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**Understanding Adolescent Girls' Vulnerability to the  
Impact of the Mass Media on Body Image and Restrained  
Eating Behaviour: The Role of Media Type, Body Perfect  
Internalisation and Materialism**

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September, 2011

# Declaration

I hereby declare that this thesis has not been and will not be submitted, in whole or in part, to another University for the award of any other degree.

Signature:

# Acknowledgements

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# Summary

## Understanding Adolescent Girls' Vulnerability to the Impact of the Mass Media on Body Image and Restrained Eating Behaviour: The Role of Media Type, Body Perfect Internalisation and Materialism

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There is a strong body of psychological research implicating the mass media in the aetiology of adolescent girls' negative body image and eating behaviours. The present thesis aims to extend this research by examining potential factors – namely, media type, body perfect internalisation and materialism – that make girls more vulnerable to the negative impact of the mass media.

An initial meta-analysis (Chapter 3) collated the findings of existing research examining the impact of 'body perfect' media on adolescents' body image; examining gender, age and media type as moderators of this effect. Chapter 4 examined the relative roles of both media type and media model identification (a key dimension of body perfect internalisation), within the mass media and body image relationship. Using both survey and experimental methods ( $N = 199$ ), it was found that adolescent girls' habitual tendency to identify with media models, was a more potent vulnerability factor within the mass media and body image relationship, than media type. Due to the limitations associated with existing measures of body perfect internalisation, a new measure of body perfect internalisation was developed in Chapter 5 ( $N = 373$ ), which was subsequently utilised in the final experiments of the thesis.

Chapter 6 demonstrated that acute music video exposure had a more potent negative impact on girls' body image than still media images ( $N = 142$ ); an effect that was fully mediated by wishful character identification and also moderated by body perfect internalisation. Chapter 7 consists of two studies that demonstrate the important role which materialism plays within the mass media, body image and eating behaviour relationship. In Study 1, structural equation modelling identified a direct pathway between materialism and restrained eating that was independent of body image ( $N = 199$ ). This finding was further replicated in an exposure experiment, which demonstrated that brief exposure to materialistic media causes acute diet-like behaviours in adolescent girls ( $N = 180$ ).

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# Chapter One

## Understanding Adolescent Girls' Vulnerability to the Impact of the Mass Media on Body Image and Restrained Eating Behaviour

The mass media's role in the aetiology of young women's body image and eating behaviour disturbances is believed to stem from its prolific over-representation, objectification, and idealisation of female models that homogenously adhere to an unrealistic and artificial body and beauty ideal – the '*body perfect*' (Fouts & Burggraf, 1999, 2000; Martin & McCracken, 2001; Spyeck, Gray, & Ahrens, 2004; Wallis, 2011). A substantial body of psychological research has demonstrated that both acute and habitual exposure to such biased media depictions of female models may lead girls to experience a combination of both pressure and desire to conform to it (Thompson & Stice, 2001). The unrealistic nature of this 'body perfect' ideal makes it impossible for the majority of girls and women to attain, leading them to experience negative feelings towards their own bodies and also to engage in strategies aimed at modifying the appearance of the body, including dietary restraint (Keery, van den Berg, & Thompson, 2004; Shroff & Thompson, 2006; Stice, Ziemba, Margolis, & Flick, 1996).

Probably the strongest body of psychological research linking exposure to body perfect models in the mass media to negative body image and restrained eating behaviour in girls and women are meta-analyses (Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002; Holstrom, 2004; Want, 2009). Typically, these meta-analyses have found a robust negative effect of the mass media on female body image. However, such effect sizes represent a small-moderate effect only (Cohen, 1988), and closer examination of the individual studies included within the meta-analyses indicate that there is considerable

disparity amongst the effect sizes yielded. The implication of this disparity is that, although the mass media exert a generalised negative influence on girls' and women's body image, there are a number of factors that affect their responsiveness to this.

Therefore, the emphasis of psychological research has shifted from simply investigating whether or not the mass media is implicated in body image and eating disturbances, towards identifying the factors and processes that make girls and women more vulnerable to its negative effect (Dittmar, 2005; 2009). The present thesis aims to expand on this research literature by examining the role of three potential vulnerability factors – media type, body perfect internalisation, and materialism – within the mass media, body image and eating behaviour relationship, focusing specifically on adolescent girls; a population identified as being particularly susceptible to the media's negative influence (Groesz et al., 2002).

#### *Negative Body Image and Restrained Eating Behaviour*

Body image, defined as “a person's perceptions, thoughts and feelings about his or her body” (Grogan, 2008, p. 3), is a broad and multi-faceted construct encompassing a wide range of evaluations about one's own body, including perceptions of body shape and size, health and fitness, aesthetic appearance, and sexual attractiveness (Cash & Pruzinsky, 2002; Dittmar, 2008; Grogan, 2008; Ogden, 2010). It is a highly subjective construct, which can bear little resemblance to objective bodily measures (Presnell, Bearman, & Stice, 2004; Ricciardelli & McCabe, 2001), that is influenced by a diverse range of physiological, psychological, and socio-cultural factors (Cash & Pruzinsky, 2002; Grogan, 2008). As a consequence of these diverse influences, body image is a highly malleable construct that is likely to change over time (Grogan, 2008). Increasingly, body image forms an important part of the modern female identity (Dittmar, 2005, 2008), and as such may be a defining part of

self-concept (Vartanian, 2009) and an important source of self-worth, for many girls and women (Clabaugh, Kaprinski, & Griffin, 2008; Crocker & Wolfe, 2001).

Typically, psychological investigations in the domain of body image have centred on the negative dimensions of the construct, particularly body dissatisfaction; the subjective experience of negative thoughts and feelings about the body (Dittmar, 2005; Thompson, 2004; Ogden, 2010). Body dissatisfaction is highly prevalent within contemporary society, having reached normative levels amongst girls and women (Eisenberg, Neumark-Sztainer, & Paxton, 2006; Neumark-Stzainer, Paxton, Hannan, Haines, & Story, 2006; Ricciardelli & McCabe, 2003), and has been associated with a diverse range of deleterious physical and mental health outcomes (Cash & Prushinsky, 2002; Grogan, 2008). It is believed to be the single biggest precursor of a number of unhealthy body-shaping behaviours, including disordered eating, excessive exercise and cosmetic surgery (Neumark-Stzainer et al., 2006; Sarwer, Infield & Crerand, 2009), and has furthermore been associated with a variety of negative health outcomes, including low self esteem, depressed mood, smoking, drug misuse, and risky sexual behaviour (van den Berg, Mond, Eisenberg, Ackard & Neumark-Sztainer, 2010; Neumark-Stzainer et al., 2006).

The most common deleterious outcome associated with negative body image is disordered eating behaviour, which includes clinical eating disorders, such as anorexia, bulimia and obesity, and also non-clinical disordered eating practices, such as dieting, binge-eating, and engaging in binge-purge cycles (Neumark-Stzainer et al., 2006; Sarwer et al., 2009). Of particular relevance to the present thesis is non-clinical restrained eating behaviour (dieting); the deliberate and prolonged restriction of food intake for the purposes of weight loss and weight maintenance (Ogden, 2010). Dieting is extremely common amongst girls and women in contemporary society, with recent research has suggesting that around 50% of the female population diet regularly (Eisenberg et al., 2006; Neumark-Stzainer et al., 2006). Like

negative body image, restrained eating behaviour has been identified as a central risk factor in the aetiology of more severe and dangerous eating behaviours, such as binge eating and binge-purge cycles (Stice, 2001), as well as being implicated in the onset and maintenance of clinical eating disorders, such as anorexia and bulimia (Killen et al., 1996). Furthermore, dieting during adolescence has ironically been linked to weight-gain amongst girls and women, increasing their risk of obesity (Field et al., 2003; Stice, Presnell, Shaw, & Rhode, 2005).

#### *Socio-cultural Theory: The Role of Media Models*

According to socio-cultural theory, negative body image emerges as a result of perceived environmental pressure from parents, peers, and - most potently - the mass media, to conform to a culturally-defined body and beauty ideal (Keery et al., 2004; Shroff & Thompson, 2006; Stice, Ziemba, Margolis & Flick, 1996). Recent cultural analyses suggest that the current physical attractiveness ideal for women is quite complex, incorporating a body shape that is excessively thin - yet also both toned and curvaceous – complete with perfect skin, teeth and hair (Ahern, Bennett, Kelly & Hetherington, 2011; Grabe & Hyde, 2009; Want, 2009). The unrealistic nature of the ‘body perfect’ ideal means that it is impossible for the majority of girls to attain, and it therefore is likely to lead many to experience a psychologically salient discrepancy between their perceived actual appearance and their ideal appearance, giving rise to feelings of body dissatisfaction (Dittmar, 2008). This body dissatisfaction, in turn, causes individuals to engage in appearance modification strategies, such as dieting, aimed at reducing the self-ideal discrepancy (Keery et al., 2004; Shroff & Thompson, 2006; Stice et al., 1996).

The mass media is believed to play a prominent role in the communication and reinforcement of the body perfect ideal. Throughout the mass media, body perfect models are disproportionately overrepresented, whereas overweight characters are comparatively absent

(Fouts & Buggraf, 1999; 2000; Martin & McCracken, 2001; Spyeck et al., 2004; Wallis, 2011), creating the illusion that the body perfect is more socially normative than it actually is (Sanderson, Wallier, Stockdale, & Yopyvik, 2008). Moreover, due to the diverse range of appearance-enhancement techniques employed by the media, including airbrushing, lighting and make-up (Englis, Solomon, & Ashmore, 1994; Want, 2009), and also, the extreme body-shaping strategies purportedly practiced by the models themselves, including cosmetic surgery and extreme dieting, the body perfect models contained within the media may represent a particularly unrealistic and artificial version of the body perfect ideal (Want, 2009). In support of this, research has demonstrated that body perfect media models are thinner than over 90% of the female population (Smolak, 1996; National Eating Disorders Association, 2002).

Throughout the mass media, the appearance of these body perfect models is both emphasised and objectified. Filming techniques and camera angles that focus on the physical attributes of body perfect models are used throughout the mass media (Wallis, 2011); drawing viewers' attention to it. Content analyses reveal that body perfect models are frequently depicted as the object of admiration and attention - particularly from males (Wallis, 2011; Frith, Shaw, & Cheung, 2005), and so girls and women may internalise this view, and begin to view their own body, and themselves, as an object to be looked at and evaluated (Fredrickson & Roberts, 1997; Slater & Tiggemann, 2002). Furthermore, body perfect models within the media tend to be idealised, and are presented as possessing a number of 'desirable' characteristics – such as happiness, success and popularity (Dittmar, 2008; Englis et al., 1994). In contrast, the few female overweight characters that are featured within the media are typically ridiculed and subjected to weight-related teasing (Fouts & Buggraff, 2000; Greenberg, Eastin, Hofschire, Lachlan, & Brownell, 2003). As such, the

body perfect has become synonymous with desirable traits, whereas alternative body shapes have become vilified (Dittmar, 2008; Holstein, Smith, & Atlas, 1998; Harrison, 2000).

As a consequence of the mass media's overrepresentation, objectification and idealisation of a particularly unrealistic and artificial version of the body perfect ideal, it may present a particularly potent threat to female body image. There are three dominant strands of research that have sought to examine the role of both habitual and acute body-perfect media exposure within the aetiology of negative body image and restrained eating behaviour amongst girls and women, which each vary in terms of their general aims and objectives. Correlational studies are concerned with measuring the strength of the relationship between habitual media use and *trait* body image. Exposure experiments are concerned with determining the causal impact of acute media exposure on *state* body image. Longitudinal research is concerned with examining relationships between media use and body image over time. The vast majority of this research – with the exception of longitudinal studies - has focused on examining the impact of the mass media on young adult women's body image. However, there are strong theoretical reasons for proposing that the mass media's negative influence on body image and eating behaviour may be particularly potent for adolescent girls.

### *Adolescence*

Adolescent girls are bombarded by images of body perfect models. The typical teenager spends at least one third of their day engaging with some form of media (Rideout, Roberts, & Foehr, 2005), and furthermore, the types of media that adolescent girls typically engage with - including fashion and beauty magazines, TV teenage drama series, and music videos - are saturated with images of idealised body perfect female models (Englis et al., 1994; Fouts & Burggraf, 1999; 2000; Martin & McCracken, 2001; Spyeck et al., 2004; Wallis, 2011). Research has suggested that adolescent girls may be particularly vulnerable to the mass media's negative impact on body image and eating behaviour (Groesz et al., 2002;

Levine & Murnen, 2009). However theorists agree that it is not just the high *amount* of body-perfect media exposure that accounts for adolescent girls' increased vulnerability to media messages, but rather the important role that this high media exposure plays within the context of the psychological, social, and physical challenges facing adolescents (Arnett, 1995; Lloyd, 2002).

In terms of psychological development, the primary challenge faced by adolescents is that of identity formation (Erikson, 1968; Kroger, 2007), where girls must negotiate their own unique identity from the range of potential identities that are modelled by peers, parents, and media models within the socio-cultural environment (Lloyd, 2002; Dittmar, 2008). Body perfect media models are believed to be particularly salient role models for adolescent girls (Giles, 2004; Hoffner, 1996), influencing a range of thoughts, feelings, attitudes and behaviours – including body image - due to the frequency with which adolescents are exposed to them, and also the way in which they are idealised; possessing a number of desirable characteristics, and thus representing an idealised identity (Englis et al., 1994).

Social concerns are also highly salient during adolescence, as girls experience the increasing desire to be socially accepted by their peers, and also to be perceived as alluring to potential romantic partners (Collins, 2003; Collins & Repinski, 1994). Throughout the mass media, body perfect models are frequently depicted as being popular - both with peers and with potential romantic partners (Dittmar, 2008; Englis et al., 1994; Wallis, 2011) – and so it may be that girls' perceive body perfect acquisition as a route to successful platonic and romantic relationships. Therefore, social concerns, in addition to identity concerns, may serve to increase adolescent girls' desire for the body perfect, leading them to internalise it as an important personal goal and actively pursue it.

The physical changes associated with the onset of puberty may further increase adolescent girls' susceptibility to negative body image. For girls, pubertal development

involves a number of physical changes, including breast and hip growth, and general weight gain (Levine & Smolak, 2002). Therefore, adolescent girls' bodies typically move away from the media-promoted body perfect ideal, at a time when it has never been more important to conform to it, making them increasingly susceptible to the mass media's negative impact on body image and restrained eating behaviour.

### *Vulnerability Factors*

Though research has suggested that adolescent girls may be particularly vulnerable to the negative impact of the mass media on body image (Groesz et al., 2002), considerable individual differences can be found amongst this age group, regarding the extent to which individual girls are negatively affected by the media. Research has therefore begun to focus on the identifying factors that make adolescent girls more vulnerable to the mass media's negative influence. The present thesis aims to expand on this research by examining the role of three potential vulnerability factors - media type, body perfect internalisation, and materialism – within the mass media and body image relationship.

### *Media Type*

There is a tendency in both lay conversation, and in psychological research, to regard the mass media as a unified entity. In actuality, the mass media is an umbrella term referring to a collective, yet diverse, group of media industries; comprised of various different media types (e.g., internet, TV, and magazines) and various different sub-types (e.g. internet - social media sites, online fashion retailers and entertainment; TV – music videos, cartoons, and soap operas; magazines – fashion, gossip and 'lads mags') (Baran & Davis, 2011; Ziegler, 2007). Moreover, as a consequence of recent technological advances, the media landscape is constantly changing and evolving, with new media types and subtypes constantly emerging; further increasing the diverse range of media that is available (Brown & Bobkowski, 2011; Lloyd, 2002; Ziegler, 2007).



Each of the different media types and subtypes has unique dimensions, incorporating its own distinct combination of content and features, which are not shared by the others (Baran & Davis, 2011; Jordan, Kramer-Golinkoff & Strasburger, 2008; Tapper, Thorson, & Black, 1994). As such, they may vary in terms of the frequency with which they present images of body perfect models, and also the way in which they present them. For example, both music videos and fashion magazines have been associated with particularly high volumes of body perfect imagery (Luff & Gray, 2009; Martin & McCracken, 2001; Spyeck, et al., 2004; Wallis, 2011), but the way in which they present the body perfect is different. Fashion magazines typically show feature still images of the body perfect models, embedded in articles about celebrities, diet, fitness, beauty and fashion (Luff & Gray, 2009; Tiggemann, 2003). In contrast, music videos typically show bodily ideals through moving, dancing, and sexualised characters (Andsager & Roe, 2003; Martin & McCracken, 2001; Turner, 2011; Wallis, 2011), often in a fantasy or dreamlike sequence (Aufderheide, 1987), accompanied by popular song (Roberts & Christenson, 2001).

### *Existing Research*

Due to the differences between media types and subtypes - in terms of the frequency with which they present body perfect models and the way in which they presented them – it is possible that some media types may exert a more potent influence on adolescent girls' body image and eating behaviour, than others. In support of this, existing research has demonstrated that negative body image is closely related to high consumption of fashion and beauty magazines (Harrison, 2000; Hofschire & Greenberg, 2001; Tiggemann & Pickering, 1996; Jones, Vigfusdottir, & Lee, 2004; Van den Bulck, 2000), music videos (Grabe & Hyde, 2009, Borzekowski, Robinson, & Killen, 2000; Hofschire & Greenberg, 2001; Tiggemann & Pickering, 1996) and TV soap operas (Botta, 1999; Hofschire & Greenberg, 2001; Tiggemann & Pickering, 1996).

However, research in this area has tended to be very fragmented, with the majority of studies focusing on a selective number of media types only. Therefore, there is a strong need to synthesise existing research, providing a systematic examination of the correlations between different media types and body image. A recent meta-analysis aimed to do this, by examining whether the strength of correlations between media use and body dissatisfaction for girls and women, varied as a function of media type (Murnen et al., 2007). In particular, the meta-analysis sought to compare the strength of the association between general magazine use and body image, to that of general TV use and body image, since the majority of research in this area has tended to focus on these media types. It was found that high overall magazine consumption was more strongly correlated with negative body image than high levels of general TV consumption, suggesting that magazine consumption is more detrimental to body image than TV consumption. However, this interpretation would be misleading, as research has shown that exposure to certain types of TV programmes - such as music videos and soap operas – are much more strongly correlated with body dissatisfaction than a composite measure of TV use (Borzekowski et al., 2000; Hofschire & Greenberg, 2001; Van den Bulck, 2000; Tiggeman & Pickering, 1996). Therefore, a more finely grained approach to synthesising this existing research is needed.

### *Issues of Causality*

Though research suggests that certain media types are more closely associated with adolescent girls' body image than others, the majority of research in this area has been of a correlational nature, and so causality cannot be inferred. Consistent with research demonstrating that adolescent girls actively engage with the media for a variety of motivations, including the exploration of developmental issues (Arnett, 1995; Comstock & Scharrer, 2007), it is possible that adolescent girls with high body dissatisfaction may

actively seek out certain media types as important sources of information regarding body ideals.

Therefore, in order to test the hypothesis that certain media types and subtypes actually *cause* more negative body image than others, exposure experiments are needed. Traditionally, exposure experiments have aimed to establish the causal impact of body perfect media on adolescent girls' body dissatisfaction by comparing the acute effects of short-term exposure to images of body-perfect media models on state body dissatisfaction to that of neutral images or images of average-sized models. To date, however, the overwhelming majority of exposure experiments have used still images taken from magazines as the body perfect media stimulus (for exceptions, see Bell, Lawton, & Dittmar, 2007; Hargreaves & Tiggemann, 2003, 2004), meaning that not only has research neglected to study the types of media that are most popular amongst adolescent girls, but also that comparisons of the magnitude of different media types' impact on adolescent girls' body image cannot easily be made. Thus, there is a strong need for exposure experiments that involve additional media types as body-perfect media exposure stimuli, such as music videos. In particular, extending current exposure paradigms, the impact of exposure to the same body perfect models, but presented in different media types, promises a systematic investigation of the impact of media type within a single experiment.

#### *How Do Certain Media Types Exert a More Potent Influence? The Role of Wishful Identification*

If some media types and subtypes are found to cause greater negative body image than others, then questions arise as to why and how these media types have a more potent effect. Wishful identification, the conscious desire to look, be, or act like the models featured within the mass media (Hoffner, 1996; Hoffner & Buchanan, 2005), has been hypothesised to mediate the negative impact of the mass media on body image (Dittmar, 2008; Kistler,

Rodgers, Power, Austin, & Hill, 2010), particularly during adolescence, when identity concerns are especially heightened. Wishful identification leads adolescent girls to experience negative body image, as, simultaneous with the desire to imitate the body perfect model, girls experience a heightened awareness of the social barriers that distinguish the viewer from the model (Cohen, 2001; Hoffner & Buchanan, 2006; Klimmit, Hefner, & Vorderer, 2009). Thus, as a consequence of engaging in wishful identification with body perfect models, adolescent girls may experience a heightened awareness of the discrepancy between their perceived actual appearance, and their ideal appearance - as demonstrated by the body perfect model - leading them to experience negative body image (Kistler et al., 2010). However, though wishful identification has been demonstrated to mediate the impact of the mass media on body image over time (Keery et al., 2004; Kistler et al., 2010; Shroff & Thompson, 2006) there have been no empirical examinations of how wishful identification mediates the impact of acute media exposure on body image.

The unique characteristics of certain media types and subtypes - in terms of their body perfect content, and the way in which this content interacts with the inherent features of the media type - may induce greater wishful identification with the body perfect models contained within them, and it is this greater wishful identification that may underlie their hypothesised increased negative impact on body image. According to social-cognitive learning theory, adolescent girls are more likely to engage in wishful identification with socio-cultural models that they perceive as being positively rewarded for their physical attributes (Bandura, 2002; Giles, 2002; Hoffner, 1996; Hoffner & Buchanan, 2005). The idealisation of body perfect models within the media may serve as a potent source of positive reinforcement, and as different media types and subtypes typically embed the body perfect within different contexts and scenarios, the body perfect models contained within them may be idealised to differing extents. For example, music videos feature high volumes of

consumption imagery, including highly fashionable clothing and the latest material goods (Englis, et al., 1993; Martin & Collins, 2002; Martin & McCracken, 2001), and also high volumes of sexualised imagery (Andsager & Roe, 2003; Turner, 2011; Wallis, 2011), which both serve to idealise the body perfect models contained within them. The result is that being the models seems more appealing and the likelihood and intensity of wishful identification increases.

Furthermore, each different media format has its own distinctive features, which may accentuate and emphasise the body perfect in different ways. For example, many of the distinctive filming techniques utilised in music videos, such as flashing images, abrupt scene shifts and close-up shots, tend to focus on the various attributes of the body perfect, and so draw viewers' attention to them (Wallis, 2011). The result is that the body perfect is emphasised within its idealised context (Aufdersheide, 1987; Gow, 1996), meaning that appearance-related wishful identification may be more likely. Alternatively, some of the unique features of the different media types and subtypes may serve to increase identification with the characters, more directly. For example, role-playing computer games, wherein the media consumer is encouraged to temporarily 'become' the character contained within them, have been associated with increased character identification (Klimmit et al., 2009), and as such, may exert a more potent effect on body image.

### *Summary*

Research examining the negative impact of the mass media on adolescent girls' body image and eating behaviour has tended to examine the impact of a limited number of media types, implying that they are representative of mass media consumption more generally. For example, correlational studies have focused primarily on TV and magazine consumption (Murnen et al., 2007), whereas exposure experiments, even more limiting, have focused on still images of the body perfect, typically taken from magazines (Groesz et al, 2002). As

such, psychological research has tended to neglect the important differences that exist between media types and subtypes, in terms of the frequency with which they present body perfect models, and also the way in which they present them.

Such differences between media types and subtypes may mean that certain media types are more closely linked with body image than others. Indeed, there is some correlational research to support this (Borzekowski et al., 2000; Hofschire & Greenberg, 2001; Van den Bulck, 2000; Tiggeman & Pickering, 1996). However, as individual studies have focused on a limited range of media types only, there is a strong need for a systematic examination of the differential impact of media types and subtypes on adolescent girls' body image. Furthermore, as existing research in this area has been of a correlational nature, causality cannot be inferred. As such, it is unclear whether different media types and subtypes actually cause more dissatisfaction than others, or whether girls with negative body image tend to seek out these types of media. Exposure experiments that aim to investigate causality are therefore needed.

Moreover, if certain media types and subtypes are found to exert a more potent influence over adolescent girls' body image than others, then questions arise surrounding how this increased negative effect occurs. Though wishful identification with media models has been demonstrated to underlie the negative impact of the mass media on body image over time (Keery et al., 2004; Kistler et al., 2010; Shroff & Thompson, 2006), there have been no empirical investigations of whether wishful identification mediates the impact of the acute media exposure on body image, though such a mediation effect is likely. In particular, there are theoretical grounds for supposing that acute wishful identification with media models may underlie the differential impact of different media types on adolescent girls' body image. This is because the differences between media types and subtypes - in terms of the proportion of body perfect models featured within them and the context in which these body perfect

models are embedded, combined with the way in which this body perfect content interacts with the unique technical features of each media type - may serve to increase adolescent girls' propensity to engage in wishful identification with the body perfect models. And as such, this increased wishful identification with media models may explain the hypothesised increased negative impact of certain media types and subtypes on body image.

### *Body Perfect Internalisation*

Body perfect internalisation - defined as the active endorsement of the body perfect ideal, to the extent that the body perfect becomes a psychologically salient goal, influencing attitudes and behaviour – has been identified as a key precursor in the onset of negative body image and restrained eating behaviour (Cafri, Yamamiya, Brannick & Thompson, 2005; Levine & Murnen, 2009; Shroff & Thompson, 2006). According to social reinforcement theory, internalisation occurs when attitudes and goals are approved by - and therefore positively reinforced by - significant others (Kandel, 1980). The mass media, due to its biased depiction and consequent idealisation of body perfect models, may serve as a particularly potent source of positive social reinforcement for the body perfect (Dittmar, 2008; Thompson & Stice, 2001), especially during adolescence, when girls are most receptive to the mass media's influential appearance-related messages (Groesz et al., 2002). In support of this, there is a strong body of correlational linking exposure to body perfect promoting media, to its internalisation as a personal goal, in adolescent girls (Cafri et al., 2005; Grabe et al., 2008).

Throughout the mass media, body perfect models are ubiquitously depicted in a highly idealised way; research has shown that, relative to average-sized or overweight female models, body perfect models are more likely to receive appearance-related compliments and be the object of gaze and attention from the opposite sex (Fouts & Buggraff, 1999, 2000), are more likely to be affluent and own the latest material possessions (Conrad, Dixon, & Zhang,

2009), and, are more likely to possess a ‘desirable’ identity – characterised by happiness, success and popularity (Dittmar, 2008; Englis et al., 1994). This idealisation serves as a form of vicarious positive reinforcement for the body perfect (Bandura, 2002; Hoffner, 1996; Hoffner & Buchanan, 2006), leading girls to internalise the media-promoted belief that ‘desirable’ life outcomes are contingent upon body perfect acquisition (Dittmar, 2008; Holstein et al., 1998). As such, girls do not simply internalize the body perfect as a personal goal, but they also internalize the beliefs associated with its acquisition (Hohlstein et al., 1998).

#### *The Mass Media, Body Image and Restrained Eating Behaviour: The Role of Body Perfect Internalisation*

The negative impact of the mass media on adolescent girls’ body image and restrained eating behaviour is believed to be largely mediated by the extent to which girls have internalised the body perfect as a personal goal (Anschutz, Engels, & Van Strien, 2008; Keery et al., 2004; Shroff & Thompson, 2006; Stice et al., 1996). High levels of media consumption are believed to lead girls to internalise the body perfect, consequently leading to feelings of body dissatisfaction as girls feel unable to attain the unrealistic and artificial body perfect that is their goal (Clark & Tiggemann, 2008; Stice & Whitenton, 2002). This body dissatisfaction, in turn, is believed to lead to restrained eating behaviour, as girls try to alleviate the negative affect associated with the body, and minimise their perceived self-ideal discrepancy (Ogden, 2010). Alternatively, it has also been proposed that body perfect internalisation may cause restrained eating behaviour directly (Dunkley et al., 2001; Harrison & Cantor, 1997; Stice et al., 1996), perhaps reflecting girls who diet in order to maintain a body shape that they are satisfied with, rather than as a means of changing it (Ogden, 2010).

A few exposure experiments have demonstrated that adolescent girls who have strongly internalized the body perfect as a personal goal experience significantly more



negative body image following exposure to images of body-perfect media models, than those who have not (Durkin, Paxton, & Sorbello, 2007; Hargreaves & Tiggemann, 2002). Therefore, in addition to mediating the negative influence of the mass media on body image and eating behaviour over time, body perfect internalisation may also heighten adolescent girls' responsiveness to acute body perfect media exposure. This therefore suggests that the relationship between the mass media, body perfect internalisation, and body image may be quite complex, and not follow the linear developmental sequence, as it is typically conceptualised as being (Anschutz et al., 2008; Keery et al., 2004; Shroff & Thompson, 2006; Stice, et al., 1996). Furthermore, though body perfect internalisation has been documented to moderate the effects of body perfect media on body image, it is unclear whether this will be extended to adolescent girls' eating behaviour or not, due to a lack of exposure experiments examining eating behaviour as an outcome measure.

