Exploring the impact of negative and positive self-talk in relation to loneliness and self-esteem in secondary school-aged adolescents

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Abstract

The effect of negative and positive self-talk in relation to loneliness and self-esteem is an under-researched area when associated with adolescence. Self-talk has been understood to assist in the construction of self-concept (Jemmer, 2009), and adolescence is a prevalent stage for this development (Hoover, Oliver & Hazler, 1992). Specifically, negative self-talk has been considered to play a role in the maintenance of anxiety (Yaratan & Yucesoylu, 2010) and depression (Cole, Maxwell, Dukewhich & Yosick, 2010). Moreover, positive self-talk has been associated with self-esteem improvement (Brinthaupt & Dove, 2012). The current study aimed to explore if negative and positive self-talk could also predict peer loneliness and self-esteem. In association with previous research two hypotheses were devised: H1 - peer loneliness will be predicted by negative and positive self-talk; and H2 - self-esteem will be predicted by negative and positive self-talk. The participants (n=113) were male and female adolescents. In part the hypotheses were supported; negative self-talk predicted peer loneliness but positive self-talk did not. It emerged that socially threatening self-talk was a significant predictor of loneliness. Both positive and negative self-talk predicted self-esteem; however, personal failure self-talk significantly predicted low self-esteem. These findings could be implicated in therapeutic work for adolescents which directly targets peer-loneliness and self-esteem.

KEY WORDS:	SELF-TALK	ADOLESCENCE	SELF-ESTEEM	LONELINESS

Introduction

The formation of language as a form of communication is a crucial component in the evolution of human life (Mead, 1934), while external communication through the use of linguistic acquisition is fundamental to the human experience as it assists in the individualisation and development of social interactions and understandings (Spirkin, 1983). Language communication is undoubtedly an experiential and integral element in the process of developing social relationships; however, the importance of internal communication with the self is a less noticeable construct with extreme significance to the development of an individual.

Importantly, some psychologists believe that our self-concept is influenced by the continuous process of an internal dialogue (Jemmer, 2009; Houghton & Neck, 2002; Qualter et al. 2015). The existence of intrapersonal communication supports the idea that human beings adopt a stance of self-multiplicity (Higgins, 1987; Ogilvie, 1987; Markus & Nurius, 1986), where the sense of self is a process of intrinsic construction developed by cognitively observing the self from another individuals' viewpoint (Mead, 1934), and which is known as the 'looking-glass self' (Cooley, 1902). With this functionality in mind, our distinct sense of self is thought to be a continual process, constructed by the internal perceptions we take of our external realities (Morin, 1995; Pfeifer et al. 2009; Bandura, 1977, 1991). The ability to manufacture and adopt our internal and external perceptions of reality is referred to as the practice of self-awareness, which is typically negotiated by the use of self-talk (Morin, 1995; Hackfort & Schwenkmezger, 1993; Houghton & Neck, 2002). Thus, the aforementioned philosophical viewpoints of the self, developed by internal communication, provides an historical platform for the importance of self-directed language to enhance or impede the development of the self by means of consciously choosing the direction of our internal self-talk.

This concept of an intrapersonal voice is a notion thought to be ubiquitous to human beings (Mead, 1934; Sokolov, 1972). The existence of an inner voice is variously referred to in the relevant existing literature as inner-speech (MacKay, 1992), private speech (Winsler, Diaz & Montero, 1997), self-statements (Kamann & Wong, 1993), intrapersonal communication (Jemmer, 2009) and self-talk (Brinthaupt & Dove, 2012), all of which can be understood in essence as the psychological use of language to refer to one's self either externally or internally with the attempt to develop self-awareness, understanding, motivation or direction (Brinthaupt & Dove, 2012; Jemmer, 2009). For the purpose of clarification, within the current study the function of intrapersonal communication will be referred to as 'self-talk' throughout the paper. The importance of intrapersonal language is of great significance because self-talk is utilised in almost all individuals who are able to use language; initiated either vocally or via inner speech (Heavy & Hurltburt, 2008). This suggests that the controlled acquisition of self-directed thought is accessible to any person with the potential to attain this. In convergence, self-talk has been strongly linked to the cognitive development of the self and the ability to elicit the practice of self-awareness (Piaget, 1959; Bandura, 1977; Vygotksy, 1978, 1986; Tudge & Winterhoff, 1993).

As well as philosophically, the importance of self-talk as a method of controlled thinking has its origins in the ancient teachings of the Buddha, which express that all that we are as human beings is a result of the thoughts we have internally conveyed thus, as a result we are shaped by these thoughts (Bhikku,1997). Even prior to

Buddhism, in the Tibetan religious discipline known as 'Bon', where the acquisition of positive thinking is practised as a part of life, it is believed that thoughts are energy and that it is this ability to transcend thought energy into positive thinking which is responsible for the positive emotions and actions which follow (Hansard, 2004).

The teachings of Bon are conceptualised by the idea that positive thinking is directly related to experiencing clarity, insight and happiness (Hansard, 2004). The sentiments of these teachings have been integrated into contemporary psychology (Shonin, Gordan & Griffiths, 2014), and the popularisation of cognitive behavioural therapy ([CBT]; Beck, 1993) contains clear associations with the cognitive modification of negative and positive thoughts to remedy clinical pathological symptomologies. The core principles of CBT are epitomised by developing awareness of negative thinking patterns and adapting these to include more realistic and positive ways of thinking (Beck, 1993). The major introduction of CBT into the area of clinical psychology as a method for solving multiple clinical disorders highlights the significance of an individual's use of thinking to improve or impede mental well-being (Beck, 1976, 1993; Elllis, 2004, 2009; Zastrow, 1988). The interrelationships of emotions, actions and thoughts have also been substantiated by Zastrow (1988), who suggested that within the realms of psychological therapy, any positive change apparent within the client is accredited to modifications in their use of self-talk. The importance of self-talk in therapeutic interventions to help improve well-being suggests that adapting the way individuals conceptualise and self-address is an imperative component in the recovery process.

