victim.

The present study aimed to use eye-tracking for the first time to investigate the processing of emotional responses for ironic *vs.* literal criticism in autistic adults. Autism spectrum disorder (ASD) is a neurodevelopmental disorder diagnosed on the basis of social-communication difficulties, and restricted and repetitive behaviors and interests (American Psychiatric Association, 2013). These social-communication difficulties have been associated with impairments in pragmatic abilities or processing language in context (i.e. global coherence), as well as difficulties considering the intentions/mental states of others [Theory of mind (ToM); Booth, & Happé, 2010; Happé, 1997; Happé, 1993; Jolliffe, & Baron-Cohen 1999; Larkin, Hobson, Hobson, & Tolmie, 2017; Pearson, Ropar, & Hamilton, 2013]. Autistic individuals have also been shown to experience broad difficulties identifying and interpreting emotions in the self and others (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001; Uljarevic & Hamilton, 2013). Some researchers have shown specific impairments in figurative language understanding among autistic individuals. For example, Jolliffe and Baron-Cohen (1999) found that high functioning autistic adults were impaired at using context to interpret non-literal statements.

Taken together, these socio-emotional difficulties suggest that the autistic group would have problems processing irony and its related emotional processes. This prediction is partially borne out in early studies with children and adolescents, which have largely shown that comprehension of irony is impaired and delayed among autistic participants, compared to their typically developing peers (TD; e.g. de Villiers, 2011; Gyori, 2006; Wang, Lee, Sigman, & Dapretto, 2006). However, only a handful of studies have experimentally tested online emotional processing in narratives, or irony comprehension directly, among autistic adults. In contrast to the broader social-communication impairments described above, these studies have largely demonstrated an undiminished ability to comprehend irony and track emotional states online, thus adding to a growing literature showing that autistic adults can integrate linguistic input with context in real-time (e.g. Au-Yeung et al., 2018; Barzy, Williams, Black, & Ferguson, submitted; Black, Williams, & Ferguson, 2018; Ferguson, Black, & Williams, 2019; Howard, Liversedge, & Benson, 2017a, b, c). Specifically, Au-Yeung, Kaakinen, Liversedge, and Benson (2015) recorded eye movements while autistic and non-autistic participants read stories that could be interpreted as ironic or not, depending on the context. Results revealed an intact ability to comprehend irony in autistic participants, who used context to infer a non-literal meaning for ironic passages, albeit at a slower rate

than the TD controls. Similarly, Black, Barzy, Williams, and Ferguson (2019) found that autistic adults were unimpaired, or even enhanced, in tracking a story character's emotions based on that character's goals and actions (i.e. counterfactual emotions, regret and relief) compared to TD participants. Thus, these online studies suggest that autistic adults can understand basic irony, and are able to infer complex emotions for characters in a story.

The current study makes an important contribution to this literature as it tests how autistic adults process the emotional responses to irony in real-time, thus combining the questions addressed independently in Au-Yeung et al. (2015) and Black et al. (2019). Moreover, our study is the first to examine whether/how autistic adults will track multiple story characters' perspectives in a story to distinguish the emotional intentions and responses experienced by a protagonist or victim, respectively. To this end, we conducted a pre-registered experiment that adapted the design from Filik et al. (2017), by combining the two experiments into a single experiment (i.e. we included both negative and positive emotions, and compared effects directly). Participants' eye movements were recorded while they read narratives as in (1) and (2ab), in which we manipulated the type of criticism (ironic *vs.* literal), character perspective (victim *vs.* protagonist), and emotional valence of the response (hurt *vs.* amusing), and compared these effects for autistic adults with age and IQ-matched TD adults. The degree of difficulty readers experienced integrating the text was indicated from measures of reading times and regressive eye movements (Rayner, 1998). This experiment therefore tests the speed with which readers can infer emotions and intentions for other people, and keep track of the narrative context during language processing, and therefore addresses a gap in the literature on online irony comprehension in autistic adults.

First of all, we expected to replicate the key findings from Filik et al. (2017), supporting the two-stage processing account for emotional responses to irony. Thus, we predicted that TD readers would initially find it easier to integrate a hurt response following an ironic *vs.* literal comment (i.e. on the critical emotion word itself), then later find it easier to integrate a hurt response following a literal *vs.* ironic comment, and an amused response following an ironic *vs.* literal comment. As in Filik et al., we also predicted that perspective would influence later processing (i.e. on the words following the emotion word), as it would be easier to integrate an amused response following criticism from the protagonist's perspective than the victim's perspective. Regarding how these effects might be modulated by autism, we contrasted two predictions based on previous research in this area. On one hand, if autistic adults experience impairments in processing emotions, inferring the mental states of others, and integrating

information in context (as reported in Deliens, Papastamou, Ruytenbeek, Geelhand, & Kissine, 2018; Happé, 1993; Martin & McDonald, 2004), then we would expect delayed or absent integration of characters' emotional states following verbal irony, compared to TD adults. In contrast, if online irony and emotional processing are intact in autistic adults, then we would expect this group to experience the same patterns of integrating emotional states following ironic *vs.* literal criticism as TD adults, and thus Group would not interact with any other variables.

<div align="center">Method</div>

All methodological procedures were pre-registered on the Open Science Framework (OSF) website (see https://osf.io/wrk2v/).

Participants

All the autistic and TD participants were recruited using the Autism Research at Kent (ARK) database. A total of 53 participants were initially recruited to take part in the study, but four were excluded prior to analysis due to technical problems with the eye-tracker or excessive data loss during the eye-tracking task. Hence, the final sample included 49 participants, specifically, 25 autistic adults and 24 TD adults, which is consistent with our pre-registered target sample size. This sample size was chosen *a priori* based on the sample size used in each experiment in Filik et al. (2017; N = 28), and to be comparable or even exceed the sample sizes used in previous research that has examined eye movements in reading in autistic and TD adults (e.g. Au-Yeung et al., 2015, 2018; Black et al., 2018; 2019; Ferguson et al., 2019; Howard et al., 2017abc).

Participants in each group were matched on gender, age and IQ (measured by the Wechsler Abbreviated Scale of Intelligence; WASI; Wechsler, 1999; see Table 1 for demographic information). All were native English speakers, and none had a diagnosis of dyslexia or reading comprehension impairment. None of the TD participants reported any current psychiatric diagnoses. All participants had normal or corrected-to-normal vision, which allowed the experimenter to conduct successful 9-point based calibration, and validation, procedures for all participants. Autistic participants had a formal diagnosis of Autism Spectrum Disorder (DSM 5, American Psychiatric Association, 2013), or Autistic Disorder, Asperger's Syndrome or Pervasive Developmental Disorder Not-Otherwise Specified (DSM-IV, American Psychiatric Association, 1994). Participants were asked to bring their diagnosis documents with them so the

experimenter could confirm and make a copy for records. Current autistic traits were assessed in the autistic group by a trained, research-reliable researcher, using module 4 of the Autism Diagnostic Observation Schedule (ADOS-2 Module 4; Lord et al., 2000), and videos were double-coded to ensure reliability of scoring (see Table 1 for the average overall total score and standard deviation). Ten individuals in the autistic group scored lower than 7 on the ADOS-2 Module 4 (i.e. the cut off score, scores ranged between 1 to 21). All participants completed the Autism-spectrum Quotient (AQ; Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001) as a measure of self-reported autistic traits. Details of individuals' scores on each demographic criterion are available on OSF (see https://osf.io/vdqkn/).

------------- TABLE 1 HERE -------------

Materials and design

Experimental items were based on those used in Filik et al. (2017). Each scenario consisted of three sentences. The first sentence provided the context for the protagonist to criticize the victim (e.g. "John had been scared by a huge spider in the bathroom sink and immediately ran out shouting."). The second sentence was the protagonist's critical comment, which was delivered either ironically or literally (e.g. "Anna said to him, "That was brave/cowardly.""). The final target sentence indicated an emotional response either from the victim's perspective or as intended by the protagonist. This emotional response was either negative or positive (e.g. "John thought that this was a very mean/witty remark." OR "Anna had meant for this to be a very mean/witty remark."), and was expressed using a variety of words for each emotion (e.g. Hurt: insensitive, hurtful, upset, offended, mean, insulted, unkind, cruel; Amused: comical, humorous, witty, tickled, funny, amused, entertained, hilarious). An example item is shown in Table 2, and the full stimulus list can be found in the Appendix.

------------- TABLE 2 HERE -------------

Thus, the experiment employed a 2 x 2 x 2 x 2 mixed design, crossing three within-subjects variables, Type of criticism (ironic *vs.* literal), Perspective (victim *vs.* protagonist), and Emotional valence (hurt *vs.* amused), with a between-subjects variable, Group (autistic *vs.* TD). Eight presentation lists were created, with each list containing 56 experimental scenarios, seven in each of the eight within-subjects conditions. Participants were randomly assigned to read one list, meaning that each participant only saw each experimental sentence once, in one of the eight conditions (i.e. seven scenarios for each condition). These experimental items were presented in a random order, alongside an additional 30 filler items. None of the filler scenarios included any emotional responses, and most described interactions between two characters. Five of the fillers included direct speech, five included indirect speech, and the other 20 described mental states. Comprehension questions were included after 25% of the trials to ensure that participants maintained attention throughout the task (e.g. *Where did John see a huge spider?*). Participants used the mouse to select the correct answer from two choices (e.g. in the bathroom sink < > in the bedroom).

In addition, to obtain a comparative measure of Theory of Mind ability across groups, participants completed the Animations Task, based on Abell, Happé, and Frith (2000), in which they watched a series of silent video clips and had to describe interactions between a large red triangle and a small blue triangle. Four clips were designed to prompt an explanation of the triangles' behaviour in terms of epistemic mental states, such as beliefs, intentions, and deception. Each clip was presented to participants on a computer screen. After the clip was finished, participants described what had happened in the clip. An audio recording of participants' responses was made for later transcription.

Procedure

The study was approved by the School of Psychology Research Ethics Committee, at the University of Kent. Participants' eye movements were monitored using an EyeLink 1000 Plus eye-tracker, which tracked the dominant eye. A chin rest was used to minimise head movements, and to set a fixed distance of 70cm between participants' eyes and the VDU screen showing experimental sentences. At the start of the experiment, and during the experiment where necessary, calibration was performed using a 9-point procedure. Each trial began with a central drift correction to verify accurate calibration, followed by a square to indicate where the text would appear. Once participants accurately fixated on this square, text was presented in Arial font size 14, left-aligned on the screen, with each of the three sentences for each scenario appearing on a separate line. Participants were instructed to read each

scenario carefully for comprehension, then click with the mouse when they had finished reading to proceed either to the next scenario, or a comprehension question (25% of trials). Each trial timed out after 30 seconds. The reading task took approximately 20-25 minutes to complete, and was always completed before the AQ, WASI and animations task. Autistic participants returned on a separate occasion to take part in the ADOS-2.

<div align="center">Results</div>

All the analyses were pre-registered based on those used in Filik et al. (2017), and the full datasets and analysis scripts are available on the Open Science Framework web pages (see https://osf.io/wrk2v/).

Animations Task

To verify that ToM competency was compromised in our autistic sample, each verbal transcription was scored on a scale of 0–2 for accuracy, with 0 showing that participants focused on an unimportant or minor part of the interaction between triangles, 1 indicating a partially correct answer (i.e. describing the whole event but missing the critical point/mental state), and 2 showing that participants included a correct reference to the mental states of the triangles (based on the criteria outlined in Abell et al., 2000). This resulted in a total score for each participant between 0 and 8. Twenty percent of transcripts were scored by two independent raters. Inter-rater reliability across all clips was excellent according to Cicchetti's (1994) criteria (intraclass correlation = 0.85). Results showed that autistic participants were significantly impaired at describing the animations in terms of their mental states compared to the TD participants (Ms = 4.20 *vs.* 5.54, respectively; $t(47) = 2.24$, $p = 0.03$, d = 0.64).

Methods of Analysis

The final target sentence for each experimental scenario was divided into three regions for analysis. The emotional response (e.g. "mean" here) was always the critical region, the word directly preceding it was always the pre-critical region, and the word/phrase that was presented after it was the post-critical region. Pre-critical and post-critical regions were identical across conditions, and the critical region was equated for length across conditions (Amused *vs.* Hurt, Ms = 7.43 *vs.* 6.88, respectively; $t(110) = 1.40$, $p = 0.165$).

	Pre-critical	**Critical**	**Post-critical**
John thought that was a	very	mean	remark.

Using a standard automatic procedure in UMass EyeDoctor 0.6.5 software, eye movements were processed so that fixations shorter than 80ms were pooled with larger adjacent fixations, fixations shorter than 40ms (and not within three characters of another fixation) were excluded, and fixations longer than 1200ms were truncated. Replicating Filik et al. (2017), five measures of reading behaviour were extracted from the eye movements: first-pass reading time, first-pass regressions out, regression path reading time, second-pass reading time, and skipping rate. First-pass reading time is the duration of gaze on a region from first entering it until first leaving it, and thus measures the costs of early text processing. First-pass regressions out measures the proportion of trials on which there is a regressive saccade from the current region to reinspect earlier text, and thus indicates the degree of difficulty readers experience during initial processing of the current region. Regression path reading time is the sum of fixations from first entering a region from the left to first leaving it on the right, and therefore indicates when readers experience difficulties processing text in a region and regress back to seek information from earlier regions. Second-pass reading time is the duration of gaze on a region when readers returned to that region for a second time (i.e. returning to a region following a saccade to the left or right). Finally, skipping rate is the proportion of trials in which a region was skipped (i.e. no fixations were made). The mean values for each of these five reading measures are shown in Table 3 for each region, condition and group.

------------- TABLE 3 HERE -------------

Data for the three continuous measures (first-pass reading times, regression path reading times, and second-pass reading times) was log-transformed prior to analysis to increase normality due to positively skewed reading times, as recommended by Baayen et al. (2008). Eye movement data was analysed separately for each region, using the lmer function in the lme4 package for continuous data and the glmer function in the lme4 package for binary data (i.e. first-pass regressions out and skipping rate),

using R [R Core Team, 2016], version 1.2.1335 (Bates et al., 2015). Deviation coding (-0.5 *vs.* 0.5) was applied to enable direct comparison between the two levels of each fixed effect. The maximal random effects structure was used, including participants and items as random effects in each model, and crossed random slopes of Group, Type, Emotion, and Perspective within items, and Type, Emotion, and Perspective within participants (as suggested by Barr, Levy, Scheepers, & Tily, 2013). When random effects led to non-convergence due to overparameterization, we removed them from the models. Details of the final models for each region/measure are available in the R script on OSF. Full statistical effects for each measure and across different regions are summarised in Table 4. Note that due to space constraints, only significant effects are discussed in the text here.

------------- TABLE 4 HERE -------------

Pre-critical word region

In this region, there was a significant effect of Perspective in first-pass reading times (protagonist *vs.* victim: *M* = 242.14 *vs.* 254.18, *SE* = 3.23 *vs.* 3.98; Cohen's *d* = 0.25), first-pass regressions out (*M* = 0.17 *vs.* 0.25, *SE* = 0.02 *vs.* 0.02; Cohen's *d* = 0.20) and regression path reading times (*M*= 430.65 *vs.* 474.34, *SE*= 40.64 *vs.* 37.30; Cohen's *d* = 0.16), showing that participants had longer reading times and made more regressions out when the target sentence depicted the victim's perspective compared to the protagonist's perspective. This pattern replicates the results obtained by Filik et al. (2017), and suggests that readers found it easier to adopt the protagonist's perspective when processing these narratives.

There was also a significant effect of Group in first-pass regressions out (autistic *vs.* TD group: *M* = 560.17 *vs.* 349.42, *SE* = 50.08 *vs.* 24.52; Cohen's *d* = 0.33) and regression path reading times (autistic *vs.* TD group: *M* = 0.28 *vs.* 0.14, *SE* = 0.02 *vs.* 0.01; Cohen's *d* = 0.23), revealing increased likelihood of regressions, and longer regression path reading times in the autistic group compared to the TD group (as seen in previous eye-tracking research). In addition, the Group × Emotion × Type interaction was significant in this region on the first-pass regressions out measure (Cohen's *d* = 0.50), however none of the post-hoc comparisons reached significance when tested (*zs* < 1.17, *ps* > 0.238).

Critical word region

In this critical region, there was a significant effect of Group in regression path reading time (Cohen's d = 0.25), as participants in the autistic group had longer reading times (M= 783.53, SE= 39.66) compared to the TD group (M = 548.67, SE = 21.40), mirroring the patterns seen in the pre-critical region and previous eye-tracking reading research. There was also a significant effect of Type in regression path reading time (Cohen's d = 0.25), reflecting longer reading times in the literal criticism condition (M= 685.83, SE = 33.54) compared to the ironic criticism condition $(M$ = 640.83, SE = 29.20).

Importantly, analysis of first-pass regressions out revealed a significant 4-way interaction between Group, Emotion, Type, and Perspective (see Figure 1; Cohen's d = 0.92). To explore this effect further, we tested the Emotion x Type x Perspective interaction separately for each Group. The TD group showed a significant effect of Type (literal > ironic; $Est.$ = 0.33, SE = 0.17, z = 1.96, p = 0.050), and the Emotion x Type x Perspective interaction was marginally significant ($Est.$= -1.27, SE = 0.67, z = -1.89, p = 0.058). To follow up this three-way interaction in the TD group, we first separated the data by Emotion (thus replicating Experiments 1 and 2 in Filik et al., 2017) and found a significant Type x Perspective interaction in the hurt condition ($Est.$ = -1.03, SE = 0.46, z = -2.23, p = 0.026), but not in the amused condition ($Est.$ = 0.36, SE = 0.49, z = 0.74, p = 0.460). Post-hoc comparisons revealed that TD participants made more regressions out when the protagonist had used literal criticism to hurt the victim (M = 0.36, SE = 0.05) compared to when the protagonist used ironic criticism to hurt the victim (M = 0.23, SE = 0.04; Est. = 0.71, SE = 0.32, z = 2.22, p = 0.026). There was no difference between the two types of criticism when the emotional reaction was described from the victim's perspective ($Est.$ = -0.10, SE = 0.34, z = -0.30, p = 0.770). This pattern suggests that participants in the TD group expected the protagonist to intend more hurt when they used ironic than literal criticism (i.e. they found it more difficult to integrate a hurt emotion following literal criticism), but were equally likely to expect a hurt response for the victim following both types of criticism.