### *Measurement Issues*

In light of the highly important role that body perfect internalisation has been demonstrated to play within the mass media, body image and disordered eating behaviour relationship, understanding the construct has never been more important. However, one of the central issues surrounding research in this area involves the instruments that have been used to measure the construct. In particular, scales that have measured the internalisation of socio-cultural body and beauty ideals have provided measurement of the construct that is paradoxically both too broad – conflating body perfect internalisation with similar, yet psychologically distinct constructs – and too narrow – measuring some aspects of body perfect internalisation only.

Early body perfect internalisation scales sought to measure the construct in terms of the extent to which individuals agreed with statements describing the current physical attractiveness ideal. For example, the Ideal Body Stereotype Scale (IBSS; Stice et al., 1996)

contained items such as “slender women are more attractive” and “women with toned (lean) bodies are more attractive”. However, such items may measure the mere awareness, or passive recognition, of the existence of socio-cultural body and beauty ideals within society, and not the internalisation of them to the *extent that they become psychologically salient goals, actively influencing attitudes and behaviour* (Cafri et al., 2005; Cusumano & Thompson, 1997; Heinberg, Stormer, & Thompson, 1995; Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). Such a distinction is extremely important, as research indicates that internalisation accounts for up to six times more variance in body image and eating behaviour than awareness (Heinberg et al., 1995; Cafri et al., 2005).

The first body perfect internalisation measure to make the important distinction between internalisation and awareness, the Socio-Cultural Attitudes Towards Appearance Questionnaire (SATAQ-I; Heinberg et al., 1995, Thompson et al., 2004), featured two subscales for the separate measurement of each. In contrast to awareness items that measure the more passive recognition of socio-cultural body and beauty ideals, e.g. “famous people are an important source of information about fashion and being attractive”, the internalisation items directly measured girls’ tendencies to wishfully identify with media models, e.g. “I would like my body to look like the people who are in movies”, therefore, indicating their active desire to achieve the body perfect, as it is represented in the socio-cultural environment.

Since it was the first measure of socio-cultural appearance ideals that explicitly differentiated internalisation from awareness, the SATAQ has been highly influential and, as a result, is widely used by researchers. However, it can be argued that the SATAQ does not provide a conceptually ‘pure’ measurement of body perfect internalisation, since several of the items that comprise the scale, such as “I compare my body to the bodies of TV and movie stars” or “I compare my appearance to the appearance of people in magazines”, directly

measure the tendency to make social comparisons between one's own body and the bodies of media models. Therefore, though the internalisation subscale of the SATAQ does not conflate the construct with awareness, it appears that instead it is conflated with body comparison tendency – a closely related, yet psychologically distinct construct (Keery et al., 2004). Indeed, factor analysis has demonstrated that the body comparison items contained within the SATAQ shared higher factor loadings with the items contained within a popular measure of body comparison tendency, the Physical Appearance Comparison Scale (PACS; Thompson, Heinberg, & Tantleff, 1991), than with the rest of the SATAQ items (Durkin et al., 2007).

Though the tendency to engage in wishful identification is an extremely important component of body perfect internalisation, since it is indicative of girls' *active* desire to achieve the body perfect as it is represented in the socio-cultural environment, measuring the construct solely in this way may be limiting. This is because it provides no indication of how important girls perceive the goal of body perfect acquisition to be, nor the extent to which girls are personally invested in the pursuit of it. Furthermore, it provides no indication of the extent to which adolescent girls have internalised the media-promoted beliefs associated with body perfect acquisition, which may play a particularly important role in motivating their desire for the body perfect during adolescence, when identity concerns are most salient. In light of the current conceptualisation of body perfect internalization, the psychological importance of the body perfect, the extent to which girls are invested in attaining it and the extent to which they endorse the media-promoted beliefs surrounding body perfect acquisition, may be regarded as key indicators of the construct, and therefore, there is a strong need for a more comprehensive measure of body perfect internalisation, which considers these additional dimensions.

## *Summary*

The extent to which adolescent girls have internalised the body perfect as personal goal, and strive towards attaining it has been identified as a central vulnerability factor within the mass media, body image and restrained eating behaviour relationship (Cafri et al., 2005; Levine, & Murnen, 2009; Shroff & Thompson, 2006). Both correlational and longitudinal research has consistently demonstrated that body perfect internalisation mediates the negative impact of the mass media on body image and restrained eating behaviour, over time (Keery et al., 2004; Shroff & Thompson, 2006). And furthermore, exposure experiments suggest that girls with high levels of body perfect internalisation are most responsive to acute body perfect media, in terms of body image (Durkin et al., 2007; Hargreaves & Tiggemann, 2002), though this finding has not as yet been generalised to acute eating behaviour.

Despite this research demonstrating that body perfect internalisation is both an important mediator and moderator of the impact of the mass media on adolescent girls' body image and eating behaviour, there are several problems associated with the way in which body perfect internalisation is currently measured. First, scales designed for the measurement of body perfect internalisation have tended to conflate the construct with two constructs that are closely related to body perfect internalisation, but are also psychologically distinct from it - including awareness of the body perfect ideal and body comparison tendency. There is therefore a strong need to develop a conceptually 'pure' measure of body perfect internalisation.

Furthermore, the most influential and widely-used measure of body perfect internalisation, the SATAQ, measures the construct solely in terms of the extent to which girls' habitually engage in wishful identification with body perfect media models. However, though the tendency to engage in wishful identification with body perfect media models is an important dimension of body perfect internalisation - since it indicates girls' desire to

replicate the body perfect, as it is represented in the socio-cultural environment - measuring the construct solely may be very limiting, especially in light of the conceptualisation of body perfect internalisation developed in this thesis as “the active endorsement of the body perfect ideal (and the beliefs associated with its acquisition), to the extent that the body perfect becomes a psychologically salient goal, influencing attitudes and behaviour.” Therefore, a more holistic and comprehensive measure of body perfect internalisation - that also considers the importance of body perfect acquisition to girls, their personal investment in attaining the body perfect, and, the extent to which they have endorsed the media-promoted beliefs associated with the body perfect - may be necessary in order to encapsulate the construct accurately and adequately.

### *Materialism*

Throughout the mass media, body perfect models are typically presented alongside a second media-promoted ideal – the *material ideal* – wherein material goods, products and services are similarly both over-represented (Martin & McCracken, 2001; O’Guinn & Shrum, 1997), and idealised as the means to desirable life outcomes (Dittmar, 2008; Kasser, 2002). Exposure to media containing the ‘material-ideal’ has been demonstrated to lead individuals to internalise it (and the beliefs associated with its acquisition) as a personal goal (Buijzen & Valkenburg, 2003; Shrum, Lee, Burroughs, & Rindfleisch, 2011), in a way that is analogous to how biased depictions of the body perfect are internalised as a personal goal. The continual pairing and shared meaning of these two prominent media ideals may furthermore mean that they become ‘blended’ together by the media; presenting the image of an idealised individual that is both beautiful and wealthy. Therefore, media consumers may perceive the body perfect as being an integral part of the material ideal, and vice versa (Bartky, 1982; Englis et al., 1994; Fawcett, 2004).

Internalisation of the two media ideals has been demonstrated to be highly correlated in young women, suggesting that the two ideals are not only linked together within the media, but that they are furthermore merged together in the minds of the viewer (Ashikali & Dittmar, 2011). However, though there is substantive empirical evidence linking exposure to material-ideal promoting media to negative life outcomes (e.g. Deci & Ryan, 2005; Kasser, 2002, 2005), research has neglected to consider the potential role of the material ideal and its internalisation (materialism) within the mass media, body image and restrained eating behaviour relationship (for exception see Ashikali & Dittmar, 2011).

### *Materialism and Wellbeing*

Though the precise definition of materialism may vary across academic disciplines (Buckingham, 2011), within psychology, it is typically defined as the extent to which individuals pursue material goods, products and services; believing that their acquisition will lead to psychological fulfilment (Richins & Dawson, 1992; Richins, 2004). Therefore, materialism transcends the mere pursuit of material goods for the functional value, and marks a shift towards pursuing them for the symbolic meaning that has been culturally ascribed to them (Dittmar, 2008). As such, highly materialistic individuals are likely to believe that highly desirable life outcomes - including personal, social and professional success - are dependent on the acquisition of material possessions, and so actively pursue them as a central life goal (Richins & Dawson, 1992; Richins, 2004). Furthermore, having endorsed the belief that material possessions serve as external markers of an ideal identity, highly materialistic individuals may place strong emphasis on the importance of outwardly appearance, therefore becoming more inclined to judge themselves and others on the basis of appearance (Dittmar, 2005, 2008).

Understood within the framework of self-determination theory, materialism marks a shift towards pursuing goals for extrinsic motivations, i.e. for external rewards, which is often

at the detriment of pursuing intrinsically motivated goals (Kasser, 2005). According to self determination theory, the pursuit of any goal for such extrinsic motivations will have aversive consequences for mental health, since they are incompatible with individuals' basic intrinsic needs for autonomy, belongingness and relatedness (Deci & Ryan, 2000; Sheldon, Ryan, Deci & Kasser, 2004; Vansteenkiste, Soenens, & Duriez, 2008). Therefore, though materialistic individuals endorse the belief that the acquisition of the latest material goods and possessions will lead to psychological fulfilment and a desirable identity, psychological research has ironically linked higher levels of materialism to a diverse range of negative consequences, including lower psychological well-being, lower life satisfaction, insecurity, lower academic achievement, peer rejection, and juvenile delinquency (Chang & Arkin, 2002; Froh, Emmons, Card, Bono & Wilson, 2011; Goldberg, Gorn, Peracchio, & Bamossy, 2003; Kasser, 2005; Rahn & Transue, 1998).

#### *Socio-cultural Influences on Materialism: The Role of the Material Ideal*

Materialism is largely the product of the modern capitalist society and the consumer culture that permeates it, which places great emphasis on wealth and consumption (Buckingham, 2011; Dittmar, 2008). Therefore, individuals' materialistic values are believed to be heavily influenced by socio-cultural agents, including peers, parents and - most potently – the mass media (Dittmar, 2008). In support of this, there is a consistent body of research linking both habitual and acute media exposure to the internalisation of the material ideal and the elicitation of material values (Ashikali & Dittmar, 2011; Buijzen & Valkenburg, 2003; Shrum et al., 2011).

The mass media's role in the development of materialistic values is believed to stem from its perpetuation and promotion of a 'material ideal,' that universally idealises material wealth. Images of affluence and wealth saturate the mass media (Martin & McCracken, 2001; O'Guinn & Shrum, 1997), with expensive material goods, products and services serving as

visible symbolic indicators of this (Dittmar, 2008). Individuals in possession of this material wealth are depicted as possessing a number of desirable characteristics - such as happiness, popularity and success - and as such, affluence and material possessions have become synonymous with the 'good life' (Dittmar, 2008; Kasser, 2002). The notion that material goods, products and services will improve one's life permeates the mass media – particularly advertising - wherein material possessions are overtly promoted as the gateway to an ideal identity, and therefore an ideal self (Dittmar, 2008). Adolescents, in particular, may be extremely vulnerable to internalising the media-promoted material ideal, due to their high media consumption and preoccupation with identity formation (Dittmar, 2008; Shim, Barber & Serido, 2011).

*The Hypothesised Role of Material Ideal and Materialism within the Mass Media, Body Image and Restrained Eating Behaviour Relationship*

As noted previously, the body perfect and the material ideal are typically presented together throughout the mass media (Dittmar, 2008). The continual pairing and shared meaning of these two prominent media ideals, may lead media consumers to perceive the body perfect as being an integral part of the material ideal (Bartky, 1982; Englis et al., 1994; Fawcett, 2004). Therefore the emphasis on 'image' – i.e. external features as markers of an idealised identity - that is an inherent feature of the material ideal and materialism, may become generalised to the physical appearance of the body also (Fawcett, 2004; Kasser, 2002). Furthermore, within its materialistic context, the body perfect may become seen as an object or commodity - analogous to material possessions - that can be acquired through activities, such as cosmetic surgery, dieting, and exercise (Bartky, 1982; Fawcett, 2004). Therefore, exposure to material-ideal promoting media, and the subsequent internalisation of this ideal, may lead girls to pursue and desire the body perfect in the same way that they



pursue and desire material possessions; presenting an additional mechanism through which the mass media may impact upon body image and restrained eating behaviour.

A recent exposure experiment (Ashikali & Dittmar, 2011), demonstrated that exposure to material-ideal promoting media led young women to place greater importance on physical appearance as a part of their self concept. At the same time, however, there was no comparable main effect on their experience of negative feelings towards their own bodies, as measured in terms of their self-ideal body-related discrepancies.

This finding may be explained in terms of research that has demonstrated that the potential negative psychological impact of self-ideal discrepancies may be minimised if the perceived attainability of this ideal is increased (Lockwood & Kunda, 1997). It may be that in perceiving the body perfect as part of the material ideal, the body perfect may become seen as a buyable commodity, increasing the perceived attainability of the body perfect as a personal goal. Thus “the realisation that one is currently less successful than another (in this case, an ideal self) may lose its sting if it is accompanied by the belief that one will attain comparable success in the future” (Lockwood & Kunda, 1997, p.93), and so material ideal promoting media and materialism may not lead to negative body-related affect.

However, it is unclear how these findings would be generalised to eating behaviour, since perceiving the body perfect in this highly achievable way may increase the likelihood of girls engaging in unhealthy body shaping behaviours, such as surgery, excessive exercise or dieting. In support of this, Henderson-King & Brooks (2009) found that materialistic individuals were more likely to report that they would consider having appearance-modifying cosmetic surgery than their non-materialistic counterparts. Therefore materialism – both as elicited by exposure to materialistic media, and as an internalised value system - may increase the likelihood that girls will engage in ‘transactions’ aimed at changing the appearance of their own bodies, without impacting upon body image. It is possible that

material ideal promoting media and materialism may impact directly upon restrained eating behaviour, independent of how girls feel about their bodies. However, to date no psychological research has sought to examine this.

### *Summary*

Throughout the mass media, the body perfect and the material ideal are perpetually presented together, and may therefore become inextricably linked in the minds of the viewer. As such, the material ideal may become seen as an integral part of the body perfect, and the body perfect may become seen as an integral part of the material ideal. However, despite the close association between the two, psychological research has tended to examine the impact of these two media ideals separately. Therefore, though there is a strong body of psychological research linking exposure to material-ideal promoting media and materialism to a diverse range of negative life outcomes (Kasser, 2002), research has neglected to consider the potential role of materialism and the material ideal within the mass media, body image and restrained eating behaviour relationship (for exception see Ashikali & Dittmar, 2011).

Despite this lack of research, there are strong theoretical reasons for supposing that materialism and the material ideal may play an important role within the mass media, body image and eating behaviour relationship. The material ideal, and its consequent internalisation, leads individuals to place strong emphasis on the importance of outwardly appearance, due to its inherent emphasis on external features as indicators of idealised identity (Dittmar, 2008; Kasser, 2002). The continual pairing and shared meaning of the material ideal and the body perfect throughout the mass media may mean that this emphasis on appearance becomes linked to the physical appearance of the body more generally. It may furthermore lead girls to perceive the body perfect as an important part of the material ideal, and so lead them to pursue it in the same way that they pursue material goods, products and

services. Therefore the material ideal – due to both its emphasis on the body perfect as a commodity and its inherent emphasis on appearance - may present an additional mechanism through which the mass media may impact upon body image and eating behaviour. Given the paucity of previous research, there is a strong need for empirical investigations that improve our understanding of the role of the material ideal and materialism within the mass media, body image and restrained eating behaviour, using both correlational and experimental methods.

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## Chapter Two

### Overview of Empirical Programme

Chapter 1 provided a brief outline of existing empirical research examining the impact of the mass media on adolescent girls' body image and eating behaviour. It furthermore identified the three vulnerability factors that will be the focus of the present thesis, provided a rationale for this focus, and outlined the relevant existing research pertaining to each one. On the basis of this, three central research aims of the present thesis may be identified:

1. The first aim of the present thesis is to examine the role of media type, as a potential vulnerability factor within the mass media and body image relationship. In particular, the present thesis aims to systematically synthesise the highly fragmented body of existing research in this area. Moreover, it aims to use an adapted exposure experiment methodology, to determine whether different media types actually *cause* more negative body image than others, and to furthermore identify the mediational processes that may underlie these hypothesised effects; focusing specifically on the role of wishful identification.
2. Second, the thesis aims to build on the growing body of existing research that has examined the role of body perfect internalisation within the mass media, body image and restrained eating behaviour. In particular, the thesis aims to address the measurement issues that have been associated with the construct, by developing a conceptually 'pure,' yet comprehensive, measure of body perfect internalisation. It is furthermore intended that the present thesis will build on existing research in this area, by piloting improved measures of body perfect internalisation within psychological

research, and by examining as yet un-studied aspects of the role of body perfect internalisation within the mass media, body image and restrained eating behaviour relationship.

3. The third aim of the present thesis is to investigate the previously neglected role of materialism as a vulnerability factor within the mass media, body image and restrained eating behaviour relationship. In particular, the thesis examines the role of materialism as a potential mediator of the mass media's impact on body image and restrained eating behaviour over time, using structural equation modelling in order to suggest predictive pathways between the four constructs. It furthermore complements this correlational approach with exposure experiment methodology, in order to assess whether acute exposure to media promoting the material ideal actually has a role in causing negative body image and restrained eating behaviour; examining girls' pre-existing material values as a potential moderator of these effects.

An overview of each empirical chapter, its contribution to the research aims of the thesis, and links between studies is set out below. In order to make the design and sequence of studies more easily understandable, the main findings of each study are also sketched in brief.

### *Chapter 3. The Link between Exposure to Body Perfect Media and Adolescents' Body Dissatisfaction: A Meta-Analysis*

Chapter 3 presents a two-part meta-analysis that systematically synthesises existing research regarding the effects of the mass media on adolescents' body image; examining the role of gender, age and –pertinent to the first aim of the thesis – media type, as potential moderators of the mass media's negative effect. Whereas Study 1 collates correlational

research that has examined the relationship between habitual media use and trait body dissatisfaction during adolescence, Study 2 examines experimental studies that assess the immediate impact of exposure to body perfect media on state body dissatisfaction.

The meta-analysis provides a useful starting point for the thesis. Interestingly, stronger overall effect sizes were found for experimental research, as opposed to correlational research. Adolescent girls were more susceptible to the mass media's negative influence on body image than adolescent boys for a small number of media types. Furthermore, relevant to the first aim of the thesis, the meta-analysis of correlational research found some evidence to support the proposal that certain media types may be more closely associated with negative body image than others. In the meta-analysis of correlational research, slightly stronger relationships were found between certain media types and negative body image in adolescent girls – namely music videos and magazines – than others, and in the meta-analysis of exposure experiments, it was found that experiments, which had utilised moving media – including 'new' media and TV - as the experimental stimulus, yielded slightly stronger effect sizes than those involving still images, such as magazines. However, these differences were small and non-significant, owing in part, to the very small number of studies that had examined the impact of newer and alternative media types on body dissatisfaction.

*Chapter 4. Does Media Type Matter? The Role of Identification in Adolescent Girls' Media Consumption and the Impact of Different Thin-Ideal Media on Body Dissatisfaction.*

Also published as:

Bell, B. T., & Dittmar, H. (2011). Does media type matter? The role of identification in adolescent girls' media consumption and the impact of different thin-ideal media on body image. *Sex Roles*, 65, 478-490.

The findings of the meta-analysis suggest not only that the consumption of certain media types is more closely related to adolescent girls' body dissatisfaction than others, but that certain media may actually *cause* more body dissatisfaction than others. Therefore, the studies reported in Chapter 4 utilised both survey and experimental methods to examine the role of media type, as a vulnerability factor within the mass media and body dissatisfaction relationship; directly addressing research aim one. Further relevant to this research aim, the tendency to engage in wishful identification with the models contained within different media was examined – in order to assess whether some media types, in addition to being more closely associated with negative body image, are more closely associated with increased wishful identification.

In the survey study, neither amount nor type of adolescent girls' media consumption, were found to be related to body dissatisfaction. Instead, it was the extent to which girls engaged in wishful identification with the characters contained within each media type that predicted negative body image. Few differences were found between media types, in terms of the amount of wishful identification associated with the characters contained within them, and as such, adolescent girls' wishful identification scores remained stable across media types, sharing high inter-correlations. Therefore, it is suggested that, rather than varying as a function of media type –as suggested in research aim one –habitual media model identification may best be conceptualised as an individual difference variable that holds across different types of media.

The causal impact of different media types on adolescent girls' body image was investigated, using an exposure experiment paradigm, in which the impact of music videos on adolescent girls' body and appearance dissatisfaction was compared to that of magazine articles containing the body perfect, still body perfect images, and a neutral control. Girls' habitual tendency to engage in wishful identification with media models was examined as a

moderator, and was assessed using Media Model Identification (MMI); a measure based on the average extent to which girls engaged in wishful identification with the various media types, as recorded within the survey study. Regardless of media type, only girls with heightened tendency to engage in wishful identification with media models were found to be affected by body perfect media exposure. Therefore, the findings of the studies in Chapter 4 suggest that it is not so much the media types that are important when understanding adolescent girls' body image, but rather the lens through which girls view this media.

The tendency to engage in wishful identification with media models is a central dimension of body perfect internalisation. Therefore, in demonstrating the importance of wishful identification within the mass media and body image relationship, Chapter 4 also contributes to the second research aim of thesis. Furthermore, the development of the Media Model Identification scale (MMI) may be seen as the first step towards developing a conceptually pure measure of body perfect internalisation.

*Chapter 5. Body Perfect Internalisation Scale (BPIS): A new measure of socio-cultural body and beauty ideal internalisation for adolescent girls.*

Existing research, as well as the studies reported in Chapter 4, have highlighted the important role that wishful identification with media models plays within the mass media, body image and restrained eating behaviour relationship (for a review see Cafri, Yamamiya, Brannick, & Thompson, 2005; Shroff & Thompson 2006). Although the tendency to engage in wishful identification with media models is an important construct within its own right, more commonly it is conceptualised as forming part of the broader construct of body perfect internalisation. Popular existing measures of body perfect internalisation have measured the construct solely in terms of wishful identification with media models (SATAQ 13; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 2004), however such an approach may be limiting. Therefore - relevant to the second research aim of the thesis – Chapter 5 aimed to

develop and validate a new, comprehensive measure of body perfect internalisation - the Body Perfect Internalisation Scale (BPIS) - designed specifically for use with adolescent girls.

373 adolescent girls, aged 13-15, participated in the development of the BPIS, by completing questionnaires containing potential BPIS items and measures of related constructs. The final 18-item scale was developed through both exploratory and confirmatory factor analyses, and validated against widely-used measures of body image related constructs. The final scale consists of three 6-item sub-scales; media model identification (identification), importance of body perfect to the self (importance) and personal investment in the body perfect (investment). The BPIS was subsequently utilised throughout the remaining empirical programme of the thesis in order to measure body perfect internalisation; further validating its usefulness within the media effects and body image research literatures.

#### *Chapter 6. The Impact of Music Videos on Adolescent Girls' Body Image: The Role of Wishful Identification and Body Perfect Internalisation*

In Chapter 4, it was found that music videos did not cause significantly more body dissatisfaction than still images of body perfect models, however, they were found to cause an elevation in post-exposure weight and appearance-related concerns, comparative to still media. This finding was not reported in the published article, because the percentage of girls who completed the measure of weight and appearance-related concerns correctly - just 69% - was considered too small (see Appendix 1). The apparent discrepancy in these findings may be explained in terms of differences in the sensitivity of the two scales that were utilised to measure these constructs.

Chapter 6 aimed to clarify these findings, and experimentally examine whether music videos containing body perfect models exerted a greater negative influence on adolescent



girls' body image, than still images of the same models. In order to do so, the measure of weight- and appearance-related concerns that had been poorly completed in the research reported in Chapter 4 - the Self Discrepancy Index (SDI; Dittmar, Beattie, & Friese, 1996) - was amended, in order to ensure its full and competent completion. Furthermore, wishful identification was examined as a mediator of these hypothesised effects, and body perfect internalisation was examined as a moderator.

All girls exposed to body perfect models reported more weight- and appearance-related concerns, compared to the control. Furthermore, girls exposed to music videos reported more immediate wishful identification with the characters and more weight and appearance-related concerns, compared to girls exposed to still images of the body perfect. Mediation analysis revealed that wishful identification mediated the impact of body perfect exposure on body image, suggesting that the more potent impact of music videos on adolescent girls' body image is due to the increased wishful identification with characters that the media format induces. Therefore, the experiment reported in Chapter 6 not only provides empirical evidence that some media types *do cause* more negative body image than others, supporting the findings of the meta-analysis (Chapter 3), but it furthermore identifies wishful identification as the psychological process mediating this effect; making an important contribution to the first research aim of the thesis, and the research literature more broadly.

Additionally - and pertinent to the second research aim of the thesis - body perfect internalisation, as measured using the BPIS scale devised in Chapter 4, was found to moderate media exposure effects. Therefore, these findings provide further validation for the new measure of body perfect internalisation that was devised within the thesis. Moreover, they also extend the research regarding body perfect internalisation as a moderator of the media's impact on body image, by demonstrating its interaction with a second vulnerability factor: media type.

## *Chapter 7. The Role of Materialism and the Material Ideal within the Media, Body Image and Restrained Eating Behaviour Relationship*

The repeated findings supporting the important role of body perfect internalisation for adolescent girls' body image also provided a foundation for examining the consumer culture context in which socio-cultural appearance ideals are often presented: affluence and expensive possessions. The primary aim of Chapter 7 was to investigate the as yet uncharted territory of the role of the material ideal and materialism within the mass media, body image and eating behaviour relationship; directly addressing the third research aim of the present thesis.

In Study 1, 199 adolescent girls completed measures of media use, media ideal internalisation, body image and restrained eating behaviour<sup>1</sup>, and structural equation modelling was used to examine a comprehensive theoretical model of how exposure to idealised imagery within the mass media impacts upon adolescent girls' body image and eating behaviour. It was demonstrated that habitual media use predicted internalisation of both media ideals. However, whereas the effect of body perfect internalisation on eating behaviour was fully mediated by body dissatisfaction, the effect of materialism on eating behaviour was direct, i.e. over and above the impact of body image on eating behaviour. In Study 2, this phenomenon was tested experimentally, by examining the impact of brief exposure to advertisements containing either the body perfect, the material ideal, both the body perfect and the material ideal, or none, on body image and acute eating behaviour. It was found that body-perfect promoting adverts caused significantly more negative body image and diet-like behaviours than non-body perfect adverts, whereas material-ideal promoting adverts caused significantly more diet-like behaviours, but not more negative body

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<sup>1</sup> Same sample as used in Study 1 of Chapter 4

image than non-material-ideal adverts. Furthermore, internalisation of each media ideal was found to significantly moderate the majority of these negative effects.

In identifying a direct causal pathway between materialism – both as temporally elicited by exposure to material ideal promoting media, and as an internalised value system – and restrained eating behaviour, which is independent of negative body image, Chapter 7 presents an important and novel contribution to the research literature. Furthermore, although the primary focus of Chapter 7 was to examine the potential role of materialism as a predictor of negative body image and restrained eating behaviour, its findings concerning the relative role of body perfect internalisation - as both a mediator and moderator of the mass media's negative impact on body image and eating behaviour - serve to both consolidate and extend existing research in this area; therefore addressing the second research aim of thesis.

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## **Chapter Three**

### **The Link between Exposure to Body Perfect Media and Adolescents' Body**

#### **Dissatisfaction: A Meta-Analysis**

##### **Abstract**

There is a small yet growing body of psychological research investigating the impact of body perfect media models on body dissatisfaction during adolescence. The present paper systematises these existing research findings in a two-part meta-analysis, and examines gender, age and media type as potential moderators of the mass media's negative influence. In the first meta-analysis, existing correlational studies examining the relationship between different types of media consumption and body dissatisfaction are collated ( $k = 25$ ). A weak overall relationship between habitual general media use and trait body dissatisfaction was found ( $d = 0.17$ ). However, the strength of this relationship varied according to gender, age and media type. The second meta-analysis synthesises the findings of exposure experiments that have investigated the impact of brief exposure to body perfect media on state body dissatisfaction ( $k = 21$ ). A much stronger, yet homogenous effect size was found for experimental studies ( $d = 0.39$ ). The meta-analyses demonstrate that the mass media is a potent source of body dissatisfaction in adolescence, and highlights the need for further research in this area, particularly for research involving males and alternative media types.