These sentiments are also evident in Bandura's social cognitive theory ([SCT]; Bandura, 1977, 1991), which assumes that there is a reciprocal interplay of personal, behavioural and environmental factors which mutually influence behaviour. It is this cognitive process, composed by the individual, which suggests that internal cognitions are able to influence behaviour if they are able to restructure their thoughts in a way which is beneficial for the individual. This theory reciprocates the notion that self-talk is a powerful mechanism which may be influential when associated with intensities of well-being, and this is evidenced by the fact that the deliberate use of positive self-talk has gained much popularity outside the confines of the clinical population. Consequently, a considerable amount of research exists in sports psychology where positive self-talk is implemented to enhance performance, self-confidence and self-regulation (Mousa, Rami & Abdu, 2014; Hatzigeorgiadis, Zourbanos & Theodorakis, 2007; Hatzigeorgiadis, Theodorakis, Zourbanos, 2004; Hatzigeorgiadis, Zourbanos, Goltsios & Theodorakis, 2008; Park, 2000; Tod, Hardy & Oliver, 2011). The existence of psychological therapies which are attuned to the modification of negative thoughts and the presence of widely taught strategies which enhance physical performance through positive self-talk indicate that the functionality of negative and positive self-talk merits considerable evaluation in non-clinical and non-athletic societal groups.

Although self-talk is a concept common to people of all ages, existing research which encompasses this phenomenon is not unanimous in agreement when considering the impact of positive and negative self-talk. The current study will explore further research which has addressed the roles of positive and negative self-talk within the general population, moving on to examine specific research which indicates how negative and positive self-talk is explicitly contributing to feelings of loneliness and self-esteem.

The interactions of the self-talk function and well-being have recently been noted by Oliver, Markland and Hardy (2010), who examined post-lecture self-talk use in undergraduate students. Results indicated that the use of informational self-talk was directly related to positive effects in the students, even if they had lacked understanding of the content within the lecture. Whereas the interactions between controlling self-talk demonstrated that if there had been a negative or lack of understanding of lecture content, controlling self-talk was higher, which predicted higher state anxiety. The researchers were optimistic about the implications of their findings, suggesting that self-talk may affect students' experience of higher education, proposing it should be appropriately promoted as an intervention aimed at developing strategic coping skills. These findings reiterate the potential for self-talk to be implemented in a way that enhances the well-being of the individual.

The functions of self-talk have been associated with the severity of anxiety and depression in both adults and children. When experiencing anxiety, self-talk is generally related to future worries and threats, while depressive self-talk is associated with past losses and failures (Kley, Caffier & Heinrichs, 2012). Negative self-talk as a maintaining factor of anxiety has been supported by Kley, et al. (2012), their results indicated that children with social anxiety disorder (SAD) tended to exert higher negative cognitions during tasks. Positive correlations between negative cognitions and anxiety were also discovered. Those children experiencing SAD had less positive cognitions than non-anxious children, demonstrating that positive thoughts could be acting as a protective factor against anxiety. However, the study only recorded self-talk present in task situations, and does not address the daily self-talk apparent in everyday processes. In comparison, Lodge, Harte and Tripp (1998) concluded from a study of 8 to 9 year-old children who were required to solve typical maths problems and puzzles, that heightened levels of negative self-talk were associated with increased reports of anxiety, indicating that negative self-statements may be contributing to the maintenance of anxiety in young children who are exposed to typical educational settings. This demonstrates the potential detrimental effects of negative self-talk on individuals who are considered healthy, as opposed to those diagnosed with clinical symptoms.

Similarly, Ronan and Kendall (1997) discovered that children coping with emotional distress reported more negative cognitions related to depressive and anxious statements about the self when compared to a group of healthy children. Negative self-talk was directly related to distress in these participants; however, these findings reflect the self-talk frequency of children in emotional turmoil and do not give an indication of self-talk for average children coping with less problematic issues. Interestingly the authors concluded that it was actually the absence of negative self-talk instead of the presence of positive self-talk which was contributing to psychological well-being. Kendall (1984) termed this 'the power of non-negative thinking'. Although an alternative interpretation for this relationship could be that children coping with emotional distress are more familiar with negative thoughts, meaning that the impact negative thoughts have on their distressed state is incomparable to those in a 'healthy' condition because negative thinking may have become normative behaviour. In this way it could seem that it is merely the absence of negative thoughts that are contributing to their well-being, because their level of well-being is different to those who have not experienced as much emotional distress. Therefore, positive thoughts could have more of an impact on the positive well-being of average children than psychologists Ronan and Kendall (1997) have interpreted.