In contrast, the three-way interaction did not reach significance in the autistic group ($Est.$ = 1.08, SE = 0.65, z = 1.66, p = 0.097)[2]; only the overall effect of Perspective (victim > protagonist; $Est.$ = 0.33, SE = 0.16, z = 2.01, p = 0.044) and the two-way Emotion x Perspective interaction were significant ($Est.$ = -0.87, SE = 0.33, z = -2.67, p = 0.007). Follow up analyses for this two-way interaction revealed that autistic participants made more regressions out from the critical region when the victim found the

---

[2] An exploratory analysis examined the effects underlying this marginal 4-way interaction, as in the TD group, but the Type x Perspective interaction was not significant in either the hurt or the amused condition (zs < 0.55, ps > 0.23), and none of the post-hoc comparisons of Type for each Perspective condition reached significance (zs < 0.38, ps > 0.24).

comment amusing (M = 0.45, SE = 0.02) compared to when the protagonist intended the comment to be amusing (M = 0.37, SE = 0.02; $Est.$ = 0.77, SE = 0.23, z = 3.37, p < 0.001). There was no difference between the two perspectives when the comment was described as hurtful ($Est.$ = -0.06, SE = 0.23, z = -0.24, p = 0.814). This pattern suggests that autistic participants successfully tracked the two characters' perspectives, and were immediately sensitive to the victim's expected emotions following the criticism (i.e. they found it more difficult to integrate an amused emotion), but importantly did not distinguish literal and ironic criticism.

Finally, analysis of second-pass reading time revealed a significant Group x Perspective interaction (Cohen's d = 0.35), however none of the post-hoc comparisons reached significance when tested (ts < 1.56, ps > 0.119).

------------ FIGURE 1 HERE ------------

Post-critical word region

In this region, there was a main effect of Emotion in regression path reading times (Cohen's d = 0.10), with longer reading times when the character was described as feeling amused (M = 1402.89, SD = 1606.76) compared to when the character was described as feeling hurt *(M = 1245.48, SD = 1198.3)*.

Similar to the critical region, analysis of first-pass regressions out in this post-critical region revealed a significant 4-way interaction between Group, Emotion, Type, and Perspective (see Figure 2; Cohen's d = 0.82). To follow up this interaction, we again tested the Emotion x Type x Perspective interaction separately for each Group. In the TD group, the Type x Perspective x Emotion interaction was significant (Est. = -2.39, SE = 0.84, z = -2.85, p = 0.004). As before, follow-up analyses were run separately for each emotion, and revealed a significant Type x Perspective interaction in the amused condition ($Est.$ = 1.38, SE = 0.61, z = 2.25, p = 0.024), but not in the hurt condition ($Est.$ = -0.90, SE = 0.57, z = -1.56, p = 0.118). Post-hoc comparisons revealed that TD participants made more regressions out when the victim perceived the literal criticism as amusing (M = 0.87, SD = 0.34) compared to when the victim perceived the ironic criticism as amusing (M = 0.73, SD = 0.45; Est. = 0.93, SE = 0.48, z = 1.94, p = 0.052). There was no difference between the two types of criticism when the emotional reaction was described from the protagonist's perspective ($Est.$ = -0.47, SE = 0.41, z = -1.16, p = 0.245). Taken together, this suggests that

TD participants expected the victim to feel more amusement when the protagonist used ironic than literal criticism (i.e. they found it more difficult to integrate an amused emotion following literal criticism), but were equally likely to expect the protagonist to intend an amusing emotion following both types of criticism. None of the effects reached significance in the autistic group ($zs < 0.81$, $ps > 0.420$).

There was also a significant 4-way interaction (Type x Perspective x Emotion x Group) in skipping rates (Cohen's $d = 0.52$), however none of the post-hoc comparisons reached significance when tested ($zs < 1.52$, $ps > 0.130$).

------------- FIGURE 2 HERE -------------

Discussion

In this paper, we sought to understand how autistic adults process the emotional responses relating to irony in real-time. Specifically, we examined whether and how autistic adults keep track of the perspective and emotional intentions of the characters in the story (i.e. the protagonist and the victim), following ironic criticism. In a pre-registered experiment, autistic and non-autistic adult participants were eye-tracked while they read short narratives in which a protagonist criticized the actions of a victim using either literal (e.g. "That was horrendous parking") or ironic (e.g. "That was fantastic parking") criticism. Subsequently, the victim was described as feeling hurt or amused, or the protagonist was described as intending to inflict hurt or amusement by this comment. Reading patterns (i.e. measures of reading time and incidence of regressions) indicated when readers experienced difficulty integrating the emotion words in each context.

Our results broadly replicated the key findings from Filik et al. (2017), thus validating the task as a sensitive measure of irony comprehension and emotion tracking. Firstly, type of criticism influenced reading on the critical word, with longer regression path reading times following literal than ironic criticism, indicating that readers found it easier to integrate an emotional response in the ironic condition. This pattern is consistent with previous research that has suggested a link between figurative language and emotional experiences, hence individuals may be more likely to associate ironic language with emotional responses, and consequently find it easier to integrate an emotional response following the ironic comment (Gibbs, Leggitt, & Turner, 2002; Knickerbocker, Johnson, & Altarriba, 2015). Secondly, readers had longer first-pass and regression path reading times and made more regressions

out of the pre-critical region when taking the victim's perspective compared to the protagonist's perspective, which suggests that they found it easier to process text from the protagonist's perspective. However, it is worth noting that in the victim condition, participants had to switch between the characters' perspectives twice (victim -> protagonist -> victim), whereas in the protagonist's condition participants only had to switch perspectives once (victim -> protagonist -> protagonist). Hence, longer reading times and more regressions in the victim condition could simply be due to the greater processing costs of switching between perspectives and working memory load (Black, Turner, & Bower, 1979).

More importantly, data from the TD group support the two-stage account put forward by Filik et al. In the critical region, TD individuals found it easier to integrate a hurt response when the protagonist had intended to hurt the victim by making an ironic comment (i.e. they made fewer regressions out from a hurt emotion word following ironic than literal criticism). This replicates the findings of Filik et al. (2017), showing that participants initially found it easier to integrate a hurt response following ironic criticism than literal criticism. Subsequently, in the post-critical region, readers experienced difficulties integrating an amused response for the victim following a literal comment, but processed the amused responses more easily following an ironic comment (i.e. they made more regressions out from an amused emotion word following literal than ironic criticism). This pattern is also consistent with Filik et al.'s findings, showing that processing emotional responses to irony involves two stages: readers initially expect the victim to feel more hurt following ironic criticism than following literal criticism, but that the victim will eventually find it more amusing than hurtful. The findings also provide further evidence for the tinge hypothesis, showing that sarcastic criticism is ultimately perceived as less negative and funnier (Dews & Winner, 1995; Dews et al., 1995). The fact that these emotional expectation effects were specific to the victim, and not the protagonist, shows that TD participants successfully tracked the different character perspectives in real time, and were sensitive to the distinct intentions and feelings that each might experience.

Interestingly, evidence for this two-stage process was absent in the autistic group; group modulated the 3-way effects between Type, Perspective and Emotion on first-pass regressions out. In the critical region, autistic participants distinguished emotional responses for the victim and protagonist (i.e. they found it harder to integrate when the victim found the comment amusing compared to when the protagonist intended the comment to be amusing), but did not discriminate between the two types of criticism. Thus, participants showed some evidence of tracking emotional responses for the two

characters, but criticism delivered ironically was interpreted in the same way as literal criticism, which suggests that readers did not infer the intended negative meaning for the ironic comment, and thus did not differentiate between the types of criticism.

Reading behaviours in the post-critical region were not influenced by any of our experimental manipulations in the autistic group. It is possible that this absent or reduced propensity to make perspective-relevant emotional inferences based on ironic criticism relates to the autistic group's significantly impaired ability to infer others' mental states (as measured by the animations task here; Abell et al., 2000). The narrative scenarios tested in the current study relied heavily on readers making rapid inferences about other peoples' mental states, extracting their intentions and associating them with appropriate emotions. Since our autistic sample were also impaired at inferring intentions for inanimate triangles and previous research has demonstrated an intact ability to comprehend basic irony in autistic adults (Au Yeung et al., 2015), the current findings could suggest that autistic people experienced a specific difficulty taking into account the communicative intentions of the protagonist (i.e. using ToM). Consequently, they may have struggled to appropriately anticipate the emotional responses to the ironic comment. This finding supports previous literature, which has shown impairments in representing the mental states of others in autism (Agostino, Im-Bolter, Stefanatos, & Dennis, 2017; Baron-Cohen, Tager-Flusberg, & Cohen, 1994; Baron-Cohen, 1997; Frith, 2003; Hamilton, 2009; Happé, 1994; Jolliffe, & Baron-Cohen 1999; Kapogianni, 2016; Sabbagh, 1999), including intentions (for discussion, see Williams & Happé, 2010). Ideally, this causal relationship would be tested by correlating ToM scores with the reading measures during irony comprehension. Unfortunately, these post-hoc analyses were not possible in the current study due to the relatively small sample size (25 autistic adults and 24 TD adults), and restricted range of variability (range: 0-8 in 9 discrete values; see Bland & Altman, 2011) and non-normal distribution of ToM scores obtained from the animations task (coW = 0.92477, $p<$ .001; using the Shapiro-Wilk normality test). However, future research should investigate whether and how ToM abilities predict emotion understanding in ironic language (See Bland & Altman, 2011).

Another possible explanation for the autistic group's apparent insensitivity to the emotional responses to irony is their reduced knowledge about the functional use of verbal irony. Previously it has been argued that as well as ToM, general conceptual knowledge of irony and its affective processes are necessary for comprehending verbal irony and appreciating its social functions, such as diluting the negative comment through humour and condemning the undesirable behavior at the same time (Akimoto, Sugiura, Yomogida, Miyauchi, Miyazawa, & Kawashima, 2014; Dews & Winner, 1995; Harris &

Pexman, 2003; Lucariello, 1994; Pexman & Glenwright, 2007). For example, Pexman et al. (2011) demonstrated that autistic children had an intact ability to process ironic comments, but were less likely than TD children to rate them as more humorous than literal comments. The authors thus concluded that autistic children may struggle to understand the social functions of using irony. This topic has received little attention in autism research, and has never been examined in an adult autistic sample, so future research should focus on how autistic individuals perceive verbal irony and its associated emotional processes.

Taken together, the results also provide evidence for both the complex information processing disorder account and the predictive coding theory of autism, since both theories suggest that under high cognitive load, autistic individuals struggle with processing information in context. For example, the complex information processing theory suggests that autistic individuals struggle with integrating information when multiple sources are involved (Minshew & Goldstein, 1998), and the predictive coding theory proposes that autistic individuals struggle with ignoring the bottom up errors and making predictions due to meta learning impairments, which is more pronounced in complex and dynamic situations (Van de Cruys et al., 2014). In this task, as well as comprehending irony, participants were required to switch between perspectives, keep track of the characters' intentions and integrate their emotional states, which is likely to have loaded cognitive capacities and thus could explain why autistic people were impaired at representing the emotional states of the characters.

Whilst the results are interesting and informative, we acknowledge the potential limitation of sample size; we simply may not have had sufficient power to accurately detect the 3- and 4-way interaction effects in our experiment (particularly due to wide heterogeneity among the autistic group). Our sample size was chosen *a priori* to achieve comparable participant numbers in each group to the total sample size used in each experiment in Filik et al. (2017; N = 28), and to match or exceed the sample size used for previous studies that have used eye-tracking to compare reading in autistic and TD adults. In the current study, detecting a significant 4-way interaction with the significance level of α=.05 on 80% of occasions (as suggested by Cohen, 1988) would have needed a minimum of 90 participants (calculated using the *simr* package in R; Green & MacLeod, 2016). The current sample size yields an estimated power of 56%. It would not be feasible to recruit and test ~45 autism individuals, as well as ~45 age- and IQ-matched controls, using the complex methods we used, given the difficulties associated with recruiting and testing autistic people (i.e. autism affects only 1% of the population and over half of autistic individuals have an intellectual impairment that would prevent them from taking part in the kind

of study that we conducted). Importantly, the results in the TD group broadly replicated the patterns seen in Filik et al. (2017). Moreover, since the 4-way interaction emerged on two consecutive regions of the same eye-tracking measure, and the atypical processing in the autistic group was revealed on both, we can feel relatively confident that the reported findings are reliable. Nevertheless, as a field, research on autism should continue to aim for larger sample sizes, ideally recruiting participants with a diverse representation on the autism spectrum to ensure generalizability of results.

Finally, our experiment revealed group differences in overall reading time, with adults in the autistic group incurring longer regression path reading times and making more regressions out from the critical and pre-critical regions compared to the TD control group. This pattern adds to the fairly consistent finding from eye-tracking research to date, suggesting that autistic people employ a more cautious reading strategy, and are more likely to re-read text to verify understanding of the intended meaning (Au-Yeung et al., 2015; Black et al., 2018; 2019; Ferguson et al., 2019; Howard et al., 2017a,b,c; Sansosti, Was, Rawson, & Remaklus, 2013). A similar pattern has been reported in neuroimaging research, which suggests that autistic individuals show traces of hyper-lexicality, meaning that they focus more on the meaning of words and individual sentences and less on using mental imagery to build a coherent representation of discourse while processing discourse online (Just, Cherkassky, Keller, & Minshew, 2004). Hence, our data adds to the body of evidence showing that autistic individuals invest more resources to build representations of text- they re-inspect it more frequently to gain confidence in the way they have interpreted the text, perhaps due to facing more difficulties while integrating the information (e.g. Just et al., 2004; Kana, Keller, Cherkassky, Minshew, & Just, 2006).

In conclusion, the present study replicated Filik et al. (2017) in showing that TD individuals comprehend emotional responses to irony following a two-stage process. Readers initially expected the protagonist to intend more hurt by using an ironic comment, but at a later stage expected the victim be more amused by an ironic comment. Thus, TD readers built a mental presentation of the text online, and updated it in real time. Importantly, autistic individuals did not differentiate between the emotional responses for victims or protagonists following ironic *vs.* literal criticism. We think this difficulty could be associated with more general impairments in representing the communicative intentions of the protagonist (i.e. ToM), and a reduced/atypical awareness of the social functions of irony and its affective processes. Taken together, our findings suggest that delivering criticism using irony has a less negative impact on the recipient. Therefore, understanding its emotional impact has important implications for maintaining successful real-life social interactions. Since this is the first study investigating this topic in

autistic adults, future research is needed to confirm our findings and further explore the explicit emotional process of using irony in autistic people.

<div align="center">References</div>

Abell, F., Happe, F., & Frith, U. (2000). Do triangles play tricks? attribution of mental states to animated shapes in normal and abnormal development. *Cognitive Development, 15*(1), 1-16.

Agostino, A., Im-Bolter, N., Stefanatos, A. K., & Dennis, M. (2017). Understanding ironic criticism and empathic praise: The role of emotive communication. *British Journal of Developmental Psychology*, *35*(2), 186-201.

Akimoto, Y., & Miyazawa, S. (2017). Individual differences in irony use depend on context. *Journal of Language and Social Psychology, 36*(6), 675-693.

Akimoto, Y., Sugiura, M., Yomogida, Y., Miyauchi, C. M., Miyazawa, S., & Kawashima, R. (2014). Irony comprehension: Social conceptual knowledge and emotional response. *Human Brain Mapping, 35*(4), 1167-1178.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)* American Psychiatric Pub.

Au-Yeung, S. K., Kaakinen, J. K., Liversedge, S. P., & Benson, V. (2015). Processing of written irony in autism spectrum disorder: An Eye-Movement study. *Autism Research, 8*(6), 749-760.

Baron-Cohen, S. (1997). *Mindblindness: An essay on autism and theory of mind* MIT press.

Baron-Cohen, S. E., Tager-Flusberg, H. E., & Cohen, D. J. (1994). *Understanding other minds: Perspectives from autism.* New York, NY, US: Oxford University Press.

Baron-Cohen, S., Wheelwright, S., Skinner, R., Martin, J., & Clubley, E. (2001). The autism-spectrum quotient (AQ): Evidence from asperger syndrome/high-functioning autism, males and females, scientists and mathematicians. *Journal of Autism and Developmental Disorders, 31*(1), 5-17.

Barr, D. J., Levy, R., Scheepers, C., & Tily, H. J. (2013). Random effects structure for confirmatory hypothesis testing: Keep it maximal. *Journal of Memory and Language, 68*(3), 255-278.

Barzy, M., Ferguson, H., Williams, D., & Black, J. (submitted). Adults with and without autism anticipate and integrate meaning based on the speaker's voice: Evidence from eye-tracking and event-related potentials.

Bates, D., Maechler, M., Bolker, B., Walker, S., Christensen, R. H. B., Singmann, H., . . . Rcpp, L. (2015). Package 'lme4'. *Convergence, 12*(1).

Baayen, R. H., Davidson, D. J., & Bates, D. M. (2008). Mixed-effects modeling with crossed random effects for subjects and items. *Journal of Memory and Language*, *59*(4), 390-412.