## Introduction

Recent research found that 46% of adolescent girls and 26% of adolescent boys reported feeling dissatisfied with the appearance of their bodies (Eisenberg, Neumark-Sztainer, & Paxton, 2006); making body dissatisfaction a highly prevalent concern amongst adolescents in western society. Body dissatisfaction has been associated with a number of unhealthy body shaping behaviours, including restrained eating practices, cosmetic surgery, excessive exercising, binge-purge cycles (involving vomiting or laxative use) and anabolic steroid use (Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006; Sarwer, Infield & Crerand, 2009). In particular, body dissatisfaction has been identified as the single biggest precursor in the onset of clinical eating disorders, such as anorexia and bulimia (Keery, Van Den Berg & Thompson, 2004; Levine & Murnen, 2009); the majority of which, begin to develop during adolescence (Keel, Eddy, Thomas, & Schwartz, 2010). Furthermore, in addition to triggering unhealthy body shaping behaviours, body dissatisfaction has also been related to a number of negative health outcomes during adolescence, including low self-esteem, depressed mood, smoking, drug misuse, and risky sexual behaviour (van den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010; Neumark-Sztainer et al., 2006). In light of the diverse detrimental impacts of body dissatisfaction on the physical and mental health of adolescents, understanding its origin has never been more important.

According to socio-cultural theory, body dissatisfaction - defined as the experience of negative thoughts and esteem about one's body (Dittmar, 2005) – emerges as a result of perceived environmental pressure, from family, peers, and the mass media, to conform to the culturally-defined body and beauty ideal – the *body perfect* (Levine & Murnen, 2009; Shroff & Thompson, 2006; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 2004). For females, the body perfect ideal is extremely thin, yet toned and curvaceous (Grabe & Hyde, 2009), and for males, the body perfect is extremely toned and muscular, as well as lean (Leit,

Gray, & Pope, 2001). The mass media has been identified as *the* single biggest purveyor of this ideal, since it disproportionately features idealised models that epitomise both the male and female body perfect ideals (Luff & Gray, 2005; Fouts & Buggraf, 2000; Coupland, 2007; Ricciardelli, Clow, & White, 2010).

The unrealistic nature of the media-promoted body-perfect ideals, mean that they are impossible for the majority of adolescents to attain (Levine & Murnen, 2009). As a result, a psychologically salient discrepancy develops for many adolescents between how they believe they actually look and how they would ideally like to look, leading them to experience negative feelings about their own bodies (Dittmar, 2008). Meta-analyses document the link between exposure to idealised media models and body dissatisfaction amongst adult women and men, reporting small - moderate effect sizes (Bartlett, Vowells, & Saucier, 2008; Blond, 2008; Grabe, Ward & Hyde, 2008; Groesz, Levine, & Murnen, 2002; Holstrom, 2004; Want, 2009). To date, no previous meta-analysis has focused specifically on adolescents, yet there are good reasons to propose that adolescents may be particularly vulnerable to negative media effects.

Adolescents consume more media than other age groups, with the average teenager reported to spend at least one third of their day engaging with some form of media (Rideout, Roberts, & Foehr, 2005), and furthermore, the media types that adolescents typically engage with are usually saturated with body perfect imagery (Luff & Gray, 2005; Fouts & Buggraf, 2000; Coupland, 2007; Ricciardelli et al., 2010). However, it is not just the high amount and type of media consumed by adolescents that may contribute to making them particularly vulnerable to the media's influence on body image, but rather the important role that this media consumption plays within the context of the immense physical and psychological changes that characterise adolescence.

The onset of puberty during adolescence leads to physical changes in the appearance of the body, creating a heightened sense of bodily awareness and an increase in appearance-related concerns amongst adolescents (Siegal, Yancey, Aneshensel, & Schuler, 1999) - with females being most affected by these physical changes, than males (Labre, 2002). Interest in potential sexual partners also begins to develop at this time, and so the desire for the adolescent to be perceived as attractive by others increases - further heightening their pre-occupation with appearance (Collins, 2003; Collins & Repinski, 1994).

In terms of psychological development, a primary task faced by adolescents is that of developing a more independent identity, and being socially accepted by peers becomes increasingly important (Erikson, 1968; Lloyd, 2002). Adolescents turn to socio-cultural agents as important sources of information on how to look, think, feel and behave within the social world, in order to negotiate their own unique identity (Lloyd, 2002). Body perfect media models may serve as particularly salient role models for adolescents, due to the way in which they are idealised by the mass media, by being depicted as happy, successful and popular (Englis, Solomon, & Ashmore, 1994), and as such, the body perfect becomes synonymous with these desirable outcomes and a desirable identity. Therefore, fuelled by a myriad of appearance and identity concerns, and the desire to be perceived as both physically and socially attractive, adolescents are likely to identify closely with idealised body-perfect media models, and desire to look like them (Dittmar, 2008; Giles, 2004). Consequently, this identification results in body dissatisfaction, as the adolescent fails to meet the largely unrealistic and artificial body perfect standards set by their idols.

#### *Need for a meta-analysis*

In light of the amount of media consumed by adolescents, and the important role that this media consumption is hypothesised to play within the developmental context of adolescence, there are strong theoretical grounds for supposing that adolescents may be



particularly vulnerable to negative media influences on their body image. To date, however, there has been no meta-analysis, which has systemised research linking media exposure and body dissatisfaction, specifically focusing on this age group, and sought to identify factors that may make this age group more susceptible to the media's influence.

Existing psychological research addressing the impact of the mass media on body dissatisfaction during adolescence has mainly taken one of two forms. Correlational studies that measure the relationship between self-reported habitual media use and long-term body dissatisfaction, and, exposure experiments that examine the immediate impact of brief exposure to body perfect media exposure on transitory dimensions of body dissatisfaction. The two research literatures differ in terms of their general aims and outcome measures. Correlational studies are concerned with measuring the strength of the relationship between media use over time and *trait* body dissatisfaction, whereas exposure experiments are concerned with determining the causal impact of acute media exposure on *state* body dissatisfaction. A previous meta-analysis of research involving girls and women, examined both types of research in a single meta-analysis, examining research design as a moderator (Grabe et al., 2008). However we propose, due to the qualitative differences between outcome measures, to examine correlational and experimental studies in separate analyses, as was done in a recent meta-analysis on adult men (Bartlett et al., 2008).

The present paper, therefore, aims to synthesise the two dominant strands of the research literature, correlational and experimental evidence, in two separate meta-analyses. Furthermore, it aims to examine factors that may moderate the impact of the mass media on adolescent body dissatisfaction - including gender, age, and type of media. These potential vulnerability factors are discussed below.

## *Gender*

Body dissatisfaction disproportionately afflicts the female population, with recent research reporting that adolescent girls are twice as likely to experience body dissatisfaction and engage in unhealthy weight management strategies, than adolescent boys (Eisenberg et al., 2006). Gender differences in pubertal development have often been blamed for the girls' vulnerability to body dissatisfaction, as female puberty, which is characterised by breast and hip growth, moves girls' bodies further away from the predominantly thin ideal, whereas some aspects of male puberty, such as broadening of shoulders, can move boys closer to the male ideal (Labre, 2002). Furthermore, throughout society there is still a greater emphasis on the attractiveness and appearance of women, and this is reflected within the mass media, which typically objectifies female bodies and presents them in such a way that their physical appearance is overemphasised (Fredrickson & Roberts, 1997; Luff & Gray, 2009; Fouts & Buggraf, 2000).

As such, adolescent girls may be more vulnerable to the mass media's impact on body image, than adolescent boys. Indeed, research has suggested that adolescent girls report feeling significantly more pressure to conform to media-promoted body ideals than their male counterparts (Knauss, Paxton, & Alsaker, 2007; McCabe & Ricciardelli, 2003). However, correlational studies investigating the relationship between self-reported actual media use and body dissatisfaction during adolescence have typically yielded mixed findings, and though some have found that media use is more closely related to body image amongst adolescent girls, than boys (Jones, Vigfusdottir, & Lee, 2004; Van den Bulck, 2000), others have reported very similar relationships for both genders (Harrison, 2000; Hofschire & Greenberg, 2001). Furthermore, no empirical studies have directly addressed the issue of whether exposure to body perfect ideals actually causes more body dissatisfaction amongst adolescent girls than boys. And as such, though there are strong theoretical grounds for supposing that

adolescent girls may be more susceptible to the media's influence on negative body image than adolescent boys, it remains unclear whether this is actually the case.

### *Age*

Adolescence is characterised by significant physical and psychological development; changes that approximately span the course of a full decade. Though there are large individual differences as to when these changes occur, a general developmental age-related pattern can be observed, and as such, three key stages of adolescent development may be identified. First, early adolescence –the period between the ages of eleven and fourteen - is typically characterised by the physical changes associated with the onset of puberty (Walvoord, 2010). Second, mid-adolescence – the period between the ages of fourteen and sixteen – is characterised by the rapid continuation of physical pubertal development. Furthermore, in terms of psychological development - concerns regarding identity and peer relationships peak, and romantic relationship concerns become increasingly salient (Collins, 2003; Collins & Repinski, 1994; Lloyd, 2002). In late adolescence - between the ages of sixteen and nineteen - full physical maturation is reached, and though identity and romantic relationship concerns are important, this period may mark the beginning of their resolution.

As a consequence of the different developmental challenges faced by adolescents of varying ages, age may be an important moderator of the negative influence of body perfect media exposure on adolescents' body image. To date however, only one study has directly investigated this. Durkin and Paxton (2002) found that mid-adolescent girls ( $M$  age = 15.50) experienced more body dissatisfaction following acute exposure to body perfect images than girls in early adolescence ( $M$  age = 12.90), therefore suggesting that mid- adolescents may be more vulnerable to the mass media's negative impact on body dissatisfaction. However such a finding warrants further investigation.

### *Media Type*

There has been a tendency within psychological research to treat the mass media as a unified entity. However, it is comprised of many different forms, such as TV, magazines, music videos, or computer games. Each of these media types has distinct characteristics, and may differ in the way in which they present the body perfect and the frequency with which they present it (Jordan, Kramer-Golinkoff, & Strasburger, 2008), meaning that they may exert differing effects on adolescents' body image.

To date, there have been no experimental investigations that have compared the magnitude of the immediate impact of different media types on adolescents' body dissatisfaction, but several correlational studies have assessed the magnitude of the relationship between different media types and body dissatisfaction. General TV consumption is only weakly correlated with body dissatisfaction in adolescence, yet certain types of TV consumption that heavily feature the body perfect (such as soap operas), have been shown to be more strongly correlated with body dissatisfaction (Borzekowski, Robinson, & Killen, 2000; Van den Bulk, 2000; Tiggemann & Pickering, 1996). Furthermore, in girls, magazine use has been shown to be strongly associated with body dissatisfaction (Harrison, 2000). A causal role of media influence cannot, of course, be inferred from these studies, as it is equally possible that adolescents with a more negative body image may actively seek out and engage with different types of media, as it is that these media depictions of the ideal body influence adolescents' body image.

In recent years, the popularity and availability of newer, more interactive media has soared, particularly amongst adolescents (Van den Beemt, Akkerman & Simons, 2010; Ziegler, 2007). Such media -including music videos and video games - may have a particularly potent effect on body image, due to the increased character identification that they are hypothesised to induce (Funk, Baldacci, Pasold, & Baumgardner, 2004). However,

as these media types are relatively new, few studies have examined the link between their consumption and adolescents' body image.

### *Aims and hypotheses*

The present meta-analysis aims to systematise existing research findings on the link between exposure to body perfect images in the mass media and adolescent body dissatisfaction, consisting of two parts. The first meta-analysis aims to synthesise existing correlational evidence on the relationship between long-term media exposure and trait body dissatisfaction. The second meta-analysis aims to examine existing experimental findings on the direct impact of brief body perfect media exposure on state body dissatisfaction. Gender, age and type of media exposure will be explored as moderators within both meta-analyses.

## Method

### *Literature Search*

Initial literature searches were performed on the two most prominent psychological databases; PSYCINFO and PSYCARTICLES. Three searches were performed on each database, using the advanced search tool and the following search terms: - 'ADOLESCEN\*' 'OR' 'TEENAGE' 'OR' 'BOY' 'OR' 'GIRL' 'AND' 'BODY' 'OR' 'APPEARANCE' 'AND' 'TV' 'OR' 'MEDIA' 'OR' 'TELEVISION' / 'ADOLESCEN\*' 'OR' 'TEENAGE' 'OR' 'BOY' 'OR' 'GIRL' 'AND' 'BODY' 'OR' 'APPEARANCE' 'AND' 'MAGAZINES' 'OR' 'VIDEO' 'OR' 'MUSIC' / 'ADOLESCEN\*' 'OR' 'TEENAGE' 'OR' 'YOUNG PEOPLE' 'AND' 'BODY' 'OR' 'APPEARANCE' 'AND' 'IDEAL' 'OR' 'ADVERT\*' OR 'COMMERCIAL.' The search was restricted to studies published between 1975 and January 1<sup>st</sup> 2011, and yielded over 500 results. In addition to the literature searches, the reference lists of six previous meta-analyses in the field (Bartlett et al., 2008; Blond, 2008; Grabe et al., 2008; Groesz et al., 2002; Holstrom, 2004; Want, 2009) were examined for potential studies.

Similarly, the reference lists of the individual articles that were to be included in the meta-analysis were checked for further potential studies.

Abstracts for potentially suitable studies were gathered and examined. Studies were excluded at this stage according to specified criteria. First, it was required that the article was presenting original data, featuring a predominately white/western sample of adolescents. Second, it was important that the respondents in the studies had a minimum age of 11 and maximum age of 19 years, as this is the widely accepted age boundary for adolescence. Several studies were excluded due to this criterion, as though the mean age of the sample fell within these cut-off points, the age range exceeded them (e.g. Stice & Shaw, 1994). Third, the study needed to provide quantitative data that was derived from either correlational or experimental methodology. Therefore, qualitative studies and longitudinal studies that did not contain time one zero order correlations were excluded (e.g., Hargreaves & Tiggemann, 2003a; McCabe, Ricciardelli, & Ridge, 2006).

A further consideration at this stage of the research process is how to deal with the possibility of publication bias. There is a tendency within psychology for research with significant findings to be both submitted and accepted for publication, whereas studies with null findings are neglected. This publication bias can distort the findings of a meta-analysis, if measures are not taken to control for it (Dickersin, 1990). In a meta-analysis, with a limited number of studies, a good strategy is to locate and include unpublished research. For the present meta-analysis, seven prominent researchers in the field of media and body image research were contacted for unpublished studies that may meet the initial inclusion criteria. Although all of the contacted authors responded to this request, only two provided research that met the stringent inclusion criteria, outlined below. Furthermore, eight unpublished undergraduate research projects that had been supervised by the second author at the

University of Sussex were found to meet the stringent inclusion criteria for the present meta-analysis and were therefore included.

Finally, it was decided that examinations of the impact of exposure to sports media consumption and body dissatisfaction would be excluded from the meta-analyses. Though many sports stars conform to the socio-cultural body perfect ideal for men and women, within sports media, their bodies are typically presented in such a way that the instrumental utility of their bodies are emphasised rather than their physical appearance (Daniels & Wartena, 2011; Farquhar & Wasyliw, 2007). As a consequence, sports media consumption - both in print and on TV - has been linked to higher body satisfaction in adolescence (Harrison, 2000; Hofschire & Greenberg, 2001; Tiggemann & Pickering, 1996). Similarly exposure experiments involving media that emphasised the utility of the body, such as sports media, rather than the physical appearance of the body (e.g. sub-samples of Farquhar & Wasyliw, 2007) have found that this media has no negative impact on adolescents' body image. As the meta-analysis aimed to focus on media that idealises socio-cultural ideals in an objectifying and ideal-promoting way, it was decided that these studies should be excluded from the meta-analysis.

### **Study 1: Correlational Evidence**

The first meta-analysis is exclusively concerned with studies that investigate the relationship between habitual media use and body dissatisfaction. From the initial literature search, all studies that met the initial inclusion criterion and were correlational in nature, were collated. These studies were then subjected to further scrutiny in order to ascertain their suitability for inclusion in the meta-analysis, on the basis of whether or not they contained appropriate measures of body dissatisfaction and habitual media exposure.

*Measure of Body Dissatisfaction.* As outlined in the introduction, body dissatisfaction may be defined as the experience of negative thoughts and feelings about one's body (Dittmar, 2005). The focus in correlational studies is on how individuals feel about their bodies over time, so suitable studies needed to include an appropriate measure of *trait* body dissatisfaction. Appropriate measures included the trait version of the Physical Appearance State and Trait Anxiety Scale (PASTAS; Reed, Thompson, Brannick, & Sacco, 1991), The Body Esteem Scale (BES; Mendelson, Mendelson & White, 2001), Eating Disorders Inventory – Body Dissatisfaction subscale (EDI-BD; Garner, Omstead, & Polivy, 1983), The Figure Rating Scale (Stunkard, Sorenson & Schulsinger, 1983), or alternatively other measures designed specifically for the assessment of stable body-specific positive or negative feelings (e.g., Borzekowski et al., 2000).

*Media Use.* The present meta-analysis was only concerned with correlational studies that had measured amount of media use, using self-report measures of actual consumption. A number of correlational studies have measured media use by examining adolescents' perceptions of the media's influence on their body image, such as perceived pressure from the media to fit with the socio-cultural ideal for appearance (e.g., McCabe & Ricciardelli, 2003; McCabe, Ricciardelli & Finemore, 2002; Keery et al., 2004). It was decided to exclude these studies as the purpose of this meta-analysis was to investigate the role of actual media consumption, not perceived media pressure. This stringent inclusion criterion avoids conflation between two very different constructs, and is consistent with prominent previous meta-analysis of the link between the mass media and women's body dissatisfaction (Grabe et al., 2008).

*Effect Size Calculation.* The statistics needed for effect size calculation were the zero-order correlations between media use and the outcome measure. Some correlational studies had only reported the Beta-weights, and so did not provide zero-order correlations between



media use and the outcome measure (e.g., Botta, 2000; Schooler, Ward, Merriweather, & Caruthers, 2004). Effect sizes were calculated in the correlation coefficient  $r$ , and transformed into  $d$ , using standardised formula, so that the average effect sizes for the meta-analysis of correlation research could be compared directly to the effect sizes from the meta-analysis of experimental research (Hedges & Becker, 1986). As effect sizes can be upwardly biased if based on small samples, all effect sizes were weighted by the inverse of their variance, to minimise this (Lipsey & Wilson, 2000). Positive effect sizes indicated a stronger association between media use and body dissatisfaction.

Independence of sample sizes is an underlying assumption of meta-analysis, and therefore, in studies where more than one effect size can be computed on a given sample, it is common practice to pool the effect sizes to produce an average effect size that represents that sample. Many of the studies featured within the present meta-analysis offered several different effect sizes based on the same sample; each representing the correlation between a different type of media use and body dissatisfaction. However, if these effects sizes are pooled, then a comparison of the strength of the relationship between different types of media use and body dissatisfaction would not be possible. Therefore, we performed two different types of meta-analysis. The first, using pooled effect sizes for each sample, examined the relationship between overall media consumption and body dissatisfaction. We then conducted separate meta-analyses for four different types of media; magazines, general TV, TV soap operas and music videos.

A mixed effects model was used for each meta-analysis, which assumes that effect size variance can be explained by both systematic and random components (Hedges & Olkin, 1985). The meta-analysis was performed on SPSS 16 using macros by Wilson (2010).

*Moderator Analysis.* Gender and age were examined as moderators of each meta-analysis. To investigate age as a moderator, studies were classified into three categories based

on the mean age of the sample; early adolescence (11 – 14 yrs. old), mid adolescence (14.01-16 yrs. old) and late adolescence (16.01-19 yrs. old). Furthermore, to ensure that there were no systematic differences in the effect sizes yielded by published research compared to unpublished research, the publication status of the studies was also examined as a potential moderator of each meta-analysis.

*Final Sample.* As shown in Table 1, eleven published studies and six unpublished studies were deemed suitable for inclusion in the meta-analysis, contributing a total of 46 effect sizes.

Table 1. *Effect Sizes and Moderator Variable Information for Relationships between Habitual Media Use and Trait Body Dissatisfaction from Correlational Studies,*

Study	<i>d</i>	<i>r</i>	<i>N</i>	Mean Age (yrs.)	Gender	Media Type	Published
Borzekowski, Robinson, & Killen (2000)	-.02	-.01	837	14.90	Female	TV General	Yes
	.16	.08				Music Videos	
Botta (1999)	-.10	-.05	214	15.19	Female	TV General	Yes
	-.02	-.01				TV Soaps	
Bullard & Dittmar (2010)	.41	.20	102	16.88	Female	TV General	No
	.49	.24	57		Male	TV General	
Caira & Dittmar (2010)	.63	.30	75	17.01	Female	TV Soaps	No
Grabe & Hyde (2009)	.28	.14	195	13.20	Female	Music Videos	Yes
Harrison (2000)	-.14	-.07	178	14.63	Female	TV General	Yes
	.12	.06				Magazine General	
	-.08	-.04	180		Male	TV General	
	-.18	-.09				Magazine General	
Hofschire & Greenberg (2001)	.24	.12	179	15.50	Female	TV Soaps	Yes
	.32	.16				Music Video	
	.54	.26				Magazine General	
	.24	.12	203		Male	TV Soaps	
Jones, Vigfusdottir, & Lee (2004)	.30	.15	433	13.60	Female	Magazine General	Yes
	.02	.01	347		Male	Magazine General	
Ross & Dittmar (2010)	.46	.23	101	16.61	Female	Music Videos	No

Slater (2006)	.24	.12	179	15.28	Female	Magazines	No
	-.04	-.02				TV General	
	.16	.08				Music Videos	
	.14	.07				TV Soaps	
	.08	.04	182	15.22	Male	Magazines	
	.39	.19				TV General	
	-.06	-.03				Music Videos	
	.14	.08				TV Soaps	
Stonebridge & Dittmar (2010)	.02	.01	131	16.98	Female	TV General	No
	.20	.10	56		Male	TV General	
Tiggemann (2001)	.22	.11	306	16.06	Female	TV General	Yes
	.06	.08				TV Soaps	
Tiggemann (2005)	.22	.11	799	14.37	Female	TV General	Yes
	.35	.17				TV Soaps	
	.16	.08				Music Videos	
	.08	.04	652		Male	TV General	
	.24	.12				TV Soaps	
	.10	.05				Music Videos	
Tiggemann (2006)	.00	.00	214	13.98	Female	Magazine General	Yes
	-.20	-.10				TV Soaps	
Tiggemann & Pickering (1996)	.30	.15	94	15	Female	TV General	Yes
	.60	.30		.50		TV Soaps	
Van den Bulck (2000)	.16	.08	534	17.00	Female	TV General	Yes
	.24	.12				TV Soaps	
	.30	.15	481		Male	TV General	
	.28	.14				TV Soaps	
Wallace & Dittmar (2010)	.20	.10	67	14.00	Female	TV Soaps	No

## Results

*Overall Media.* A small effect size was found for the relationship between overall habitual media use and body dissatisfaction,  $d = 0.17$ ; 95%  $CI = 0.11$  to  $0.24$ , based on criteria by Cohen (1988). Marginally significant heterogeneity amongst effect sizes was found,  $Q_T(24) = 35.53$ ,  $p = .06$ , and so moderator analyses were performed. However, neither age,  $Q_B(2) = 3.91$ ,  $ns$ , gender,  $Q_B(1) = 0.37$ ,  $ns$ , nor publication bias,  $Q_B(1) = 1.85$ ,  $ns$ , were

found to moderate the relationship between habitual general media use and body dissatisfaction.

*General Magazines.* The meta-analysis yielded a very small overall effect size for the relationship between magazine use and body dissatisfaction,  $d = 0.14$ ; 95%  $CI = -0.01$  to  $0.29$ , and furthermore significant heterogeneity was found amongst the effect sizes,  $Q_T(7) = 72.80$ ,  $p < .001$ . As Table 2 shows, a significantly stronger and positive effect size was found for the relationship between girls' magazine use and body dissatisfaction,  $d = 0.24$ , compared to boys,  $d = -0.03$ ,  $Q_B(1) = 4.25$ ,  $p < .05$ . Neither age,  $Q_B(1) = 0.10$ ,  $ns$ , nor publication status,  $Q_B(1) = 0.02$ ,  $ns$ , were found to moderate the relationship between magazine consumption and body dissatisfaction.

Table 2. *Gender-Related Moderator Analyses for Correlational Studies Assessing the Relationship between Habitual Magazine or Music Video Consumption and Trait Body Dissatisfaction*

	Between Groups $Q$	No. of studies	$d$	95% $CI$	Within Group $Q$
<i>Magazine use</i>					
Gender	4.25*				
Male		3	-.03	-.22 to .17	1.15
Female		5	.24	.09 to .39	5.25
<i>Music Videos</i>					
Gender	3.10				
Male		2	.07	-.06 to .20	0.94
Female		6	.20	.12 to .29	4.71

Note.  $Q$  = heterogeneity. \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

*General TV.* A very small, and significantly heterogeneous, overall effect size was found for the relationship between general TV consumption and body dissatisfaction,  $d = 0.12$ ; 95%  $CI = 0.05$  to  $0.21$ ,  $Q_T(13) = 15.26$ ,  $p < .05$ . As Table 3 shows, age was found to be a significant moderator of the relationship between general TV consumption and body dissatisfaction,  $Q_B(1) = 3.62$ ,  $p < .05$ . As no studies had examined the relationship between

general TV consumption and body image in young adolescents, only older- and mid- adolescents were compared; revealing that older adolescents reported significantly stronger relationships between general TV consumption,  $d = 0.21$ , than mid- adolescents,  $d = 0.07$ . No significant differences were found between effect sizes in terms of gender,  $Q_B(1) = 1.35$ , *ns*, or publication status,  $Q_B(1) = 1.41$ , *ns*.

Table 3. *Significant Age-Related Moderator Analyses for Correlational Studies Investigating the Relationship between General TV or TV Soap Opera Consumption and Trait Body Dissatisfaction*

	Between Groups $Q$	No. of studies	$d$	95% $CI$	Within Group $Q$
<i>General TV Use</i>					
Age	3.62*				
Early		-	-	-	-
Mid		9	.07	-.02 to .16	11.70
Late		7	.21	.10 to .33	4.24
<i>TV Soap Operas</i>					
Age	7.78*				
Early		2	-.10	-.34 to .13	1.99
Mid		9	.25	.17 to .33	10.05
Late		4	.23	.13 to .34	5.33

Note.  $Q$  = heterogeneity. \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

*TV Soap Operas.* The meta-analysis yielded a small overall effect size for the relationship between TV soap opera consumption and body dissatisfaction,  $d = 0.20$ ; 95%  $CI = 0.11$  to  $0.30$ , and again significant heterogeneity was found amongst effect sizes,  $Q_T(7) = 15.34$ ,  $p < .05$ . Moderator analyses revealed that age was identified as a significant moderator of the relationship between soap opera consumption and body image,  $Q_B(2) = 7.78$ ,  $p < .05$ . As Table 3 shows, larger effect sizes were reported for older,  $d = 0.25$ , and mid- adolescents,  $d = 0.23$ , than for younger adolescents,  $d = -0.10$ . Furthermore, no significant differences were found in terms of gender,  $Q_B(1) = 0.12$ , *ns*, or publication status,  $Q_B(1) = 0.02$ , *ns*.

*Music Videos.* A small overall effect size was found for the relationship between music video consumption and body dissatisfaction,  $d = 0.17$ ; 95%  $CI = 0.09$  to  $0.25$ . No significant heterogeneity was found amongst effect sizes,  $Q_T(7) = 8.75$ ,  $ns$ , however moderator analyses were still performed in an exploratory capacity to investigate any trends amongst this sub-sample of effect sizes. As Table 2 shows, much stronger relationships were found between music video consumption and body dissatisfaction for adolescent girls,  $d = 0.20$ , in comparison to those found for adolescent boys,  $d = 0.07$ , and furthermore this difference was found to be marginally significant,  $Q_B(1) = 0.44$ ,  $p = .07$ . No evidence of publication bias was found,  $Q_B(1) = 0.22$ ,  $ns$ , and furthermore age-based comparisons could not be made, since there were insufficient studies within each age category.

## Discussion

The present meta-analysis aimed to synthesise existing correlational studies that had examined the relationship between habitual media use and trait body dissatisfaction in adolescent populations, and investigate the potential moderating role of gender, age and media type. A weak overall relationship was found between general media consumption and adolescents' body dissatisfaction, which was smaller than that reported in previous meta-analyses of research involving adult samples ( $d = -0.19$ , Bartlett et al., 2008;  $d = -0.41$ , Groesz et al., 2008). There were few differences between the strength of the overall relationship reported between different types of media exposure and body dissatisfaction ( $d$  range =  $0.12$  to  $0.20$ ).