In contrast, high levels of positive self-talk have predicted changes in cognitive therapy (Ellis, 2004); while enhanced psychological well-being in times of stress has been associated with stronger feelings of meaning in life (Boyraz & Lightsey, 2012), and has proven to have motivational uses in athletes through improving achievement (Burton, Gillham & Glenn, 2011; Kolovelonis, Goudas, & Dermitzaki, 2011; Hidayat & Budiman, 2014; Weinberg, Grove & Jackson, 1992). This indicates that positive self-talk could potentially have successful attributes in the non-athletic population. It has also been documented that the balance of negative and positive self-talk is key to psychological well-being (Schwartz & Garamoni, 1989). Deeper insight into the biology of cognitive processes related to positive and negative self-talk has been attained by Bruhl, Rufer, Kaffenberger, Baur and Herwig (2014). The aforementioned researchers discovered that positive self-appraisals were responsible for heightened activity of the amygdala, ventral striatum and anterior cingulate cortex, and overall showed an increase in activity of emotion-related areas of the brain when compared to negative self-appraisals; whereas stronger perception-related brain activity was associated with negative self-appraisals. These findings deliver some insight into the strength that positive cognitions may have over the experience of emotions, as well as being indicative of the possible influence of negative self-appraisals on behaviour related to emotion from an intrinsic neurological perspective (Bruhl et al. 2014).

Some of the existing child and adolescent focused literature appears to support the use of positive self-talk and elucidates the functionality and adverse impact of negative self-talk. A study exploring the use of self-talk by Lee (2011) conceptualises the function of self-talk in 7 to 8 year olds. The findings demonstrated that children's use of self-talk is multifunctional: self-talk was utilised for problem-solving strategies, resisting distraction and self-regulation of emotions (Wolters, 2003), with some children participating in self-talk when they felt lonely. These results indicate that self-talk may have a role in the socio-emotional skills of children (Lee, 2011). In contrast, more recent research from Lee and McDonough (2015) exploring the role of self-talk in the classroom did not find convergent results. Self-talk was deemed to have a weak role in children's behavioural regulation within the classroom environment. Although this contradicts previous research into children's self-talk in classroom settings, these findings are important because childhood has been noted as an important developmental stage for the construction of the self through positive and negative self-cognitions (Hoover, Oliver & Hazler, 1992), where external feedback is influential on the view of self-competence within the individual (Cole, 1991; Winsler, 2003). This research provides insight into how young children are using self-talk in typical daily situations.

A study which directly addresses positive and negative self-talk in children was explored by Hogendoorn et al. (2010). The researchers examined age differences in positive and negative self-talk use, findings indicated that younger children used more negative self-thoughts regarding social and physical threat than the older participants. This research indicates how both positive and negative self-talk is being utilised by children from a developmental perspective and delivers insight into how young children are participating in negative, socially threatening types of self-talk which have been known to maintain anxiety and depression (Hogendoorn et al. 2010; Kley, Caffier & Heinrichs, 2012). Thus, negative self-talk could potentially be contributing to the maintenances of other childhood symptomologies such as loneliness and self-esteem.

So far, research on self-talk has produced contradictory findings detailing the usefulness of positive self-talk as a protective factor for loneliness and poor self-esteem. Adolescents are especially vulnerable to the implications of self-talk because they are at a critical period where they are developing a sense of self through the construction of self-talk which includes both negative and positive aspects (Hoover, Oliver & Hazler, 1992; Pellegrini & Bartini, 2000; Smith, Shu & Madsen, 2001; Kaplan & Flum, 2010). If negative self-talk is compromising negative emotional states, as some studies have indicated, further research is required in order to directly understand how self-talk is affecting loneliness and self-esteem, as these are both debilitating issues amongst adolescences[1] (Harris, Qualter & Robinson, 2013; Quatler et al. 2015; Trzesniewski et al, 2006; Mggee & Williams, 2000). Moreover, further research may increase awareness of how negative self-talk may be worsening these states, or if the use of positive self-talk is able to predict high self-esteem.

Chronic loneliness is a destructive condition that can cause major physical and mental implications for those suffering from it (Leary, 1990; Harris, Qualter & Robinson, 2013). The detrimental impact of loneliness chronicity on individuals includes; poor adjustment (Jobe-Shields, Cohen, & Parra, 2011; Jones, Schinka, Van Dulman, Bossarte, & Swahn, 2011) low self-worth (Qualter & Munn, 2002) poor emotional health outcomes (Qualter et al. 2012; Gardner, Pickett & Knowles, 2005) impaired executive functioning (Cacioppo et al. 2000) and poor physical and mental health outcomes (Cacioppo & Hawkley, 2003; Harris, Qualter & Robinson, 2013; Quatler et al. 2015). These findings suggest that the relationship of loneliness and self-talk is an important area to explore as any research which gives insight into mechanisms that may be maintaining loneliness could help to inform interventions which could act as preventive measures.

Reichl, Schneider and Spinath (2013) examined self-talk frequency in relation to loneliness, the need to belong and health in adults. Findings from the study revealed that the need to belong and loneliness were correlated with self-talk frequency, suggesting that self-talk was being used as a substitute for inadequate social contact (Reichl, Schneider & Spinath, 2013; Jonason, Webster & Lindsey, 2008). Self-talk also emerged as a risk factor for loneliness if it was utilised when it is not needed, which may be maladaptive to the well-being of the individual because it reinforces the feelings of loneliness, serving as a reminder to the state of social isolation (Reichl, Schneider & Spinath, 2013; Jonason, Webster & Lindsey, 2008). Hence, self-talk appears to work as a temporary substitute for social stimulation, although if real social contact is not satisfied, self-talk could possibly become an adverse reminder of the state of loneliness. However an important criticism of the study is that the effects of positive and negative self-talk were not examined separately. Arguably, the role of positive self-talk whilst experiencing loneliness may be different from the role of negative self-talk, thus the use of positive and negative self-talk in this capacity is inconclusive.