Black, J., Barzy, M., Williams, D., & Ferguson, H. (2019). Intact counterfactual emotion processing in autism spectrum disorder: Evidence from eye-tracking. *Autism Research, 12*(3), 422-444.

Black, J. B., Turner, T. J., & Bower, G. H. (1979). Point of view in narrative comprehension, memory, and production. *Journal of verbal learning and verbal behavior*, *18*(2), 187-198.

Black, J., Williams, D., & Ferguson, H. J. (2018). Imagining counterfactual worlds in autism spectrum disorder. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 44*(9), 1444.

Bland, J. M., & Altman, D. G. (2011). Correlation in restricted ranges of data. *BMJ*, *342*, d556.

Booth, R., & Happé, F. (2010). "Hunting with a knife and… fork": Examining central coherence in autism, attention deficit/hyperactivity disorder, and typical development with a linguistic task. *Journal of Experimental Child Psychology*, *107*(4), 377-393.

Bowes, A., & Katz, A. (2011). When sarcasm stings. *Discourse Processes, 48*(4), 215-236.

Boylan, J., & Katz, A. N. (2013). Ironic expression can simultaneously enhance and dilute perception of criticism. *Discourse Processes, 50*(3), 187-209.

Brownell, H., Jacobs, J., Gardner, H., & Gianoulis, D. (1990). Conditions for sarcasm. *Unpublished Paper from the Boston University Aphasia Research Center and Harvard Project Zero.*

Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment*, *6*(4), 284.

Cohen, J. (1988). The effect size index: d. *Statistical power analysis for the behavioral sciences*, *2*, 284-288.

Colston, H. L. (1997). Salting a wound or sugaring a pill: The pragmatic functions of ironic criticism. *Discourse Processes, 23*(1), 25-45.

Carminati, M. N., & Knoeferle, P. (2013). Effects of speaker emotional facial expression and listener age on incremental sentence processing. *PloS one*, *8*(9), e72559.

Carminati, M. N., & Knoeferle, P. (2016). Priming younger and older adults' sentence comprehension: insights from dynamic emotional facial expressions and pupil size measures. *The Open Psychology Journal*, *9*(1).

De Villiers, J. (2011). "I saw the yellowish going south": Narrative discourse in autism spectrum disorder. *Belgian journal of linguistics*, *25*(1), 3-29.

Deliens, G., Antoniou, K., Clin, E., Ostashchenko, E., & Kissine, M. (2018). Context, facial expression and prosody in irony processing. *Journal of memory and language*, *99*, 35-48.

Deliens, G., Papastamou, F., Ruytenbeek, N., Geelhand, P., & Kissine, M. (2018). Selective pragmatic impairment in autism spectrum disorder: Indirect requests versus irony. *Journal of autism and developmental disorders*, *48*(9), 2938-2952.

Dews, S., Kaplan, J., & Winner, E. (1995). Why not say it directly? the social functions of irony. *Discourse Processes, 19*(3), 347-367.

Dews, S., & Winner, E. (1995). Muting the meaning A social function of irony. *Metaphor and Symbol, 10*(1), 3-19.

Ferguson, H. J., Black, J., & Williams, D. (2019). Distinguishing reality from fantasy in adults with autism spectrum disorder: Evidence from eye movements and reading. *Journal of Memory and Language*, *106*, 95-107.

Filik, R., Brightman, E., Gathercole, C., & Leuthold, H. (2017). The emotional impact of verbal irony: Eye-tracking evidence for a two-stage process. *Journal of Memory and Language, 93*, 193-202.

Filik, R., Howman, H. E., Ralph-Nearman, C., & Giora, R. (2018). The role of defaultness and personality factors in sarcasm interpretation: Evidence from eye-tracking during reading. *Metaphor and Symbol, 33*, 148-162.

Filik, R., Leuthold, H., Wallington, K., & Page, J. (2014). Testing theories of irony processing using eye-tracking and ERPs. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 40*(3), 811.

Filik, R., & Moxey, L. M. (2010). The on-line processing of written irony. *Cognition, 116*(3), 421-436.

Frith, U. (2003). *Autism: Explaining the enigma* Blackwell Publishing.

Fussell, S. R., & Moss, M. M. (1998). Figurative language in emotional communication. *Social and Cognitive Approaches to Interpersonal Communication,* 113-141.

Gibbs Jr, R. W., Leggitt, J. S., & Turner, E. A. (2002). What's special about figurative language in emotional communication? *The verbal communication of emotions* (pp. 133-158) Psychology Press.

Giora, R. (1997). Understanding figurative and literal language: The graded salience hypothesis. *Cognitive Linguistics (includes Cognitive Linguistic Bibliography)*, *8*(3), 183-206.

Giora, R. (2003). *On our mind: Salience, context, and figurative language*. Oxford University Press.

Green, P., & MacLeod, C. J. (2016). SIMR: an R package for power analysis of generalized linear mixed models by simulation. *Methods in Ecology and Evolution*, *7*(4), 493-498.

Grice, H. P., Cole, P., & Morgan, J. L. (1975). Logic and conversation. *1975,* 41-58.

Győri, M. (2006). *Autism and Cognitive Architecture: Domain Specificity and Psychological Theorising on Autism* (Vol. 3). Akadémiai Kiadó.

Hamilton, Antonia F de C. (2009). Research review: Goals, intentions and mental states: Challenges for theories of autism. *Journal of Child Psychology and Psychiatry, 50*(8), 881-892.

Happé, F. G. (1993). Communicative competence and theory of mind in autism: A test of relevance theory. *Cognition, 48*(2), 101-119.

Happé, F. G. (1994). An advanced test of theory of mind: Understanding of story characters' thoughts and feelings by able autistic, mentally handicapped, and normal children and adults. *Journal of autism and Developmental disorders*, *24*(2), 129-154.

Happé, F. G. (1997). Central coherence and theory of mind in autism: Reading homographs in context. *British Journal of Developmental Psychology, 15*(1), 1-12.

Harris, M., & Pexman, P. M. (2003). Children's perceptions of the social functions of verbal irony. *Discourse Processes, 36*(3), 147-165.

Howard, P. L., Liversedge, S. P., & Benson, V. (2017a). Benchmark eye movement effects during natural reading in autism spectrum disorder. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *43*(1), 109.

Howard, P. L., Liversedge, S. P., & Benson, V. (2017b). Investigating the use of world knowledge during on-line comprehension in adults with autism spectrum disorder. *Journal of autism and developmental disorders*, *47*(7), 2039-2053.

Howard, P. L., Liversedge, S. P., & Benson, V. (2017c). Processing of co-reference in autism spectrum disorder. *Autism Research*, *10*(12), 1968-1980.

Jolliffe, T., & Baron-Cohen, S. (1999). The strange stories test: A replication with high-functioning adults with autism or asperger syndrome. *Journal of Autism and Developmental Disorders, 29*(5), 395-406.

Just, M. A., Cherkassky, V. L., Keller, T. A., & Minshew, N. J. (2004). Cortical activation and synchronization during sentence comprehension in high-functioning autism: Evidence of underconnectivity. *Brain, 127*(8), 1811-1821.

Kaakinen, J. K., Olkoniemi, H., Kinnari, T., & Hyönä, J. (2014). Processing of written irony: An eye movement study. *Discourse Processes, 51*(4), 287-311.

Kana, R. K., Keller, T. A., Cherkassky, V. L., Minshew, N. J., & Just, M. A. (2006). Sentence comprehension in autism: Thinking in pictures with decreased functional connectivity. *Brain, 129*(9), 2484-2493.

Kapogianni, E. (2016). The ironist's intentions. *Pragmatics & Cognition, 23*(1), 150-173.

Kenny, L., Hattersley, C., Mollins, B., Buckley, C., Povey, C., & Pellicano, E. (2016). Which terms should be used to describe autism? Perspectives from the UK autism community. *Autism, 20*, 442-462.

Knickerbocker, H., Johnson, R. L., & Altarriba, J. (2015). Emotion effects during reading: Influence of an emotion target word on eye movements and processing. *Cognition and Emotion, 29*(5), 784-806.

Komeda, H., & Kusumi, T. (2006). The effect of a protagonist's emotional shift on situation model construction. *Memory & Cognition, 34*(7), 1548-1556.

Larkin, F., Hobson, J. A., Hobson, R. P., & Tolmie, A. (2017). Collaborative competence in dialogue: Pragmatic language impairment as a window onto the psychopathology of autism. *Research in Autism Spectrum Disorders, 43*, 27-39.

Leggitt, J. S., & Gibbs, R. W. (2000). Emotional reactions to verbal irony. *Discourse Processes, 29*(1), 1-24.

Leuthold, H., Filik, R., Murphy, K., & Mackenzie, I. G. (2012). The on-line processing of socio-emotional information in prototypical scenarios: Inferences from brain potentials. *Social Cognitive and Affective Neuroscience, 7*(4), 457-466.

Lord, C., Risi, S., Lambrecht, L., Cook, E. H., Leventhal, B. L., DiLavore, P. C., . . . Rutter, M. (2000). The autism diagnostic observation Schedule—Generic: A standard measure of social and communication deficits associated with the spectrum of autism. *Journal of Autism and Developmental Disorders, 30*(3), 205-223.

Lucariello, J. (1994). Situational irony: A concept of events gone awry. *Journal of Experimental Psychology: General, 123*(2), 129.

Martin, I., & McDonald, S. (2004). An exploration of causes of non-literal language problems in individuals with Asperger syndrome. *Journal of autism and developmental disorders*, *34*(3), 311-328.

Milanowicz, A. (2013). Irony as a means of perception through communication channels. emotions, attitude and IQ related to irony across gender. *Psychology of Language and Communication, 17*(2), 115-132.

Minshew, N. J., & Goldstein, G. (1998). Autism as a disorder of complex information processing. *Mental Retardation and Developmental Disabilities Research Reviews*, *4*(2), 129-136.

Munster, K., Carminati, M. N., & Knoeferle, P. (2014). How do static and dynamic emotional faces prime incremental semantic interpretation?: comparing older and younger adults. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 36, No. 36).

Olkoniemi, H., Johander, E., and Kaakinen, J. K. (2019). The role of look- backs in the processing of written sarcasm. *Memory & Cognition, 47*(1), 87-105.

Olkoniemi, H., Ranta, H., & Kaakinen, J. K. (2016). Individual differences in the processing of written sarcasm and metaphor: Evidence from eye movements. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *42*, 433-450.

Olkoniemi, H., Strömberg, V., and Kaakinen, J. K. (2019). The ability to recognise emotions predicts the time-course of sarcasm processing: Evidence from eye movements. *Quarterly Journal of Experimental Psychology, 72*(5), 1212-1223.

Pearson, A., Ropar, D., & Hamilton, A. F. d. (2013). A review of visual perspective taking in autism spectrum disorder. *Frontiers in Human Neuroscience, 7*, 652.

Pexman, P. M., & Glenwright, M. (2007). How do typically developing children grasp the meaning of verbal irony? *Journal of Neurolinguistics, 20*(2), 178-196.

Pexman, P. M., Rostad, K. R., McMorris, C. A., Climie, E. A., Stowkowy, J., & Glenwright, M. R. (2011). Processing of ironic language in children with high-functioning autism spectrum disorder. *Journal of Autism and Developmental Disorders, 41*(8), 1097-1112.

Ralph-Nearman, C., & Filik, R. (2018). Eating disorder symptomatology and body mass index are associated with readers' expectations about character behavior: Evidence from eye-tracking during reading. *International Journal of Eating Disorders*, *51*(9), 1070-1079.

Rinck, M., & Bower, G. H. (2000). Temporal and spatial distance in situation models. *Memory & Cognition, 28*(8), 1310-1320.

Rayner, K. (1998). Eye movements in reading and information processing: 20 years of research. *Psychological bulletin*, *124*(3), 372.

Rayner, K., Chace, K. H., Slattery, T. J., & Ashby, J. (2006). Eye movements as reflections of comprehension processes in reading. *Scientific studies of reading*, *10*(3), 241-255.

Sabbagh, M. A. (1999). Communicative intentions and language: Evidence from right-hemisphere damage and autism. *Brain and Language, 70*(1), 29-69.

Shamay-Tsoory, S. G., Tomer, R., & Aharon-Peretz, J. (2005). The neuroanatomical basis of understanding sarcasm and its relationship to social cognition. *Neuropsychology, 19*(3), 288.

Sansosti, F. J., Was, C., Rawson, K. A., & Remaklus, B. L. (2013). Eye movements during processing of text requiring bridging inferences in adolescents with higher functioning autism spectrum disorders: A preliminary investigation. *Research in Autism Spectrum Disorders*, *7*(12), 1535-1542.

RCore, T. E. A. M. (2016). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. *URL http://www. R-project. org*.

Ţurcan, A. & Filik, R. (2016). An eye-tracking investigation of written sarcasm comprehension: The roles of familiarity and context. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 42,* 1867-1893.

Țurcan, A. & Filik, R. (2017). Investigating sarcasm comprehension using eye-tracking during

reading. *Irony in Language Use and Communication*, *1*, 255.

Van de Cruys, S., Evers, K., Van der Hallen, R., Van Eylen, L., Boets, B., de-Wit, L., & Wagemans, J. (2014).

Precise minds in uncertain worlds: Predictive coding in autism. *Psychological review*, *121*(4), 649.

Vega, M. (1996). The representation of changing emotions in reading comprehension. *Cognition &*

Emotion, 10(3), 303-322.

Uljarevic, M. & Hamilton, A. (2013). Recognition of emotions in autism: a formal meta-analysis. *Journal*

of autism and developmental disorders, *43*(7), 1517-1526.

Wang, A. T., Lee, S. S., Sigman, M., & Dapretto, M. (2006). Neural basis of irony comprehension in

children with autism: the role of prosody and context. *Brain*, *129*(4), 932-943.

Wechsler, D. (1999). WASI (wechsler adult scale–Reduced). *New York: The Psychological Corporation.*

Williams, D., & Happé, F. (2010). Representing intentions in self and other: Studies of autism and typical

development. *Developmental Science, 13*, 307-319.

Zwaan, R. A. (1996). Processing narrative time shifts. *Journal of Experimental Psychology: Learning,*

Memory, and Cognition, 22(5), 1196.

Table 1. Demographic information for the autistic and TD groups, M (SD), with comparison statistics.

	ASD (n=25)	TD (n=24)	*t*-value	*p*-value	$\eta2$
Sex (m:f)	17:8	17:7	-	-	-
Age (years)	34.4 (10.78)	33.04 (16.88)	0.34	0.738	0.096
Verbal IQ	103.88 (11.95)	99.71 (9.62)	1.34	0.186	0.384
Procedural IQ	109.24 (19.41)	103.04 (11.94)	134	0.187	0.384
Overall IQ	106.88 (15.14)	101.79 (10.91)	1.35	0.185	0.385
Total AQ	31.52 (9.00)	20.04 (8.19)	4.66	<0.001 ***	1.334
ADOS2 Module4	8.04 (5.32)	-	-	-	-

Table 2. Example item showing literal and ironic scenarios from the victim's or the protagonist's perspective, with negative and positive emotional critical words underlined for illustration.

Literal

Victim

John had been scared by a huge spider in the bathroom sink and immediately ran out shouting. Anna said to him, "That was cowardly". John thought that this was a very witty/mean remark.

Protagonist

John had been scared by a huge spider in the bathroom sink and immediately ran out shouting. Anna said to him, "That was cowardly". Anna had meant for this to be a very witty/mean remark.

Ironic

Victim

John had been scared by a huge spider in the bathroom sink and immediately ran out shouting. Anna said to him, "That was brave". John thought that this was a very witty/mean remark.

Protagonist

John had been scared by a huge spider in the bathroom sink and immediately ran out shouting. Anna said to him, "That was brave". Anna had meant for this to be a very witty/mean remark.

Table 3. Mean (SE) reading time measures for autistic and TD groups across regions and conditions.