Though no gender differences emerged in terms of the strength of the relationship between overall media use and body dissatisfaction, consumption of certain media types – namely magazines and music videos – were found to be more closely related to adolescent girls' body image, than adolescent boys. Furthermore, these effect sizes were larger than the overall mean effect size yielded for these media types; suggesting therefore that exposure to

certain media types is more closely associated with some girls' body image disturbance than others. However, the reasons for this are unclear. It is possible that consumption of some media types may be more closely related to adolescent girls' body image due to the important functional role that they play within adolescent girls' development; serving as important sources of beauty and appearance related information (Currie, 1999; Sun & Lull, 1986). Alternatively, the way in which these media types disproportionately emphasise the appearance of female characters, relative to males (Luff & Gray, 2006; Wallis, 2011), may account for their closer association with female body image.

For some media types – namely, TV and soap operas - the relationship between media consumption and body image appeared to strengthen with age, as larger effect sizes were yielded for older adolescents. It may be that the relationship between media consumption strengthens during the course of adolescence, and future longitudinal research may benefit from examining this.

## **Study 2: Experimental Evidence**

From the remaining studies of the initial literature search, studies that had used an exposure experiment methodology were extracted, and an additional inclusion criterion was imposed to determine the suitability of these studies for the meta-analysis of experimental evidence.

*Measure of Body Dissatisfaction.* The study needed to contain a suitable measure of *state* body dissatisfaction, i.e. a scale designed for the measurement of the more transitory/changeable aspects of body image. Suitable scales included single item visual analogue scales assessing dissatisfaction with weight, body size or appearance (e.g. Hargreaves & Tiggemann, 2002), Body Image State Scale (BISS; Cash, Fleming, Alindogan,

Steadman, & Whitehead, 2002), Physical Appearance State and Trait Anxiety Scale (PASTAS; Reed et al., 1991), or, alternatively, trait measures of body dissatisfaction where the instructional set had been deliberately adjusted to transform it into a state measure (e.g., Clay, Vignoles, & Dittmar, 2005).

*Media Exposure.* The experimental stimuli needed to consist of a brief media clip (e.g. music videos or magazine images) that featured idealised models that were of the same gender as the participants in the study. The male sub-sample of Hargreaves & Tiggemann (2003b) was excluded for this reason. Furthermore, studies were excluded if the instructional set under which participants were told to view the media had been deliberately manipulated (e.g. Martin and Gentry, 1997; Hargreaves & Tiggemann, 2004).

It was essential that the study contained a suitable control group, who were exposed to a form of media. The most common form of control was a matched media containing neutral/non-appearance focused images. In studies where there were more than one control group, the neutral image control was favoured over the second control (e.g., Bell, Lawton & Dittmar, 2007).

*Calculation of Effect Sizes.* Effect sizes were calculated based on means and standard deviations, using standard formula for the computation of  $d$  (Hedges & Becker, 1986). In instances where means and standard deviations were not available,  $d$  was calculated from  $F$ , again using standard formula (Hedges & Becker, 1986). Similar to the correlation study, effect sizes were weighted by the inverse of their variance, to avoid effect sizes based on small samples upwardly biasing the results (Lipsey & Wilson, 2000), and positive effect sizes indicated a stronger impact of the mass media on body dissatisfaction. To avoid biasing results, each sample could only contribute one effect size, despite some measuring body dissatisfaction in more than one way (e.g. Hargreaves & Tiggemann, 2002). In these circumstances, the effect sizes were averaged to produce a single effect size to represent the



whole study. A mixed effect model was again used for the meta-analysis, which was performed using SPSS 16 and macros by Wilson (2010).

*Moderator Analyses.* Gender, age and media type were examined as moderators of the impact of body perfect media exposure on body dissatisfaction. To investigate age as a moderator, studies were divided into three categories based on the mean age of the sample in the same way as the meta-analysis of correlational research. To assess media type as a moderator, exposure stimuli was divided into three categories; still body perfect images (e.g., magazine covers, print adverts etc.), TV clips and ‘alternative media’. In the present meta-analysis, alternative media was defined as media that may be deemed as qualitatively different - in terms of format and features - to the two previous categories, and comprised media genres such as music videos and video games.

*Final Study Selection.* As Table 4 shows, 9 published and 9 un-published studies were deemed suitable for inclusion in the meta-analysis; contributing a total of 22 effect sizes.

Table 4. *Effect Sizes for the Impact of Acute Exposure to Media on State Body Image from Exposure Experiment and Moderator Variables Information*

Study	<i>d</i>	<i>N</i>			Mean Age (yrs)	Gender	Image Type	Published
		<i>E</i>	<i>C</i>	<i>S</i>				
Bell, Lawton & Dittmar (2007)	.42	30	27	57	17.00	Female	Music Videos	Yes
Bullard & Dittmar (2010)	.30	50	52	102	16.88	Female	TV	No
Caira & Dittmar (2010)	.35	30	26	56	17.01	Female	TV	No
Clay, Vignoles & Dittmar (2005)	.57	56	28	84	13.50	Female	Still	Yes
Crouch & Degelman (1998)	.68	20	20	40	15.40	Female	Still	Yes
Dabin & Dittmar (2006)	.53	60	55	115	16.49	Female	Still	No
Durkin & Paxton (2002)	.22	74	42	116	12.90	Female	Still	Yes
	.33	67	58	125	15.50	Female	Still	Yes
Durkin, Paxton & Sorbello (2007)	.27	65	59	124	15.47	Female	Still	Yes
	.27	83	91	174	15.35	Female	Still	Yes
Farquhar & Wasyllkiw (2007)	.41	34	37	71	12.51	Male	Still	Yes
Halliwell & Diedrichs (2011)	1.00	17	20	37	13.00	Female	Still	No
Hargreaves & Tiggemann (2002)	.34	86	99	185	15.80	Female	TV	Yes

Hargreaves & Tiggemann (2003b)	.71	80	80	160	14.20	Female	TV	Yes
Hobson & Dittmar (2008)	.20	41	28	69	12.00	Female	Still	No
Humphreys & Paxton (2004)	.21	50	50	100	15.60	Male	Still	Yes
Rees (2010)	.37	24	22	46	16.80	Male	Videogames	No
	.31	37	34	71	16.60	Male	Videogames	No
Ross & Dittmar (2010)	.43	32	34	66	16.61	Female	Music Videos	No
Stonebridge & Dittmar (2010)	.33	53	41	94	16.98	Female	TV	No
	.49	28	15	43	16.98	Male	TV	No
Wallace & Dittmar (2010)	.37	20	19	39	14.00	Female	TV	No

*E = Experimental condition; C = Control condition, S= Total in sample*

## Results

Based on Cohen's criterion (Cohen, 1988), a moderate overall effect of brief mass media exposure on adolescents' body dissatisfaction was found,  $d = 0.39$ ; 95%  $CI = 0.30$  to  $0.48$ . Heterogeneity analyses revealed that the effect sizes were homogenous,  $Q_T(21) = 13.14$ , *ns*. Though moderator analyses are usually only warranted if significant heterogeneity amongst effect sizes is found, they were still performed on the present data so that any trends regarding effect sizes amongst the limited number of studies could be explored (see Table 5 for effect sizes, confidence intervals and statistics regarding group differences).

*Gender.* As Table 6 shows, the effect size for the impact of brief media exposure on girls' state body dissatisfaction,  $d = 0.40$ , was slightly larger than that found for boys,  $d = 0.34$ , however this gender difference was not significant,  $Q_B(1) = 0.22$ , *ns*. There were considerably fewer studies that had used an adolescent male sample than those that had used a female sample, with just five investigating the impact of the media on boys' body dissatisfaction, compared to the fifteen that had investigated the media's effect on girls.

Table 5. *Gender, Age, & Media Type Moderator Analyses for Exposure Experiments*

	Between Groups $Q$	No. of Samples	$d$	95% $CI$	Within Group $Q$
Gender	.22				
Male		5	.34	-0.03 to 0.53	0.62
Female		17	.40	0.26 to 0.47	8.53
Age	.05				
Early		6	.40	0.20 to 0.60	5.11
Mid		7	.38	0.25 to 0.51	6.90
Late		9	.40	0.25 to 0.56	1.08
Media Type	.51				
Still		7	.36	0.24 to 0.48	4.30
TV		11	.43	0.28 to 0.58	8.21
New Media		4	.41	0.24 to 0.64	0.12

Note.  $Q$  = heterogeneity. \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

*Age.* Very similar effect sizes were yielded for studies across all three age categories; young adolescents,  $d = 0.40$ , mid-adolescents  $d = 0.38$ , late adolescents,  $d = 0.40$ . These findings suggest that the media has a similar impact on adolescents, regardless of their ages,  $Q_B(2) = 1.47, p < .48$ .

*Media Type.* Studies that had used TV and alternative media as their exposure stimuli reported marginally stronger mean effect sizes,  $d = 0.43$  and  $d = 0.41$  respectively, than studies that had used still body perfect images,  $d = 0.36$ . However, these differences between media types were not significant,  $Q_B(2) = 0.51, ns$ . Interestingly, only four studies had investigated experimentally the impact of alternative media on body dissatisfaction in adolescence, and the vast majority of the studies had used still images as the exposure stimuli

*Publication Bias.* No evidence of publication bias was found, as published studies,  $d = 0.38$ , reported very similar effect sizes to unpublished studies,  $d = 0.40$ ,  $Q_B(1) = 0.09, ns$ .

## Discussion

The present meta-analysis aimed to synthesise existing experimental research regarding the impacts of brief body perfect media exposure on body dissatisfaction in adolescence, finding a small-moderate overall effect. This effect size was at the higher end of those that had been found in previous meta-analyses (*d range* = 0.17 to 0.35; Bartlett et al., 2008; Blond, 2008; Grabe et al., 2008; Groesz et al., 2002; Holstrom, 2004; Want, 2009), which have incorporated experimental research conducted on both adult and adolescent samples. No significant heterogeneity was found amongst effect sizes in the present meta-analysis, however moderator analyses were still performed in an exploratory capacity, to determine any emerging trends regarding gender, age and media type.

Though female adolescents are widely believed to be more susceptible to socio-cultural influences on body image than their male counterparts (Eisenberg et al., 2006), only a small and non-significant difference was found between the effect sizes for the impact of body perfect media on girls' body dissatisfaction, compared to boys. Furthermore, only negligible age-related differences were found in terms of the magnitude of the effect of acute mass media exposure on body image. With regards to media type, exposure experiments wherein TV clips and alternative media were used as the exposure stimuli reported slightly larger overall effect sizes, than exposure experiments wherein still images had been used as the exposure stimuli, but again these differences were small and non-significant.

## General Discussion

The present meta-analyses aimed to synthesise previous research examining the impact of the mass media on adolescents' body dissatisfaction. In the first meta-analysis of correlational research that has investigated the relationship between habitual media use and trait body dissatisfaction, only a very small overall relationship was found between the two.

In the second meta-analysis, the findings from exposure experiments that had investigated the impact of acute media exposure and body dissatisfaction were synthesised, and a moderate overall effect size was found. The disparity between the effect sizes of the two types of research literature is surprising, but also very interesting. It may be that adolescents' body dissatisfaction is less fixed and more malleable than that of adults, so though there is a weak relationship between habitual media use and trait body dissatisfaction, adolescents may be more vulnerable to the transitory changes in body image following acute body perfect media exposure - though this possibility requires further investigation.

Furthermore, the present research also sought to examine gender, age and media type as moderators of the media's effect on body dissatisfaction, and the findings pertaining to each of these vulnerability factors will be discussed in turn.

*Gender.* The meta-analysis of experimental research found no significant gender differences in terms of the strength of the impact of acute media exposure on adolescents' body image. However, in the meta-analysis of correlational research, stronger relationships between certain media types – namely magazines and music videos – were yielded for adolescent girls, than for adolescent boys. Therefore, though it appears that both genders are equally susceptible to the mass media's acute negative impact on body image over time, stronger associations between girls' use of certain types of media and trait body image develop. It is possible that this may be due to the highly gendered role that certain media types play within adolescent girls' social development (Currie, 1999), or alternatively due to the different ways in which males and females are portrayed in these media types (Luff & Gray, 2006; Wallis, 2011). It should also be noted that there was a distinct lack of research - both experimental and correlational - that had investigated the impact of body perfect media on adolescent boys' body dissatisfaction, and as such, adolescent boys remain a largely understudied population in this domain.

*Age.* In the meta-analysis of correlational research, for some media types, it was found that studies featuring samples of older adolescents generally reported stronger relationships between media use and body dissatisfaction, than those involving samples of younger- and mid- adolescents. However, in the meta-analysis of experimental evidence, all adolescents appeared to be equally affected by acute exposure to body perfect media - regardless of their ages. Therefore, though habitual media use becomes more closely related to body dissatisfaction towards the end of adolescence, adolescents of all ages appear to be equally sensitive to the acute effects of body perfect exposure on body image.

*Media Type.* Consistent with existing research (Borzekowski et al., 2000; Tiggemann & Pickering, 1996), the meta-analysis of correlational research found that consumption of music videos and magazines was slightly more closely correlated to body dissatisfaction in adolescents – but only amongst girls. Furthermore, though the meta-analysis of exposure experiments found that those which had used moving media – including TV clips and new media - as the exposure stimuli yielded slightly stronger effect size than those which had used still images, these differences were small and non-significant. However, in both meta-analyses, very few studies had examined the impact of new and alternative media on body dissatisfaction, and as such the possibility that these media types may actually be linked to more negative body image than others, cannot be dismissed. The meta-analysis therefore highlights the pressing need for more psychological research involving newer and more alternative media types.

*Conclusion.* In conclusion, the present meta-analyses systematised existing research into the impacts of the mass media on adolescent body dissatisfaction. Although the meta-analysis of correlational research found only a very small relationship between actual media use and trait body dissatisfaction, the meta-analysis of exposure experiments found a small-moderate effect of acute exposure to body perfect media on state body dissatisfaction,

yielding an effect size stronger than those reported in meta-analyses based on predominantly adult samples. Therefore the findings of the meta-analyses lend support to the suggestion that adolescents may be particularly vulnerable to body dissatisfaction following acute exposure to body perfect media. Future research should focus on the impacts of body perfect media on adolescent boys and younger adolescents, as both these groups represent under-studied populations. It should also focus on the impacts of newer media types on body dissatisfaction, since such media types - though widely used by adolescents - remain under-studied.

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## Chapter Four

### **Does Media Type Matter? The Role of Identification in Adolescent Girls' Media Consumption and the Impact of Different Thin-Ideal Media on Body Image**

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Bell, B. T., & Dittmar, H. (2011). Does media type matter? The role of identification in adolescent girls' media consumption and the impact of different thin-ideal media on body image. *Sex Roles*, 65, 478-490.

#### **Abstract**

Previous research on media exposure and body image focuses on TV and magazines, rather than the under researched types of media heavily consumed by adolescents, such as music videos. The present research, involving 199 adolescent girls (aged 14-16) from South-East England, examines girls' media consumption (types and genres) and identification with media models, then uses an exposure experiment to investigate whether the different media formats in which 'body perfect' ideals are presented affects their impact on body image. Study 1 showed that neither type nor amount of media use was related to body dissatisfaction, however media model identification was. Study 2 demonstrated that regardless of media type, experimental exposure to the body perfect led to significantly higher body and appearance dissatisfaction, compared to control images, but primarily amongst those girls who strongly identified with media models. Theoretical and intervention implications are discussed.

## Introduction

Negative body image is a growing concern amongst female adolescents in the UK, where body dissatisfaction and disordered eating behaviour are believed to have reached normative levels (Furnham, Badmin & Sneade, 2002), a trend mirroring that of other westernised countries, such as the USA and Australia (Eisenberg, Neumark-Sztainer & Paxton, 2006; Riccardelli & McCabe, 2003). According to socio-cultural theory, negative body image emerges as a result of perceived environmental pressure to conform to a culturally-defined body and beauty ideal (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 2004; Shroff & Thompson, 2006). The mass media may be seen as *the* single biggest purveyor of this ideal, promoting an unrealistic and artificial image of female beauty that is impossible for the majority of females to achieve (Levine & Murnen, 2009). Meta-analyses of research, predominantly conducted in the UK, USA and Australia, provide substantive and consistent evidence that exposure to thin ‘body perfect’ ideals in the media is strongly related to negative body image in girls and women (Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002; Want, 2009), with adolescent girls’ seemingly most vulnerable to its negative influence (Groesz et al., 2002).

There has been a tendency in this research literature to focus primarily on TV and magazines since these media types have been traditionally regarded as the most popular amongst females (Hofschire & Greenberg, 2001; Tiggemann & Pickering, 1996). However, media reports within the UK suggest that the popularity of such media types is declining, whilst the popularity and availability of more interactive media (such as music videos or Internet) is increasing, particularly amongst adolescents (The Independent, 2006). The UK is not alone in this trend, as similar changes in media use habits have been reported in other western countries, such as the USA (Ziegler, 2007). In light of this, the present research aims

to use a survey study to gain a better understanding of the different media types and genres in which adolescent girls from the UK typically encounter images of thin media models, and investigate their comparative influence on adolescent girls' trait body image. It furthermore uses exposure experiment methodology to assess whether brief exposure to these different media formats has a differential impact on adolescent girls' state body and appearance dissatisfaction.

Negative body image may be defined as the psychologically salient discrepancy between a person's perceived body and their ideal body (Halliwell & Dittmar, 2006), which manifests itself as the experience of negative thoughts and esteem about one's body and appearance (Dittmar, 2005). It has been identified as a significant risk factor in a range of physical and mental health problems (Cash & Pruzinsky, 2002; Grogan, 2008). In turn, perceived pressure from idealised media models to conform to the culturally defined body and beauty ideal has been identified as a potent source of negative body image (Levine & Murnen, 2009; Shroff & Thompson, 2006; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 2004). Relevant research has predominantly been conducted within the cultural context of westernised societies, particularly within the UK, USA and Australia, using primarily White samples. Virtually all of the research reviewed within this paper has been conducted within one of these three countries, since all three countries share the same culturally defined body and beauty ideal, and all report similar levels of body dissatisfaction amongst their adolescent female population (Furnham et al., 2002; Eisenberg et al., 2006; Riccardelli & McCabe, 2003). Throughout these societies, the mass media uniformly idealises an unrealistic image of female beauty that is predominantly thin, yet impossibly toned and curvaceous, accompanied by perfect skin, teeth and hair (Grabe & Hyde, 2009; Want, 2009). Traditionally, this research has focused on how this 'body perfect' ideal impacts upon the specifically weight-related dimensions of body dissatisfaction. Although this is an important aspect of body

image, the beauty ideals contained within the mass media not only possess an unrealistic body shape, but due to airbrushing, lighting and make-up techniques, they are also unrealistically beautiful (Want, 2009). Research has shown that exposure to these beauty ideals may lead to more general appearance-related dissatisfaction, in addition to more specific weight-related body dissatisfaction (Thornton & Maurice, 1999; Trampe et al, 2007).

There is a substantial body of psychological research relating exposure to thin ideal images in the media to female body and appearance dissatisfaction, including three meta-analyses (Grabe et al., 2008; Groesz et al., 2002; Want, 2009). Adolescent girls are particularly prone to negative body image following exposure to thin ideal media (Groesz et al, 2002). This may be due to the immense physical and psychological developmental changes that characterise adolescence. During adolescence, a primary psychological task faced is that of identity formation, and being socially accepted by one's peers becomes increasingly important (Lloyd, 2002). Furthermore, being perceived as attractive to potential mates also becomes increasingly important to girls at this age (Halpern, 2003). Idealised media models that permeate the culture in which western adolescent girls develop constantly reinforce the idea that thinness is important to attaining both of these goals (Thompson et al, 2004). However, pubertal physical development, such as breast and hip growth (Hillman & Biro, 2010), means that the average girl's body naturally moves away from the thin ideal at a time when it has never been more important to conform to it. The likely results are increased body dissatisfaction and increased sensitivity to thin ideal media.

Research into the impacts of thin ideal media on body dissatisfaction have tended to take the form of either correlational studies (e.g., Tiggeman & Pickering, 1996), which aim to show relationships between habitual media use and long-term 'trait' body dissatisfaction, or exposure experiments (e.g., Bell, Lawton, & Dittmar, 2007), which aim to show the effects of brief media exposure on 'state' body dissatisfaction. Both avenues of research have tended to

focus on limited media types, implying that they are representative of general mass media consumption. Correlational studies have focused primarily on TV and magazine consumption (Murnen, Levine, Groesz, & Smith, 2007), whereas exposure experiments, even more limiting, have focused on still images of the thin ideal, typically taken from magazines (Groesz et al, 2002).

### *Different types of mass media*

Although the mass media has often been treated as one unified entity, it is comprised of many different forms, such as TV, magazines, music videos, or computer games. Each of these media types has distinct characteristics, and may differ in the way in which they present the thin beauty ideal (Jordan, Kramer-Golinkoff & Strasburger, 2008). For example, magazines typically show still images of the thin ideal, embedded in articles about celebrities, diet, fitness, beauty and fashion (Tiggeman, 2003). In contrast, music videos typically show bodily ideals through moving, dancing, sexualised characters (Grabe & Hyde, 2009) accompanied by meaningful songs (Roberts, Christensen, Singer & Singer, 2001), often in a fantasy or dreamlike sequence (Aufderheide, 1986). No previous study has provided a systematic comparison of different media formats in which the thin ideal is presented, and we therefore do not know whether or not they would differ in their impact on girls' body image.

Some previous correlational evidence suggests that such differences are likely. A meta-analysis by Murnen, Levine, Groesz, and Smith (2007) examined the strength of correlations between different media types and body dissatisfaction in girls and women, finding that magazine use was more strongly associated with body dissatisfaction than TV use. Furthermore, there are various sub-types within each different media type, which differ qualitatively from one another in terms of the way in which they portray the thin ideal and how frequently they show it (Tiggeman & Pickering, 1996). Adolescent girls' consumption of music videos, soap operas, and ideal body programmes has been shown to be more



strongly correlated with body dissatisfaction than general TV use in Australian and American samples (Tiggeman & Pickering, 1996; Borzekowski, Robinson, & Killen, 2000; Van den Bulck, 2000), though no study has investigated this within the UK.

At present no study exists that has examined the relationship between media type and negative body image experimentally, and see whether certain media formats have a more potent effect on girls' immediate body and appearance dissatisfaction.

### *Identification with media models*

It is not exposure to *perfect body* ideals *per se* that seems detrimental to body image, but rather the lenses through which individuals view their world in relation to appearance. The meta-analysis by Groesz et al. (2002) shows that women who already have body image issues are disproportionately more vulnerable to negative effects from exposure to thin ideal media. Several previous studies, conducted using samples of Australian adolescent girls, demonstrated that it is specifically the extent to which they have identified with the thin ideal and internalised it as a personal goal that causes the negative impact of thin-ideal exposure on body image (Hargreaves & Tiggeman, 2002; Durkin, Paxton & Sorbello, 2007). We therefore investigated adolescents' identification with thin models in different media formats as a potential factor that may be strongly linked to their body and appearance dissatisfaction.

### *The present research*

The aims of the present research are therefore twofold. The first aim is to investigate adolescent girls' actual media consumption and their identification with thin media models in different media types as factors that correlate with their body image. We carried out a survey to explore the patterns of media use amongst adolescent girls, in terms of time spent engaging with different types and sub-types of media, and their identification with characters contained within them, thus providing a comprehensive and detailed account of English adolescent girls' typical media habits in relation to their body image. The second aim is to examine

experimentally whether exposure to thin-ideal models in different media formats – such as models featured in magazine articles compared to moving models in music videos – has a differential impact on adolescent girls’ body and appearance dissatisfaction. To do this, we compared exposure to still images of thin girl band models, similar to still images typically used in previous studies, with exposure to images of the same thin models, but appearing in two different, real-life formats: either in music videos or embedded in magazine articles about the band. Identification with models was examined as a potential moderator of media effects.

### **Study 1**

The mass media is constantly changing and evolving and, over the last twenty years, different media have emerged, such as music video, computer games, and the Internet, whose use has grown at alarming rates (Ziegler, 2007). While these media types appear to be thriving in terms of popularity amongst adolescents in the UK, more traditional media types, such as girls’ magazines, seem to be in decline (The Independent, 2006). Given these media changes, there is a pressing need for up-to-date and detailed information regarding English adolescent girls’ actual media consumption.

This is especially relevant for research on body image; where previous studies suggest that use of certain media types are particularly strongly associated with body dissatisfaction (Borzekowski, Robinson & Killen, 2000; Murnen et al, 2007; Tiggeman & Pickering, 1996; Van den Bulck, 2000). As these newer media types are regarded as more interactive (Ziegler, 2007) they may pose more of a threat to body satisfaction than older formats. The increased interaction may cause individuals to identify more with the characters, making it more likely that they will try to imitate them (Funk, Baldacci, Pasold & Baumgardner, 2004). Alternatively, they may vary in terms of the way in which they show bodily ideals. Music videos in particular have been criticised for presenting a highly sexualised and objectified

view of the female body (Grabe & Hyde, 2009). Moreover, girls' identification with media models in these different media types has not been examined previously. Thus, given that these media types are understudied in the realm of body image, there is a great need for systematic research comparing different types of media format.

Although this research is largely exploratory, and does not aim to formally test hypotheses, several research questions were addressed:

RQ1. How much time do English adolescent girls spend engaging with different types and subtypes of media? Are different media types associated with thinner characters or increased character identification than others?

RQ2. Can body and appearance dissatisfaction be predicted by time spent engaging with a certain media type, or with the subtypes associated with that type, or is it the adolescents' level of identification with the media models in different types of media that is most important? To examine this research question, overall amount of media exposure, media exposure to specific genres, and strength of identification with media models were assessed sequentially in multiple regression as predictors of girls' body and appearance dissatisfaction.

RQ3. Do adolescents who strongly identify with the media models contained within one media type, also identify with thin models contained in other media types?

## Method

### *Participants*

A volunteer sample of 199 adolescent females was recruited from an all-girls' high school in the South-East of England. Participants were between 14 and 16 years ( $M = 14.76$ ,  $SD = 0.70$ ), and predominately White (87%). The average BMI (calculated as weight in kg/heightm<sup>2</sup>) was 19.95 ( $SD = 4.21$ ), with 9.1% of girls classified as underweight, 85.9% as

normal weight, 3% as overweight and 2% as obese, using population appropriate guidelines (Zaninotto et al, 2006).

### *Questionnaire and Procedure*

The research was introduced as a study of how different personality characteristics can influence media choice in adolescents. The questionnaire contained both measures of media use, and measures of body image. It received ethical clearance from the relevant University committee and participating schools, and complied fully with APA ethical guidelines.

*Measures of Media Consumption.* The questionnaire section on media use was divided into five categories: Internet, TV, music video, magazines, and computer games. Participants were asked to report the number of hours spent consuming each form of media on the average week-day and week-end day, so that their weekly consumption could be calculated. They were also asked to break down their weekly consumption into number of hours spent engaging with specific sub-types of each media.

Extensive lists of media genres were devised based on those used in previous research, and also the first author's own expertise. These lists were piloted amongst a group of thirty adolescent girls, who were asked to report their weekly use of each genre. Any genres with a reported weekly mean use of less than 0.1 hours were removed from the list. Furthermore, in a class discussion, these girls were asked to report any difficulties experienced in classifying their media use in terms of the genres provided. On the basis of this, several media genres were merged together. For instance, girls reported difficulties in separating social networking sites and chat-room sites as the two have very similar features, and so the two were merged together to form one genre.

For Internet use, the final media genres used were social networking and 'chat' (e.g., Facebook), fashion/shopping (e.g., ASOS), entertainment (e.g., Youtube), gaming and

homework. TV use was broken down into soap operas and reality TV (e.g., Big Brother), comedy (e.g., Friends), music videos, drama (e.g., CSI), and animated series. Music video use was divided by musical genre, into pop, indie, RnB, dance and hip-hop. Magazine subtypes comprised celebrity focused, girls' general interest (e.g., Sugar), women's general interest (e.g., Cosmopolitan), women's fashion (e.g., Vogue), and TV/music/film related magazines (e.g., NME). Finally, computer game use was divided into time spent playing sport (e.g., Fifa), adventure (e.g., Rome Total War), role-playing (e.g., Sims), racing (e.g., Mario-Kart), and action (e.g., Call of Duty).

*Prominence of, and Identification with, Thin Media Models.* Participants were asked to name their two favourite websites, TV programmes, music videos, magazines, computer games, and Internet sites. Then, they evaluated on five-point Likert scales how thin they perceived the female characters featured to be, how much they would like to look like them, and how much they would like to be like them. For each media type, the extent to which participants identified with the associated media models was computed by averaging the extent to which participants' wished to look like them and be like them, giving a composite 'identification' measure.

*Body Image Measures.* Both weight-related body dissatisfaction, as well as girls' broader concerns with general appearance, were examined in the present study. As we intended to use the same measures in the experimental study, it was important that scales were suitable for both trait and state body image measurement.