The relationship between loneliness, negative and positive self-talk in adolescents is especially interesting because of research indicating that loneliness is particularly prevalent during adolescence (Jemmer, 2009; Houghton & Neck, 2002;

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[1] The term adolescence has been used throughout the paper in line with guidance from the Paediatric and Child Health Journal which states that adolescent development commences between the ages of 10 to 19 (Sacks, 2003).

Qualter et al. 2015). Loneliness is particularly detrimental on a number of levels, including research which suggested that loneliness is linked to impaired executive functioning, where findings indicate a lower ability in attentional regulation for individuals identified as lonely (Cacipoppo et al. 2000). In particular interest to the current research, the study of functional magnetic resonance imaging (fMRI) has revealed that loneliness may intensify attention to negative social stimuli such as social threat (Shintel et al. 2006; Yamada & Decety, 2009; Cacioppo & Hawkley, 2009). Importantly, hypervigilance to social threat has also been reported amongst chronically lonely children aged 8 to 10 years (Qualter et al. 2012). In relation to these findings, Cacioppo and Hawkley (2009) advise that loneliness can adversely affect cognition, and it is suggested that individuals who experience social isolation illicit a preference for hypervigilance to social threat. This affects attentional, confirmatory and memory biases in a cyclical motion, known as the regulatory loop (Cacioppo & Hawkley, 2009). The presence of social threating cognitions includes the likelihood of the individual perceiving that the social world is threatening, thus developing an increase in negative preconceptions about social expectations (Cacioppo & Hawkley, 2009). Lonely individuals have also been reported to form more negative impressions of others (Cacipoppo & Hawkley, 2005), and are often likely to behave more reservedly towards others. By maintaining hypervigilance to social threat, lonely individuals are thought to participate in the processes of the regulatory loop until a decision is made to attract connections or a continuation in repulsion and social isolation (Cacioppo & Hawkley, 2009).

In light of this research, negative self-talk could affect loneliness due to specific cognitions implicit to social threat. An element to the 'hypervigilance for social threat' process described in the regulatory loop could be influence by rumination of specific negative thoughts directed at other people. This sensitivity to social threat may include an elevated rate of socially threatening self-talk which enhances feelings of isolation, this prevalence of negative self-talk in lonely individuals offers an opportunity to engage in rumination which is a common mediator to the effects of loneliness (Zawadzki, Graham & Gerin, 2012). From an antithetical perspective, and in convergence with the effects of positive thinking (Mousa et al. 2014; Hatzigeorgiadis, Zourbanos & Theodorakis, 2007; Park, 2000; Kendall, 1984) it is suggested that if positive self-talk strategies could replace rumination processes in lonely individuals, they may begin to feel more positive about themselves in relation to their social environment which could encourage the 'attracting connections' stage (Cacioppo & Hawkley, 2009) consequentially reducing feelings of isolation.

In addition to loneliness, the impact of low self-esteem on adolescents is also known to have negative implications including poorer mental and physical health, lower economic prospects, and higher levels of criminal behaviour in adulthood when compared to adolescents with high self-esteem (Trzesniewski et al. 2006). Low self-esteem has predicted suicidal ideation and other health compromising behaviours such as early sexual activity and substance abuse (Mggee & Williams, 2000). As self-concept is thought to develop through the process of self-talk (Jemmer, 2009; Houghton & Neck, 2002), it is important to understand if the use of negative self-talk is contributing to low-self-esteem and if positive self-talk is utilised to maintain or develop high self-esteem. If the latter is so, then positive self-talk interventions which help to enhance self-esteem for adolescents could be implicated. An intervention which specifically targets negative self-evaluations to improve self-esteem for adolescents includes an activity which is aimed at recognising negative cognitions and

introducing positive cognitions (Lim, Saulsman & Nathan, 2005). The existence of this intervention suggests that positive and negative cognitions play a significant role in the maintenance of self-esteem; thus, it is permissible to increase awareness about the types of negative self-talk that contribute to low self-esteem and if positive self-talk could potentially act protective factor against this condition.

In convergence, Brinthaupt and Dove (2012) found a relationship between self-talk statements and self-esteem, reporting that high levels of critical self-talk and social assessment were associated with automatic negative self-statements and lower self-esteem. In contrast, those who reported high levels of self-reinforcing self-talk also reported more automatic positive self-statements. These findings indicate that the adaptation of reinforcing self-statement could contribute to the rate of positive thoughts about oneself, thus having the potential to increase self-esteem. Given the existing literature, it seems that the use of negative-self talk has self-destructive components on self-esteem, in contrast positive self-talk emanates positive associations in enhancing self-esteem (Lim, Saulsman & Nathan, 2005).

The current study aims to link together some of the dispersed findings which have been presented above to further support and clarify the possible effects of positive self-talk in relation to loneliness and self-esteem, and to explore the types of negative self-talk which may be contributing to loneliness. This investigation will be executed by replicating recent research from Reichl, Schneider and Spinath (2013), with secondary school-aged children. This replication will initiate the future empirical comparison of self-talk processes between adults and children's use of self-talk when experiencing loneliness as a developmental perspective is lacking in the current literature.