		Ironic				Literal			
		Amused		Hurt		Amused		Hurt	
		Protagonist	Victim	Protagonist	Victim	Protagonist	Victim	Protagonist	Victim
Pre-critical region									
First-pass reading time (ms)	Autistic	236 (8)	285 (16)	240 (10)	245 (11)	236 (12)	239 (12)	223 (8)	242 (9)
	TD	255 (10)	267 (10)	252 (9)	244 (9)	244 (8)	270 (11)	249 (10)	244 (10)
Second-pass reading time (ms)	Autistic	278 (27)	270 (23)	257 (18)	276 (18)	269 (20)	244 (14)	249 (19)	243 (15)
	TD	294 (22)	266 (25)	261 (22)	221 (22)	273 (27)	261 (36)	245 (21)	220 (17)
First-pass regressions out (prop)	Autistic	0.2 (0.1)	0.3 (0.1)	0.3 (0.1)	0.4 (0.1)	0.1 (0.1)	0.4 (0.1)	0.3 (0.1)	0.3 (0.1)
	TD	0.1 (0.04)	0.2 (0.1)	0.1 (0.04)	0.1 (0.04)	0.1 (0.03)	0.1 (0.04)	0.1 (0.04)	0.2 (0.1)
Regression path reading time (ms)	Autistic	354 (56)	547 (89)	550 (103)	603 (107)	609 (267)	619 (162)	606 (131)	583 (163)
	TD	310 (33)	341 (26)	415 (128)	303 (26)	271 (20)	316 (25)	334 (41)	502 (129)
Skipping rate (prop)	Autistic	0.5 (0.04)	0.4 (0.04)	0.4 (0.04)	0.5 (0.04)	0.5 (0.04)	0.4 (0.04)	0.4 (0.04)	0.4 (0.04)
	TD	0.4 (0.04)	0.4 (0.04)	0.4 (0.04)	0.5 (0.04)	0.4 (0.04)	0.5 (0.04)	0.5 (0.04)	0.5 (0.04)
Critical region									
First-pass reading time (ms)	Autistic	266 (13)	293 (16)	287 (12)	270 (13)	282 (13)	274 (11)	277 (12)	283 (12)
	TD	256 (9)	275 (11)	280 (12)	277 (9)	295 (12)	272 (10)	300 (11)	281 (10)
Second-pass reading time (ms)	Autistic	388 (45)	394 (38)	300 (32)	317 (31)	335 (30)	415 (38)	292 (27)	363 (33)
	TD	341 (60)	339 (32)	454 (76)	302 (33)	320 (37)	347 (65)	324 (34)	247 (27)
First-pass regressions out (prop)	Autistic	0.3 (0.04)	0.6 (0.1)	0.4 (0.04)	0.4 (0.05)	0.4 (0.04)	0.5 (0.04)	0.3 (0.04)	0.4 (0.1)
	TD	0.3 (0.04)	0.3 (0.04)	0.2 (0.04)	0.3 (0.04)	0.3 (0.04)	0.4 (0.04)	0.4 (0.1)	0.3 (0.04)
Regression path reading time (ms)	Autistic	749 (89)	867 (109)	613 (53)	844 (136)	934 (179)	753 (80)	704 (92)	797 (103)
	TD	531 (67)	501 (64)	465 (62)	572 (47)	599 (69)	603 (62)	594 (67)	519 (45)
Skipping rate (prop)	Autistic	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	0.3 (0.03)	0.3 (0.03)
	TD	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)	0.3 (0.03)	0.2 (0.03)	0.2 (0.03)	0.2 (0.03)
Post-critical region									
First-pass reading time (ms)	Autistic	334 (22)	320 (19)	351 (27)	329 (23)	364 (29)	315 (20)	373 (27)	293 (20)
	TD	348 (26)	367 (21)	351 (29)	337 (21)	327 (20)	320 (18)	316 (22)	327 (24)
Second-pass reading time (ms)	Autistic	569 (72)	441 (69)	405 (46)	505 (85)	491 (59)	465 (77)	426 (63)	331 (36)
	TD	357 (46)	410 (62)	431 (74)	470 (92)	350 (37)	414 (50)	383 (55)	441 (62)
First-pass regressions out (prop)	Autistic	0.9 (0.04)	0.8 (0.04)	0.9 (0.04)	0.8 (0.04)	0.9 (0.04)	0.9 (0.03)	0.8 (0.03)	0.9 (0.04)
	TD	0.8 (0.04)	0.7 (0.04)	0.8 (0.04)	0.8 (0.04)	0.8 (0.04)	0.9 (0.03)	0.8 (0.04)	0.8 (0.04)
Regression path reading time (ms)	Autistic	1783 (188)	1573 (138)	1458 (121)	1414 (107)	1612 (132)	1577 (180)	1379 (79)	1462 (163)
	TD	1356 (140)	1094 (88)	1060 (88)	1038 (89)	1170 (119)	1146 (90)	1185 (101)	946 (71)
Skipping rate (prop)	Autistic	0.3 (0.03)	0.3 (0.03)	0.4 (0.03)	0.3 (0.04)	0.3 (0.04)	0.3 (0.03)	0.3 (0.04)	0.3 (0.03)
	TD	0.4 (0.04)	0.3 (0.04)	0.3 (0.03)	0.3 (0.04)	0.3 (0.03)	0.4 (0.03)	0.3 (0.04)	0.3 (0.04)

Table 4. Model Estimate, Standard Error (SE) and t/z value for each measure in each region, where *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

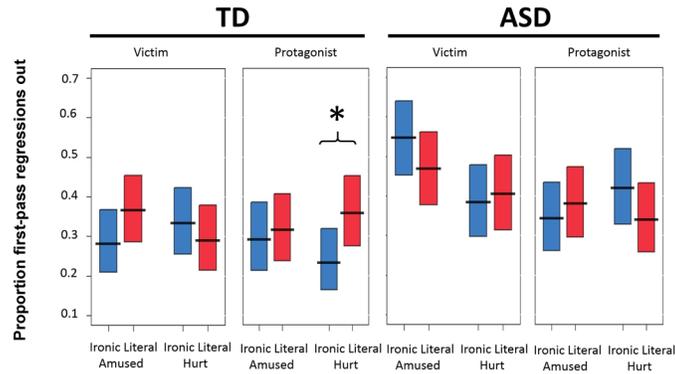|	First-pass reading time			First-pass regressions out			Second-pass reading time			Regression path reading time			Skipping		
	Est.	SE	t-value	Est.	SE	z-value	Est.	SE	t-value	Est.	SE	t-value	Est.	SE	t-value
Pre-critical region															
Type	-0.013	0.009	-1.48	-0.114	0.168	-0.68	-0.025	0.016	-1.55	0.000	0.016	0.00	-0.027	0.082	-0.322
Perspective	0.016	0.008	2.02 *	0.543	0.168	3.24 **	-0.020	0.018	-1.11	0.054	0.021	2.54 *	0.030	0.082	0.367
Emotion	-0.009	0.008	-1.18	0.184	0.169	1.09	-0.027	0.018	-1.47	0.017	0.016	1.03	-0.081	0.082	-0.981
Group	0.031	0.022	1.44	-0.905	0.230	-3.94 ***	-0.017	0.026	-0.68	-0.075	0.029	-2.60 *	-0.099	0.185	-0.536
Type*Perspective	-0.015	0.016	-0.94	0.254	0.335	0.76	0.001	0.032	0.02	-0.009	0.033	-0.28	0.116	0.165	0.706
Type*Emotion	0.006	0.016	0.41	0.344	0.336	1.03	0.003	0.032	0.09	0.010	0.033	0.32	-0.070	0.165	-0.423
Perspective*Emotion	-0.025	0.016	-1.58	-0.115	0.335	-0.34	0.021	0.032	0.66	-0.054	0.033	-1.66	-0.245	0.165	-1.484
Type*Group	0.029	0.016	1.87	-0.264	0.335	-0.79	-0.002	0.032	-0.08	0.007	0.033	0.21	-0.009	0.165	-0.053
Perspective*Group	-0.017	0.016	-1.06	0.011	0.335	0.03	-0.035	0.032	-1.08	-0.054	0.042	-1.28	-0.179	0.165	-1.090
Emotion*Group	-0.015	0.016	-0.96	0.085	0.337	0.25	-0.047	0.037	-1.29	0.000	0.033	-0.01	-0.247	0.165	-1.497
Type*Perspective*Emotion	0.022	0.031	0.70	-0.038	0.671	-0.06	0.007	0.065	0.10	-0.005	0.065	-0.08	0.380	0.330	1.153
Type*Perspective*Group	0.032	0.031	1.02	0.617	0.670	0.92	0.041	0.064	0.64	0.068	0.065	1.05	-0.207	0.329	-0.629
Type*Emotion*Group	-0.025	0.031	-0.79	1.392	0.672	2.07 *	0.026	0.064	0.40	0.098	0.065	1.51	-0.157	0.329	-0.477
Perspective*Emotion*Group	-0.033	0.032	-1.06	0.577	0.672	0.86	-0.032	0.064	-0.50	0.032	0.065	0.49	0.519	0.329	1.577
Type*Perspective*Emotion*Group	-0.112	0.063	-1.78	1.359	1.341	1.01	0.022	0.129	0.17	0.054	0.130	0.42	0.840	0.659	1.275
Critical region															
Type	0.012	0.008	1.49	0.116	0.117	0.99	-0.016	0.020	-0.798	0.030	0.015	1.98 *	-0.065	0.111	-0.587
Perspective	-0.003	0.008	-0.36	0.228	0.155	1.47	-0.002	0.020	-0.110	0.026	0.018	1.47	0.030	0.100	0.297
Emotion	0.003	0.010	0.30	-0.142	0.118	-1.20	-0.022	0.020	-1.061	-0.012	0.015	-0.80	-0.027	0.158	-0.172
Group	0.010	0.025	0.38	-0.565	0.326	-1.73	-0.015	0.034	-0.454	-0.092	0.040	-2.33 *	0.134	0.207	0.646
Type*Perspective	-0.022	0.016	-1.44	-0.174	0.234	-0.74	0.037	0.041	0.912	-0.043	0.030	-1.43	-0.031	0.200	-0.156
Type*Emotion	-0.010	0.016	-0.64	-0.035	0.235	-0.15	0.009	0.041	0.229	-0.004	0.030	-0.14	-0.325	0.206	-1.579
Perspective*Emotion	-0.023	0.015	-1.49	-0.392	0.235	-1.67	-0.062	0.041	-1.522	-0.009	0.030	-0.29	-0.165	0.200	-0.822
Type*Group	0.018	0.016	1.16	0.438	0.235	1.86	-0.070	0.041	-1.735	0.041	0.030	1.36	0.148	0.200	0.739
Perspective*Group	-0.013	0.016	-0.86	-0.210	0.283	-0.74	-0.087	0.041	-2.14*	-0.025	0.036	-0.70	0.228	0.200	1.140
Emotion*Group	0.022	0.016	1.43	0.081	0.235	0.34	0.061	0.041	1.495	0.029	0.030	0.97	0.271	0.251	1.079
Type*Perspective*Emotion	0.052	0.031	1.68	-0.088	0.471	-0.19	0.051	0.081	0.636	-0.004	0.060	-0.07	-0.550	0.400	-1.374
Type*Perspective*Group	-0.032	0.031	-1.02	-0.231	0.469	-0.49	-0.039	0.082	-0.479	-0.034	0.060	-0.56	0.354	0.399	0.886
Type*Emotion*Group	0.016	0.031	0.50	-0.078	0.469	-0.17	-0.110	0.082	-1.352	-0.074	0.060	-1.23	0.190	0.399	0.476
Perspective*Emotion*Group	0.018	0.031	0.59	0.846	0.469	1.80	-0.122	0.082	-1.499	0.060	0.060	0.99	-0.420	0.400	-1.051
Type*Perspective*Emotion*Group	-0.067	0.062	-1.08	-2.320	0.940	-2.47 *	0.118	0.162	0.728	-0.180	0.120	-1.50	-0.856	0.799	-1.071
Post-critical region															
Type	-0.005	0.014	-0.38	0.144	0.145	0.99	-0.016	0.029	-0.54	0.004	0.017	0.23	0.04	0.12	0.33
Perspective	-0.002	0.011	-0.17	0.007	0.145	0.05	-0.013	0.037	-0.35	-0.010	0.017	-0.58	-0.05	0.14	-0.33
Emotion	-0.010	0.011	-0.98	-0.142	0.165	-0.86	0.020	0.029	0.69	-0.036	0.017	-2.09 *	-0.14	0.10	-1.43
Group	0.008	0.039	0.22	-0.239	0.287	-0.84	0.002	0.047	0.05	-0.108	0.061	-1.77	0.11	0.32	0.35
Type*Perspective	-0.010	0.021	-0.46	0.184	0.290	0.64	0.011	0.058	0.18	0.008	0.035	0.24	0.21	0.20	1.04
Type*Emotion	0.006	0.021	0.30	-0.124	0.289	-0.43	-0.068	0.057	-1.19	0.023	0.035	0.66	0.05	0.20	0.23
Perspective*Emotion	-0.024	0.021	-1.12	0.046	0.289	0.16	0.040	0.058	0.69	-0.012	0.035	-0.36	-0.11	0.20	-0.53
Type*Group	-0.031	0.026	-1.20	-0.058	0.290	-0.20	0.005	0.058	0.09	-0.013	0.035	-0.38	0.04	0.23	0.16
Perspective*Group	0.028	0.021	1.34	0.065	0.291	0.22	0.070	0.074	0.96	0.008	0.035	0.23	-0.10	0.25	-0.40
Emotion*Group	-0.024	0.021	-1.13	-0.156	0.289	-0.54	0.086	0.058	1.49	-0.014	0.035	-0.39	-0.33	0.20	-1.66
Type*Perspective*Emotion	0.008	0.042	0.19	-1.091	0.579	-1.89	-0.135	0.115	-1.17	-0.083	0.070	-1.19	0.05	0.39	0.14
Type*Perspective*Group	-0.005	0.042	-0.12	0.207	0.578	0.36	0.089	0.116	0.77	0.026	0.069	0.37	-0.10	0.39	-0.25
Type*Emotion*Group	0.019	0.042	0.46	-0.061	0.576	-0.11	-0.012	0.115	-0.10	0.054	0.069	0.79	-0.81	0.39	-2.06 *
Perspective*Emotion*Group	0.006	0.042	0.14	-0.130	0.578	-0.23	-0.051	0.116	-0.44	-0.004	0.070	-0.05	-0.28	0.39	-0.72
Type*Perspective*Emotion*Group	0.123	0.084	1.46	-2.578	1.154	-2.24 *	0.178	0.230	0.77	-0.014	0.139	-0.10	1..66	0.79	2.10 *

Figures

Figure 1: Proportion of first-pass regressions out from the critical region, with a horizontal line reflecting the condition mean, and a rectangle representing the Bayesian highest density interval. * indicates a significant difference between ironic and literal conditions.
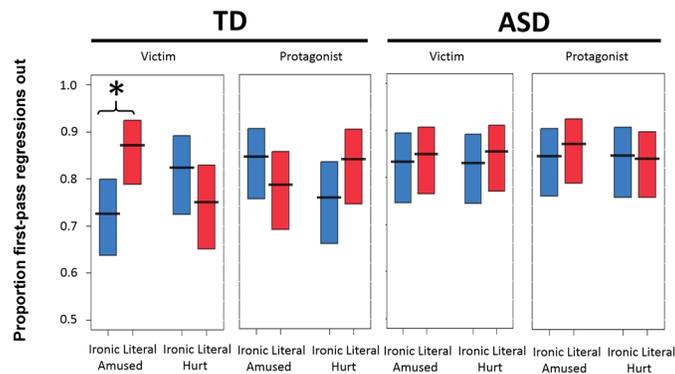

Figure 2: Proportion of first-pass regressions out from the post-critical region, with a horizontal line reflecting the condition mean, and a rectangle representing the Bayesian highest density interval. * indicates a significant difference between ironic and literal conditions.

Appendix

Full set of experimental items in each condition. Note that for each of the items below, conditions are listed in the order: Ironic Victim Positive, Literal Victim Positive, Ironic Protagonist Positive, Literal Protagonist Positive, Ironic Victim Negative, Literal Victim Negative, Ironic Protagonist Negative, Literal Protagonist Negative.

1

Sandra had misjudged the distance when reversing into the space and bumped into the car behind her. Harriet said to her, "That was fantastic parking". Sandra was really amused by what she said.

Sandra had misjudged the distance when reversing into the space and bumped into the car behind her. Harriet said to her, "That was horrendous parking". Sandra was really amused by what she said.

Sandra had misjudged the distance when reversing into the space and bumped into the car behind her. Harriet said to her, "That was fantastic parking". Harriet had intended for her to be really amused by what she said.

Sandra had misjudged the distance when reversing into the space and bumped into the car behind her. Harriet said to her, "That was horrendous parking". Harriet had intended for her to be really amused by what she said.

Sandra had misjudged the distance when reversing into the space and bumped into the car behind her. Harriet said to her, "That was fantastic parking". Sandra was really hurt by what she said.

Sandra had misjudged the distance when reversing into the space and bumped into the car behind her. Harriet said to her, "That was horrendous parking". Sandra was really hurt by what she said.

Sandra had misjudged the distance when reversing into the space and bumped into the car behind her. Harriet said to her, "That was fantastic parking". Harriet had intended for her to be really hurt by what she said.

Sandra had misjudged the distance when reversing into the space and bumped into the car behind her. Harriet said to her, "That was horrendous parking". Harriet had intended for her to be really hurt by what she said.

2

Milly, who was a beginner at tennis, kept hitting the ball into the net. Charlotte announced, "You are amazing at this". Milly thought that this was a very humorous comment.

Milly, who was a beginner at tennis, kept hitting the ball into the net. Charlotte announced, "You are dreadful at this". Milly thought that this was a very humorous comment.

Milly, who was a beginner at tennis, kept hitting the ball into the net. Charlotte announced, "You are amazing at this". Charlotte had meant for this to be a very humorous comment.

Milly, who was a beginner at tennis, kept hitting the ball into the net. Charlotte announced, "You are dreadful at this". Charlotte had meant for this to be a very humorous comment.

Milly, who was a beginner at tennis, kept hitting the ball into the net. Charlotte announced, "You are amazing at this". Milly thought that this was a very unkind comment.

Milly, who was a beginner at tennis, kept hitting the ball into the net. Charlotte announced, "You are dreadful at this". Milly thought that this was a very unkind comment.

Milly, who was a beginner at tennis, kept hitting the ball into the net. Charlotte announced, "You are amazing at this". Charlotte had meant for this to be a very unkind comment.

Milly, who was a beginner at tennis, kept hitting the ball into the net. Charlotte announced, "You are dreadful at this". Charlotte had meant for this to be a very unkind comment.

3

Carrie commented on how much she loved the song that was playing on the radio. Joanne rolled her eyes and sneered, "What brilliant taste in music you have". Carrie thought that this was a very funny thing to say.

Carrie commented on how much she loved the song that was playing on the radio. Joanne rolled her eyes and sneered, "What awful taste in music you have". Carrie thought that this was a very funny thing to say.

Carrie commented on how much she loved the song that was playing on the radio. Joanne rolled her eyes and sneered, "What awful taste in music you have". Joanne had intended for this to be a very funny thing to say.

Carrie commented on how much she loved the song that was playing on the radio. Joanne rolled her eyes and sneered, "What awful taste in music you have". Joanne had intended for this to be a very funny thing to say.

Carrie commented on how much she loved the song that was playing on the radio. Joanne rolled her eyes and sneered, "What brilliant taste in music you have". Carrie thought that this was a very mean thing to say.