*Weight-related body dissatisfaction* was measured using a shortened trait version of the Physical Appearance State and Trait Anxiety Scale (PASTAS; Reed, Thompson, Brannick, & Sacco, 1991). This scale measures the negative affect associated with weight-related body parts, on five point Likert scale ranging from *not anxious* to *extremely anxious*. Items were interspersed amongst other aspects of the self that adolescents may experience

anxiety about, e.g. “social relationships” or “school work,” so as to help disguise the true purpose of the study. In the present study, the scale had excellent internal reliability,  $\alpha = .93$ .

*Appearance dissatisfaction* was measured using a modified version of the Body Image State Scale (BISS; Bell et al, 2007), which assesses dissatisfaction not only with one’s body, but also general appearance. This 6-item scale has been shown to have high internal reliability in an adolescent sample (Bell et al, 2007) and also good construct validity (Cash, Fleming, Alindogan, Steadman, & Whitehead, 2002). In the current study, the scale was modified to measure stable, trait aspects of appearance dissatisfaction by changing the instruction to “In general, I feel...”, in line with state/trait modifications of the PASTAS (Reed, Thompson, Brannick, & Sacco, 1991). The scale was shown to have satisfactory internal reliability,  $\alpha = .73$ .

## Results

### *Patterns of Media Use*

In order to address the first research question, adolescent girls’ patterns of media use were examined, showing that some media types were far more popular than others. Reported weekly hours of Internet use was higher than any other media type ( $M = 19.08$ ,  $SD = 9.32$ ), closely followed by TV use ( $M = 18.59$ ,  $SD = 9.05$ ) and music video use ( $M = 11.53$ ,  $SD = 10.84$ ). In comparison, computer games and magazines were engaged with much less frequently ( $M = 6.51$ ,  $SD = 8.30$ , and  $M = 6.39$ ,  $SD = 6.60$ , respectively).

To gain a more detailed, comprehensive understanding of the patterns of media use amongst adolescent girls, weekly hours of media use were broken down by type, and then by genre. Named favourites for each type of media were also classified by genre, and as the characters contained in these favourites had been rated in terms of thinness and identification, a mean thinness and identification score could be calculated for each genre. For this part of the study, we omitted computer games and Internet, because favourites for computer games

were named by less than a quarter of girls, and the majority of girls reported using the Internet for social networking, i.e., as a communication tool, rather than a place where they are exposed to thin ideal media. Findings for TV, music videos, and magazines are given in Table 1.

Table1. *Patterns of TV, Music Video, and Computer Game Media Consumption in Adolescent Girls and Perceptions of, and Identification with, Thin Media Models*

	Weekly hours		Favourites					
	M	SD	N	%	Thinness of characters (1-5)		Identification (1-5)	
					<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<b>TV</b>								
Soap opera + Reality TV	2.04	2.67	192	54	3.13	1.08	2.33	1.08
Comedy	1.55	1.59	70	20	3.07	1.08	2.46	1.09
Music Videos	1.76	2.09	0	-	-	-	-	-
Animation	1.25	1.94	28	8	2.11	0.89	2.07	1.44
Drama series	0.83	1.30	39	11	2.67	1.07	2.39	1.20
Miscellaneous	0.69	1.68	26	7	2.69	1.05	2.23	1.37
<b>Music Videos</b>								
Rock/Indie	1.11	1.86	77	37	2.50	1.23	2.53	1.16
RnB	0.85	1.36	29	7	3.39	1.07	2.88	1.32
Hip-hop	0.59	1.20	15	7	3.79	1.12	2.36	1.12
Pop	0.57	.71	72	34	3.19	1.35	2.53	1.16
Dance	0.53	1.00	4	2	2.86	1.29	2.43	1.45
Miscellaneous	0.12	0.73	14	7	2.86	1.29	2.43	1.45
<b>Magazines</b>								
Celebrity focused	0.77	1.33	108	49	3.54	1.00	2.55	1.04
Girls’ general interest	0.46	0.79	49	22	3.35	1.15	2.53	1.12
Women’s general interest	0.19	0.41	14	7	3.86	1.10	2.32	1.08
Fashion	0.22	0.46	9	4	4.56	0.53	2.72	0.36
TV/Film/Music	0.25	0.63	25	11	3.25	0.85	3.08	1.32
Miscellaneous	0.25	0.77	14	7	1.73	1.01	1.50	0.76

N = 199

Some genres were much more popular amongst adolescent girls than others, both in terms of the weekly hours spent consuming them, and the number of favourites given for each of them. For TV, soap operas/reality TV and comedy series were the most popular; for music videos, rock/indie, pop and RnB were the most popular; and for magazines, celebrity-focused and girl's general interest were the most popular. In terms of thinness ratings, the female characters depicted in magazines tended to be rated as being even thinner than those of the other media types, but identification ratings remained constant across all media types and genres. Overall, identification scores were close to the mid-point of the scale.

The second research question addressed the impact of media consumption compared to identification with media models on girls' appearance and body dissatisfaction. Multiple regression analyses were conducted for TV, music videos, and magazines, with predictors entered in three consecutive steps: overall amount of hours per week spent consuming a type of media, then amount of hours spent on genres within a type of media, and finally media-type specific identification with models. At each step, we assessed whether predictors contributed significantly to explaining variance in body image. Collinearity did not pose any difficulty in these analyses, since both VIF and tolerance statistics for all predictors were close to 1 (*VIF range*= 1.02 to 1.33; *tolerance range* = .69 to 0.99).

Regardless of whether TV, music video, or magazine consumption was examined, the addition of total amount of hours spent on the media type did not contribute significantly to the prediction of girls' appearance or body dissatisfaction in any of the six analyses (all  $\Delta F < 0.39$ ). Similarly, when the genres within a media type were added as predictors in a second step, this, too, proved non-significant in all six analyses carried out (all  $\Delta F < 2.08$ ). In contrast, the addition of girls' identification with media models proved a significant contribution to explaining body image in all analyses. For body dissatisfaction, significant change statistics were found for TV,  $\Delta F(1, 163) = 21.66, p < .001$ , music videos,  $\Delta F(1, 150)$



= 22.82,  $p < .001$ , and magazines,  $\Delta F(1, 102) = 3.98$ ,  $p < .05$ . For appearance dissatisfaction, the change statistics, in the same order, were  $\Delta F(1, 163) = 9.84$ ,  $p < .01$ .  $\Delta F(1, 150) = 7.28$ ,  $p < .01$ , and  $\Delta F(1, 102) = 3.93$ ,  $p < .05$ .

Table 2. Final Regression Models of Adolescent Girls' Body Image on Media Exposure (Hours Per Week) and Media Model Identification in Three Media Types

	Body Dissatisfaction		Appearance Dissatisfaction	
	$\beta$	$t$	$\beta$	$T$
<u>TV</u>				
Overall	-0.05	-0.62	-0.02	-.23
Soaps + Reality TV	-0.14	-1.81	-0.03	-.39
Comedy	0.01	0.10	0.12	1.35
Music videos	-0.06	-0.73	0.14	1.65
Animation	-0.03	-0.44	0.15	1.69
Drama	-0.04	-0.44	-0.04	-.46
Miscellaneous	0.19	2.45	-0.08	-1.05
TV Model Identification	0.35**	4.65**	0.24**	3.14**
<u>Music Videos</u>				
Overall	0.02	0.17	0.12	1.02
Rock/Indie	0.11	1.24	0.02	0.22
RnB	-0.18	-1.82	0.19	1.74
Hip-hop	0.06	0.47	-0.04	-0.27
Pop	0.11	1.24	-0.09	-1.00
Dance	-0.11	-1.04	0.02	0.15
Miscellaneous	-0.12	-1.10	0.08	0.65
Music Video Model Identification	0.36***	4.78***	0.22**	2.70**
<u>Magazines</u>				
Overall	-0.01	-0.05	0.05	0.40
Celebrity Focused	0.14	1.44	0.14	1.43
Girls' General Interest	0.14	1.41	-0.12	-1.16
Women's' General Interest	0.07	0.78	0.07	-0.72
Fashion	0.10	0.10	0.06	0.62
TV/Film/Music	0.10	0.20	-0.08	-0.74
Miscellaneous	0.02	1.01	-0.02	-0.16
Magazine Model Identification	0.28*	2.63*	0.18*	2.09*

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ;  $N = 199$

Given that significant regression models resulted only after the addition of media model identification scores, we show regression coefficients for those models in Table 2, which also keeps the presentation of results economical. Identification with media models emerges as a significant predictor of girls' body dissatisfaction in each media type, as well as a significant predictor of their appearance dissatisfaction. Therefore, the pattern could not be clearer: the amount of time spent watching these types of media, or genres within them, is not related to body and appearance dissatisfaction. In contrast, it is the extent to which girls identify with the female characters depicted within each type of media that is a significant predictor of body and appearance dissatisfaction.

Finally, as Table 3 shows, media-specific identification scores were highly inter-correlated for individual girls, so that girls who identify with thin models in one type of media, also do so for other types of media (all  $r \geq .51$ ;  $p < .001$ ). Therefore, it appears that, with respect to our third research question, we can best think of media model identification (MMI) as an individual difference variable that holds across different types of media. MMI was found to be significantly, but weakly, correlated with overall media use,  $r = .19$ ,  $p < .01$ .

Table 3. *Correlations between TV, Music Video, and Magazine Thin Media Identification Scores in Adolescent Girls*

	TV	Music Video	Magazine	M (1-5)	SD
TV	-	.79***	.60***	2.32	1.00
Music Video	-	-	.51***	2.33	1.11
Magazine	-	-	-	2.47	1.09

\*\*\*  $p < .001$ ;  $N = 199$

## Discussion

The present research provides up-to-date and comprehensive information regarding British adolescent girls' media use patterns, including their perceptions of the characters' thinness and aspirations to be like them. Girls engaged with magazines less than any other media type, and the number of hours spent engaging with this media form was much lower than that recorded in previous studies with similar aged samples (e.g. Harrison, 2001), perhaps reflecting a decline in their popularity over recent years (Independent, 2006). Computer games were the second least engaged with media type, despite reports of their growing availability and popularity (Gentile, 2009; Ziegler, 2007). TV use and music video use remained high, consistent with previous research that has shown their popularity amongst adolescents (Borzekowski et al., 2000; van den Bulck, 2000). Interestingly, the internet triumphed as the most engaged with media type. However, as it was largely used for communication purposes, such as keeping in touch with friends via social networking sites, it does not constitute a form of thin ideal media exposure *per se* for girls.

It is likely that these findings regarding media use patterns are highly gendered, as research involving adolescent boys, from the USA, has reported much higher computer game use (Gentile, 2009). However, with computer games becoming increasingly feminised, and increasingly targeted at young women (Kafai, Heeter, & Denner, 2008), it is likely that adolescent girls' computer game use will increase dramatically in the near future. Furthermore, if adolescent boys' computer game use is as high as reports suggest, it is likely that TV, music videos and internet use, which the present study has shown to be high in girls, will be lower amongst boys. The findings for the study are also specific to predominately White adolescent girls living within the UK, and therefore may not be generalisable.

Like other surveys of media consumption, the present study relies on self-report, which means that the reported estimates need to be treated with some caution. However, the

breakdown into hours spent on a typical weekday and a typical weekend day should have helped to produce better accuracy than asking for weekly estimates.

It is clear from the findings of the present study that amount of media exposure, either overall or by genre, does not directly predict body and appearance dissatisfaction. Instead, consistent with Dittmar's impact model of 'perfect body' media on body image (2008), it appears that it is media model identification, rather than exposure *per se*, that is related to negative body image. This finding is also in line with longitudinal evidence, which has shown that amount of pre-adolescent English girls' media exposure predicts thin ideal internalisation, but not body dissatisfaction, one year later (Sands & Wardle, 2003). This suggests that the relationship between media exposure, identification with ultra-thin media ideals, and negative body image is developmental, with high media exposure increasing the likelihood that young girls will identify with thin media models over time, and this, in turn, increasing the likelihood that they will develop body dissatisfaction. However, only longitudinal research is capable of testing this developmental hypothesis.

The patterns of media consumption among adolescent girls demonstrated in this study have implications for experimental research, the majority of which is conducted by exposing adolescent girls to still images of the thin ideal taken from magazines (Groesz et al., 2002; Grabe et al., 2008). Due to the low levels of magazine consumption reported by adolescent girls in this study, it is likely that these images are not representative of the kind that they are most frequently exposed to. Despite their popularity, only one experiment has exposed adolescent girls to TV commercials (Hargreaves & Tiggemann, 2002) and only one has exposed girls to music videos (Bell et al., 2007). Thus, there is a strong need for more experimental research on different media types.

## Study 2

The causal impact of thin-ideal media on adolescent girls' body dissatisfaction has been tested experimentally by comparing the effects of short-term exposure to thin-ideal images on state body dissatisfaction to that of neutral images or images of average-sized models. Such experiments have consistently shown that thin ideal media have a negative impact on girls' body dissatisfaction in comparison to a control group (Grabe et al, 2008; Groesz et al., 2002; Want, 2009).

The overwhelming majority of these exposure experiments have used still images taken from magazines as the thin ideal media stimulus (Grabe et al, 2008; Groesz et al., 2002; Want, 2009). The lack of experimental research involving more popular and naturalistic media formats as the exposure stimulus has also meant that no comparison of the magnitude of the immediate effects of different media types on body dissatisfaction can be made.

Different media types and genres vary in terms of how they present the thin ideal, therefore it is possible that these differences may enhance the negative effects of the thin ideal on body dissatisfaction. In particular, newer media formats may be seen as more interactive than older formats, e.g. music videos may be seen as more interactive since they feature highly emotive song content (Roberts, Christensen, Singer, & Singer, 2001). This stronger identification comparative to older media formats and the still images of the thin ideal typically used in empirical research may, in turn, cause them to have a greater negative impact on body image. Alternatively, some media present a more sexualised and objectified bodily ideal than others, encouraging the viewer to reflect on their body in a more negative way (Frederickson & Roberts, 1997). Music videos in particular are believed to be highly sexualised (Grabe & Hyde, 2009).

However, although there is some correlational evidence to suggest that long-term exposure to some media types may affect long-term body dissatisfaction more than others

(Borzekowski et al., 2000; Murnen et al, 2007; Tiggeman & Pickering, 1996; Van den Bulck, 2000), the correlational findings in Study 1 showed a different picture. Here, it was identification with media models, not amount or type of media exposure, which correlated with body and appearance dissatisfaction. Previous experimental research, involving Australian adolescent girls has shown that individuals who strongly identify with media models, and aspire to look like them, are more affected in terms of body dissatisfaction by exposure to images of the thin ideal, than those who do not (Hargreaves & Tiggeman, 2002; Durkin, Paxton & Sorbello, 2007)

The present study aims to assess experimentally whether the presentation of the thin ideal in different media formats makes girls more vulnerable to the negative impact of the thin ideal, by comparing the effects of exposure to thin-ideal images within two different media formats, i.e. as moving sexualised female models accompanied by popular music in music videos, and as still images appearing within the context of a magazine article, to that of thin-ideal images taken out of context, i.e., as they have typically appeared in psychological research. It furthermore aims to explore the role of media model identification as a potential moderator of effects. Based on previous research, three hypotheses were formulated, as outlined below:

H1. It is predicted that adolescent girls exposed to images of the thin ideal will report increased body and appearance dissatisfaction post-exposure in comparison to a control.

H2. Among the three experimental conditions, it is predicted that exposure to thin models presented in a media type typically consumed by girls (music videos and magazines) may cause more body and appearance dissatisfaction than exposure to still images. Music videos are predicted to cause more post-exposure body and appearance dissatisfaction than magazine articles.

H3. It is expected that the impacts of thin ideal exposure on body and appearance dissatisfaction will be moderated by levels of identification with media models, such that girls who identify more strongly with thin media models show more pronounced increases in dissatisfaction with their body image.

The hypotheses were tested using hierarchical regression analysis. Exposure conditions were examined first as three contrasts: the first comparing the experimental conditions with the control (H1), the second comparing still images with the magazine and video contexts, and the third contrasting the two contexts (H2). Subsequently, interactions between media model identification and these exposure contrasts were examined to test moderation (H3).

## Method

### *Participants*

Out of the 199 girls who completed the media consumption survey, 144 participated in the exposure experiment. There were 37 girls in the music video condition, 36 in the magazine condition, 35 in the still thin images condition, and 35 in the control condition. The demographic details of the sample, including age, ethnicity and BMI are given in Study 1.

To ensure that participant characteristics did not differ systematically across the four exposure conditions, one-way ANOVAs were performed on all relevant constructs measured in the correlational study, as well as key demographic information, such as age and BMI. No significant differences emerged in terms of trait body image (trait body dissatisfaction,  $F(3, 139) = 0.08, p < .97$ ; trait appearance dissatisfaction,  $F(3, 139) = 1.79, p < .15$ ), or demographic information (age,  $F(3, 126) = 2.25, p < .09$ ; BMI,  $F(3, 76) = 0.73, p < .54$ ).

### *Exposure stimuli and presentation*

In the music video condition, the stimuli comprised of two music videos selected because they were the most recent produced by two very popular all-girl bands (the Saturdays and the Pussycat Dolls) who epitomise the thin ideal. The videos were recorded onto DVD, and played to the group on a large projection screen. The exposure lasted eight minutes.

To ensure that the thin ideal images remained as constant as possible across all three thin-ideal experimental conditions, five still images were created from each of the two music videos by capturing screenshots through image capture software. The criterion for deciding which five images should be taken from the videos was that they should contain images of the singers as thin ideal models, and be a good reflection of the content of the music video. For example, one video featured a twenty second sequence of the girl's legs, and therefore one of the still images selected was from this sequence. For the still thin-ideal image condition, these 10 screenshots were transferred into a timed PowerPoint slide show, wherein each image appeared for thirty seconds, followed by a black screen for twenty seconds. Again, these images were played to the group on a large projection screen, and the exposure lasted eight minutes.

For the magazine article condition, two recent articles were selected from UK teenage magazines that featured the girl bands in the music videos. However, neither of the articles had a layout suitable for combining with images, thus two other articles were used from UK teenage magazines that did have a suitable layout. These articles were scanned into digital imaging software (Adobe Photoshop). Text from these articles was then replaced with text from the two articles about the girl bands, and images were replaced with the screenshots from the music videos. The articles were printed in full colour onto A4 magazine quality paper, and introduced to participants as "proof articles" from a new teenage magazine named "Sweet." The booklets containing the articles were distributed individually to girls, and they were given eight minutes to read them.



The control condition consisted of 10 images of animals, which were not in any way suggestive of body shape, presented on a timed slide-show, with the same timings as the thin ideal image stimulus. The images were selected from a “cute animal” google image search, and again the exposure lasted eight minutes. Cute animal images were chosen as they were believed to be equally interesting and enjoyable for adolescent girls as the experimental images of girl bands would be.

#### *Post-exposure measures*

*Body and Appearance Dissatisfaction.* Immediately post-exposure, participants completed a questionnaire containing state versions of the body (PASTAS) and appearance dissatisfaction (BISS) measures, which had been used as trait measures in the correlational study. Here, the instructions were changed to ask participants how they felt “Right now ... at this very moment” in order to have state measures of momentary body image caused by the brief exposure to the thin ideal media. Both the BISS and the PASTAS have been widely used as state measures in previous exposure experiments, and have repeatedly been shown to be highly sensitive. Both scales showed good internal reliability in this part of the study, too, with  $\alpha = .91$ , and  $\alpha = .78$ , respectively.

*Media Model Identification.* Participants’ habitual level of media model identification was examined as a potential moderator of the impact of thin ideal exposure on body and appearance dissatisfaction. It was measured using MMI scores from the correlational study.

#### *Procedure & Ethics*

Testing took place during the school registration period, at the beginning of the school day. Participants were tested in groups of approximately 25, whilst in their allotted mixed academic ability ‘form’ classes. In the music video, thin image, and control condition, participants were presented with stimuli on a large projector screen. In the magazine condition, participants were given an individual paper magazine to read. Once the exposure

time was over, participants completed the questionnaire containing the post-exposure measures.

## Results

Two hierarchical regression analyses were performed to investigate the impacts of the stimuli on post-exposure body and appearance dissatisfaction separately, and to assess the role of media model identification as a moderator. For each of these regressions, predictors were entered in three steps. In the first model, trait body or appearance satisfaction was entered as a control variable. The second model contained exposure effects, which were dummy-coded as three contrasts, assessing, respectively, the differences between all experimental conditions vs. the control ( $H_1$ ), still images vs. contextualised images, and magazines vs. music videos ( $H_2$ ). The third model was intended to assess moderator effects, and therefore included media model identification (mean-centred), and the interaction between media model identification and each of the three contrasts ( $H_3$ ). The results for all regressions are shown in Table 4. Again, collinearity did not pose any difficulty in these analyses, since both VIF and tolerance statistics for all predictors were close to 1 (*VIF range* = 1.00 to 1.08; *tolerance range* = 0.93 to 0.99).

Table 4. *Regression Models of Adolescent Girls' Post-Exposure Body Image on Media Exposure Type and Media Model Identification*

	Body Dissatisfaction			Appearance Dissatisfaction		
	<i>R</i> <sup>2</sup> change	<i>B</i>	<i>t</i>	<i>R</i> <sup>2</sup> change	<i>B</i>	<i>T</i>
Step one	0.67***			0.51***		
Trait dissatisfaction		0.82***	16.57***		0.72***	11.80***
Step two	0.01			0.03*		
Trait dissatisfaction		0.81***	16.64***		0.72***	12.03***
C1: Experimental vs. control		0.11*	2.22*		-0.01	-0.21
C2: Format vs. no format		-0.04	-0.89		0.17**	2.87**
C3: Music video vs. magazines		-0.10	-0.21		0.06	1.01

Step three	0.05**		0.06**	
Trait dissatisfaction	0.84***	17.71***	0.76***	13.15***
C1: Experimental vs. control	0.11*	2.40*	-0.01	-0.20
C2: Format vs. no format	-0.05	-1.00	0.11	2.22
C3: Music videos vs. magazines	0.00	0.03	0.05	0.93
MMI	0.15**	3.05**	-0.18	-3.12**
C1 * MMI	0.13**	2.74**	-0.14**	-2.51*
C2 * MMI	-0.05	-0.98	0.06	1.10
C3 * MMI	0.02	0.49	-0.02	-0.35

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\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ;  $N = 138$

*Body Dissatisfaction.* As expected, trait weight-related body dissatisfaction was found to be a significant predictor of post-exposure body dissatisfaction,  $\beta = .82$ ,  $p < .001$ . However, the addition of the exposure contrasts did not prove significant, failing to show an overall impact of exposure to thin-ideal images on girls' body dissatisfaction nor any media format effects, contrary to the first and second hypotheses. Step three was significant, with MMI significantly predicting post-exposure body dissatisfaction,  $\beta = .15$ ,  $p < .13$ . Importantly, in support of hypothesis three, a significant interaction between MMI and the contrast between experimental groups vs. the control group was found,  $\beta = .13$ ,  $p < .01$ . Thus girls' body image was affected by the exposure to thin models, but depending on the extent to which they identify with media models.

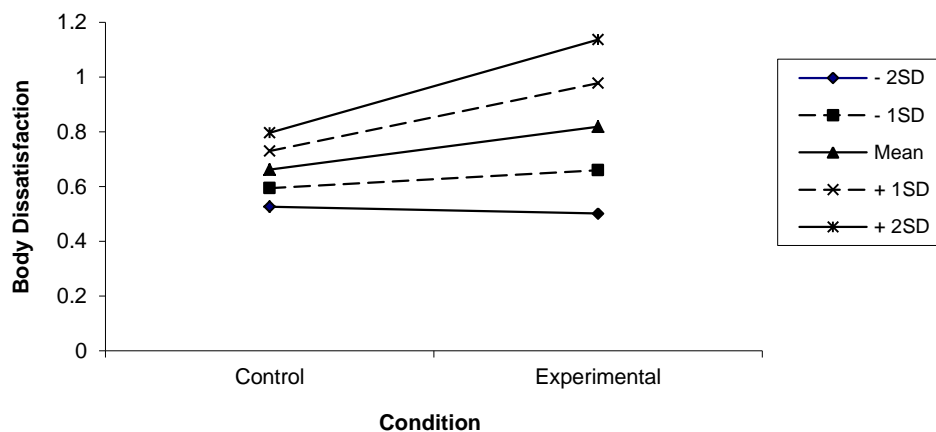


Figure 1. *Slopes Analysis for the Interaction between Media Model Identification and Exposure Condition in terms of Body Dissatisfaction*

Slopes analysis was used to determine the nature of this interaction, by examining the differences between post exposure body dissatisfaction in the experimental conditions compared to the control, for those with MMI scores one and two standard deviations above and below the mean. Effect sizes were calculated according to Cohen (1988). As Figure 1 shows, girls with low levels of media model identification were relatively unaffected by exposure to the thin ideal, in comparison to the control. Furthermore, the exposure effect size for girls with MMI scores one standard deviation below the mean and two standard deviations below the mean, were very small,  $d = 0.01$ ;  $d = 0.10$ . However, girls with mean or higher levels of media model identification who were exposed to the thin ideal, reported much higher body dissatisfaction post-exposure than those in the control. The exposure effect size for these girls increased as their MMI score increased. A small effect was found for girls with mean MMI scores,  $d = 0.22$ , whereas a small to moderate effect was found for girls with MMI scores one standard deviation above the mean,  $d = 0.34$ , and a moderate-large effect at two standard deviations above the mean,  $d = 0.44$ .

*Appearance Dissatisfaction.* Similarly, trait appearance dissatisfaction was found to be a significant predictor of post-exposure appearance dissatisfaction. Furthermore, step two was significant, and examination of beta-weights showed that the contrast between still images in context and still images out of context was significant,  $\beta = -.17, p < .01$ , but this finding no longer holds once media model identification is taken into account in the third step. Therefore, hypothesis one and two were not supported. As for body dissatisfaction, step three was significant, and MMI itself was found to significantly predict appearance dissatisfaction,  $\beta = .14, p < .01$ . As with body dissatisfaction, the interaction between MMI and the contrast between experimental groups and the control group was also found to be significant,  $\beta = .22, p < .05$ , supporting hypothesis three.

Slopes analysis was used to determine the nature of this effect and Cohen's  $d$  was calculated to determine its magnitude. As Figure 2 shows, a very similar pattern of findings emerged. The impact of the experimental exposure on appearance dissatisfaction was minimal for those low in media model identification, with effect sizes close to zero for girls with MMI scores one standard deviation below the mean,  $d = 0.02$ , or two standard deviations below the mean,  $d = 0.06$ . However, as the level of media model identification increased, so, too, did the impact of experimental exposure, in comparison to the control. Exposure effect sizes progressively increased, whereby girls with mean-level MMI scores a very small effect of exposure,  $d = 0.14$ , girls with MMI scores that fell one standard deviation above the mean demonstrated a small effect,  $d = 0.22$ , and girls with MMI scores that fell two standard deviations above the mean demonstrated a small to moderate effect,  $d = 0.30$ .

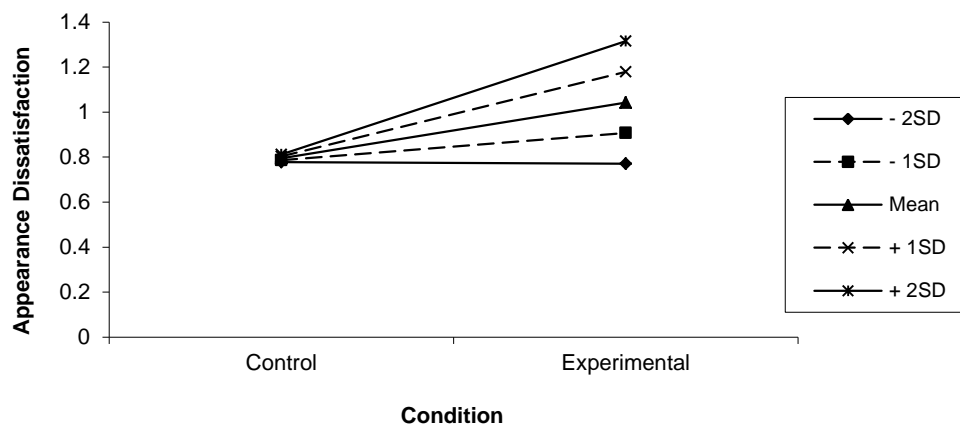


Figure 2. *Slopes Analysis of the Interaction between Media Model Identification and Exposure Condition in Terms of Appearance Dissatisfaction*

## Discussion

Contrary to the first hypothesis, the present study failed to find any overall effects of exposure to thin ideal images on body and appearance dissatisfaction, in comparison to the control. Instead, in line with hypothesis three, it was found that girls with average or strong levels of media model identification were affected by thin ideal exposure, experiencing significantly higher body and appearance dissatisfaction post-exposure in comparison to the control group. Therefore, only girls who did not identify with media models were unaffected by thin ideal media exposure.

Furthermore, the present study aimed to assess whether some media formats have a greater immediate effect on body and appearance dissatisfaction than others. However, we found little empirical support for the hypothesised differences, with findings currently suggesting instead that it is the exposure to the thin ideal, which has a similar, negative impact on girls.