The current study includes an extension to the literature by determining if positive and negative self-talk are predictors of peer loneliness and low self-esteem. Although the findings from Reichl, Schneider and Spinath (2013) indicated a link between self-talk and loneliness, self-talk was actually deemed as a risk factor for loneliness. However, the researchers did not separate the use of positive and negative self-talk in relation to loneliness. The evidence which posits that positive self-talk may be being ameliorative of conditions such as anxiety and depression (Ellis, 2004;1957;1962; Kendall, 1984; Schwartz & Garamoni, 1989) suggests that it is important to explore the capability of positive self-talk in relation to loneliness and low self-esteem by examining if they are predictive factor of these conditions. As rumination has been related to loneliness (Zawadzki, Graham & Gerin, 2012), particularly thoughts which include social threat (Qualter, et al. 2012; Cacioppo & Hawkely, 2009), it is important to explore the types of negative thought patterns that are prevalent during experiences of loneliness and low self-esteem in adolescents as this includes a developmental perspective of self-talk function in relation to this age group. Additionally, this can enable deeper understanding of how to adapt interventions which specifically target negative thought patterns in adolescents.

In response to the discussed literature that expresses the positive implication of positive self-talk and possible negative implications of negative self-talk in relation to loneliness and self-esteem, the following hypotheses have been formulated:

H_1: Peer loneliness will be predicted by negative self-talk indicating that lonely children will be more likely to use negative self-talk. Peer loneliness is also suggested to be

predicted by positive self-talk signifying that positive self-talk may have a relationship with low peer loneliness.

H₂: Self-esteem will be positively correlated with positive self-talk and will have negative correlations with negative self-talk, suggesting a relationship with high self-esteem and use of automatic positive self-talk statements and low self-esteem with negative self-statements.

Method

Participants: The participants were recruited from 2 secondary schools in different areas of the North West of England (n = 120). Seven children did not compete all the questions and were removed from the final analyses, leaving a total of 113 children, aged between 11 and 13 years (mean = 12, SD =.516).

Design: This study uses a correlational design. To examine the if positive and negative self-talk predicts loneliness and self-esteem, the data will be analysed using a linear regression method and the results will be displayed using 2 models, one for loneliness and one for self-esteem.

Model 1: In model 1, peer loneliness will be the criterion variable, while the predictor variables will include positive and negative self-talk subscales: physical threat, social threat, personal failure, positive thoughts and hostile intention.

Model 2: In model 2, the relationship between self-esteem and self-talk will be analysed. Self-esteem will be the criterion variable, while positive and negative self-talk subscales will be the predictor variables: physical threat, social threat, personal failure, positive thoughts and hostile intention.

Materials: Positive and negative thoughts were measured using the Children's Automatic Thoughts Scale-Negative/Positive ([CATS-N/P]; Hogendoorn et al. 2010). The CATS-N/P consists of 50 items which address both positive and negative thoughts, such as "I feel good about myself" and "Kids will think I'm stupid" (see Appendix 1). This is scored on a 5 point scale ranging from "Not at all" (1) to "All of the time" (4). There are 5 10-item subscales within the CATS-N/P which include physical threat (PT), social threat (ST), personal failure (PF), hostile intent (HI) and positive thoughts (POST). The CATS-N/P has been classified as having good internal consistency and validity (Hogendoorn et al. 2010).

Loneliness was measured using Marcoen and Goossens' (1993) Loneliness Scale. This is a 48-item scale that addresses statements that the child may experience, such as "I think I have fewer friends than others" and "My parents share my interests" (see Appendix 2). This is scored on a 4-point scale ranging from "often" (4) to "never" (1). This scale has 4 subscales: loneliness in relationships with parents (TTL_LPART), loneliness in relationships with peers (TTL_LPEER), aversion to aloneness (TTL_ANEG) and affinity for aloneness (TTL_APOS). In this study the subscale peer loneliness will be used. Marcoen and Goossens (1993) advise that the subscales are reliable (internal consistency: Cronbach's alpha = 80 and above).

The Rosenberg Self-esteem Scale (Rosenberg, 1965) is a 10-item scale that measures individual self-worth by scoring positive and negative feelings about the self,

using statements such as, "At times I think I am no good at all" and "I take a positive attitude toward myself" (see Appendix 3). The measure is answered using a 4-point Likert scale ranging from "Strongly agree" (4) to "Strongly disagree" (1). Self-esteem is presented in the results as EST. The Rosenberg Self-Esteem Scale has presented high ratings in reliability areas (internal consistency: 0.77; Rosenberg, 1965).

Procedure: All participants were verbally briefed about their participation in the study; this included an overview of what would be required for them to participate and the opportunity to opt out when the questionnaire was given to them. All parents had been informed about the study prior to the data collection via a letter sent by the school (see appendix 4); verbal consent from the students was also gained during the data collection procedure. Parents who did not want their children to participate were required to send an 'opt out' form back to the school. Only 1 parent opted out from the study and 3 participants asked to opt out during the session when they were given the questionnaires. The children in the study completed the questionnaires within their school environment during allocated class time, they were issued a de-brief letter after completion of the questionnaire (see appendix 5).

Results

All the data met the assumptions of parametric testing and the assumptions of homogeneity and variance; there were no multicollinearity correlations and all predictors correlated with the dependent variables. The self-talk scale consisted of 5 subscales; personal failure consisted of 10 items (α = .91), social threat consisted of 10 items (α = .92), physical threat consisted of 10 items (α = .88), hostile intent consisted of 10 items (α = .71) and positive thoughts consisted of 10 items (α = .86). Cronbach's alpha for the self-talk subscales ranged from good to excellent. The peer loneliness scale consisted of 12 items (α = .89) found to be excellent. And the self-esteem scale consisted of 10 items (α = .66) which was satisfactory.

To explore the significance and strength of the relationships between all variables included within the analyses a Pearson's correlation was performed on the data, with the results displayed in Table 1.