Carrie commented on how much she loved the song that was playing on the radio. Joanne rolled her eyes and sneered, "What awful taste in music you have". Carrie thought that this was a very mean thing to say.

Carrie commented on how much she loved the song that was playing on the radio. Joanne rolled her eyes and sneered, "What awful taste in music you have". Joanne had intended for this to be a very mean thing to say.

Carrie commented on how much she loved the song that was playing on the radio. Joanne rolled her eyes and sneered, "What awful taste in music you have". Joanne had intended for this to be a very mean thing to say.

4

Nicola had just made Ellen a cup of tea, but tripped and spilt it all over the living room carpet. Ellen snapped at her, "That was intelligent". Nicola was really entertained by this statement.

Nicola had just made Ellen a cup of tea, but tripped and spilt it all over the living room carpet. Ellen snapped at her, "That was stupid". Nicola was really entertained by this statement.

Nicola had just made Ellen a cup of tea, but tripped and spilt it all over the living room carpet. Ellen snapped at her, "That was intelligent". Ellen had meant for her to be really entertained by this statement.

Nicola had just made Ellen a cup of tea, but tripped and spilt it all over the living room carpet. Ellen snapped at her, "That was stupid". Ellen had meant for her to be really entertained by this statement.

Nicola had just made Ellen a cup of tea, but tripped and spilt it all over the living room carpet. Ellen snapped at her, "That was intelligent". Nicola was really offended by this statement.

Nicola had just made Ellen a cup of tea, but tripped and spilt it all over the living room carpet. Ellen snapped at her, "That was stupid". Nicola was really offended by this statement.

Nicola had just made Ellen a cup of tea, but tripped and spilt it all over the living room carpet. Ellen snapped at her, "That was intelligent". Ellen had meant for her to be really offended by this statement.

Nicola had just made Ellen a cup of tea, but tripped and spilt it all over the living room carpet. Ellen snapped at her, "That was stupid". Ellen had meant for her to be really offended by this statement.

5

Hannah tumbled into class fifteen minutes late, but managed to find a seat next to Bryony. Bryony muttered, "Excellent time keeping". Hannah was really tickled by what she said.

Hannah tumbled into class fifteen minutes late, but managed to find a seat next to Bryony. Bryony muttered, "Poor time keeping". Hannah was really tickled by what she said.

Hannah tumbled into class fifteen minutes late, but managed to find a seat next to Bryony. Bryony muttered, "Excellent time keeping". Bryony had intended for her to be really tickled by what she said.

Hannah tumbled into class fifteen minutes late, but managed to find a seat next to Bryony. Bryony muttered, "Poor time keeping". Bryony had intended for her to be really tickled by what she said.

Hannah tumbled into class fifteen minutes late, but managed to find a seat next to Bryony. Bryony muttered, "Excellent time keeping". Hannah was really upset by what she said.

Hannah tumbled into class fifteen minutes late, but managed to find a seat next to Bryony. Bryony muttered, "Poor time keeping". Hannah was really upset by what she said.

Hannah tumbled into class fifteen minutes late, but managed to find a seat next to Bryony. Bryony muttered, "Excellent time keeping". Bryony had intended for her to be really upset by what she said.

Hannah tumbled into class fifteen minutes late, but managed to find a seat next to Bryony. Bryony muttered, "Poor time keeping". Bryony had intended for her to be really upset by what she said.

6

Maddie had forgotten about the buns and when she took them out of the oven, they were badly burnt. Cheryl said to her, "They look good". Maddie thought that this was a very witty comment.

Maddie had forgotten about the buns and when she took them out of the oven, they were badly burnt. Cheryl said to her, "They look bad". Maddie thought that this was a very witty comment.

Maddie had forgotten about the buns and when she took them out of the oven, they were badly burnt. Cheryl said to her, "They look good". Cheryl had meant for this to be a very witty comment.

Maddie had forgotten about the buns and when she took them out of the oven, they were badly burnt. Cheryl said to her, "They look bad". Cheryl had meant for this to be a very witty comment.

Maddie had forgotten about the buns and when she took them out of the oven, they were badly burnt. Cheryl said to her, "They look good". Maddie thought that this was a very cruel comment.

Maddie had forgotten about the buns and when she took them out of the oven, they were badly burnt. Cheryl said to her, "They look bad". Maddie thought that this was a very cruel comment.

Maddie had forgotten about the buns and when she took them out of the oven, they were badly burnt. Cheryl said to her, "They look good". Cheryl had meant for this to be a very cruel comment.

Maddie had forgotten about the buns and when she took them out of the oven, they were badly burnt. Cheryl said to her, "They look bad". Cheryl had meant for this to be a very cruel comment.

7

Laura had just arrived home from work and slammed the front door loudly after a bad day. Chloe said to her, "You look happy". Laura thought that this was a very comical thing to say.

Laura had just arrived home from work and slammed the front door loudly after a bad day. Chloe said to her, "You look miserable". Laura thought that this was a very comical thing to say.

Laura had just arrived home from work and slammed the front door loudly after a bad day. Chloe said to her, "You look happy". Chloe had intended for this to be a very comical thing to say.

Laura had just arrived home from work and slammed the front door loudly after a bad day. Chloe said to her, "You look miserable". Chloe had intended for this to be a very comical thing to say.

Laura had just arrived home from work and slammed the front door loudly after a bad day. Chloe said to her, "You look happy". Laura thought that this was a very cruel thing to say.

Laura had just arrived home from work and slammed the front door loudly after a bad day. Chloe said to her, "You look miserable". Laura thought that this was a very cruel thing to say.

Laura had just arrived home from work and slammed the front door loudly after a bad day. Chloe said to her, "You look happy". Chloe had intended for this to be a very cruel thing to say.

Laura had just arrived home from work and slammed the front door loudly after a bad day. Chloe said to her, "You look miserable". Chloe had intended for this to be a very cruel thing to say.

8

Amber had been watching a game show on television and got the answer to a simple question completely wrong. Jan said to her, "That was intelligent". Amber was really tickled by this statement.

Amber had been watching a game show on television and got the answer to a simple question completely wrong. Jan said to her, "That was dumb". Amber was really tickled by this statement.

Amber had been watching a game show on television and got the answer to a simple question completely wrong. Jan said to her, "That was intelligent". Jan had meant for her to be really tickled by this statement.

Amber had been watching a game show on television and got the answer to a simple question completely wrong. Jan said to her, "That was dumb". Jan had meant for her to be really tickled by this statement.

Amber had been watching a game show on television and got the answer to a simple question completely wrong. Jan said to her, "That was intelligent". Amber was really offended by this statement.

Amber had been watching a game show on television and got the answer to a simple question completely wrong. Jan said to her, "That was dumb". Amber was really offended by this statement.

Amber had been watching a game show on television and got the answer to a simple question completely wrong. Jan said to her, "That was intelligent". Jan had meant for her to be really offended by this statement.

Amber had been watching a game show on television and got the answer to a simple question completely wrong. Jan said to her, "That was dumb". Jan had meant for her to be really offended by this statement.

9

As Charles picked up the glass, it shattered in his hand and pieces flew across the bar floor. Phil jeered, "You are the best bartender ever". Charles was really amused by what he said.

As Charles picked up the glass, it shattered in his hand and pieces flew across the bar floor. Phil jeered, "You are the worst bartender ever". Charles was really amused by what he said.

As Charles picked up the glass, it shattered in his hand and pieces flew across the bar floor. Phil jeered, "You are the best bartender ever". Phil had intended for him to be really amused by what he said.

As Charles picked up the glass, it shattered in his hand and pieces flew across the bar floor. Phil jeered, "You are the worst bartender ever". Phil had intended for him to be really amused by what he said.

As Charles picked up the glass, it shattered in his hand and pieces flew across the bar floor. Phil jeered, "You are the best bartender ever". Charles was really upset by what he said.

As Charles picked up the glass, it shattered in his hand and pieces flew across the bar floor. Phil jeered, "You are the worst bartender ever". Charles was really upset by what he said.

As Charles picked up the glass, it shattered in his hand and pieces flew across the bar floor. Phil jeered, "You are the best bartender ever". Phil had intended for him to be really upset by what he said.

As Charles picked up the glass, it shattered in his hand and pieces flew across the bar floor. Phil jeered, "You are the worst bartender ever". Phil had intended for him to be upset hurt by what he said.

10

Aaron missed the final penalty of the penalty shoot-out, causing his team to lose. Richard announced, "Outstanding shooting today Aaron". Aaron was really entertained by this statement.

Aaron missed the final penalty of the penalty shoot-out, causing his team to lose. Richard announced, "Dreadful shooting today Aaron". Aaron was really entertained by this statement.

Aaron missed the final penalty of the penalty shoot-out, causing his team to lose. Richard announced, "Outstanding shooting today Aaron". Richard had meant for him to be really entertained by this statement.

Aaron missed the final penalty of the penalty shoot-out, causing his team to lose. Richard announced, "Dreadful shooting today Aaron". Richard had meant for him to be really entertained by this statement.

Aaron missed the final penalty of the penalty shoot-out, causing his team to lose. Richard announced, "Outstanding shooting today Aaron". Aaron was really insulted by this statement.

Aaron missed the final penalty of the penalty shoot-out, causing his team to lose. Richard announced, "Dreadful shooting today Aaron". Aaron was really insulted by this statement.

Aaron missed the final penalty of the penalty shoot-out, causing his team to lose. Richard announced, "Outstanding shooting today Aaron". Richard had meant for him to be really insulted by this statement.

Aaron missed the final penalty of the penalty shoot-out, causing his team to lose. Richard announced, "Dreadful shooting today Aaron". Richard had meant for him to be really insulted by this statement.

11

Whilst Eric was unloading his food shopping, a box of eggs smashed on the floor. Ross snapped at him, "What a fabulous day this has been". Eric thought that this was a very hilarious comment.

Whilst Eric was unloading his food shopping, a box of eggs smashed on the floor. Ross snapped at him, "What a horrendous day this has been". Eric thought that this was a very hilarious comment.

Whilst Eric was unloading his food shopping, a box of eggs smashed on the floor. Ross snapped at him, "What a fabulous day this has been". Ross had meant for this to be a very hilarious comment.

Whilst Eric was unloading his food shopping, a box of eggs smashed on the floor. Ross snapped him, "What a horrendous day this has been". Ross had meant for this to be a very hilarious comment.

Whilst Eric was unloading his food shopping, a box of eggs smashed on the floor. Ross snapped at him, "What a fabulous day this has been". Eric thought that this was a very insensitive comment.

Whilst Eric was unloading his food shopping, a box of eggs smashed on the floor. Ross snapped at him, "What a horrendous day this has been". Eric thought that this was a very insensitive comment.

Whilst Eric was unloading his food shopping, a box of eggs smashed on the floor. Ross snapped at him, "What a fabulous day this has been". Ross had meant for this to be a very insensitive comment.

Whilst Eric was unloading his food shopping, a box of eggs smashed on the floor. Ross snapped him, "What a horrendous day this has been". Ross had meant for this to be a very insensitive comment.

12

Barney had just received his essay grade and was disappointed that he scraped a pass. Harry said to him, "What an outstanding grade". Barney thought that this was a very funny comment.

Barney had just received his essay grade and was disappointed that he scraped a pass. Harry said to him, "What a terrible grade". Barney thought that this was a very funny comment.

Barney had just received his essay grade and was disappointed that he scraped a pass. Harry said to him, "What an outstanding grade". Henry had meant for this to be a very funny comment.

Barney had just received his essay grade and was disappointed that he scraped a pass. Harry said to him, "What a terrible grade". Henry had meant for this to be a very funny comment.

Barney had just received his essay grade and was disappointed that he scraped a pass. Harry said to him, "What an outstanding grade". Barney thought that this was a very unkind comment.

Barney had just received his essay grade and was disappointed that he scraped a pass. Harry said to him, "What a terrible grade". Barney thought that this was a very unkind comment.

 Barney had just received his essay grade and was disappointed that he scraped a pass. Harry said to him, "What an outstanding grade". Henry had meant for this to be a very unkind comment.

Barney had just received his essay grade and was disappointed that he scraped a pass. Harry said to him, "What a terrible grade". Henry had meant for this to be a very unkind comment.

13

Charlie was desperately trying to open the lid of a jar but was having difficulty opening it. Ray said to him, "Youíre so strong". Charlie thought that this was a very hilarious thing to say.

39

Charlie was desperately trying to open the lid of a jar but was having difficulty opening it. Ray said to him, "Youíre so weak". Charlie thought that this was a very hilarious thing to say.

Charlie was desperately trying to open the lid of a jar but was having difficulty opening it. Ray said to him, "Youíre so strong". Ray had intended for this to be a very hilarious thing to say.

Charlie was desperately trying to open the lid of a jar but was having difficulty opening it. Ray said to him, "Youíre so weak". Ray had intended for this to be a very hilarious thing to say.

Charlie was desperately trying to open the lid of a jar but was having difficulty opening it. Ray said to him, "Youíre so strong". Charlie thought that this was a very hurtful thing to say.

Charlie was desperately trying to open the lid of a jar but was having difficulty opening it. Ray said to him, "Youíre so weak". Charlie thought that this was a very hurtful thing to say.

Charlie was desperately trying to open the lid of a jar but was having difficulty opening it. Ray said to him, "Youíre so strong". Ray had intended for this to be a very hurtful thing to say.

Charlie was desperately trying to open the lid of a jar but was having difficulty opening it. Ray said to him, "Youíre so weak". Ray had intended for this to be a very hurtful thing to say.

14

Brendan had decided after ten minutes that he couldnít be bothered to exercise any longer. Patrick said to him, "Youíre so energetic". Brendan was really tickled by this statement.

Brendan had decided after ten minutes that he couldnít be bothered to exercise any longer. Patrick said to him, "Youíre so lazy". Brendan was really tickled by this statement.

Brendan had decided after ten minutes that he couldnít be bothered to exercise any longer. Patrick said to him, "Youíre so energetic". Patrick had meant for him to be really tickled by this statement.

Brendan had decided after ten minutes that he couldnít be bothered to exercise any longer. Patrick said to him, "Youíre so lazy". Patrick had meant for him to be really tickled by this statement.

Brendan had decided after ten minutes that he couldnít be bothered to exercise any longer. Patrick said to him, "Youíre so energetic". Brendan was really upset by this statement.

Brendan had decided after ten minutes that he couldnít be bothered to exercise any longer. Patrick said to him, "Youíre so lazy". Brendan was really upset by this statement.

Brendan had decided after ten minutes that he couldnít be bothered to exercise any longer. Patrick said to him, "Youíre so energetic". Patrick had meant for him to be really upset by this statement.

Brendan had decided after ten minutes that he couldnít be bothered to exercise any longer. Patrick said to him, "Youíre so lazy". Patrick had meant for him to be really upset by this statement.

15

Phillip had been putting shelves up for an hour when he noticed they were a bit wonky and uneven. Karl said to him, "They look wonderful". Phillip was really amused by what he said.

Phillip had been putting shelves up for an hour when he noticed they were a bit wonky and uneven. Karl said to him, "They look dreadful". Phillip was really amused by what he said.

Phillip had been putting shelves up for an hour when he noticed they were a bit wonky and uneven. Karl said to him, "They look wonderful". Karl had intended for him to be really amused by what he said.

Phillip had been putting shelves up for an hour when he noticed they were a bit wonky and uneven. Karl said to him, "They look dreadful". Karl had intended for him to be really amused by what he said.

Phillip had been putting shelves up for an hour when he noticed they were a bit wonky and uneven. Karl said to him, "They look wonderful". Phillip was really offended by what he said.

Phillip had been putting shelves up for an hour when he noticed they were a bit wonky and uneven. Karl said to him, "They look dreadful". Phillip was really offended by what he said.

Phillip had been putting shelves up for an hour when he noticed they were a bit wonky and uneven. Karl said to him, "They look wonderful". Karl had intended for him to be really offended by what he said.

Phillip had been putting shelves up for an hour when he noticed they were a bit wonky and uneven. Karl said to him, "They look dreadful". Karl had intended for him to be really offended by what he said.

16

Henry had decided he wasnít going to buy anybody Christmas or birthday presents this year. Louis said to him, "How generous of you". Henry thought that this was a very humorous thing to say.

Henry had decided he wasnít going to buy anybody Christmas or birthday presents this year. Louis said to him, "How stingy of you". Henry thought that this was a very humorous thing to say.

Henry had decided he wasnít going to buy anybody Christmas or birthday presents this year. Louis said to him, "How generous of you". Louis had intended for this to be a very humorous thing to say.

Henry had decided he wasnít going to buy anybody Christmas or birthday presents this year. Louis said to him, "How stingy of you". Louis had intended for this to be a very humorous thing to say.

Henry had decided he wasnít going to buy anybody Christmas or birthday presents this year. Louis said to him, "How generous of you". Henry thought that this was a very insensitive thing to say.

Henry had decided he wasnít going to buy anybody Christmas or birthday presents this year. Louis said to him, "How stingy of you". Henry thought that this was a very insensitive thing to say.

Henry had decided he wasnít going to buy anybody Christmas or birthday presents this year. Louis said to him, "How generous of you". Louis had intended for this to be a very insensitive thing to say.

Henry had decided he wasnít going to buy anybody Christmas or birthday presents this year. Louis said to him, "How stingy of you". Louis had intended for this to be a very insensitive thing to say.

17

Erica reached across to put her phone into her bag, but misjudged the distance and smashed her phone. Neil announced, "Excellent coordination Erica". Erica thought that this was a very witty thing to say.

Erica reached across to put her phone into her bag, but misjudged the distance and smashed her phone. Neil announced, "Rubbish coordination Erica". Erica thought that this was a very witty thing to say.

Erica reached across to put her phone into her bag, but misjudged the distance and smashed her phone. Neil announced, "Excellent coordination Erica". Neil had intended for this to be a very witty thing to say.