The exposure experiment further highlights the important role that media model identification plays in the media exposure and body image relationship, demonstrating that

the more girls identified with media models, the more they experienced acute negative body image following exposure to the thin ideal, supporting research involving Australian adolescent girls (Hargreaves & Tiggeman, 2002; Durkin, Paxton & Sorbello, 2007). This is an important finding, as it indicates that the role played by media model identification is far more important than the format in which adolescent girls encounter the thin ideal. Indeed, the findings indicate that media type seems to matter little in terms of thin ideal exposure causing body and appearance dissatisfaction. This highlights the need for longitudinal research amongst adolescent girls studying the origins of media model identification.

### **General Discussion and Conclusion**

The present research aimed to investigate the influence of the different types of thin-ideal media exposure on English adolescent girls' long-term and short-term body image. Three main and innovative findings emerged. First, the present study highlights the important role that media model identification plays in the media and body image relationship. In particular, the correlational study shows that identification with media models, but neither amount nor type of media consumption, predicts long term body and appearance dissatisfaction. Similarly, the exposure study shows that it is the mere presence of the body perfect in the media, and not the way in which it is presented, that leads to momentary increases in body and appearance dissatisfaction following exposure, but only for girls who identify with media models. Both studies therefore complement each other to show that it is not the *type* of media exposure that is important in understanding girls' vulnerability to negative body image, but rather the extent of girls' identification with media models. Future research should focus longitudinally on the origins of media model identification in girls, to establish how media consumption, media model identification, and body dissatisfaction emerge developmentally.

Second, the measure of media model identification utilised within the study is new, and offers some benefits compared to previous measures of thin-ideal internalisation. Previous measures, particularly the widely used Sociocultural Attitudes towards Appearance Questionnaire (SATAQ, Thompson et al, 2004), have tended to conflate several factors: social comparison with media models, internalisation of thinness as a personal goal, and aspirations to look like media models. In contrast, the measure developed in the present research provides a more finely-grained and specific measure of identification with media models in respondents' most favourite media. This measure should be of interest to researchers in media and body image literature, and such research would benefit from an examination of the association of this measure with the SATAQ, and its distinctiveness.

Finally, the findings from the present study have important implications in terms of intervention. In the past, psychological research has largely focused on how exposure to the thin ideal in fashion magazines and advertisements causes body dissatisfaction, and media literacy programmes have concentrated on these types of media (Richardson, Paxton & Thompson, 2009; Yager & O'Dea, 2008). However, the present study demonstrates that exposure to the thin ideal *in any context* is damaging to adolescent girls' body dissatisfaction. Thus, although it may be beneficial if some media types have sanctions in place to try to minimise the appearance of the thin ideal within them (such as the banning of underweight catwalk models in fashion houses in Milan and Madrid in 2006), other widely used areas of the mass media, such as the Internet, remain largely unregulated. Furthermore, media literacy interventions need to address new forms of media, and girls may engage with them more easily if they address exactly the types of media in which they typically encounter ultra-thin models, such as music videos. A universal approach to reducing the impact of the thin ideal in all forms of mass media is therefore warranted.



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## Appendix

The inter-correlations, means and standard deviations for each of the trait body-image related variables, demographic variables and media consumption variables measured in the present sample are displayed in Table 5.

Table 5. Means, Standard Deviations and Inter-Correlations for Trait Body Dissatisfaction, Appearance Dissatisfaction, Media Model Identification, Age, BMI and Media Consumption

	1	2	3	4	5	6	7	8	9	10	<i>M</i>	<i>SD</i>
<b>1 Body dissatisfaction</b>											2.73	1.16
<b>2 Appearance dissatisfaction</b>	.56*										40.01	13.60
<b>3 Media model identification</b>	.32**	.19**									2.32	0.93
<b>4 BMI</b>	.21*	.09	.17								19.24	3.92
<b>5 Age</b>	-.12	.06	-.09	-.11							14.59	0.65
<b>6 Overall media use</b>	.11	.04	.18**	.11	-.09						57.41	27.27
<b>7 Internet use</b>	.13	.07	-.08	.05	.02	.61**					18.59	9.32
<b>8 TV use</b>	-.02	-.06	.18*	.16	.05	.52**	.04				19.08	9.05
<b>9 Magazine use</b>	.05	.01	.25**	.12	-.19*	.49**	.04	.17*			6.39	6.60
<b>10 Music video use</b>	.05	-.12	.16*	-.14	-.20**	.82**	.45**	.28**	.30**		11.53	10.84
<b>11 Computer game use</b>	.11	-.04	.19*	-.10	-.12	.63**	.26**	.07	.35**	.43**	6.51	8.30

Furthermore, the adjusted means for post-exposure state body dissatisfaction, appearance dissatisfaction, weight-related and appearance-related concerns (controlling for the relevant trait measure) are displayed in Table 6 for each exposure condition. Weight- and appearance- related concerns were measured using the self discrepancy index (SDI; Dittmar et al., 1996; Dittmar et al., 2009) and were not reported in the published version of this chapter due to the poor completion of this measure (just 69% of the sample). Using this measure, a slight media type effect was found, as girls in the music video condition reported higher weight- and appearance- related concerns, than those in the magazine or still images condition. However due to the poor completion of the measure, a test of significance was not possible.

Table 6. *Adjusted Means (and Standard Errors) for Body Dissatisfaction, Appearance Dissatisfaction, Weight-Related Concerns and Appearance-Related Concerns across the Four Exposure Conditions.*

	Music video	Magazine	Still thin images	Control
Body dissatisfaction	2.83 (0.10)	2.84 (0.10)	2.96 (0.10)	2.57 (0.10)
Appearance dissatisfaction	41.43 (1.54)	39.36 (1.54)	34.80 (1.56)	38.52 (1.60)
Weight-related concerns	11.19 (1.49)	5.03 (1.92)	4.91 (1.74)	5.89 (1.58)
Appearance-related concerns	16.22 (2.84)	10.04 (2.16)	10.05 (2.32)	7.76 (2.51)



## Chapter Five

### **Body Perfect Internalisation Scale (BPIS): A New Measure of Socio-Cultural Body and Beauty Ideal Internalisation for Adolescent Girls**

#### **Abstract**

The extent to which individuals have internalized socio-cultural norms of physical attractiveness and pursue them as a personal goal has been identified as an important precursor for negative body image and disordered eating in girls and women (Levine & Murnen, 2009; Thompson & Stice, 2001). The present study introduces and validates a new scale for measuring the internalisation of socio-cultural body and beauty ideals in adolescent girls, the *Body Perfect Internalisation Scale (BPIS)*. 373 adolescent girls, aged 13-15, completed potential BPIS items and measures of related constructs. The final 18-item scale was developed through both exploratory and confirmatory factor analyses, and validated against widely used measures of body image related constructs. The scale consists of three 6-item sub-scales; media model identification (identification), importance of body perfect to the self (importance) and personal investment in the body perfect (investment). The scale had high internal reliability and convergent validity, and represents a pure and comprehensive measure of body perfect internalisation in adolescent girls.

## Introduction

The extent to which individuals have internalised socio-cultural ideals regarding physical attractiveness as a personal goal and strive towards attaining them has been identified as central vulnerability factor for body dissatisfaction (Cafri, Yamamiya, Brannick & Thompson, 2005; Dittmar, 2005; Levine & Murnen, 2009; Thompson & Stice, 2001). In light of the highly detrimental impact body dissatisfaction has been shown to have upon individuals' physical and mental health, understanding such vulnerability factors has never been more important (Cash & Pruzinsky, 2002; Grogan, 2008). However, notwithstanding the importance of 'thin ideal internalisation' within the body image research literature, the instruments typically utilised to measure the internalisation of socio-cultural body and beauty ideals provide a narrow measurement of the construct. The present research aims to develop and validate a new, more comprehensive measure of the internalisation of socio-cultural body and beauty ideals, designed specifically for use with adolescent girls, a population identified as particularly vulnerable to body dissatisfaction (Groesz, Levine & Murnen, 2002; Keel, Eddy, Thomas & Schwartz, 2010).

Body dissatisfaction, the experience of negative thoughts and feelings regarding one's body (Dittmar, 2005), is believed to have reached normative levels amongst adolescent girls in western society (Eisenberg, Neumark-Sztainer, & Paxton, 2006). It has been identified as the single biggest predictor in the onset of clinical eating disorders, such as anorexia and bulimia (Keery, van den Berg, & Thompson, 2004; Levine & Murnen, 2009), the majority of which develop during adolescence (Keel et al., 2010), and has furthermore been linked to a number of negative health outcomes, including low self-esteem, depressed mood, smoking, drug misuse, and risky sexual behaviour (van den Berg, Mond, Eisenberg, Ackard & Neumark-Sztainer, 2010; Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006).

According to socio-cultural theory, body dissatisfaction emerges as a result of perceived environmental pressure, from parents, peers, and - most potently - the mass media, to conform to a culturally-defined body and beauty ideal (Keery et al., 2004; Shroff & Thompson, 2006). Traditionally for females, this ideal has been impossibly thin (Fouts & Burgraff, 2000; Luff & Gray, 2009), hence the term '*thin ideal*'. However the current ideal is not only thin, but it is also unrealistically toned and curvaceous, accompanied by perfect skin, teeth and hair (Ahern, Bennett, Kelly & Hetherington, 2011; Grabe & Hyde, 2009; Want, 2009), and so the term 'body perfect' may be a more apt description of current socio-cultural physical attractiveness ideals. The unrealistic nature of the 'body perfect' ideal makes it impossible for the majority of girls to attain, leading them to feel dissatisfied with their own bodies (Dittmar, 2008).

Previous research, focussing on particular dimensions of socio-cultural appearance ideals (as discussed below), has demonstrated consistently that the extent to which adolescent girls have internalised the body perfect as a personal goal, and strive towards attaining it, mediates the influence of environmental pressures on body dissatisfaction (Keery et al., 2004; Shroff & Thompson, 2006), and as such, body perfect internalisation has been identified as an important vulnerability factor in the onset of body image disturbance (Cafri, et al., 2005; Levine & Murnen, 2009; Thompson & Stice, 2001). Longitudinal research has shown that the extent to which adolescent girls have internalised the body perfect is a potent predictor of negative body image over time (Clark & Tiggemann, 2008; Stice & Whitenton, 2002), and furthermore, experimental research has shown that girls with high levels of body perfect internalisation are more likely to experience body dissatisfaction following acute exposure to body perfect imagery (Bell & Dittmar, 2011; Durkin, Paxton & Sorbello, 2007; Hargreaves & Tiggemann, 2002).

Explanations of why girls internalise the body perfect are rooted in social reinforcement theory, which posits that internalisation occurs when attitudes and goals are approved by significant others (Kandel, 1980). Socio-cultural agents, including parents, peers and the mass media positively reinforce the body perfect through comments and actions that support and promote it, leading girls to internalize it (Shroff & Thompson, 2006). The mass media may be a particularly potent source of socio-cultural body and beauty ideal reinforcement, since not only does it uniformly contain models that conform to the ideal, but it furthermore idealizes these models, perpetuating the myth that acquisition of the body perfect will lead to highly desirable outcomes, such as happiness, popularity and success (Dittmar, 2008; Englis, Solomon & Ashmore, 1994). Therefore girls do not simply internalize the body perfect as a personal goal, but also they internalize the beliefs associated with its acquisition (Hohlstein, Smith & Atlas, 1998).

In this sense, body perfect internalisation may be seen as analogous to the internalisation of other prominent consumer culture values, such as materialism. Material goods, like the body perfect, are also idealised throughout western culture – particularly the mass media – where they are presented as the means to personal, social and professional success (Dittmar, 2008). Those who have internalised the material ideal, like those who have internalised the body perfect, do not just internalise the desire for material goods, but they also internalise unrealistic beliefs associated with their acquisition (Richins 2004).

An important theoretical distinction has been made within the research literature between internalisation of socio-cultural body and beauty ideals, and the awareness of them. Whereas awareness refers to the passive recognition of the body perfect as the physical attractiveness ideal within contemporary society, internalization refers to the active endorsement of the body perfect and the beliefs associated with its acquisition, to the extent that the body perfect becomes a psychologically salient goal for the adolescent, influencing

attitudes and behaviour (Cafri et al., 2005; Cusumano & Thompson, 1997; Heinberg, Thompson, & Stormer, 1995; Thompson, van den Berg, Roehrig, Guarda & Heinberg, 2004). This distinction between awareness and internalisation is an important feature of the most influential and widely used measure of socio-cultural body and beauty ideal internalization, the Socio-Cultural Attitudes Towards Appearance Questionnaire (SATAQ; Heinberg et al., 1995, Thompson et al., 2004). Items measuring awareness and internalisation are separated into two distinct subscales, with awareness items measuring the more passive recognition of socio-cultural body and beauty ideals, e.g. “Famous people are an important source of information about fashion and being attractive”, and internalisation items measuring the active desire to look like those who possess the body perfect, e.g. “I would like my body to look like the people who are in movies”. Research has demonstrated that individuals’ scores on the internalisation subscale account for up to six times more variance in body dissatisfaction and disordered eating behaviour, than awareness scores (Heinberg et al., 1995; Cafri et al., 2004).

Since it was the first measure of socio-cultural appearance ideals that explicitly differentiated internalisation from awareness, the SATAQ has been highly influential and, as a result, is widely used by researchers. However, by measuring internalization in terms of individuals’ aspirations towards looking like those who epitomise physical attractiveness ideals in the media (identification), the SATAQ offers a narrow measurement of the construct. In particular, it offers no indication of the psychological importance of the goal of body perfect acquisition to the individual (importance), nor the extent to which the individual is personally invested in the pursuit of it (investment), which may both be regarded as key indicators of internalization, in light of the current conceptualisation of body perfect internalization as the *active endorsement of the body perfect (and the beliefs associated with its acquisition) to the extent that the body perfect becomes a psychologically salient goal,*

*influencing attitudes and behaviour*. We therefore propose that a comprehensive measurement of body perfect internalisation needs dimensions, in addition to identification with media models, which focus explicitly on the importance of the goal of body perfect internalisation to the self and the personal investment in body perfect attainment. The three dimensions – identification, importance, and investment – are discussed in turn.

### *Identification*

Identifying with and aspiring to look like body perfect media models is a very important dimension of body perfect internalisation, since it indicates a girl's desire to achieve the body perfect, as it is represented in the socio-cultural environment. Measurement of identification with media models is the defining feature of the Internalisation subscale of the latest version of the Socio-Cultural Attitudes Towards Appearance Questionnaire (SATAQ-I3; Thompson et al., 2004). In the SATAQ-I3, the majority of questions are aimed to measure girls' identification with, and aspirations to look like, the models in various different types of media. However, it can be argued that the SATAQ-I3 does not represent a conceptually 'pure' measure of identification with media models, since several of the items which comprise the scale, such as "I compare my body to the bodies of TV and movie stars" or "I compare my appearance to the appearance of people in magazines", directly measure the tendency to make social comparisons between one's own body and the bodies of media models. These items are therefore likely to measure body comparison tendency, and indeed, factor analysis has demonstrated that the body comparison items contained within the SATAQ-I3 shared higher factor loadings with the items contained within a popular measure of body comparison tendency, the Physical Appearance Comparison Scale (PACS; Thompson, Heinberg, & Tantleff, 1991), than with the rest of the SATAQ-I3 items (Durkin et al., 2007).

Thus, although identification with media models and body comparison tendency are similar and correlated constructs (Keery et al., 2004), the two are nevertheless psychologically distinct entities and measures of body perfect internalisation should not be conflated with measures of body comparison tendency. Dittmar and Howard (2004) further emphasise the importance of making a clear distinction between the two, by demonstrating that internalisation of socio-cultural body ideals is much more closely related with negative body image than social comparison tendency. It therefore is likely that measures of body perfect internalisation that conflate the construct with body comparison tendency may underestimate its role as a vulnerability factor for body dissatisfaction.

### *Importance*

Research has consistently demonstrated that goals and values that are regarded as important by individuals are more likely to influence their cognitions and behaviours (Verplanken & Holland, 2002), and so assessing girls' perceived importance of body perfect acquisition may enhance the predictive utility of our new body perfect internalisation measure. Although assessment of the psychological importance of the body perfect to the self has been absent from existing measures of socio-cultural body and beauty ideal internalisation, there are several measures that have assessed the psychological importance of broader, more general appearance-related goals. Typically, these measures have aimed to assess the importance of appearance-related goals in two key ways.

First, importance has been measured in terms of the centrality of appearance-related goals to individuals' cognitive schemata, including their self-concept and identity. For example, the Appearance Schemas Inventory (ASI; Cash & Labarge, 1996; Cash, Melnyk, & Hrabosky, 2004), includes items such as "What I look like is an important part of who I am" which aim to assess how central appearance-related goals are to the self. Second, the importance of appearance-related goals have been measured by assessing the extent to which

individuals perceive their self-worth, happiness and personal fulfilment as being dependent on their appearance. For example, the Appearance dimension of the Contingencies of Self-Worth Scale (CSW-A; Crocker, Luhtanen, Cooper, & Bouvrette, 2003) includes items such as “When I think I look attractive, I feel good about myself.”

However, these measures are concerned with the importance of appearance in general terms, rather than with the importance of a particular appearance ideal. Yet, it is highly likely that girls’ perceptions of the psychological importance of appearance is related to the idealised socio-cultural representation of the body perfect, and the cultural beliefs associated with its acquisition. As outlined above, the body perfect is idealised throughout western society, particularly within the mass media, wherein it is depicted as the means to a happier, more personally fulfilled self (Englis et al., 1994; Dittmar, 2005). Through social learning mechanisms, girls come to internalise the beliefs attached to body perfect internalisation, and so endorse the myth that happiness and self-worth are dependent on body perfect acquisition (Hohlstein et al., 1998), leading them to perceive the goal as being increasingly important to them.

Existing measures of the extent to which individuals endorse one prominent consumer culture ideal, the pursuit of money and material goods, emphasise associated beliefs that this ideal will lead to happiness and personal fulfilment, thus offering a good point of departure for conceptualising and formulating items relating to the body perfect ideal. A prominent example is the Material Values Scale (MVS; Richins & Dawson, 1992; Richins, 2004), which includes items such “I’d be happier if I could afford to buy more things.”

### *Investment and popularity*

Measurement of adolescent girls’ investment in body perfect acquisition, in terms of energy, time and money, provides an important indicator of how strongly they have internalised the body perfect as a personal goal. To date, assessment of investment has been



absent from measures of body perfect internalisation, although, investment in broader, more general appearance-related goals has previously been measured in scales that seek to assess the cognitive salience of such goals. For example, the ASI aims to measure how personally invested individuals are in their appearance, through including items such as “I should do whatever I can to look my best”(Cash & Labarge, 1996). Yet, spending time and effort on looking good may not only be an individual activity.

Peer relationships and the desire to be popular are especially important among adolescent girls, so that investment may become a strongly peer-related concern. Empirical research has indicated that within adolescent girls peer groups, appearance-related discourses dominate conversation, and shared beauty rituals are popular activities (McCabe, Ricciardelli, & Ridge, 2006; McRobbie, 1990). Therefore investment in appearance and the body perfect may play a prominent role in friendship formation and peer relationships, and so may be seen as a route to popularity by many adolescent girls. Indeed, existing research has shown that many adolescent girls’ believe that thinness, a central component of the socio-cultural body and beauty ideal, is a central route to popularity amongst peers (Oliver & Thelen, 1996). The notion that the body perfect may lead to popularity is further reinforced by socio-cultural representations, particularly within the media, wherein body perfect models are depicted as being popular, rich and successful, leading girls to believe that they too, can be popular, rich and successful, if only they had the perfect body (Dittmar, 2008). Thus, investment and beliefs about popularity may be closely linked constructs in adolescent girls.

#### *Aims and hypotheses*

The aim of the present study was to develop and validate a new measure of socio-cultural body and beauty internalisation: the Body Perfect Internalisation Scale (BPIS). As outlined, the scale was expected to comprise three correlated sub-scales that could be combined to create a composite and holistic measure of body perfect internalisation. The first

subscale is expected to measure identification with media models, a construct similar to that which is measured by the SATAQ-I3. The second subscale is expected to measure importance of the body perfect to the self, including the perceived emotional consequences of body perfect attainment, such as greater happiness and quality of life. Finally, subscale three is expected to measure investment, in terms of personal investment in attaining the body perfect, and also beliefs that body perfect acquisition will lead to popularity and success.

To assess the construct validity of the scale, participants also completed the SATAQ-I3, the most widely used existing measure of thin ideal internalization, and it was expected that the two scales would be highly correlated. Furthermore, it was expected that a particularly strong correlation would be found between the BPIS identification subscale and the SATAQ-I3, since the two are most conceptually similar.

In order to assess the convergent validity of the BPIS, several constructs were measured that have been identified by previous research as being related to socio-cultural body and beauty ideal internalization. These constructs included body image and eating behaviour, two of the key psychological and behavioural outcomes associated with socio-cultural body and beauty ideal internalization (Keery et al., 2004; Shroff & Thompson, 2006). Since body image is a multi-faceted construct comprised of both affective and cognitive components (Grogan, 2008), two different measures of body image were taken; one which sought to measure the affective components of body image, and one which sought to measure the cognitive components. Similarly, eating behaviour is a multi-dimensional construct, however only restrained (diet-like) eating behaviour was measured in the present study, since this is the central dimension of eating behaviour that has been shown to be linked to socio-cultural body and beauty ideal internalisation (Keery et al., 2004; Shroff & Thompson, 2006). In addition to measures of body image and eating behaviour, a measure of materialism was

also taken, since recent research has demonstrated that materialism is closely linked to socio-cultural body and beauty ideal internalization in young women (Ashikali & Dittmar, 2011).

It was hypothesised that the BPIS be highly correlated with negative body image, restrained eating behaviour and materialism. It was furthermore hypothesised that significantly stronger correlations would be found between the BPIS and these constructs, than the SATAQ-I3. This is because the BPIS represents a multidimensional, and therefore more comprehensive, measure of socio-cultural body and beauty ideal internalisation than the SATAQ-I3.

## Method

### *Participants*

A volunteer sample of 373 adolescent females was recruited from an all-girls High School in the North-East of England. Participants were aged between 13 and 15 years (*Mean* = 14.20, *SD* = 0.72), and were predominately white (96%).

### *Scale Construction*

Based on the literature review, it was decided that measurement of body perfect internalisation needed to incorporate questions that measure three key elements; identification with media models, importance of body perfect to self and investment in the body perfect. An initial pool of 40 items was developed to measure these constructs. Potential items were developed by examining existing scales of thin ideal internalisation (SATAQ; SATAQ-I3) and associated measures of the psychological importance of more general appearance-related goals, such as the ASI and CSW, and adapting items deemed relevant to each of the three dimensions of body perfect internalisation. Furthermore, several items from measures of materialism that measured individuals' perceived consequences of attaining the material ideal were adapted so that they were relevant to the domain of the body perfect, e.g. "I'd be

happier if I could afford to buy more things” was altered to read “I’d be happier if my body were more perfect”. Finally, some additional items were generated by the first author, such as “Having the perfect body is essential to my popularity”. Feedback on the relevance and suitability of the initial item pool was given by two additional body image researchers, and a group of fifteen adolescent girls provided feedback on the suitability of the items for their age group. This process resulted in the reduction of items down to a final pool of twenty-four, eight per sub-scale, to be examined in the current validation analysis.

### *Measures*

In addition to completing the potential BPIS items, participants completed existing measures of internalisation of the thin ideal, body image (in terms of affective body dissatisfaction and chronic cognitive self-discrepancies), restrained eating behaviour and materialism, so that convergent validity could be assessed.

*Body Perfect Internalisation Scale.* Participants completed the twenty-four potential items for the BPIS. The potential items comprised three subscales, with eight items featured on each. The identification subscale sought to measure girls’ identification with, and aspirations towards looking like the models contained within different types of media, e.g. “I wish my body was like those shown in music videos.” The importance subscale sought to measure how important the goal of body perfect acquisition is to girls’ identity and self-concept, e.g. “Having the perfect body is important to me.” The investment subscale aimed to measure girls’ level of personal investment in attaining the body perfect, and also their perceptions that possessing the body perfect would lead to popularity with peers and success, e.g. “Having the perfect body is essential to my popularity.” Participants rated how much they agreed or disagreed with each of the statements on a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree .

*Internalisation of the Thin Ideal.* Internalisation of the thin ideal was measured using the internalisation subscale of Socio-cultural Attitudes Towards Appearance Questionnaire (SATAQ-I3; Thompson et al., 2004). Participants rated how much they agreed or disagreed with each of the statements on a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The nine item scale has been widely used with adolescent girls and was found to have excellent internal reliability within the present study,  $\alpha = .96$ .

*Weight-related Body Dissatisfaction* was measured using a shortened trait version of the Physical Appearance State and Trait Anxiety Scale (PASTAS; Reed, Thompson, Brannick, & Sacco, 1991). This scale measures the negative affect associated with weight-related body parts, on a five point Likert scale ranging from 1 = Not at all Anxious to 5 = Extremely Anxious. Items were interspersed amongst other aspects of the self that adolescents may experience anxiety about, e.g. “social relationships” or “school work,” so as to help disguise the true purpose of the study. In the present study, the scale had excellent internal reliability,  $\alpha = .91$ .

The *Self-Discrepancy Index* (SDI) was used to measure general, trait levels of appearance- and weight-related self-discrepancies (Dittmar, Halliwell & Stirling, 2009). Participants were asked to complete the following sentence up to three times; “In general, I ... , but I would like ...” by stating something about themselves that they would like to change, and then stating how they would ideally like to be. They then rated each statement they generated on six-point Likert scales, ranging from 1 = Very Little to 6 Extremely, in terms of how different they are from their ideal (magnitude) and how concerned they are about the difference (importance). The statements were coded as either weight-related, appearance-related (but non-weight related), or neither. Following Dittmar et al (2009), a Weight-Related Self-Discrepancy Index (WRSDI) was calculated by multiplying the magnitude rating and the importance rating of each weight-related statement given, then

summing these for each participant. Similarly, an Appearance-Related Self Discrepancy Index (ARSDI) was computed in the same manner using only the statements classified as being appearance-related.

*Eating Behaviour.* Dieting behaviours were measured using a shortened version of the restrained eating subscale from the Dutch Eating Behaviour Questionnaire (DEBQ-R; Van Strien, Frijters, Bergers, & Defares, 1986). The shortened version was constructed by selecting the 6 items with the highest factor loadings from the restrained subscale. The scale has been widely used amongst adolescent samples and has been demonstrated to have good reliability and validity (Van Strien, 1996). Participants rated how much they agreed or disagreed with each of the statements on a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The measure of restrained eating had good internal reliability in the present study,  $\alpha = .85$ .

*Materialism.* Materialism was measured using the 9-item version of the Material Values Scale (MVS) by Richins (2004). The inclusion of the MVS also had the further advantages of contributing toward the credibility of the cover study as it contains questions not associated with the body. Participants rated how much they agreed or disagreed with each of the statements on a five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree. The nine item scale has been shown to have good internal reliability and validity (Richins, 2004), which was also the case in the present study,  $\alpha = .80$ .

#### *Procedure and Ethical Issues*

Researchers administered girls a questionnaire containing the twenty-four selected items for the Body Perfect Internalisation Scale, and other measures, which was completed during the registration period of their school day. The questionnaire received ethical clearance from the relevant University committee and consent from participating schools as well as individual respondents. The study complied fully with APA ethical guidelines.

## Results

### *Analysis of Scale Structure and Dimensionality*

Once collated, the data file was randomly split in two, so that exploratory factor analysis could be performed on one half, and confirmatory factor analysis on the other. A combination of exploratory and confirmatory factor analysis was utilised since it enables the structure of the scale to be examined on one sample, and then for the structure of the scale to be tested directly in the second sample. This rigorous technique is preferred over the sole use of just one type of factor analysis (Thompson, 2004).

### *Exploratory Factor Analysis*

Prior to exploratory factor analysis, correlations between items were examined, and it was found that the five reverse-coded items, such as “How my body looks is not something that I often think about” or “I never try to look like the girls or women on TV” did not correlate with the majority of items. Research has shown that certain subpopulations (Wong, Rindfleisch, & Burroughs, 2003), particularly young respondents (Dittmar, personal communication, August 25, 2010), may have difficulties responding to reverse coded items, and therefore these items were removed.