Table 1

A Pearson correlation including descriptive statistics and correlations between all variables used in the analysis

	M	*SD*	*LPEER*	*PT*	*ST*	*PF*	*HI*	*POST*	*EST*
LPEER	20.61	7.62		.62**	.70**	.66**	.26**	-.47**	-.57**
PT	6.68	7.13			.65**	.77**	.38**	-.46**	-.50**
ST	9.86	8.48				.74**	.21*	-.54**	-.56**

PF	7.09	7.31		.33**	-.48**	-.63**
HI	12.81	6.49			.12	-.05
POST	21.13	7.52				.62**
EST	21.44	6.37				

N=120, *p<.05, **p<.001

Key: M= Mean, SD= standard deviation, LPEER= peer loneliness, PT= perceived threat, ST= social threat, PF= physical threat, HI= hostile intent, POST= positive thoughts, and EST= esteem

A series of Pearson's correlations were conducted to assess the relationships between all variables used in the analysis. Observation of the correlations (Table 1) shows that all subscales of negative self-talk had positive correlations with peer loneliness (LPEER). Social threat (ST) had the strongest correlation with peer loneliness; (*r*=704, *p*<.001) this indicates that socially threatening thoughts may have an important relationship with maintaining peer loneliness. Peer loneliness and positive thoughts had weak negative correlations, (*r* = -.474, *p*<.001), denoting that positive thoughts have a weak relationship with peer loneliness. Self-esteem (EST) had negative correlations with all subscales of negative self-talk, personal failure (PF) being the strongest correlation of negative self-talk subscales, (*r*=631, *p*<.001). This suggests that thoughts of personal failure may have a significant relationship with feelings of poor self-esteem. Self-esteem (EST) and positive self-talk (POST) had a moderate positive relationship, (*r*=621, *p*<001), indicating that positive thoughts may contribute to high self-esteem.

To examine which subscales of self-talk are significant predictors of peer loneliness and self-esteem a series of multiple regressions were performed on the data. The results are displayed bellow titled Model 1 and Model 2.

Model 1:H_1 predicts that peer loneliness will be predicted by negative and positive self-talk. To address this hypothesis a linear regression analysis was performed to explore the significance of negative and positive self-talk to predict loneliness.

Table 2 includes the results of the multiple regression analysis with loneliness as the criterion variable and self-talk as the predictor variables.

Table 2

The coefficients, beta weightings and significance values of peer loneliness, physical threat, social threat, personal failure, hostile intent and positive thoughts

	Unstandardised Coefficients		Standardised Coefficients			
	B	Std. Error	B		t	sig

	B	Std. Error	β		t	sig
Constant	16.06	2.12			7.55	.00
PT	.16	.11	.15		1.44	.15
ST	.37	.09	.42		4.22	.00
PF	.15	.12	.15		1.30	.20
HI	.10	.09	.08		1.11	.27
POST	-.12	.08	-.12		-1.45	.15

N =119 Key: Dependent variable: LPEER.
LPEER= peer loneliness, PT= perceived threat, ST= social threat, PF= physical threat, HI= hostile intent, POST= positive thoughts

To address H_1 a linear regression was conducted to explore the significance of positive and negative self-talk as predictors of loneliness. The variables were entered into the analysis in the order that follows; (1) LPEER (2) PT (3) ST (4) PT (5) HI (6) POST (7). Overall the model was significant ($F (5,113) = 28.73$, $p<.001$) and accounted for 56% of the variance (adjusted R squared 54%). Observation of the coefficients table (Table 2) indicates that ST (social threat) was the only significant predictor of loneliness ($β=4.16$, $p<00.1$) indicating that social threat proved to be statistically significant as a predictor of loneliness. Positive self-talk was not a significant predictor of peer loneliness, proposing that positive self-talk is not related to peer loneliness.

Model 2: H_2 predicts that self-esteem will be positively correlated with positive self-talk and will have negative correlations with negative self-talk, suggesting a significant relationship of poor self-esteem and negative self-talk and high self-esteem with positive self-talk. To test this hypothesis a linear regression analysis was conducted to determine the significance of positive and negative self-talk in relation to self-esteem.

Table 3 presents the results of the multiple regression analysis with self-esteem as the criterion variable and self-talk as the predictor variables.

Table 3

The coefficients, beta weightings and significance values of personal threat, social threat, and personal failure, hostile intent and positive thoughts

	Unstandardised Coefficients		Standardised Coefficients			
	B	Std. Error	B		t	sig
Constant	16.68	1.96			8.50	.00
PT	.02	.08	.06		.23	.82

ST	-.02	.08	-.03	-.25	.80
PF	-.40	.10	-.47	-.3.89	.00
HI	.07	.08	.07	.95	.34
POST	.32	.08	.38	4.34	.00

N=113. Key: Dependent variable: EST. EST= Esteem, PT= perceived threat, ST= social threat, PF= physical threat, HI= hostile intent, and POST= positive thoughts.

To address H_2 a linear regression was conducted to explore the significance of positive and negative self-talk as predictors of self-esteem. The variables were entered into the analysis in the order that follows; (1) EST (2) PT (3) ST (4) PT (5) HI (6) POST (7). Overall the model was significant (F (5,107) = 24.15, $p<.001$) and accounted for 53% of the variance (adjusted R squared 50%). Observation of the coefficients table indicates that PF (personal failure) is a significant negative predictor of self-esteem (β=-.469 p, <00.1). And POST (positive thoughts) is a significant positive predictor of self-esteem (β=.379, $p<00.1$). These results indicate that personal failure is a significant predictor of poor self-esteem and positive thoughts are significantly predicting high self-esteem.