Erica reached across to put her phone into her bag, but misjudged the distance and smashed her phone. Neil announced, "Rubbish coordination Erica". Neil had intended for this to be a very witty thing to say.

Erica reached across to put her phone into her bag, but misjudged the distance and smashed her phone. Neil announced, "Excellent coordination Erica". Erica thought that this was a very mean thing to say.

Erica reached across to put her phone into her bag, but misjudged the distance and smashed her phone. Neil announced, "Rubbish coordination Erica". Erica thought that this was a very mean thing to say.

Erica reached across to put her phone into her bag, but misjudged the distance and smashed her phone. Neil announced, "Excellent coordination Erica". Neil had intended for this to be a very mean thing to say.

Erica reached across to put her phone into her bag, but misjudged the distance and smashed her phone. Neil announced, "Rubbish coordination Erica". Neil had intended for this to be a very mean thing to say.

18

When Holly returned her book a week late, she was shocked at how much the library fine was. Adam said, "That was an intelligent thing to do". Holly was really entertained by this statement.

When Holly returned her book a week late, she was shocked at how much the library fine was. Adam said, "That was a stupid thing to do". Holly was really entertained by this statement.

When Holly returned her book a week late, she was shocked at how much the library fine was. Adam said, "That was an intelligent thing to do". Adam had meant for her to be really entertained by this statement.

When Holly returned her book a week late, she was shocked at how much the library fine was. Adam said, "That was a stupid thing to do". Adam had meant for her to be really entertained by this statement.

When Holly returned her book a week late, she was shocked at how much the library fine was. Adam said, "That was an intelligent thing to do". Holly was really insulted by this statement.

When Holly returned her book a week late, she was shocked at how much the library fine was. Adam said, "That was a stupid thing to do". Holly was really insulted by this statement.

When Holly returned her book a week late, she was shocked at how much the library fine was. Adam said, "That was an intelligent thing to do". Adam had meant for her to be really insulted by this statement.

When Holly returned her book a week late, she was shocked at how much the library fine was. Adam said, "That was a stupid thing to do". Adam had meant for her to be really insulted by this statement.

19

Stephanie arrived for her swimming lesson, but realised she had forgotten her swimsuit. Theo scoffed at her, "You are the most organised person I know". Stephanie was really entertained by what he said.

Stephanie arrived for her swimming lesson, but realised she had forgotten her swimsuit. Theo scoffed at her, "You are the most chaotic person I know". Stephanie was really entertained by what he said.

Stephanie arrived for her swimming lesson, but realised she had forgotten her swimsuit. Theo scoffed at her, "You are the most organised person I know". Theo had intended for her to be really entertained by what he said.

Stephanie arrived for her swimming lesson, but realised she had forgotten her swimsuit. Theo scoffed at her, "You are the most chaotic person I know". Theo had intended for her to be really entertained by what he said.

Stephanie arrived for her swimming lesson, but realised she had forgotten her swimsuit. Theo scoffed at her, "You are the most organised person I know". Stephanie was really insulted by what he said.

Stephanie arrived for her swimming lesson, but realised she had forgotten her swimsuit. Theo scoffed at her, "You are the most chaotic person I know". Stephanie was really insulted by what he said.

Stephanie arrived for her swimming lesson, but realised she had forgotten her swimsuit. Theo scoffed at her, "You are the most organised person I know". Theo had intended for her to be really insulted by what he said.

Stephanie arrived for her swimming lesson, but realised she had forgotten her swimsuit. Theo scoffed at her, "You are the most chaotic person I know". Theo had intended for her to be really inulted by what he said.

20

Katie was pondering over some difficult maths homework, when the pen she was chewing exploded in her mouth. Jack snorted, "You look intelligent". Katie thought that this was a very comical comment.

Katie was pondering over some difficult maths homework, when the pen she was chewing exploded in her mouth. Jack snorted, "You look dumb". Katie thought that this was a very comical comment.

Katie was pondering over some difficult maths homework, when the pen she was chewing exploded in her mouth. Jack snorted, "You look intelligent". Jack had meant for this to be a very comical comment.

Katie was pondering over some difficult maths homework, when the pen she was chewing exploded in her mouth. Jack snorted, "You look dumb". Jack had meant for this to be a very comical comment.

Katie was pondering over some difficult maths homework, when the pen she was chewing exploded in her mouth. Jack snorted, "You look intelligent". Katie thought that this was a very unkind comment.

Katie was pondering over some difficult maths homework, when the pen she was chewing exploded in her mouth. Jack snorted, "You look dumb". Katie thought that this was a very unkind comment.

Katie was pondering over some difficult maths homework, when the pen she was chewing exploded in her mouth. Jack snorted, "You look intelligent". Jack had meant for this to be a very unkind comment.

Katie was pondering over some difficult maths homework, when the pen she was chewing exploded in her mouth. Jack snorted, "You look dumb". Jack had meant for this to be a very unkind comment.

21

Hazel had just broken the news that she had failed her third driving test. George jeered, "We all know what an amazing driver you are". Hazel thought that this was a very funny comment.

Hazel had just broken the news that she had failed her third driving test. George jeered, "We all know what an awful driver you are". Hazel thought that this was a very funny comment.

Hazel had just broken the news that she had failed her third driving test. George jeered, "We all know what an amazing driver you are". George had meant for this to be a very funny comment.

Hazel had just broken the news that she had failed her third driving test. George jeered, "We all know what an awful driver you are". George had meant for this to be a very funny comment.

Hazel had just broken the news that she had failed her third driving test. George jeered, "We all know what an amazing driver you are". Hazel thought that this was a very cruel comment.

Hazel had just broken the news that she had failed her third driving test. George jeered, "We all know what an awful driver you are". Hazel thought that this was a very cruel comment.

Hazel had just broken the news that she had failed her third driving test. George jeered, "We all know what an amazing driver you are". George had meant for this to be a very cruel comment.

Hazel had just broken the news that she had failed her third driving test. George jeered, "We all know what an awful driver you are". George had meant for this to be a very cruel comment.

Natalie had been boring her friends talking about an uninteresting work story. Jake said to her, "Well that was interesting". Natalie thought that this was a very humorous thing to say.

22

Natalie had been boring her friends talking about an uninteresting work story. Jake said to her, "Well that was dull". Natalie thought that this was a very humorous thing to say.

Natalie had been boring her friends talking about an uninteresting work story. Jake said to her, "Well that was interesting". Jake had intended for this to be a very humorous thing to say.

Natalie had been boring her friends talking about an uninteresting work story. Jake said to her, "Well that was dull". Jake had intended for this to be a very humorous thing to say.

Natalie had been boring her friends talking about an uninteresting work story. Jake said to her, "Well that was interesting". Natalie thought that this was a very insensitive thing to say.

Natalie had been boring her friends talking about an uninteresting work story. Jake said to her, "Well that was dull". Natalie thought that this was a very insensitive thing to say.

Natalie had been boring her friends talking about an uninteresting work story. Jake said to her, "Well that was interesting". Jake had intended for this to be a very insensitive thing to say.

Natalie had been boring her friends talking about an uninteresting work story. Jake said to her, "Well that was dull". Jake had intended for this to be a very insensitive thing to say.

23

Jo had just purposefully ignored some of her friends at a party because she didnít feel like talking to them. Gus said to her, "That was friendly". Jo was really amused by what he said.

Jo had just purposefully ignored some of her friends at a party because she didnít feel like talking to them. Gus said to her, "That was rude". Jo was really amused by what he said.

Jo had just purposefully ignored some of her friends at a party because she didnít feel like talking to them. Gus said to her, "That was friendly". Gus had intended for her to be really amused by what he said.

Jo had just purposefully ignored some of her friends at a party because she didnít feel like talking to them. Gus said to her, "That was rude". Gus had intended for her to be really amused by what he said.

Jo had just purposefully ignored some of her friends at a party because she didnít feel like talking to them. Gus said to her, "That was friendly". Jo was really hurt by what he said.

Jo had just purposefully ignored some of her friends at a party because she didnít feel like talking to them. Gus said to her, "That was rude". Jo was really hurt by what he said.

Jo had just purposefully ignored some of her friends at a party because she didnít feel like talking to them. Gus said to her, "That was friendly". Gus had intended for her to be really hurt by what he said.

Jo had just purposefully ignored some of her friends at a party because she didnít feel like talking to them. Gus said to her, "That was rude". Gus had intended for her to be really hurt by what he said.

24

Olive had finished with the worst score in the game of bowling, like she always did. Luke said to her, "Youíre amazing at bowling". Olive was really tickled by this statement.

Olive had finished with the worst score in the game of bowling, like she always did. Luke said to her, "Youíre horrendous at bowling". Olive was really tickled by this statement.

Olive had finished with the worst score in the game of bowling, like she always did. Luke said to her, "Youíre amazing at bowling". Luke had meant for her to be really tickled by this statement.

Olive had finished with the worst score in the game of bowling, like she always did. Luke said to her, "Youíre horrendous at bowling". Luke had meant for her to be really tickled by this statement.

Olive had finished with the worst score in the game of bowling, like she always did. Luke said to her, "Youíre amazing at bowling". Olive was really insulted by this statement.

Olive had finished with the worst score in the game of bowling, like she always did. Luke said to her, "Youíre horrendous at bowling". Olive was really insulted by this statement.

Olive had finished with the worst score in the game of bowling, like she always did. Luke said to her, "Youíre amazing at bowling". Luke had meant for her to be really insulted by this statement.

Olive had finished with the worst score in the game of bowling, like she always did. Luke said to her, "Youíre horrendous at bowling". Luke had meant for her to be really insulted by this statement.

25

Ben began to panic when he realised he left his music player at the gym. Annie retorted, "You are fantastic at taking care of your belongings". Ben thought that this was a very hilarious thing to say.

Ben began to panic when he realised he left his music player at the gym. Annie retorted, "You are dreadful at taking care of your belongings". Ben thought that this was a very hilarious thing to say.

Ben began to panic when he realised he left his music player at the gym. Annie retorted, "You are fantastic at taking care of your belongings". Annie had intended for this to be a very hilarious thing to say.

Ben began to panic when he realised he left his music player at the gym. Annie retorted, "You are dreadful at taking care of your belongings". Annie had intended for this to be a very hilarious thing to say.

Ben began to panic when he realised he left his music player at the gym. Annie retorted, "You are fantastic at taking care of your belongings". Ben thought that this was a very unkind thing to say.

Ben began to panic when he realised he left his music player at the gym. Annie retorted, "You are dreadful at taking care of your belongings". Ben thought that this was a very unkind thing to say.

Ben began to panic when he realised he left his music player at the gym. Annie retorted, "You are fantastic at taking care of your belongings". Annie had intended for this to be a very unkind thing to say.

Ben began to panic when he realised he left his music player at the gym. Annie retorted, "You are dreadful at taking care of your belongings". Annie had intended for this to be a very unkind thing to say.

26

Brian thought his choice of present for Tiffany was perfect. When Tiffany opened the present she scoffed, "I really love pink woolly jumpers". Brian thought that this was a very comical comment.

Brian thought his choice of present for Tiffany was perfect. When Tiffany opened the present she scoffed, "I really hate pink woolly jumpers". Brian thought that this was a very comical comment.

Brian thought his choice of present for Tiffany was perfect. When Tiffany opened the present she scoffed, "I really love pink woolly jumpers". Tiffany had meant for this to be a very comical comment.

Brian thought his choice of present for Tiffany was perfect. When Tiffany opened the present she scoffed, "I really hate pink woolly jumpers". Tiffany had meant for this to be a very comical comment.

Brian thought his choice of present for Tiffany was perfect. When Tiffany opened the present she scoffed, "I really love pink woolly jumpers". Brian thought that this was a very mean comment.

Brian thought his choice of present for Tiffany was perfect. When Tiffany opened the present she scoffed, "I really hate pink woolly jumpers". Brian thought that this was a very mean comment.

Brian thought his choice of present for Tiffany was perfect. When Tiffany opened the present she scoffed, "I really love pink woolly jumpers". Tiffany had meant for this to be a very mean comment.

Brian thought his choice of present for Tiffany was perfect. When Tiffany opened the present she scoffed, "I really hate pink woolly jumpers". Tiffany had meant for this to be a very mean comment.

27

Thomas had been admitted to hospital with a fractured leg after tripping over his hockey stick. Sarah sniggered, "What an excellent sportsman". Thomas thought that this was a very witty thing to say.

Thomas had been admitted to hospital with a fractured leg after tripping over his hockey stick. Sarah sniggered, "What an awful sportsman". Thomas thought that this was a very witty thing to say.

Thomas had been admitted to hospital with a fractured leg after tripping over his hockey stick. Sarah sniggered, "What an excellent sportsman". Sarah had intended for this to be a very witty thing to say.

Thomas had been admitted to hospital with a fractured leg after tripping over his hockey stick. Sarah sniggered, "What an awful sportsman". Sarah had intended for this to be a very witty thing to say.

Thomas had been admitted to hospital with a fractured leg after tripping over his hockey stick. Sarah sniggered, "What an excellent sportsman". Thomas thought that this was a very hurtful thing to say.

Thomas had been admitted to hospital with a fractured leg after tripping over his hockey stick. Sarah sniggered, "What an awful sportsman". Thomas thought that this was a very hurtful thing to say.

Thomas had been admitted to hospital with a fractured leg after tripping over his hockey stick. Sarah sniggered, "What an excellent sportsman". Sarah had intended for this to be a very hurtful thing to say.

Thomas had been admitted to hospital with a fractured leg after tripping over his hockey stick. Sarah sniggered, "What an awful sportsman". Sarah had intended for this to be a very hurtful thing to say.

28

When Samuel joined the check-in queue, he realised he had left his passport at home. Maria snapped at him, "Iíd be delighted to spend our holiday in England". Samuel thought that this was a very hilarious comment.

When Samuel joined the check-in queue, he realised he had left his passport at home. Maria snapped at him, "Iíd be devastated to spend our holiday in England". Samuel thought that this was a very hilarious comment.

When Samuel joined the check-in queue, he realised he had left his passport at home. Maria snapped at him, "Iíd be delighted to spend our holiday in England". Maria had meant for this to be a very hilarious comment.

When Samuel joined the check-in queue, he realised he had left his passport at home. Maria snapped at him, "Iíd be devastated to spend our holiday in England". Maria had meant for this to be a very hilarious comment.

When Samuel joined the check-in queue, he realised he had left his passport at home. Maria snapped at him, "Iíd be delighted to spend our holiday in England". Samuel thought that this was a very cruel comment.

When Samuel joined the check-in queue, he realised he had left his passport at home. Maria snapped at him, "Iíd be devastated to spend our holiday in England". Samuel thought that this was a very cruel comment.

When Samuel joined the check-in queue, he realised he had left his passport at home. Maria snapped at him, "Iíd be delighted to spend our holiday in England". Maria had meant for this to be a very cruel comment.

When Samuel joined the check-in queue, he realised he had left his passport at home. Maria snapped at him, "Iíd be devastated to spend our holiday in England". Maria had meant for this to be a very cruel comment.

29

John, baked cookies for the first time and they were rock hard. Mary told him, "Oh these will be good for my teeth". John was really amused by what she said.

John, baked cookies for the first time and they were rock hard. Mary told him, "Oh these will be bad for my teeth". John was really amused by what she said.

John, baked cookies for the first time and they were rock hard. Mary told him, "Oh these will be good for my teeth". Mary had intended for him to be really amused by what she said.

John, baked cookies for the first time and they were rock hard. Mary told him, "Oh these will be bad for my teeth". Mary had intended for him to be really amused by what she said.

John, baked cookies for the first time and they were rock hard. Mary told him, "Oh these will be good for my teeth". John was really offended by what she said.

John, baked cookies for the first time and they were rock hard. Mary told him, "Oh these will be bad for my teeth". John was really offended by what she said.

John, baked cookies for the first time and they were rock hard. Mary told him, "Oh these will be good for my teeth". Mary had intended for him to be really offended by what she said.

John, baked cookies for the first time and they were rock hard. Mary told him, "Oh these will be bad for my teeth". Mary had intended for him to be really offended by what she said.

30

Jane decided to cut her fringe herself but she got distracted and cut it uneven. Julia told her, "Well, you will be a great barber". Jane was really entertained by this statement.

Jane decided to cut her fringe herself but she got distracted and cut it uneven. Julia told her, "Well, you will be a terrible barber". Jane was really entertained by this statement.

Jane decided to cut her fringe herself but she got distracted and cut it uneven. Julia told her, "Well, you will be a great barber". Julia had meant for her to be really entertained by this statement.

Jane decided to cut her fringe herself but she got distracted and cut it uneven. Julia told her, "Well, you will be a terrible barber". Julia had meant for her to be really entertained by this statement.

Jane decided to cut her fringe herself but she got distracted and cut it uneven. Julia told her, "Well, you will be a great barber". Jane was really insulted by this statement.

Jane decided to cut her fringe herself but she got distracted and cut it uneven. Julia told her, "Well, you will be a terrible barber". Jane was really insulted by this statement.

Jane decided to cut her fringe herself but she got distracted and cut it uneven. Julia told her, "Well, you will be a great barber". Julia had meant for her to be really insulted by this statement.

Jane decided to cut her fringe herself but she got distracted and cut it uneven. Julia told her, "Well, you will be a terrible barber". Julia had meant for her to be really insulted by this statement.

31

Jack who has just started playing football, accidentally scored an own goal. Mike told him, "Oh that was skilful". Jack thought that this was a very comical thing to say.

Jack who has just started playing football, accidentally scored an own goal. Mike told him, "Oh that was unskilful". Jack thought that this was a very comical thing to say.

Jack who has just started playing football, accidentally scored an own goal. Mike told him, "Oh that was skilful". Mike had intended for this to be a very comical thing to say.