Principal axis factor analysis was performed using promax rotation on the remaining nineteen items, and yielded a three-factor solution in seven iterations, as shown in Table 1. The eigenvalues for the three factors were as follows; 7.35 for factor one, which consisted of items measuring identification with media models, 7.51

Table 1. *Exploratory Factor Analysis Item Loadings (Factor loadings lower than .30 are not shown).*

Item	Factor 1: Identification with media models	Factor 2: Centrality of body perfect	Factor 3: Popularity and investment
I wish I looked like a film star (I-1)	.947		
I would like my bodies to look like the bodies in magazines (I-2)	.825		
I aspire to look like the actresses in TV and films (I-3)	.697		
I wish my body was like those shown in music videos (I-4)	.651		
I wish I looked like the girls or women who model underwear (I-5)	.639		
When I see advertisements for clothes, I wish I looked like the models (I-6)	.625		
It bothers me a lot that I don't have the perfect body (C-1)		.862	
I'd be happier if my body was more perfect (C-2)		.852	
My life would be better if I had the perfect body (C-3)		.772	
What I look like is an important part of who I am (C-4)		.705	
Having the perfect body would be one of the greatest achievements in my life (C-5)		.618	
Having the perfect body is important to me (C-6)		.605	
I always do whatever I can to look my best		.526	
Having the perfect body is essential to my popularity (P-1)			.793
I would be more popular if my body was more perfect (P-2)			.694
I spend a lot of money on making my body look good (P-3)			.654
I spend a lot of time making sure my body looks good (P-4)			.458
I would be more successful in life if I had a perfect body (P-5)			.440
I think that people with perfect bodies have it all (P-6)			.343

for factor two, comprising items that measured centrality of the body perfect to the self, and 6.42 for factor three, representing investment and popularity items. Factor-loadings below 0.3 were suppressed, resulting in no cross-loadings. All items except one (“I always do whatever I can to look my best”) were found to load onto the expected factor. This item was



found to load onto factor two and instead of factor three and was therefore removed before the confirmatory factor analysis, leaving a total of 18 items.

### *Confirmatory Factor Analysis*

Confirmatory factor analysis was performed using AMOS 16.1 to assess the hypothesised factor structure of the 18-item scale directly. To test the distinctiveness of each of the three subscales, each item was allowed to load onto its respective factor only, and error co-variances were only permitted between items loading onto the same factor. The three factors were allowed to co-vary, given that they were believed to be positively correlated in girls. According to criteria set by Hu and Bentler (1999), the model had excellent fit indices,  $CFI = 0.96$ ;  $RMSEA = 0.06$ ,  $RMR = 0.09$ , although there were discrepancies between the specified model and the data, which were to be expected given the relatively large number of items modelled,  $\chi^2 (125) = 203.33$ ,  $p < .001$ . All items were found to significantly load onto their respective factor, and all three factors were strongly correlated with one another, but not so highly as to suggest that they do not measure different dimensions. All path-ways included were significant at the  $p < .001$  level or smaller. The final model is shown in Figure 2.

### *Internal Reliability*

The internal reliability for each of the three subscales and for the composite BPIS was assessed on the full sample of girls. All three subscales were found to have high internal reliability: Identification,  $\alpha = .90$ ; Importance,  $\alpha = .89$ ; Investment,  $\alpha = .81$ . Furthermore, the combined Body Perfect Internalisation Scale was found to have excellent internal reliability  $\alpha = .94$ .

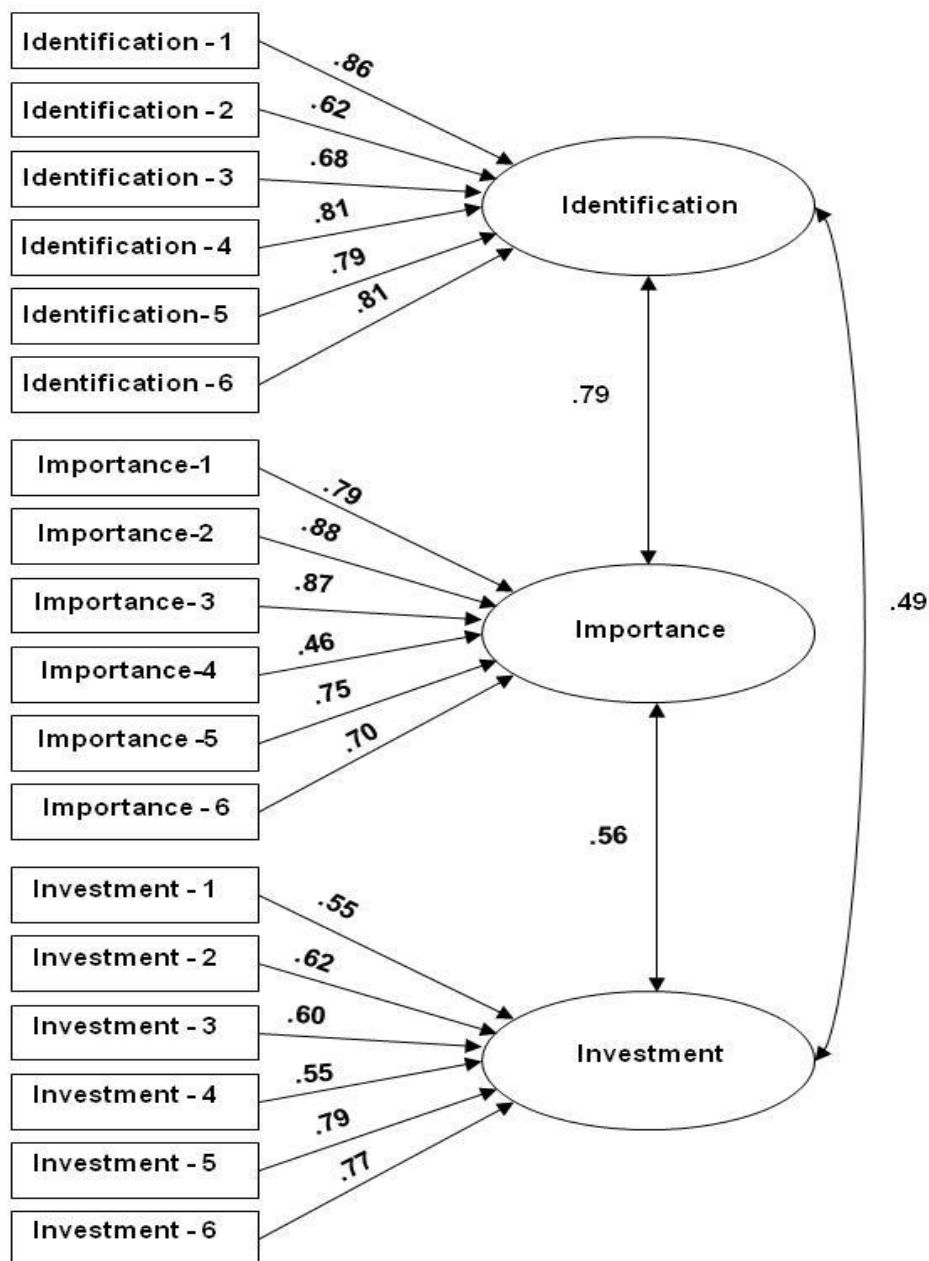


Figure 1. *Confirmatory Factor Analysis Item Loadings (all values significant at  $p < .001$  level)*

### *Convergent Validity*

Pearson's correlation coefficients were calculated for the BPIS and each of its three subscales with the most popular existing measure of socio-cultural body and beauty ideal internalisation (SATAQ-I3). As can be seen in Table 2, the BPIS and its three sub-scales correlated very highly with the SATAQ-I3, especially the identification subscale, which is conceptually most similar to the SATAQ-I3.

To assess the convergent validity of the BPIS, correlations were calculated for the BPIS, and each of its three sub-scales, with four measures of constructs that have been shown to be related to socio-cultural body and beauty ideal internalisation by previous research, namely body dissatisfaction (PASTAS), weight- and appearance-related self discrepancies (WRSDI/ARSDIs), restrained eating behaviour (DEBQ-R) and materialism (MVS). As Table 2 shows the BPIS and all three sub-scales shared significant positive correlations with measures of body dissatisfaction, weight and appearance-related self-discrepancies, restrained eating and materialism, all of which have previously been shown to be positively correlated with existing measures of socio-cultural body and beauty ideal internalisation in adolescent girls (Ashikali & Dittmar, 2011; Dittmar, 2008; Keery et al., 2004).

Table 2. *Inter-Correlations, Mean and Standard Deviations for the BPIS, and its Three Subscales – Identification (BPIS-1), Importance (BPIS-2) and Investment (BPIS-3) - and Related Constructs, Including Body Dissatisfaction (PASTAS), Weight-Related Self Discrepancies (WRSDI), Appearance-Related Self Discrepancies (ARSDI), Restrained Eating Behaviour (DEBQ-R), Thin Ideal Internalisation (SATAQ-I3), Materialism (MVS) and Age*

	1	2	3	4	5	6	7	8	9	10	<i>M</i>	<i>SD</i>
<b>1 BPIS</b>											3.19	0.98
<b>2 BPIS-1</b>	.92**										3.31	1.24
<b>3 BPIS-2</b>	.88**	.70**									3.62	1.12
<b>4 BPIS-3</b>	.86**	.71**	.64**								2.64	0.94
<b>5 PASTAS</b>	-.39**	-.33**	-.45**	-.26**							2.79	0.86
<b>6 WRSDI</b>	.42**	.33**	.47**	.32**	-.45**						9.43	12.30
<b>7 ARSDI</b>	.20**	.18**	.20**	.15**	-.17**	.20**					10.47	13.91
<b>8 DEBQ-R</b>	.54**	.43**	.57**	.45**	-.42**	.41**	.15**				2.86	0.96
<b>9 SATAQ-13</b>	.85**	.85**	.66**	.75**	-.30**	.33**	.18**	.43**			2.67	1.08
<b>10 MVS</b>	.49**	.46**	.41**	.44**	-.05	.14*	.13*	.11	.44**		3.08	0.69
<b>11 Age</b>	.05	.08	.11	-.07	-.08	.14*	.08	.04	.10	.00	14.12	1.07

\*  $p < .05$ ; \*\*  $p < .01$

Furthermore, as Table 2 shows, the correlations found between the composite BPIS and body dissatisfaction, weight- and appearance-related self discrepancies, materialism and restrained eating were stronger than those found between the SATAQ-I3 and these four constructs. Therefore Steiger's  $Z$  was calculated, according to formula described by Steiger (1980), to assess whether the differences between the strengths of these correlations were significant. It was found that the composite BPIS had a significantly stronger correlation with body dissatisfaction ( $Z = 2.92, p < .01$ ), weight-related self discrepancies ( $Z = 3.49, p < .01$ ) and restrained eating ( $Z = 4.96, p < .01$ ), than the SATAQ. However, the correlations between the composite BPIS and appearance-related self discrepancies and materialism were not significantly different to the ones between the SATAQ and these constructs ( $Z = 0.62, ns$ , and  $Z = 1.73, ns$ , respectively).

## Discussion

The present research presents a new and more comprehensive method for measuring internalisation of the body ideals in the mass media amongst adolescent girls. The eighteen-item scale is comprised of three separate six-item subscales, each measuring slightly different aspects of the construct; subscale one, BPIS-1, measures identification with media models; subscale two, BPIS-2, measures importance of the body perfect to the self; subscale three, BPIS-3, measures investment in attaining the body perfect. The dimensionality of the scale was supported through both exploratory and confirmatory factor analysis. The BPIS, and its three subscales, were found to have excellent convergent validity with the most popular existing measure of socio-cultural body and beauty ideal internalisation, as well as excellent convergent validity with measures of body dissatisfaction, weight and appearance-related self discrepancies, restrained eating behaviour and materialism. The multi-dimensional composite BPIS was also found to be more strongly correlated to each of these five constructs than the uni-dimensional SATAQ-I3, and furthermore, the difference in the strength of these

correlations was significant for body dissatisfaction, weight-related self-discrepancies and restrained eating behaviour, therefore highlighting the advantages of using a more comprehensive measure of socio-cultural body and beauty ideal internalisation in body image research.

The most widely used existing measure of thin ideal internalisation, the SATAQ-I3, assesses internalisation solely in terms of how much girls identify with body perfect media models. In light of the current conceptualisation of body perfect internalisation as the *active endorsement of the body perfect (and the beliefs associated with its acquisition) to the extent that the body perfect becomes a psychologically salient goal, influencing attitudes and behaviour*, the SATAQ-I3 may be limited by offering a relatively narrow measurement of the construct. The BPIS not only assesses body perfect internalization in terms of identification with media models, but it also assesses the importance of the body perfect to adolescent girls and their personal investment in it, both of which may be regarded as important components of internalization. It therefore provides a more complete and holistic measure of the extent to which adolescent girls have internalised socio-cultural norms regarding physical attractiveness as a personal goal, than existing measures.

Furthermore, the BPIS may be seen as a purer measure of body perfect internalisation, since it does not conflate the construct of thin ideal internalisation with body comparison tendency as previous measurement tools have done. The SATAQ-I3 contains questions that directly measure an individuals' tendency to compare their body or appearance with that of others, despite the most dominant theoretical model of socio-cultural influences on body image conceptualising the two as psychologically distinct concepts (Keery et al., 2004), and even though the two are closely related in adolescent girls, measurement tools should be able to differentiate between them.

All three subscales of the BPIS have excellent internal reliability and convergent validity with constructs shown to be related to thin ideal internalisation in the past. Therefore, in addition to being used in combination as a comprehensive measure, the three subscales may be used separately. Exploration of the relative importance of these three sub-components of body perfect internalisation within the mass media and body image relationship would provide an interesting and insightful avenue for future research. Similarly, longitudinal enquiries into how these sub-components emerge developmentally may provide equally interesting insights into the construct, and how it develops in teenage girls.

The fact that the BPIS has been developed specifically for adolescent girls, is both a strength and a limitation. It may tap particularly well into concerns of an age and gender group believed to be especially vulnerable to the negative influence of the mass media on body dissatisfaction (Groesz et al, 2002). This carries with it the limitation that it would need appropriate adaptations for other gender and age groups. For example, questions regarding popularity as a consequence of attaining the body perfect may be less suitable for adult women, as concerns regarding popularity amongst peers tend to peak in adolescence (Lloyd, 2002), and may therefore need to be replaced by more age-appropriate questions assessing the extent to which adult women equate career success, social status, and power with perfect body acquisition. Furthermore, it is unclear whether popularity questions would load as well with investment questions in adult samples given the important role beauty rituals play within adolescent peer groups. Future research needs to focus on adaptation and validation of the scale for other populations.

In conclusion, the BPIS may be regarded as a more comprehensive, as well as conceptually pure measure of body perfect internalisation. Devised specifically for adolescent girls, the scale has excellent internal reliability and convergent validity. The scale is

particularly useful for researchers interested in understanding the vulnerability factors that make girls more susceptible to socio-cultural influences on body image.

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## **Chapter Six**

### **The Impact of Music Videos on Adolescent Girls' Body Image: The Role of Wishful Identification and Body Perfect Internalisation**

#### **Abstract**

Correlational studies have suggested that music videos are more strongly related to negative body image in adolescent girls, than other media types (Tiggemann & Pickering, 1996, Borzekowski, Robinson & Killen, 2000). The present study examines this phenomenon experimentally, by comparing the impact of body perfect models in music videos to that of still images containing the same models, examining immediate wishful identification as a mediator of this effect, and body perfect internalisation as a moderator. 142 adolescent girls, aged 13-15, were exposed to either music videos containing body perfect models, still images of body perfect models, or neutral images. All girls exposed to body perfect models reported more weight and appearance-related concerns, compared to the control. Furthermore, girls exposed to music videos reported more immediate wishful identification with the characters and more weight and appearance-related concerns, compared to girls exposed to still images of the body perfect. Mediation analysis revealed that wishful identification mediated the impact of body perfect exposure on body image, suggesting that the more potent impact of music videos on adolescent girls' body image is due to the increased wishful identification with characters that they induce. Body perfect internalisation was found to moderate all media exposure effects. The implications of these findings are discussed.

## Introduction

Music videos are becoming an increasingly popular media format amongst adolescents, with recent research suggesting that adolescent girls spend between thirty minutes and three hours consuming music videos every day (Chapter 4; Roberts & Christenson, 2001; Ward & Freidman, 2006). The female models featured within music videos act as functional role models to girls, providing important social information on how to look, think, feel and behave (Lloyd, 2002; Sun & Lull, 1986). However, as the majority of these models epitomise the socio-cultural '*body perfect*' physical attractiveness ideal (Gow, 1990; Martin & McCracken, 2001; Wallis, 2011), they set an unrealistic standard for physical attractiveness, and therefore serve as unhealthy role models to adolescent girls who desire to imitate them (Dittmar, 2005; Levine & Murnen, 2009). Existing research has demonstrated that exposure to body perfect models in music videos causes body dissatisfaction amongst adolescent girls (Chapter 4; Bell, Lawton & Dittmar, 2007), however, to date, they remain an under-studied media type in the field of body image research. Therefore, little is known about the comparative dangers of music videos in relation to other media types, the psychological mechanisms underlying their impact, and which girls are most vulnerable to them.

Adolescence is an important period in terms of psychological development, since it is during this period that individuals begin to develop their own unique adult identity (Erikson, 1986; Lloyd, 2002). Increasingly, body image, defined as a "person's perceptions, thoughts and feelings about his or her body" (Grogan, 2008, p. 3), may be regarded as an integral part of the modern identity, particularly for females (Dittmar, 2008; Grogan, 2008), and, as with other aspects of identity, adolescent girls turn to media models as important sources of information regarding socio-cultural norms (Bandura, 2002; Lloyd, 2002; Giles & Maltby, 2004). However, the majority of media models conform to the unrealistic socio-cultural body



and beauty ideal, *the body perfect*, which, in addition to being invariably thin, is now also simultaneously toned and curvaceous, accompanied by perfect hair, teeth and skin (Ahern, Bennett, Kelly, & Hetherington, 2011; Grabe & Hyde, 2009; Want 2009). These models therefore set an idealised, unrealistic and artificial standard for beauty, which is impossible for the majority of girls to attain (Levine & Murnen, 2009). As a result, a psychologically salient discrepancy develops between how girls believe they actually look and how they would like to ideally look, leading them to adopt a more negative view of their own bodies (Dittmar, 2008).

There is extensive evidence from several meta-analyses documenting that exposure to body perfect models in the media leads to negative body image (Grabe, Ward & Hyde, 2008; Groesz, Levine & Murnen, 2002; Holstrom, 2004; Want, 2009), with one showing directly that adolescent girls are most affected (Groesz et al., 2002). Typically, the experiments contained within these meta-analyses have compared the impact of brief exposure to still images of body perfect models - taken from magazines - on adolescent girls' body image, to that of neutral images. Implicit within this research therefore, is the assumption that the impact of still 'body perfect' images on adolescents' body image, is representative of the impact of the mass media more generally. However, such an approach may be limited since it ignores the large qualitative differences that exist between different media formats (Brown & Bobkowski, 2011; Zeigler, 2007), and as such it is crucial that this body of research is extended by considering the differences between different media formats. It is possible that due to these qualitative differences, some media formats may exert a more potent influence on adolescent girls' body image than others.

### *Music Videos & Body Image*

Media theorists have argued that, although music videos share many common features with other media formats, they should be regarded as a qualitatively unique and distinctive

form of media. In particular, music videos feature emphatic musical content, distinctive camera angles, and adopt a non-sequential fantasy-like structure, which, when combined together, serve to differentiate music videos from all other forms of media (Aufdersheide, 1987; Gow, 1996; Sun & Lull, 1986). In terms of content, music videos uniformly feature models that conform to the socio-cultural 'body perfect' ideal (Englis, Solomon & Ashmore, 1994; Martin & McCracken, 2001; Wallis, 2011), and furthermore feature high volumes of consumption imagery, including highly fashionable clothing and the latest material goods (Englis, Solomon, & Olofsson, 1993; Martin & Collins, 2002; Martin & McCracken, 2001), and also high volumes of sexualised imagery (Andsager & Roe, 2003; Turner, 2011; Wallis, 2011), which serve to both idealise and objectify the body perfect models. It is possible that the unique features of the music video format may combine with the sexualised and idealised body perfect content, in order to produce a more potent negative effect on adolescent girls' body image.

Indeed, there is some existing correlational research which has suggested that music video consumption may be more strongly associated with adolescent girls' body image than other media types (Tiggemann & Pickering, 1996; Borzekowski et al., 2000). However, as this research is correlational, causality cannot be assumed, especially in light of evidence which has demonstrated that adolescent girls actively seek out media that is related to their perceived identity deficits (Slater, 2007). It therefore remains unclear whether their stronger association with negative body image is due to adolescent girls who are dissatisfied with their bodies actively seeking out and consuming more music videos, or whether it is the music video format itself that causes more negative body image in adolescent girls, compared to other media types.

A previous study attempted to test this phenomenon experimentally, by comparing the effects of brief exposure to body perfect models in music videos to that of still images

featuring the same body perfect models, on body image (Chapter 4). Although music videos were not found to cause significantly more body dissatisfaction than the still images, there was an elevation in post-exposure weight and appearance-related concerns. This latter finding was not reported in the published article, because the percentage of girls who completed the measure of weight and appearance-related concerns correctly, just 69%, was considered too small. It is, of interest, however, because the discrepancy between these two findings may be due to the sensitivity of the measurement tools utilised. In the study, body dissatisfaction was measured using the Physical Appearance State and Trait Anxiety Scale (PASTAS; Reed, Thompson, Brannick, & Sacco, 1991) which asks participants to rate their satisfaction with various body parts on a Likert scale. In contrast to this fixed-item measure, weight and appearance-related concerns were measured using the Self-Discrepancy Index (SDI; Dittmar, Beattie & Friese, 1996; Dittmar, Halliwell & Stirling, 2009) which has an open-ended format, allowing participants to report on any aspect of their life that they are concerned about. It is suggested therefore that adolescent girls may be reluctant to report their bodily concerns when directly asked to evaluate body parts, but may feel more confident reporting them in their own words when asked more indirectly. The implication is that participant-generated response formats may be the better tools to detect the subtle changes in negative body image caused by different media formats. This is consistent with recent research reporting the advantages in using the participant generated self-discrepancy measure compared to a fixed-item measure when assessing appearance-related concerns in populations who are unfamiliar with, or insecure about, reporting negative body image (Halliwell & Dittmar, 2006).

Given this initial evidence that music videos can have a more potent negative impact on adolescent girls' body image than other media types, questions arise as to how and why this effect occurs, and also as to which girls are most vulnerable to it.

### *General Arousal*

It could be suggested that any increased negative body image experienced by adolescent girls following exposure to music videos may be the by-product of the increases in more generalized arousal that the music video format elucidates. Research has suggested that music videos may induce particularly potent psychological and physiological arousal, since they feature multiple sources of arousal (e.g. popular music, high energy musical performances, sexualised imagery, and cutting-edge camera techniques) which work together in an additive way (Hansen & Krygowski, 1994). Therefore, a design is needed that also examines arousal when investigating effects on body image. A study on video games - a media type identified as being similarly high in arousal - found that the impact of game characters on body image was unrelated to general arousal (Dittmar, Bond, & Moorhouse, 2009).

### *Body Perfect Internalisation*

Psychological research has demonstrated that girls are not all equally vulnerable to mass media's negative impact on body image (Dittmar, 2005, 2009). In particular, adolescent girls who desire to look, be or act like the models featured within the mass media have been demonstrated to be more affected by brief exposure to media containing body perfect models (Chapter 4; Durkin, Paxon & Sorbello, 2007). The conscious desire to look, be or act like the models featured within the mass media, is known within the media effects literature as 'wishful identification' (Hoffner, 1996; Hoffner & Buchanan; 2006). However, more commonly within psychology, wishful identification is typically conceptualised as a trait variable, that is indicative of the extent to which girls have internalised the body perfect as a personal goal (Chapter 5; Thompson & Stice, 2001).

Body perfect internalisation may be defined as the extent to which individuals have actively adopted the socio-cultural 'body perfect' physical attractiveness ideal as a personal

goal, and strive towards attaining it (Thompson & Stice, 2001). Typically, individuals who have internalised the body perfect, not only aspire to look and be like body perfect media models, but they have also internalised the consequences of having the body perfect that are projected by the media, i.e. success, happiness and popularity (Dittmar, 2008; Hohlstein, Smith, & Atlas, 1998). As a result, they are highly motivated towards achieving the body perfect, and the goal of body perfect acquisition is highly central to their sense of self (Cash, Melnyk & Hrabosky, 2004). Therefore, the present study aims to utilise a more comprehensive measure of body perfect internalisation that measures the construct more wholly.

### *Wishful Identification*

Wishful identification has also been hypothesised to mediate the negative impact of the mass media on adolescent girls' body image (Kistler, Rodgers, Power, Austin, & Hill, 2010). Typically, girls engage in wishful identification with media models whom they perceive as being positively rewarded for their attributes (Bandura, 2002; Hoffner, 1996; Hoffner & Buchanan, 2006) and throughout the mass media, body perfect models are seen to be positively rewarded for their appearance (Dittmar, 2008; Englis et al., 1994). These positive rewards act as vicarious reinforcement, fuelling adolescents' desire to imitate them (Bandura, 2002; Hoffner, 1996; Hoffner & Buchanan, 2006).

Unlike some types of identification processing, wherein individuals merge consciousness with the media model and psychologically *become* them, wishful identification is characterised by an awareness of the social barriers that distinguish the viewer from the model (Cohen, 2001; Hoffner & Buchanan, 2006; Klimmit, Hefner & Vorderer, 2009). Wishful identification is believed to mediate the impact of the mass media on body image therefore, because as a consequence of engaging in wishful identification with body perfect models, adolescent girls may experience a heightened awareness of the discrepancy between

their perceived actual appearance, and their ideal appearance - as demonstrated by the model - leading them to experience negative body image (Kistler et al., 2010). Though the tendency to wishfully identify with media models has been demonstrated to mediate the mass media's negative impact on body image over time (Kistler et al., 2010; Keery, van den Berg, & Thompson, 2004; Shroff & Thompson, 2006), no study has examined this experimentally, to investigate whether the impact of acute exposure to body perfect models on body image is mediated by wishful identification.

There is ample justification for speculating that music videos may induce stronger appearance-related wishful identification with the characters contained within them, than other media types, and it may be this wishful identification that underlies their more potent impact on adolescent girls' body image. Music videos, not only ubiquitously feature models that conform to the body perfect (Englis et al., 1994; Gow, 1996; Martin & McCracken, 2001; Wallis, 2011), but they furthermore depict these body perfect models in a highly idealised way, by featuring a disproportionately high volume of both consumption and sexualised imagery (Andsager & Roe, 2003; Englis et al., 1993; Martin & Collins, 2002; Martin & McCracken, 2001; Turner, 2011; Wallis, 2011). The prolific idealisation of body perfect models in music videos acts as vicarious positive reinforcement for the body perfect, and increases the likelihood that adolescent girls will engage in wishful identification with models (Bandura, 2002; Hoffner, 1996; Hoffner & Buchanan, 2006).

This effect may be further exacerbated by the inherent features of the music video format, which serve to emphasise the role of the body perfect within this idealisation (Aufderheide, 1987; Gow, 1996; Wallis, 2011). For example, many of the distinctive filming techniques utilised in music videos, such as flashing images, abrupt scene shifts and close-up shots, tend to focus on the various attributes of the body perfect, and so draw viewers' attention to them (Wallis, 2011). The result is that the body perfect is emphasised within its

idealised context (Aufderheide, 1987; Gow, 1996), potentially leading the viewer to believe that body perfect acquisition is essential in order to achieve desirable consequences, such as attracting romantic partners or being materially wealthy, and further perpetuating adolescent girls' desire for the body perfect (Hohlstein et al., 1998).

The music video format was originally engineered as a promotional tool for song, and so a defining feature of the music video format is their emphatic song content (Aufderheide, 1987; Gow, 1996; Sun & Lull, 1986). There is a strong body of psychological literature documenting the important role that popular music plays within the life of adolescents. In particular, adolescents have been demonstrated to engage in strong emotional identification with popular music lyrics, and also with the music artists themselves (Roberts, & Christensen, 2001). Therefore, the musical content of music videos may encourage adolescent girls to desire to be like music video models on an emotional level also, and so may intensify their wishful identification with them.

#### *Aims and hypotheses*

The aim of the present study is to investigate the impact of body perfect models in music videos, compared to still images of body perfect models and neutral images, on adolescent girls' body image and arousal, examining immediate wishful identification with the models as a mediator of this effect, and body perfect internalisation as a moderator. The study adopts an exposure-experiment paradigm wherein the immediate effects of brief exposure to music videos containing the body perfect on adolescent girls' immediate character identification, state body image and arousal, are compared to that of still body perfect images and neutral images. A follow-up questionnaire administered four weeks post-exposure was used to measure trait levels of body image and also body perfect internalisation, the moderating variable. The specific hypotheses examined in the present study are:

H1. Adolescent girls exposed to images of the body perfect, whether moving in music videos or as still images, will experience significantly more negative body image than girls in the control condition.

H2. Of the girls who view body perfect images, those exposed to music videos will experience significantly more negative body image than girls exposed to still images of the body perfect.

H3. The impact of body perfect media on body image is predicted to be independent of its impact on arousal. Therefore, though exposure to images of the body perfect, whether as moving images in music videos or as still images, may have an impact on adolescent girls' arousal, in comparison to neutral images, it is expected that this arousal will not predict post-exposure body image.