Discussion

The purpose of the current study was to explore if negative self-talk predicted peer loneliness and self-esteem and to ascertain if positive self-talk was a predictor of high self-esteem and low peer loneliness. The results of the study were in part supported by the hypotheses. In model 1, peer loneliness was positively correlated with the negative self-talk subscales; in particular, social threat was a significant predictor of peer loneliness. However, contrary to the hypothesis, positive self-talk did not emerge as a significant predictor of peer loneliness. In relation to self-esteem in model 2, results converged with the hypothesis; negative self-talk predicted low self-esteem; specifically it emerged that thoughts of personal failure significantly predicted this condition. Finally, positive self-talk was a significant predictor of high self-esteem.

The findings for Model 1 of the current study were convergent with previous research. Cacioppo and Hawkley (2009) denote that individuals who experience social isolation are predicted to have a hypervigilance for social threat. This is convergent with the current findings which have indicated that social threat was a predictor of peer loneliness. Cacioppo and Hawkley (2005) also suggest that when the prevalence of loneliness is high, individuals develop negative impressions of others that may serve to maintain loneliness. These sentiments are supported by the current research, as the socially threatening aspect of the self-talk subscale (see appendix 1) is comprised of negative expectations of others, for example: 'kids will think bad of me', 'everyone is going to laugh at me' and 'other kids are making fun of me', which suggests that those adolescents whom identified as lonely also had negative impressions of their peers and potentially a hypervigilance to social threat.

These findings can be understood when considering the aforementioned psychological theories of the self (Jemmer, 2009; Houghton & Neck, 2002). As self-concept is argued to be formed by the process of internal perceptions of an individual's

external reality (Morin, 1995; Pfeifer et al. 2009); it is feasible to acknowledge the possibility that if an adolescent perceives their external reality as socially threating they may actively participate in the process of constructing an internal sense of self, based on distorted perceptions of a socially threating external environment (Morin, 1995; Pfeifer et al. 2009; Bandura, 1977, 1991). It is also suggested that when an individual is isolated, they may be more likely to participate in rumination composed of negative thoughts about the self (Zawadzki, Graham & Gerin, 2012). And by becoming increasingly aware of themselves as individuals who are isolated from others, they may consequentially intensify their attention to socially threatening thoughts in particular, possibly because they have more time to participate in rumination (Shintel et al, 2006; Yamada & Decety, 2009). This process has been described by Cacioppo and Hawkely (2009) as an 'implicit hypervigilance for social threat'. In summary, this conceptualisation attempts to elucidate the process by which social threat may be predicting loneliness by merging theories of self-concept development and the cyclical model of loneliness (Cacioppo & Hawely's, 2009) .

Moreover, the findings for model 1 indicated that peer loneliness was not predicted by positive self-talk. Although this contradicted with the current hypothesis, the findings were supported in part by previous literature which assumes that it is the absence of negative self-talk, rather than the presence of positive self-talk, which contributes to well-being in general (Kendall, 1984; Ronan & Kendall, 1997; Schwartz & Garamoni, 1989). It could be suggested that adolescents who identified as low in peer loneliness utilised a more balanced level of negative and positive self-talk. Thus, it is proposed that a balance of negative and positive thinking may be crucial to maintaining low peer loneliness. This could be because adolescents are developing a sense of self through the use of positive and negative self-cognitions (Hoover, Oliver & Hazler, 1992; Smith, Shu & Madsen, 2001; Kaplan & Flum, 2010); therefore it is important to self-attribute a balance of criticisms and appraisals in order to develop a realistic sense of self. If their own sense of self encompasses both negative and positive aspects, then perhaps there expectations of others will reflect this equilibrium of realistic expectations. Consequentially this may encourage acceptance of others more readily, which could potentially result in connectedness with peers.

The fact that positive self-talk was unable to predict loneliness could also be viewed from an alternative perspective. For example, feelings of loneliness can be mutually controlled as other people can isolate an individual by actively distancing themselves either emotionally and/or physically. And from an internal perspective; feelings of loneliness can occur even when it appears that the individual is integrated with others. Therefore loneliness can occur by actual separation and internal perceptions of isolation. In a school environment, proximity of peers is constant and for a lonely person this can be an adverse reminder of their feelings of isolation (Reichl, Schneider & Spinath, 2013; Jonason, Webster & Lindsey, 2008). Thus, simply thinking positively may not be enough to support strong feelings of separation when humans are inherently aware of their need to connect (Cacioppo & Hawkley, 2009). And consequentially this could be a reason as to why positive thoughts did not predict loneliness.

These findings extend the limited research of the relationship between loneliness and positive and negative self-talk, with the potential to inform interventions which target loneliness. Implicating that those experiencing loneliness could benefit from being encouraged to adapt a balanced view of the self via the introduction of both

positive and negative thinking, thus potentially optimising low peer loneliness. In addition to this, it is evidenced that thoughts of social threat need to be directly addressed when aiming to manage peer loneliness. This implies that it is imperative for future interventions which target loneliness to take into consideration that individuals whom are experiencing loneliness are also likely to be ruminating about social threat. Therefore they could be encouraged to address these thoughts realistically as therapeutic techniques such as CBT and rational emotive therapy advocate (Beck, 1993; Ellis, 1957; 1962; 2004).

The findings from Model 2 converge with previous research orientated around self-esteem which indicated that critical self-talk predicts low self-esteem and reinforcing self-talk predicts high self-esteem (Brinthaupt & Dove, 2012). This research relates to the current findings as both negative and positive self-talk predicted low and high self-esteem respectively, while thoughts of personal failure predicted low self-esteem in particular. The discovery that personal failure is a significant predictor of self-esteem can be understood by acknowledging the theoretical process of self-development (Jemmer, 2009; Houghton & Neck, 2002; Qualter et al. 2015).