Jack who has just started playing football, accidentally scored an own goal. Mike told him, "Oh that was unskilful". Mike had intended for this to be a very comical thing to say.

Jack who has just started playing football, accidentally scored an own goal. Mike told him, "Oh that was skilful". Jack thought that this was a very insensitive thing to say.

Jack who has just started playing football, accidentally scored an own goal. Mike told him, "Oh that was unskilful". Jack thought that this was a very insensitive thing to say.

Jack who has just started playing football, accidentally scored an own goal. Mike told him, "Oh that was skilful". Mike had intended for this to be a very insensitive thing to say.

Jack who has just started playing football, accidentally scored an own goal. Mike told him, "Oh that was unskilful". Mike had intended for this to be a very insensitive thing to say.

32

Josh is at the carpentry class, and has been trying to saw a piece of wood for the past hour. Louise came over and said to him, "Wow youíre so strong". Josh thought that this was a very humorous comment.

Josh is at the carpentry class, and has been trying to saw a piece of wood for the past hour. Louise came over and said to him, "Wow youíre so weak". Josh thought that this was a very humorous comment.

Josh is at the carpentry class, and has been trying to saw a piece of wood for the past hour. Louise came over and said to him, "Wow youíre so strong". Louise Josh had meant for this to be a very humorous comment.

Josh is at the carpentry class, and has been trying to saw a piece of wood for the past hour. Louise came over and said to him, "Wow youíre so weak". Louise had meant for this to be a very humorous comment.

Josh is at the carpentry class, and has been trying to saw a piece of wood for the past hour. Louise came over and said to him, "Wow youíre so strong". Josh thought that this was a very unkind comment.

Josh is at the carpentry class, and has been trying to saw a piece of wood for the past hour. Louise came over and said to him, "Wow youíre so weak". Josh thought that this was a very unkind comment.

Josh is at the carpentry class, and has been trying to saw a piece of wood for the past hour. Louise came over and said to him, "Wow youíre so strong". Louise had meant for this to be a very unkind comment.

Josh is at the carpentry class, and has been trying to saw a piece of wood for the past hour. Louise came over and said to him, "Wow youíre so weak". Louise had meant for this to be a very unkind comment.

33

Chloe was washing the dishes after dinner, when she suddenly dropped a few plates and they broke. Amy told her, "Youíre so careful". Chloe was really tickled by what she said.

Chloe was washing the dishes after dinner, when she suddenly dropped a few plates and they broke. Amy told her, "Youíre so clumsy". Chloe was really tickled by what she said.

Chloe was washing the dishes after dinner, when she suddenly dropped a few plates and they broke. Amy told her, "Youíre so careful". Amy had intended for her to be really tickled by what she said.

Chloe was washing the dishes after dinner, when she suddenly dropped a few plates and they broke. Amy told her, "Youíre so clumsy". Amy had intended for her to be really tickled by what she said.

Chloe was washing the dishes after dinner, when she suddenly dropped a few plates and they broke. Amy told her, "Youíre so careful". Chloe was really offended by what she said.

Chloe was washing the dishes after dinner, when she suddenly dropped a few plates and they broke. Amy told her, "Youíre so clumsy". Chloe was really offended by what she said.

Chloe was washing the dishes after dinner, when she suddenly dropped a few plates and they broke. Amy told her, "Youíre so careful". Amy had intended for her to be really offended by what she said.

Chloe was washing the dishes after dinner, when she suddenly dropped a few plates and they broke. Amy told her, "Youíre so clumsy". Amy had intended for her to be really offended by what she said.

34

Daniel was pouring a glass of red wine for his boss when he accidentally spilled a few drops on her white shirt. Danielís colleague told him, "That was a smart move". Daniel thought that this was a very funny thing to say.

Daniel was pouring a glass of red wine for his boss when he accidentally spilled a few drops on her white shirt. Danielís colleague told him, "That was a stupid move". Daniel thought that this was a very funny thing to say.

Daniel was pouring a glass of red wine for his boss when he accidentally spilled a few drops on her white shirt. Danielís colleague told him, "That was a smart move". Danielís colleague had intended for this to be a very funny thing to say.

Daniel was pouring a glass of red wine for his boss when he accidentally spilled a few drops on her white shirt. Danielís colleague told him, "That was a stupid move". Danielís colleague had intended for this to be a very funny thing to say.

Daniel was pouring a glass of red wine for his boss when he accidentally spilled a few drops on her white shirt. Danielís colleague told him, "That was a smart move". Daniel thought that this was a very cruel thing to say.

Daniel was pouring a glass of red wine for his boss when he accidentally spilled a few drops on her white shirt. Danielís colleague told him, "That was a stupid move". Daniel thought that this was a very cruel thing to say.

Daniel was pouring a glass of red wine for his boss when he accidentally spilled a few drops on her white shirt. Danielís colleague told him, "That was a smart move". Danielís colleague had intended for this to be a very cruel thing to say.

Daniel was pouring a glass of red wine for his boss when he accidentally spilled a few drops on her white shirt. Danielís colleague told him, "That was a stupid move". Danielís colleague had intended for this to be a very cruel thing to say.

35

Courtneyí'S neighbour asked her to water his plants while he was away, but Courtney completely forgot and all the plants died. David told her, "You have an amazing memory". Courtney thought that this was a very witty thing to say.

Courtneyís neighbour asked her to water his plants while he was away, but Courtney completely forgot and all the plants died. David told her, "You have a horrendous memory". Courtney thought that this was a very witty thing to say.

Courtneyís neighbour asked her to water his plants while he was away, but Courtney completely forgot and all the plants died. David told her, "You have an amazing memory". David had intended for this to be a very witty thing to say.

Courtneyís neighbour asked her to water his plants while he was away, but Courtney completely forgot and all the plants died. David told her, "You have a horrendous memory". David had intended for this to be a very witty thing to say.

Courtneyís neighbour asked her to water his plants while he was away, but Courtney completely forgot and all the plants died. David told her, "You have an amazing memory". Courtney thought that this was a very mean thing to say.

Courtneyís neighbour asked her to water his plants while he was away, but Courtney completely forgot and all the plants died. David told her, "You have a horrendous memory". Courtney thought that this was a very mean thing to say.

Courtneyís neighbour asked her to water his plants while he was away, but Courtney completely forgot and all the plants died. David told her, "You have an amazing memory". David had intended for this to be a very mean thing to say.

Courtneyís neighbour asked her to water his plants while he was away, but Courtney completely forgot and all the plants died. David told her, "You have a horrendous memory". David had intended for this to be a very mean thing to say.

36

Kelly bought some sweets to bring to her diabetic friend who had just been discharged from hospital. Elizabeth told her, "Well thatís a useful thing to buy her". Kelly thought that this was a very hilarious comment.

Kelly bought some sweets to bring to her diabetic friend who had just been discharged from hospital. Elizabeth told her, "Well thatís a useless thing to buy her". Kelly thought that this was a very hilarious comment.

Kelly bought some sweets to bring to her diabetic friend who had just been discharged from hospital. Elizabeth told her, "Well thatís a useful thing to buy her". Elizabeth had meant for this to be a very hilarious comment.

Kelly bought some sweets to bring to her diabetic friend who had just been discharged from hospital. Elizabeth told her, "Well thatís a useless thing to buy her". Elizabeth had meant for this to be a very hilarious comment.

Kelly bought some sweets to bring to her diabetic friend who had just been discharged from hospital. Elizabeth told her, "Well thatís a useful thing to buy her". Kelly thought that this was a very insensitive comment.

Kelly bought some sweets to bring to her diabetic friend who had just been discharged from hospital. Elizabeth told her, "Well thatís a useless thing to buy her". Kelly thought that this was a very insensitive comment.

Kelly bought some sweets to bring to her diabetic friend who had just been discharged from hospital. Elizabeth told her, "Well thatís a useful thing to buy her". Elizabeth had meant for this to be a very insensitive comment.

Kelly bought some sweets to bring to her diabetic friend who had just been discharged from hospital. Elizabeth told her, "Well thatís a useless thing to buy her". Elizabeth had meant for this to be a very insensitive comment.

37

Chris tripped over a table while he was staring at his crush in Biology class. Andy told him, "You are so smooth". Chris was really amused by what he said.

Chris tripped over a table while he was staring at his crush in Biology class. Andy told him, "You are so awkward". Chris was really amused by what he said.

Chris tripped over a table while he was staring at his crush in Biology class. Andy told him, "You are so smooth". Andy had intended for him to be really amused by what he said.

Chris tripped over a table while he was staring at his crush in Biology class. Andy told him, "You are so awkward". Andy had intended for him to be really amused by what he said.

Chris tripped over a table while he was staring at his crush in Biology class. Andy told him, "You are so smooth". Chris was really upset by what he said.

Chris tripped over a table while he was staring at his crush in Biology class. Andy told him, "You are so awkward". Chris was really upset by what he said.

Chris tripped over a table while he was staring at his crush in Biology class. Andy told him, "You are so smooth". Andy had intended for him to be really upset by what he said.

Chris tripped over a table while he was staring at his crush in Biology class. Andy told him, "You are so awkward". Andy had intended for him to be really upset by what he said.

38

Anne was helping her grandmother with walking as she has a bad leg, but she slipped on the snow and fell. Roger told her, "You are so careful". Anne was really entertained by this statement.

Anne was helping her grandmother with walking as she has a bad leg, but she slipped on the snow and fell. Roger told her, "You are so careless". Anne was really entertained by this statement.

Anne was helping her grandmother with walking as she has a bad leg, but she slipped on the snow and fell. Roger told her, "You are so careful". Roger had meant for her to be really entertained by this statement.

Anne was helping her grandmother with walking as she has a bad leg, but she slipped on the snow and fell. Roger told her, "You are so careless". Roger had meant for her to be really entertained by this statement.

 Anne was helping her grandmother with walking as she has a bad leg, but she slipped on the snow and fell. Roger told her, "You are so careful". Anne was really offended by this statement.

Anne was helping her grandmother with walking as she has a bad leg, but she slipped on the snow and fell. Roger told her, "You are so careless". Anne was really offended by this statement.

Anne was helping her grandmother with walking as she has a bad leg, but she slipped on the snow and fell. Roger told her, "You are so careful". Roger had meant for her to be really offended by this statement.

Anne was helping her grandmother with walking as she has a bad leg, but she slipped on the snow and fell. Roger told her, "You are so careless". Roger had meant for her to be really offended by this statement.

39

Isabell was having dinner with some friends but she kept checking her phone because her daughter was texting her. Lindsey told her, "You are very polite". Isabell thought that this was a very witty thing to say.

Isabell was having dinner with some friends but she kept checking her phone because her daughter was texting her. Lindsey told her, "You are very rude". Isabell thought that this was a very witty thing to say.

Isabell was having dinner with some friends but she kept checking her phone because her daughter was texting her. Lindsey told her, "You are very polite". Lindsey had intended for this to be a very witty thing to say.

Isabell was having dinner with some friends but she kept checking her phone because her daughter was texting her. Lindsey told her, "You are very rude". Lindsey had intended for this to be a very witty thing to say.

Isabell was having dinner with some friends but she kept checking her phone because her daughter was texting her. Lindsey told her, "You are very polite". Isabell thought that this was a very cruel thing to say.

Isabell was having dinner with some friends but she kept checking her phone because her daughter was texting her. Lindsey told her, "You are very rude". Isabell thought that this was a very cruel thing to say.

Isabell was having dinner with some friends but she kept checking her phone because her daughter was texting her. Lindsey told her, "You are very polite". Lindsey had intended for this to be a very cruel thing to say.

Isabell was having dinner with some friends but she kept checking her phone because her daughter was texting her. Lindsey told her, "You are very rude". Lindsey had intended for this to be a very cruel thing to say.

40

Adam was saying hi to everyone at work but he skipped the new colleague as he couldnít remember his name. Harry said to him, "that was a very friendly thing to do". Adam thought that this was a very comical comment.

Adam was saying hi to everyone at work but he skipped the new colleague as he couldnít remember his name. Harry said to him, "that was a very unfriendly thing to do". Adam thought that this was a very comical comment.

Adam was saying hi to everyone at work but he skipped the new colleague as he couldnít remember his name. Harry said to him, "that was a very friendly thing to do". Harry had meant for this to be a very comical comment.

Adam was saying hi to everyone at work but he skipped the new colleague as he couldnít remember his name. Harry said to him, "that was a very unfriendly thing to do". Harry had meant for this to be a very comical comment.

Adam was saying hi to everyone at work but he skipped the new colleague as he couldnít remember his name. Harry said to him, "that was a very friendly thing to do". Adam thought that this was a very unkind comment.

Adam was saying hi to everyone at work but he skipped the new colleague as he couldnít remember his name. Harry said to him, "that was a very unfriendly thing to do". Adam thought that this was a very unkind comment.

Adam was saying hi to everyone at work but he skipped the new colleague as he couldnít remember his name. Harry said to him, "that was a very friendly thing to do". Harry had meant for this to be a very unkind comment.

Adam was saying hi to everyone at work but he skipped the new colleague as he couldnít remember his name. Harry said to him, "that was a very unfriendly thing to do". Harry had meant for this to be a very unkind comment.

41

Leo bought some meat for the BBQ party but he forgot to put it in the fridge and the meat went off. Olivia told him, "you are the wisest person I know". Leo was really tickled by what she said.

Leo bought some meat for the BBQ party but he forgot to put it in the fridge and the meat went off. Olivia told him, "you are the most foolish person I know". Leo was really tickled by what she said.

Leo bought some meat for the BBQ party but he forgot to put it in the fridge and the meat went off. Olivia told him, "you are the wisest person I know". Olivia had intended for him to be really tickled by what she said.

Leo bought some meat for the BBQ party but he forgot to put it in the fridge and the meat went off. Olivia told him, "you are the most foolish person I know". Olivia had intended for him to be really tickled by what she said.

Leo bought some meat for the BBQ party but he forgot to put it in the fridge and the meat went off. Olivia told him, "you are the wisest person I know". Leo was really upset by what she said.

Leo bought some meat for the BBQ party but he forgot to put it in the fridge and the meat went off. Olivia told him, "you are the most foolish person I know". Leo was really upset by what she said.

Leo bought some meat for the BBQ party but he forgot to put it in the fridge and the meat went off. Olivia told him, "you are the wisest person I know". Olivia had intended for him to be really upset by what she said.

Leo bought some meat for the BBQ party but he forgot to put it in the fridge and the meat went off. Olivia told him, "you are the most foolish person I know". Olivia had intended for him to be really upset by what she said.

42

Emily was driving her friend to university but she didnít see the speed bump so didnít reduce her speed and both of them bounced into the air. Lily told her, "Arenít you the safest driver I know". Emily thought that this was a very hilarious thing to say.

Emily was driving her friend to university but she didnít see the speed bump so didnít reduce her speed and both of them bounced into the air. Lily told her, "Arenít you the most irresponsible driver I know". Emily thought that this was a very hilarious thing to say.

Emily was driving her friend to university but she didnít see the speed bump so didnít reduce her speed and both of them bounced into the air. Lily told her, "Arenít you the safest driver I know". Lily had intended for this to be a very hilarious thing to say.

Emily was driving her friend to university but she didnít see the speed bump so didnít reduce her speed and both of them bounced into the air. Lily told her, "Arenít you the most irresponsible driver I know". Lily had intended for this to be a very hilarious thing to say.

Emily was driving her friend to university but she didnít see the speed bump so didnít reduce her speed and both of them bounced into the air. Lily told her, "Arenít you the safest driver I know". Emily thought that this was a very insensitive thing to say.

Emily was driving her friend to university but she didnít see the speed bump so didnít reduce her speed and both of them bounced into the air. Lily told her, "Arenít you the most irresponsible driver I know". Emily thought that this was a very insensitive thing to say.

Emily was driving her friend to university but she didnít see the speed bump so didnít reduce her speed and both of them bounced into the air. Lily told her, "Arenít you the safest driver I know". Lily had intended for this to be a very insensitive thing to.

Emily was driving her friend to university but she didnít see the speed bump so didnít reduce her speed and both of them bounced into the air. Lily told her, "Arenít you the most irresponsible driver I know". Lily had intended for this to be a very insensitive thing to say.

43

Charlie had to catch a flight in rush so he didnít have time to wash his dirty dishes and left them in the sink. Oscar said to him, "Oh how nice of you". Charlie thought that this was a very funny thing to say.

Charlie had to catch a flight in rush so he didnít have time to wash his dirty dishes and left them in the sink. Oscar said to him, "Oh how mean of you". Charlie thought that this was a very funny thing to say.

Charlie had to catch a flight in rush so he didnít have time to wash his dirty dishes and left them in the sink. Oscar said to him, "Oh how nice of you". Oscar had intended for this to be a very funny thing to say.

Charlie had to catch a flight in rush so he didnít have time to wash his dirty dishes and left them in the sink. Oscar said to him, "Oh how mean of you". Oscar had intended for this to be a very funny thing to say.

Charlie had to catch a flight in rush so he didnít have time to wash his dirty dishes and left them in the sink. Oscar said to him, "Oh how nice of you". Charlie thought that this was a very mean thing to say.

Charlie had to catch a flight in rush so he didnít have time to wash his dirty dishes and left them in the sink. Oscar said to him, "Oh how mean of you". Charlie thought that this was a very mean thing to say.

Charlie had to catch a flight in rush so he didnít have time to wash his dirty dishes and left them in the sink. Oscar said to him, "Oh how nice of you". Oscar had intended for this to be a very mean thing to say.

Charlie had to catch a flight in rush so he didnít have time to wash his dirty dishes and left them in the sink. Oscar said to him, "Oh how mean of you". Oscar had intended for this to be a very mean thing to say.

44

Jacob went to the market to do the grocery shopping but he didnít look carefully and bought apples that were full of brown spots. Isabella told him, "Youíre a great shopper, arenít you?". Jacob thought that this was a very comical comment.

Jacob went to the market to do the grocery shopping but he didnít look carefully and bought apples that were full of brown spots. Isabella told him, "Youíre a terrible shopper, arenít you?". Jacob thought that this was a very comical comment.

Jacob went to the market to do the grocery shopping but he didnít look carefully and bought apples that were full of brown spots. Isabella told him, "Youíre a great shopper, arenít you?". Oscar had meant for this to be a very comical comment.

Jacob went to the market to do the grocery shopping but he didnít look carefully and bought apples that were full of brown spots. Isabella told him, "Youëre a terrible shopper, arenít you?". Oscar had meant for this to be a very comical comment.

Jacob went to the market to do the grocery shopping but he didnít look carefully and bought apples that were full of brown spots. Isabella told him, "Youíre a great shopper, arenít you?". Jacob thought that this was a very cruel comment.

Jacob went to the market to do the grocery shopping but he didnít look carefully and bought apples that were full of brown spots. Isabella told him, "Youíre a terrible shopper, arenít you?". Jacob thought that this was a very cruel comment.

Jacob went to the market to do the grocery shopping but he didnít look carefully and bought apples that were full of brown spots. Isabella told him, "Youíre a great shopper, arenít you?". Oscar had meant for this to be a very cruel comment.

Jacob went to the market to do the grocery shopping but he didnít look carefully and bought apples that were full of brown spots. Isabella told him, "Youíre a terrible shopper, arenít you?". Oscar had meant for this to be a very cruel comment.

45

Amelia and Ava had just arrived at the theatre when Amelia realised she had forgotten the tickets so they didnít get to see the play. Ava said to her, "Youíre so organised". Amelia was really tickled by what she said.

Amelia and Ava had just arrived at the theatre when Amelia realised she had forgotten the tickets so they didnít get to see the play. Ava said to her, "Youíre so disorganised". Amelia was really tickled by what she said.

Amelia and Ava had just arrived at the theatre when Amelia realised she had forgotten the tickets so they didnít get to see the play. Ava said to her, "Youíre so organised". Ava had intended for her to be really tickled by what she said.

Amelia and Ava had just arrived at the theatre when Amelia realised she had forgotten the tickets so they didnít get to see the play. Ava said to her, "Youíre so disorganised". Ava had intended for her to be really tickled by what she said.

Amelia and Ava had just arrived at the theatre when Amelia realised she had forgotten the tickets so they didnít get to see the play. Ava said to her, "Youíre so organised". Amelia was really insulted by what she said.

Amelia and Ava had just arrived at the theatre when Amelia realised she had forgotten the tickets so they didnít get to see the play. Ava said to her, "Youíre so disorganised". Amelia was really insulted by what she said.

Amelia and Ava had just arrived at the theatre when Amelia realised she had forgotten the tickets so they didnít get to see the play. Ava said to her, "Youíre so organised". Ava had intended for her to be really insulted by what she said.

Amelia and Ava had just arrived at the theatre when Amelia realised she had forgotten the tickets so they didnít get to see the play. Ava said to her, "Youíre so disorganised". Ava had intended for her to be really insulted by what she said.

46

George arrived home after a long and hot day working in the field, feeding the cows and cleaning the barn. Oliver told him, "You smell nice". George though that this was a really witty remark.

George arrived home after a long and hot day working in the field, he took off his shoes and sat on the sofa. Oliver told him, "You smell terrible". George though that this was a really witty remark.

George arrived home after a long and hot day working in the field, feeding the cows and cleaning the barn. Oliver told him, "You smell nice". Oliver had meant for this to be a very witty remark.

George arrived home after a long and hot day working in the field, he took off his shoes and sat on the sofa. Oliver told him, "You smell terrible". Oliver had meant for this to be a very witty remark.

George arrived home after a long and hot day working in the field, feeding the cows and cleaning the barn. Oliver told him, "You smell nice". George though that this was a really hurtful remark.

George arrived home after a long and hot day working in the field, he took off his shoes and sat on the sofa. Oliver told him, "You smell terrible". George though that this was a really hurtful remark.

George arrived home after a long and hot day working in the field, feeding the cows and cleaning the barn. Oliver told him, "You smell nice". Oliver had meant for had meant for this to be a very hurtful remark.

George arrived home after a long and hot day working in the field, he took off his shoes and sat on the sofa. Oliver told him, "You smell terrible". Oliver had meant for this to be a very hurtful remark.

47

Arthur arrived home and saw the calendar on the table and realised that itís his wifeís birthday today and he has forgotten it. Grace said to him, "Youíre the most thoughtful husband". Arthur thought that this was a very humorous thing to say.

Arthur arrived home and saw the calendar on the table and realised that itís his wifeís birthday today and he has forgotten it. Grace said to him, "Youíre the most thoughtless husband". Arthur thought that this was a very humorous thing to say.

Arthur arrived home and saw the calendar on the table and realised that itís his wifeís birthday today and he has forgotten it. Grace said to him, "Youíre the most thoughtful husband". Grace had intended for this to be a very humorous thing to say.

Arthur arrived home and saw the calendar on the table and realised that itís his wifeís birthday today and he has forgotten it. Grace said to him, "Youíre the most thoughtless husband". Grace had intended for this to be a very humorous thing to say.

Arthur arrived home and saw the calendar on the table and realised that itís his wifeís birthday today and he has forgotten it. Grace said to him, "Youíre the most thoughtful husband". Arthur thought that this was a very insulting thing to say.

Arthur arrived home and saw the calendar on the table and realised that itís his wifeís birthday today and he has forgotten it. Grace said to him, "Youíre the most thoughtless husband". Arthur thought that this was a very insulting thing to say.

Arthur arrived home and saw the calendar on the table and realised that itís his wifeís birthday today and he has forgotten it. Grace said to him, "Youíre the most thoughtful husband". Grace had intended for this to be a very insulting thing to say.

Arthur arrived home and saw the calendar on the table and realised that itís his wifeís birthday today and he has forgotten it. Grace said to him, "Youíre the most thoughtless husband". Grace had intended for this to be a very insulting thing to say.

48

Sophie cleaned up after dinner and accidentally put the glass jar in the food waste bin. Ella told her, "That was such an eco-friendly thing to do". Sophie thought that this was a very funny remark.

Sophie cleaned up after dinner and accidentally put the glass jar in the food waste bin. Ella told her, "That was such a wasteful thing to do". Sophie thought that this was a very funny remark.

Sophie cleaned up after dinner and accidentally put the glass jar in the food waste bin. Ella told her, "That was such an eco-friendly thing to do". Ella had meant for this to be a very funny remark.

Sophie cleaned up after dinner and accidentally put the glass jar in the food waste bin. Ella told her, "That was such a wasteful thing to do". Ella had meant for this to be a very funny remark.

Sophie cleaned up after dinner and accidentally put the glass jar in the food waste bin. Ella told her, "That was such an eco-friendly thing to do". Sophie thought that this was a very hurtful remark.

Sophie cleaned up after dinner and accidentally put the glass jar in the food waste bin. Ella told her, "That was such a wasteful thing to do". Sophie thought that this was a very hurtful remark.

Sophie cleaned up after dinner and accidentally put the glass jar in the food waste bin. Ella told her, "That was such an eco-friendly thing to do". Ella had meant for this to be a very hurtful remark.

Sophie cleaned up after dinner and accidentally put the glass jar in the food waste bin. Ella told her, "That was such a wasteful thing to do". Ella had meant for this to be a very hurtful remark.

49

Henry and Logan were driving to the train station but they were late so Henry ran through a red traffic light. Logan told him, "Youíre a very sensible driver". Henry thought that this was a very amusing remark.

Henry and Logan were driving to the train station but they were late so Henry ran through a red traffic light. Logan told him, "Youíre a very reckless driver". Henry thought that this was a very amusing remark.

Henry and Logan were driving to the train station but they were late so Henry ran through a red traffic light. Logan told him, "Youíre a very sensible driver". Logan had meant for this to be a very amusing remark.

Henry and Logan were driving to the train station but they were late so Henry ran through a red traffic light. Logan told him, "Youíre a very reckless driver". Logan had meant for this to be a very amusing remark.

Henry and Logan were driving to the train station but they were late so Henry ran through a red traffic light. Logan told him, "Youíre a very sensible driver". Henry thought that this was a very unkind remark.

Henry and Logan were driving to the train station but they were late so Henry ran through a red traffic light. Logan told him, "Youíre a very reckless driver". Henry thought that this was a very unkind remark.

Henry and Logan were driving to the train station but they were late so Henry ran through a red traffic light. Logan told him, "Youíre a very sensible driver". Logan had meant for this to be a very unkind remark.

Henry and Logan were driving to the train station but they were late so Henry ran through a red traffic light. Logan told him, "Youíre a very reckless driver". Logan had meant for this to be a very unkind remark.

50

Duncan and his wife are having dinner, but he hasnít noticed that she has had her hair cut. Holly told him, "Youíre a very attentive man". Duncan was really entertained by this statement.

Duncan and his wife are having dinner, but he hasnít noticed that she has had her hair cut. Holly told him, "Youíre a very inattentive man". Duncan was really entertained by this statement.

Duncan and his wife are having dinner, but he hasnít noticed that she has had her hair cut. Holly told him, "Youíre a very attentive man". Holly had meant for him to be really entertained by this statement.

Duncan and his wife are having dinner, but he hasnít noticed that she has had her hair cut. Holly told him, "Youíre a very inattentive man". Holly had meant for him to be really entertained by this statement.

Duncan and his wife are having dinner, but he hasnít noticed that she has had her hair cut. Holly told him, "Youíre a very attentive man". Duncan was really offended by this statement.

Duncan and his wife are having dinner, but he hasnít noticed that she has had her hair cut. Holly told him, "Youíre a very inattentive man". Duncan was really offended by this statement.

Duncan and his wife are having dinner, but he hasnít noticed that she has had her hair cut. Holly told him, "Youíre a very attentive man". Holly had meant for him to be really offended by this statement.

Duncan and his wife are having dinner, but he hasnít noticed that she has had her hair cut. Holly told him, "Youíre a very inattentive man". Holly had meant for him to be really offended by this statement.

51

Emma and Lauren were driving home from work on a rainy day when Emma drove through puddle and splashed some pedestrians. Lauren said to her, "That was a nice thing to do". Emma thought that this was a very humorous remark.

Emma and Lauren were driving home from work on a rainy day when Emma drove through puddle and splashed some pedestrians. Lauren said to her, "That was a terrible thing to do". Emma thought that this was a very humorous remark.

Emma and Lauren were driving home from work on a rainy day when Emma drove through puddle and splashed some pedestrians. Lauren said to her, "That was a nice thing to do". Lauren had meant for this to be a very humorous remark.

Emma and Lauren were driving home from work on a rainy day when Emma drove through puddle and splashed some pedestrians. Lauren said to her, "That was a terrible thing to do". Lauren had meant for this to be a very humorous remark.

Emma and Lauren were driving home from work on a rainy day when Emma drove through puddle and splashed some pedestrians. Lauren said to her, "That was a nice thing to do". Emma thought that this was a very insensitive remark.

Emma and Lauren were driving home from work on a rainy day when Emma drove through puddle and splashed some pedestrians. Lauren said to her, "That was a terrible thing to do". Emma thought that this was a very insensitive remark.

Emma and Lauren were driving home from work on a rainy day when Emma drove through puddle and splashed some pedestrians. Lauren said to her, "That was a nice thing to do". Lauren had meant for this to be a very insensitive remark.

Emma and Lauren were driving home from work on a rainy day when Emma drove through puddle and splashed some pedestrians. Lauren said to her, "That was a terrible thing to do". Lauren had meant for this to be a very insensitive remark.

52

Charlie and Eric came back from a night out and realised that Charlie had left his keys in the door. Charlie said to him, "That was such a smart thing to do". Charlie thought that this was a very comical remark.

Charlie and Eric came back from a night out and realised that Charlie had left his keys in the door. Charlie said to him, "That was such a stupid thing to do". Charlie thought that this was a very comical remark.

Charlie and Eric came back from a night out and realised that Charlie had left his keys in the door. Charlie said to him, "That was such a smart thing to do". Eric had meant for this to be a very comical remark.

Charlie and Eric came back from a night out and realised that Charlie had left his keys in the door. Charlie said to him, "That was such a stupid thing to do". Eric had meant for this to be a very comical remark.

Charlie and Eric came back from a night out and realised that Charlie had left his keys in the door. Charlie said to him, "That was such a smart thing to do". Charlie thought that this was a very upsetting remark.

Charlie and Eric came back from a night out and realised that Charlie had left his keys in the door. Charlie said to him, "That was such a stupid thing to do". Charlie thought that this was a very upsetting remark.

Charlie and Eric came back from a night out and realised that Charlie had left his keys in the door. Charlie said to him, "That was such a smart thing to do". Eric had meant for this to be a very upsetting remark.

Charlie and Eric came back from a night out and realised that Charlie had left his keys in the door. Charlie said to him, "That was such a stupid thing to do". Eric had meant for this to be a very upsetting remark.

53

Martin had made a cake but had accidently put four times the amount of salt in than he should have. Christina said to him, "That was intelligent". Martin was really entertained by what she said.

Martin had made a cake but had accidently put four times the amount of salt in than he should have. Christina said to him, "That was dumb". Martin was really entertained by what she said.

Martin had made a cake but had accidently put four times the amount of salt in than he should have. Christina said to him, "That was intelligent". Christina had entertained for him to be really entertained by what she said.

Martin had made a cake but had accidently put four times the amount of salt in than he should have. Christina said to him, "That was dumb". Christina had intended for him to be really entertained by what she said.

Martin had made a cake but had accidently put four times the amount of salt in than he should have. Christina said to him, "That was intelligent". Martin was really insulted by what she said.

Martin had made a cake but had accidently put four times the amount of salt in than he should have. Christina said to him, "That was dumb". Martin was really insulted by what she said.

Martin had made a cake but had accidently put four times the amount of salt in than he should have. Christina said to him, "That was intelligent". Christina had intended for him to be really insulted by what she said.

Martin had made a cake but had accidently put four times the amount of salt in than he should have. Christina said to him, "That was dumb". Christina had intended for him to be really insulted by what she said.

54

Terry had been laughing whilst telling a story about when he teased his little sister until she cried. Mia said to him, "Youíre so kind". Terry was really entertained by this remark.

Terry had been laughing whilst telling a story about when he teased his little sister until she cried. Mia said to him, "Youíre so mean". Terry was really entertained by this remark.

Terry had been laughing whilst telling a story about when he teased his little sister until she cried. Mia said to him, "Youíre so kind". Mia had meant for him to be really entertained by this remark.

Terry had been laughing whilst telling a story about when he teased his little sister until she cried. Mia said to him, "Youíre so mean". Mia had meant for him to be really entertained by this remark.

Terry had been laughing whilst telling a story about when he teased his little sister until she cried. Mia said to him, "Youíre so kind". Terry was really offended by this remark.

Terry had been laughing whilst telling a story about when he teased his little sister until she cried. Mia said to him, "Youíre so mean". Terry was really offended by this remark.

Terry had been laughing whilst telling a story about when he teased his little sister until she cried. Mia said to him, "Youíre so kind". Mia had meant for him to be really offended by this remark.

Terry had been laughing whilst telling a story about when he teased his little sister until she cried. Mia said to him, "Youíre so mean". Mia had meant for him to be really offended by this remark.

55

Kirk had just finished eating his dinner, whilst talking with his mouth full. Dawn said to him, "That was attractive". Kirk thought that this was a very hilarious remark.

Kirk had just finished eating his dinner, whilst talking with his mouth full. Dawn said to him, "That was disgusting". Kirk thought that this was a very hilarious remark.

Kirk had just finished eating his dinner, whilst talking with his mouth full. Dawn said to him, "That was attractive". Dawn had intended for this to be a very hilarious remark.

Kirk had just finished eating his dinner, whilst talking with his mouth full. Dawn said to him, "That was disgusting". Dawn had intended for this to be a very hilarious remark.

Kirk had just finished eating his dinner, whilst talking with his mouth full. Dawn said to him, "That was attractive". Kirk thought that this was a very insulting remark.

Kirk had just finished eating his dinner, whilst talking with his mouth full. Dawn said to him, "That was disgusting". Kirk thought that this was a very insulting remark.

Kirk had just finished eating his dinner, whilst talking with his mouth full. Dawn said to him, "That was attractive". Dawn had intended for this to be a very insulting remark.

Kirk had just finished eating his dinner, whilst talking with his mouth full. Dawn said to him, "That was disgusting". Dawn had intended for this to be a very insulting remark.

56

John had been scared by a huge spider in the bathroom sink and immediately ran out shouting. Anna said to him, "That was brave". John thought that this was a very witty remark.

John had been scared by a huge spider in the bathroom sink and immediately ran out shouting. Anna said to him, "That was cowardly". John thought that this was a very witty remark.

John had been scared by a huge spider in the bathroom sink and immediately ran out shouting. Anna said to him, "That was brave". Anna had meant for this to be a very witty remark.

John had been scared by a huge spider in the bathroom sink and immediately ran out shouting. Anna said to him, "That was cowardly". Anna had meant for this to be a very witty remark.

John had been scared by a huge spider in the bathroom sink and immediately ran out shouting. Anna said to him, "That was brave". John thought that this was a very mean remark.

John had been scared by a huge spider in the bathroom sink and immediately ran out shouting. Anna said to him, "That was cowardly". John thought that this was a very mean remark.

John had been scared by a huge spider in the bathroom sink and immediately ran out shouting. Anna said to him, "That was brave". Anna had meant for this to be a very mean remark.

John had been scared by a huge spider in the bathroom sink and immediately ran out shouting. Anna said to him, "That was cowardly". Anna had meant for this to be a very mean remark.