For instance, if an adolescent is actively and regularly manifesting negative thoughts about personal failure adjacent to developing their self-concept (Hoover, Oliver & Hazler, 1992), they are effectively practising the degeneration of their own self-worth. It is suggested that if the adolescent feels inadequate in their personal ability they will ruminate thoughts about personal failure, thus contributing to feelings of low self-esteem; as self-esteem is at its core the intrinsic evaluation of self-worth (Rosenberg, 1965).

It is proposed that the antithesis to personal failure could be personal success; thoughts of personal achievement are likely to contribute to a positive evaluation and positive sense of self. If an individual develops a sense of self, and derives from their school environment a sense of personal competence in comparison to others, it is likely that these thoughts will be contributing to high self-esteem. The significance of the relationship between positive thoughts and high self-esteem indicates that individuals whom are esteemed may be maintaining this mood state because they adopt a substantial amount of positive thoughts. This has been noted in the CBT-derived practices for adolescents, which encourage the use of positive thoughts to build self-esteem (Lim, Saulsman & Nathan, 2005).   However due to the correlation design of the research it is not possible to declare this, as it could also be suggested that the utilisation of positive thoughts results in a sense of high self-esteem or feelings of high self-esteem are represented through the use of positive self-talk.

The current findings do suggest that the active implication of positive thoughts is an imperative element when developing or adapting interventions that encourage self-esteem building for adolescents. The fact that humans are able to adapt and influence their self-talk gives potential for simple changes in self-directed language which may encourage positive thinking as a part of everyday life. Therefore, not only can individuals who are diagnosed with mood disorders be targeted, but adolescents who are considered to be functioning normally could also benefit from positive self-talk interventions as a preventive measure against the development of low self-esteem, which may ultimately enhance the positive evaluation of the self.

The combination of results from both analyses contributes to a body of knowledge which has indicated that negative self-talk lends itself to anxiety (Beck, 1976, 1993; Kley, Caffier & Heinriches, 2012), depression (Cole, Maxwell, Dukewhich & Yosick, 2010) and low self-esteem (Yaratan & Yucesoylu, 2010). This shows that there is an intrinsic relationship between the aforementioned low moods and negative thinking patterns, with the addition of loneliness.

However it must be considered that the current study used a correlation analysis, therefore negative self-talk may arise as a result of feelings of peer loneliness or low self-esteem. They could also indicate that as a result of engaging in thoughts of social threat, the individual may be maximising their vulnerability to peer loneliness because of their negative view of others. This could also be proposed for the relationship between thoughts of personal failure and low self-esteem. Similarly, the rumination of thoughts about the self as a failure may perpetuate low self-worth. Although it is evident that self-talk predicts peer loneliness and self-esteem, the degree to which self-talk may maintaining these moods will remain unknown without further research.

The current research includes a number of limitations, for example; the study was restricted by the relatively small sample size, in which the age range was particularly limited. Thus, the research only indicates a developmental perspective of a specific population of adolescents. If better accessibility and communication with schools was achieved then there would have been an increase in participants and a larger population of participants would improve the results, allowing insight into how self-talk is used throughout adolescence. Nonetheless, given the time constraints of the research this was not achievable. The study could also benefit further from encompassing a diverse range of participants from different socioeconomic and ethnic groups, which would increase the generalisability of the findings. Another limitation of the study was the articulation of some of the questions included in the measures: some of the participants expressed an inability to understand the terminology, which clearly provoked frustration whilst completing them. Using measures which are adapted to all levels of ability would thus increase participation and enable individuals of all levels to participate with an accurate understanding of meaning. It must also be noted that the questionnaires which included all the measures, were filled out whilst the participants were amongst classmates and school teachers. Therefore, it is conceivable that some participants may have been influenced by the bystander effect. The limitations cited here acknowledge that there were certain confounding factors during the research process that could potentially have influenced the validity and reliability of the findings. Accordingly, future research within this area could produce enhanced outcomes if the limitations presented in this study are addressed.

To encourage a depth of understanding regarding the implications of positive and negative self-talk in relation to loneliness and self-esteem over time, future research would benefit from a longitudinal technique which assesses self-esteem, loneliness, and self-talk at a baseline measure. The participants could then undergo an existing intervention programme which implicates the use of positive cognitions and then be re-assessed at 3 and 6 months post-intervention. The rationale being that positive and negative self-talk could effectively be tested for significance as a protective factor for peer loneliness and self-esteem. Future research could also benefit from encompassing a multitude of age ranges from childhood to adulthood, to ascertain the developmental implications of self-talk use and the type of self-talk

typically used throughout childhood. This would allow comparative insight into the types of self-talk being used across a developmental span. Thus this insight could inform the development of age specific interventions that improve self-esteem and loneliness, as it is possible that self-talk may be different for young children when compared to adolescents.

Despite the limitations of the study, the current research offers significant insight into the specific types of self-talk which are predicating self-esteem and loneliness in adolescents. The implications of the study are important for future research which aspires to achieve developmental understanding of self-talk use across childhood. This research has also linked together some of the disparities amongst the literature regarding the relationships of positive and negative self-talk in relation to loneliness and self-esteem. In respect to the role of positive self-talk, this research offers some insight into the potential importance of positive self-talk use for enhancing high self-esteem, which may help an individual develop a positive self-concept.

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