H4. Body perfect internalisation will moderate the negative impact of exposure to media featuring body perfect models on girls' body image, that is, girls who have strongly internalised the body perfect will experience more pronounced increases in negative body image.

H5. Music videos will induce more immediate character identification than still images of body perfect models, and this identification will mediate the impact of body perfect images on body image.

## Method

### *Participants*

A volunteer sample of 142 adolescent females was recruited from an all-girls' high school in the North-East of England. Participants were aged between 13 and 15 years ( $M = 14.09$ ,  $SD = 0.76$ ) and were predominately white (97%). The average BMI (calculated as



weight in kg/heightm<sup>2</sup>) was 19.95 ( $SD = 5.86$ ), with 12% girls classified as underweight, 79% as normal weight, 6% as overweight and 3% as obese, using population appropriate guidelines (Zaninotto et al, 2006). There were 44 girls in the music video condition, 49 girls in the still images condition, and 49 girls in the control condition.

To ensure that participant characteristics did not differ systematically across the three exposure conditions, one-way ANOVAs were performed on all relevant constructs, as well as key demographic information, such as age and BMI. No significant differences emerged in terms of trait body image (body dissatisfaction,  $F(2, 139) = 0.25, p = .78$ ; weight concerns,  $F(2, 139) = 0.98, p = .38$ , appearance concerns,  $F(2, 138) = 0.62, p = .54$ ; habitual restrained eating behaviour,  $F(2, 137) = 1.37, p = .26$ ), internalisation of media ideals (body perfect internalisation,  $F(2, 136) = 0.87, p = .42$ ; materialism,  $F(2, 139) = 0.13, p = .88$ ) and demographic information (BMI,  $F(2, 54) = 1.01, p = .37$ ; age,  $F(2, 107) = 2.47, p = .09$ ).

#### *Exposure stimuli and presentation*

In the music video condition, the stimuli comprised of two music videos. The music videos were selected on the basis that they were the most recently produced videos by two very popular American all-girl bands who epitomise the body perfect (Danity Kane and Girlicious). As immediate identification with the girl bands was being measured as an outcome measure, it was important that the girl-bands were unknown in the UK, so that prior identification would be minimal. Indeed, no girls reported having seen or heard the girl bands before. The videos were recorded onto DVD, and played to the group on a large projection screen. The exposure lasted eight minutes.

To ensure that the body perfect images remained as constant as possible across the two body perfect experimental conditions, five still images were created from each of the two music videos, by capturing screenshots through image capture software. The criterion for deciding which five images should be taken from the videos was that they should contain

images of the singers as body perfect models, and be a good reflection of the content of the music video. For the still body perfect image condition, these ten screenshots were transferred into a timed PowerPoint slide show, wherein each image appeared for thirty seconds, followed by a black screen for twenty seconds. Again, these images were played to the group on a large projection screen, and the exposure lasted eight minutes.

The control condition consisted of ten images of animals, which were not in any way suggestive of body shape, presented on a timed slide-show, with the same timings as the thin ideal image stimulus. The images were selected from a “cute animal” google image search, and again the exposure lasted eight minutes. Cute animal images were chosen as they were believed to be equally interesting and enjoyable for adolescent girls as the experimental images of girl bands would be. This was confirmed in a post-exposure test which found no significant differences between girls exposed to the body perfect and the control condition in terms of how interesting and enjoyable they found the stimulus,  $F(1, 137) = 3.11, p = .08$ ;  $F(1, 137) = 2.15, p = .15$ , respectively.

#### *Post-exposure measures*

Immediately post-exposure, participants completed a questionnaire containing measures of wishful identification with media models, body image, and arousal.

*Wishful Identification.* Girls’ immediate wishful identification with the girl band members was measured by asking them to rate on a five-point Likert scale how much they wished to look like the models and how much they wished to be like the models in the media clips. These two items were highly correlated, and so were averaged to produce a composite measure of character identification.

*Psychological Arousal.* Affective arousal was measured by the same ten- item arousal scale used by Dittmar, Bond, and Moorhouse (2009). Participants were presented with a list of ten arousal adjectives; five describing positive arousal (e.g. ‘excited, energetic’)

and five describing negative arousal (e.g. ‘anxious, tense’). Participants were instructed to rate each of the items on a five-point Likert scale according to how they felt ‘Right now, at this very moment.’

*Body Dissatisfaction.* Post-exposure body dissatisfaction was measured using the shortened state version of the Physical Appearance State and Trait Anxiety Scale (PASTAS; Reed et al., 1991). This fixed-item scale measures the dissatisfaction associated with weight-related body parts, on 6-point Likert scales, ranging from extremely dissatisfied to extremely satisfied. Items were interspersed amongst other aspects of the self that adolescents may experience dissatisfaction about, e.g. ‘social relationships’ or ‘school work’ so as to help disguise the true purpose of the study. The measure was found to have excellent internal reliability in the present study,  $\alpha = .82$ .

*Weight & Appearance-Related Concerns.* Post-exposure appearance and weight-related concerns were measured using the *Self Discrepancy Index* (SDI; Dittmar et al., 1996; Dittmar et al., 2009). Participants were asked to complete the following sentence up to three times; “Right now at this very moment, I ... , but I would like ...” by stating something about themselves that they would like to change, and then stating how they would ideally like to be. They then rated each generated statement on 6-point Likert scales, ranging from *very little* to *extremely*, how different they are from their ideal (magnitude) and how concerned they are about the difference (importance). The statements were coded as either weight-related, appearance-related (but non-weight related), or neither. Following Dittmar et al (2009), a Weight-Related Self-Discrepancy Index (WRSDI) was calculated by multiplying the magnitude rating and the importance rating of each weight-related statement given, then summing these for each participant. Similarly, an Appearance-Related Self Discrepancy (ARSDI) was computed in the same manner using only the statements classified as appearance-related.

Due to the poor completion of this measure of body image within Chapter 4, the instructional set was simplified, in order to make the scale more comprehensible to an adolescent population. The revised SDI was piloted amongst a sample of twenty adolescent girls (age;  $M = 14.67$ ,  $SD = 0.34$ ), prior to the inclusion of this scale within the present study, and no problems were reported.

#### *Follow-up Questionnaire*

Four weeks post-exposure, participants completed the second questionnaire containing measures of *trait* body image so that individual differences in girls' body image could be controlled for in the subsequent analysis. It furthermore contained the measure of the moderator; body perfect internalisation.

*Baseline Measures.* A trait measure of body dissatisfaction was collected using the PASTAS, only here, the instructions were changed to ask participants how they felt "In general..." The trait PASTAS was shown to have good internal reliability,  $\alpha = .92$ . Furthermore, the instructional set of the self-discrepancy index (SDI) was modified in a similar way to measure trait appearance and weight-related concerns.

*Body Perfect Internalisation.* The extent to which girls had internalised the body perfect as a personal goal was measured using the Body Perfect Internalisation Scale (BPIS; Chapter 5). The comprehensive 18-item scale measures the extent to which adolescent girls identify with media models, the centrality of achieving the body perfect to themselves and their investment in it. The scale had excellent internal reliability in the present study,  $\alpha = .93$ .

*Restrained Eating Behaviour.* Restrained eating behaviour was measured using a shortened version of the restrained eating subscale, from the Dutch Eating Behavior Questionnaire (Van Strien, Frijters, Bergers & Defares, 1986). The shortened versions were constructed by selecting the 6 items with the highest factor loadings from the restrained subscale. The scale has been widely used amongst adolescent samples and has demonstrated

good reliability and validity (Van Strien, 1996). In the present study, internal reliability was good,  $\alpha = .85$ .

### *Procedure & Ethics*

Testing took place during the school registration period, at the beginning of the school day. Participants were tested in groups of approximately 25, while in their allotted mixed academic ability 'form' classes. Having been advised that they would be participating in a study regarding "How adolescents interact with the media, as research has shown that aspects of their personality may affect how they respond to the media", participants were then presented with the stimuli. Once the exposure time was over, participants completed the questionnaire containing the post-exposure measures. Four weeks after the exposure experiment, participants completed the time two questionnaire. The study received ethical clearance from the relevant University committee and participating schools, and complied fully with APA ethical guidelines.

## Results

### *Descriptive Statistics*

The means, standard deviations and inter-correlations between trait body image variables - including body dissatisfaction, weight-related concerns, appearance-related concerns, body perfect internalisation, restrained eating behaviour and materialism - and also demographic variables, - including age and BMI - are displayed in Table 1.

Table 1. *Mean, Standard Deviations and Inter-Correlations for Trait Body Dissatisfaction, Weight-Related Concerns, Appearance-Related Concerns, Restrained Eating Behaviour, Body Perfect Internalisation, Materialism, BMI and Age.*

	1	2	3	4	5	6	7	<i>M</i>	<i>SD</i>
1 Body dissatisfaction								2.77	0.92
2 Weight-related concerns	.46**							8.16	12.26
3 Appearance-related concerns	.12	.05						9.18	13.71
4 Restrained eating behaviour	.31**	.43**	-.00					2.79	0.99
5 Body perfect internalisation	.32**	.37**	.08	.65**				3.11	1.07
6 Materialism	.04	.15	.14	.22**	.47**			3.05	0.74
7 BMI	.40**	.38**	.03	.35**	.16	.10		19.95	3.42
8 Age	.09	.17	.15	.14	.10	.07	.08	13.84	0.71

\*  $p < .05$ ; \*\*  $p < .01$

Means and standard deviations for variables measured post- media exposure, including body dissatisfaction, weight-related concerns and appearance-related concerns, positive arousal, negative arousal and wishful identification, are shown in Table 2 for each condition. For body image variables, the means shown are adjusted to control for the relevant trait measure.

Table 2. *Adjusted Means (and Standard Error) for Body Dissatisfaction, Weight-Related Concerns and Appearance-Related Concerns, and Means (and Standard Error) for Post-Exposure Wishful Identification, Positive Arousal and Negative Arousal across the Exposure Conditions.*

	Music video	Still thin images	Control
Body dissatisfaction	2.73 (0.09)	2.85 (0.08)	2.81 (0.08)
Weight-related concerns	7.92 (1.42)	9.17 (1.31)	5.94 (1.33)
Appearance-related concerns	12.69 (1.80)	9.40 (1.71)	9.68 (1.72)
Wishful identification	4.19 (.15)	3.40 (0.09)	-
Positive arousal	2.68 (0.16)	2.06 (0.15)	2.65 (0.16)
Negative arousal	2.02 (0.12)	2.68 (0.16)	2.66 (0.14)

### *Effects on Post-Exposure Arousal*

Two separate one-way ANOVAs were performed to assess the impacts of exposure type on positive and negative arousal, with two planned contrasts to assess the difference

between body perfect exposure and the control, and, music videos and still body perfect images, respectively. A significant overall effect of condition was found for both positive and negative arousal,  $F(2, 139) = 4.92, p < .01$ ;  $F(2, 139) = 6.71, p < .01$ . Planned contrasts revealed no significant differences between body perfect exposure and the control for positive or negative arousal,  $t(139) = 1.47, ns$ ;  $t(139) = 1.79, ns$ . However for both positive and negative arousal, significant differences were found between the music video condition and the still images,  $t(139) = 3.45, p < .01$ ;  $t(139) = 3.25, p < .01$ . The music video condition was found to cause significantly more positive arousal ( $M = 2.67, SD = 1.09$ ) than the still body perfect images ( $M = 2.06, SD = 1.09$ ), whereas still body perfect images were found to cause significantly more negative arousal ( $M = 2.68, SD = 1.10$ ) than the music video condition ( $M = 2.02, SD = .78$ ). Both positive and negative arousal were included in all further analyses as control variables.

#### *Effects on Post-Exposure Body Image – Body Perfect Internalisation as a Moderator*

Three hierarchical regression analyses were performed to investigate the impacts of the stimuli on post-exposure body dissatisfaction, weight-related self discrepancies and appearance-related self discrepancies separately, and to assess the role of body perfect internalisation as a moderator. For each of these regressions, predictors were entered in three steps. In the first model, the respective trait variable was entered, along with positive and negative arousal, as control variables. The second model contained exposure effects, which were dummy-coded as two contrasts, assessing, respectively, the differences between both experimental conditions vs. the control (H<sub>1</sub>) and still images vs. music videos (H<sub>2</sub>). The third model was intended to assess moderator effects, and therefore included body perfect internalisation (mean-centred), and the interaction between body perfect internalisation and each of the two contrasts (H<sub>4</sub>). The results of the final regressions are shown in Table 3.

Table 3: Standardised Beta Coefficients of Final Regression Models for Body Dissatisfaction, Weight-Related Self Discrepancies and Appearance-Related Self Discrepancies.

	Body			Appearance-Related Self			Weight-Related Self		
	Dissatisfaction			Discrepancies			Discrepancies		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	<i>B</i>
Trait	.73	.06	.75***	.42	.08	.38***	.40	.08	.33***
Positive Arousal	-.04	.05	-.05	.03	.04	.09	.06	.04	.11
Negative Arousal	-.03	.05	-.03	.06	.05	.05	.02	.04	.03
C1: Experimental vs. Control	-.01	.04	-.02	.10	.03	.24**	.11	.03	.25***
C2: Music video vs. Still	-.05	.06	-.05	.14	.06	.18*	.18	.05	.22**
BPIS	-.06	.05	-.08	.17	.04	.30***	.23	.04	.38***
BPIS * C1	-.02	.03	-.04	.08	.03	.21**	.07	.03	.17**
BPIS * C2	.04	.06	.03	-.04	.05	-.05	.12	.05	.16*

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$

*Body Dissatisfaction.* As would be expected, trait body dissatisfaction was found to be a significant predictor of post-exposure body dissatisfaction,  $\Delta R^2 = .61$ ,  $F = 71.09$ ,  $p < .001$ ;  $\beta = .78$ ,  $p < .001$ . However, step two was non-significant, failing to show an overall impact of exposure to thin-ideal images on girls' body dissatisfaction,  $\Delta R^2 = .62$ ,  $F = 0.36$ ,  $ns$ , and similarly step three was non-significant, showing no relationships between body perfect internalisation and post-exposure body dissatisfaction,  $\Delta R^2 = .62$ ,  $F = 0.69$ ,  $ns$ .

*Weight-Related Self-Discrepancies.* Trait weight-related self-discrepancies significantly predicted post-exposure weight-related self discrepancies,  $\Delta R^2 = .18$ ,  $F = 10.12$ ,  $p < .001$ ;  $\beta = .49$ ,  $p < .001$ . The impact of exposure was also significant,  $\Delta R^2 = .29$ ,  $F = 9.74$ ,  $p < .001$ , as both the contrast between body perfect exposure and the control,  $\beta = .28$ ,  $p < .001$ , and the contrast between music videos and still images of the body perfect,  $\beta = .20$ ,  $p < .05$ , were significant. Therefore, not only did exposure to the body perfect lead to significant increases in weight-related self-discrepancies, in comparison to the control, but also exposure to music videos led to significant increases in weight-related self-discrepancies, in comparison to the still body perfect images. Furthermore, step three was significant,  $\Delta R^2 =$



.44,  $F = 15.29$ ,  $p < .001$ . Body perfect internalisation was found to significantly predict post-exposure weight-related self discrepancies,  $\beta = .38$ ,  $p < .001$ , and the two interaction effects were also significant; experimental groups vs. control,  $\beta = .17$ ,  $p < .01$ ; music videos vs. still body perfect images,  $\beta = .16$ ,  $p < .05$ .

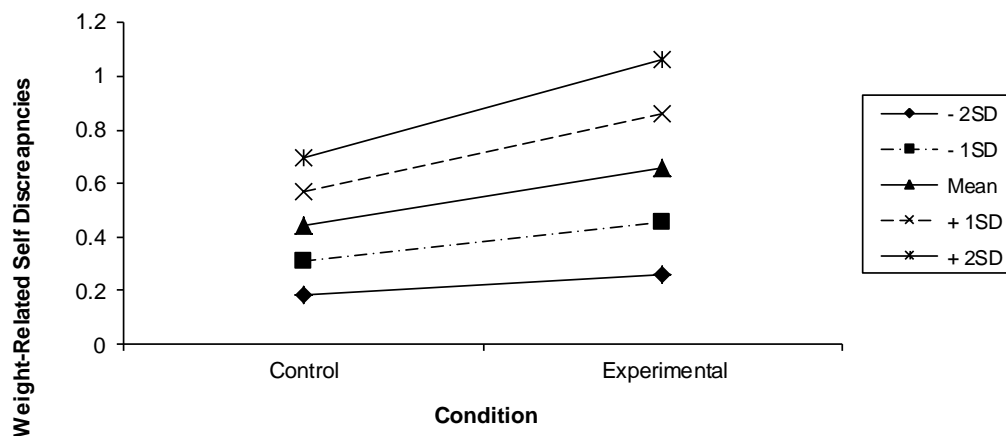


Figure1: *Slopes analysis depicting the interaction between Body Perfect Internalisation and Condition (Experimental vs. Control) on Post-Exposure Weight-Related Self Discrepancies*

Slopes analysis was used to determine the nature of the interaction effects, and Cohen's  $d$  calculated to determine the magnitude of the effects (Cohen, 1988). Figure 1 depicts the interaction effect between body perfect internalisation and condition, comparing experimental conditions to the control. The impact of the experimental exposure on weight-related self discrepancies for those low in body perfect internalisation was minimal, in comparison to the control, with a very small effect found for those with body perfect internalisation scores two standard deviations,  $d = .05$ , and one standard deviation,  $d = .13$ , below the mean. However, as the level of body perfect internalisation increased, so too did the impact of experimental exposure on WRSD, in comparison to the control. A small effect of exposure was found amongst girls with body perfect internalisation scores at mean levels,  $d = .20$ , or one standard deviation above the mean,  $d = .26$ . A small-moderate effect was

found amongst girls whose body perfect internalisation scores were two standard deviations above the mean,  $d = .33$ .

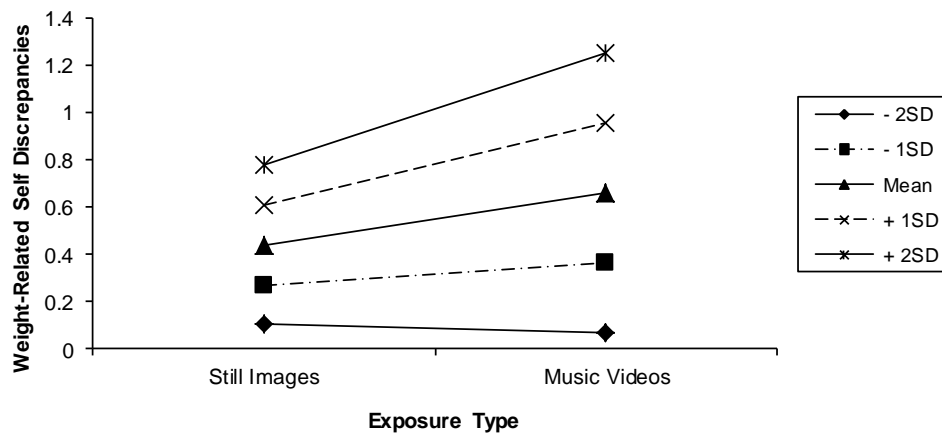


Figure 2: *Slopes analysis depicting the interaction between Body Perfect Internalisation and Body Perfect Exposure Type (Music Videos vs. Still Images) on Weight-Related Self Discrepancies*

Figure 2 depicts the interaction between body perfect internalisation and type of body perfect exposure. Those low in body perfect internalisation seemed to react the same to both types of body perfect exposure, reporting similar levels of weight-related self discrepancies in both the music video and still images condition. A negligible effect of exposure type was found amongst girls whose body perfect internalisation score was two,  $d = -.03$ , or one,  $d = .08$ , standard deviations below the mean. However, those high in body perfect internalisation were much more affected by exposure to music videos, compared to still body perfect images. The size of the effect was found to increase as levels of body perfect internalisation increased, with girls with mean levels showing a small effect,  $d = .20$ , girls with scores on standard deviation above the mean showing a small-moderate effect,  $d = .31$ , and girls with scores two standard deviations above the mean showing a moderate-large effect,  $d = .42$ .

*Appearance-Related Self-Discrepancies.* Trait appearance-related self discrepancies significantly predicted post-exposure appearance-related self discrepancies,  $\Delta R^2 = .16$ ,  $F =$

8.73,  $p < .001$ ;  $\beta = .36$ ,  $p < .001$ . Again, the impact of exposure was significant,  $\Delta R^2 = .23$ ,  $F = 7.85$ ,  $p < .01$ . Both the contrast between body perfect exposure and the control,  $\beta = .27$ ,  $p < .01$ , and between music videos and still images of the body perfect,  $\beta = .16$ ,  $p < .05$ , were significant. Therefore not only did body perfect exposure cause increases in appearance-related self discrepancies in comparison to the control, but exposure to the body perfect in music videos caused a significant increase in comparison to still body perfect images. Furthermore, step three was significant,  $\Delta R^2 = .33$ ,  $F = 8.05$ ,  $p < .001$ . Body perfect internalisation itself was found to significantly predict post-exposure appearance-related self discrepancies,  $\beta = .30$ ,  $p < .001$ , but only the interaction between body perfect internalisation and the contrast between experimental groups and the control group was found to be significant,  $\beta = .21$ ,  $p < .01$ .

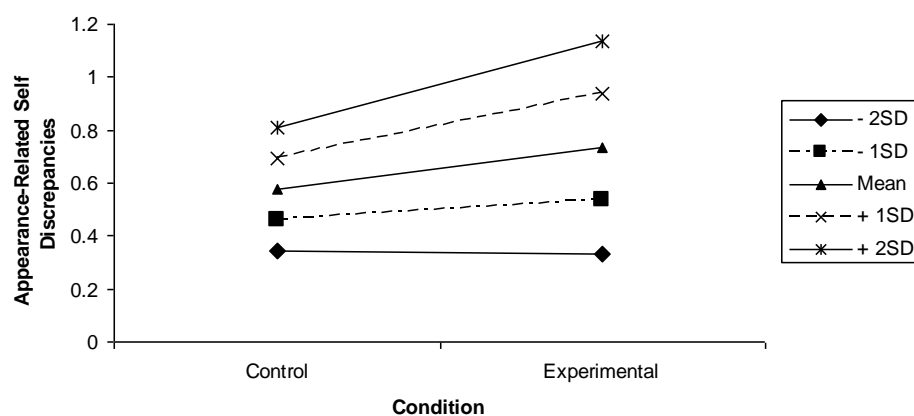


Figure 3: *Interaction between Body Perfect Internalisation and Condition (Experimental vs. Control) on Post-Exposure Appearance-Related Self Discrepancies*

Slopes analysis was carried out as before, and, as Figure 3 shows, the impact of the experimental exposure to the body perfect on appearance-related self discrepancies was minimal for those low in body perfect internalisation, in comparison to the control. Near zero exposure effects were found amongst those with body perfect scores one,  $d = -.01$ , or two,  $d =$

.07, standard deviations below the mean. However, as the level of body perfect internalisation increased, so too did the impact of experimental exposure, in comparison to the control. A very small effect was found for girls with mean levels of body perfect internalisation,  $d = .14$ , whereas a small effect was found for those with levels of body perfect internalisation that were one,  $d = .22$ , or two,  $d = .29$ , standard deviations above the mean.

#### *Exposure Effects on Immediate Wishful Identification*

As girls in the control group viewed images of animals, questions assessing identification were not asked. Therefore, the identification analysis sought to compare music videos to still images of the body perfect only. Again, a hierarchical regression analysis was performed, wherein the contrast between music videos and still images of the body perfect was entered as the first step. Body perfect internalisation and the interaction between the contrast and body perfect internalisation were inserted in the second step.

Step one was significant,  $\Delta R^2 = .04$ ,  $F = 6.04$ ,  $p < .05$ , as girls who viewed music videos reported identifying significantly more with the girl band members they saw than girls who viewed the still images of the same girl bands,  $\beta = .21$ ,  $p < .05$ . Step two was also significant,  $\Delta R^2 = .17$ ,  $F = 10.62$ ,  $p < .001$ . Body perfect internalisation was found to significantly predict identification with the girl-bands,  $\beta = .32$ ,  $p < .001$ , and was furthermore found to interact with exposure type,  $\beta = .17$ ,  $p < .05$ . Slopes analysis was used to investigate the nature of this moderation effect, revealing that girls in the music video condition with average and high levels of body perfect internalisation identified more strongly with the characters, than in the still images condition. A moderate-large effect was found for girls with mean levels,  $d = .38$ . The effect size for girls with high levels of body perfect was large, with a very large effect found for girls with body perfect internalisation scores two standard deviations,  $d = 0.93$ , and a large effect for those one standard deviations above the mean,  $d = .66$ . Low internalisers did not seem to be sensitive to increased identification with music

video characters, with a negligible effect found for those with internalisation scores one,  $d = .10$ , or two,  $d = -.13$ , standard deviations below the mean.

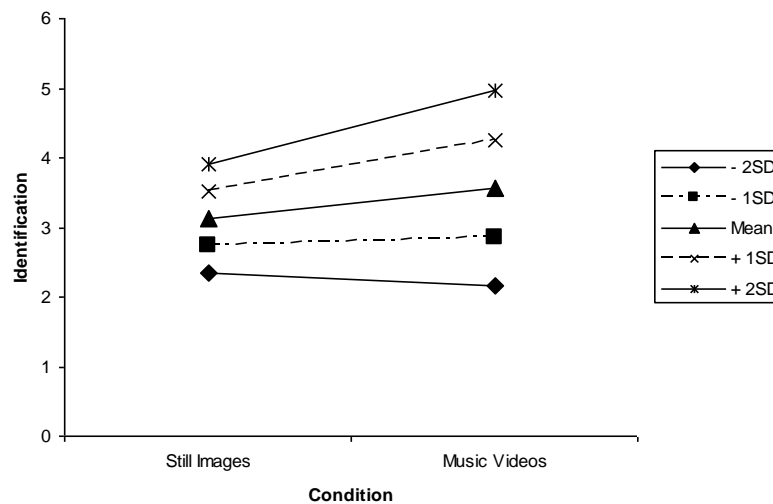


Figure 4: *Interaction between Body Perfect Internalisation and Body Perfect Exposure Type (Music Videos vs. Still Images) on Immediate Identification with Media Models*

#### *Identification as a mediator of effects on post-exposure body self-discrepancies*

In order to assess immediate identification with media models as the process through which media format affects self-discrepancies, a mediation analysis was performed. The previous regression analyses have shown that the independent variable (the contrast between music videos and still body perfect images) significantly predicted the mediator variable (identification) and the outcome variables (self discrepancies and arousal), therefore meeting the criterion for mediation analysis (Baron & Kenny, 1986). To assess whether mediation had occurred, separate hierarchical regressions for weight-related self discrepancies and appearance-related self discrepancies, wherein the respective trait variable, positive and negative arousal were entered in the first step, the contrast between music videos and still images of the body perfect was included as the second, and immediate identification with the media models inserted as the third. According to Baron and Kenny (1986), mediation will

have occurred, if identification significantly predicts the outcome variable, and its inclusion in the regression equation renders the contrast non-significant. The results of these regressions are shown in Table 3.

Table 4: *Hierarchical Regression Analyses Demonstrating Identification as a Mediator of the Effects of Body Perfect Exposure on Weight and Appearance-Related Self Discrepancies.*

	Weight-Related Self			Appearance-Related Self		
	Discrepancies			Discrepancies		
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>B</i>	<i>SE</i>	$\beta$
Step 1						
Trait	.42	.09	.38***	.41	.09	.38***
Positive Arousal	-.04	.04	-.08	.01	.04	.02
Negative Arousal	-.06	.09	-.10	.10	.05	.16
Step 2						
Trait	.48	.09	.40***	.40	.09	.37***
Positive Arousal	-.06	.05	-.11	.03	.04	.05
Negative Arousal	-.04	.05	-.06	.07	.05	.12
Music videos vs. Still Images	.14	.07	.18*	.12	.06	.15*
Step 3						
Trait	.49	.09	.41***	.41	.08	.37***
Positive Arousal	-.07	.04	-.11	.03	.04	.05
Negative Arousal	-.05	.05	-.07	.09	.05	.15
Music vs. Still Images	.11	.06	.14	.08	.06	.05
Identification	.08	.04	.17*	.08	.03	.20*

\* $p < .05$ ;  $p < .01$ ;  $p < .001$

The effect of exposure type on weight-related and appearance-related self discrepancies was found to be fully mediated by identification. Immediate identification with media models was found to significantly predict both weight and appearance related self discrepancies,  $\beta = .17$ ,  $p < .05$ ;  $\beta = .20$ ,  $p < .05$ , and its inclusion in the regression equation rendered the contrast non-significant,  $\beta = .14$ ,  $ns$ ;  $\beta = .05$ ,  $ns$ ;  $\Delta R^2 = .24$ ,  $F = 4.80$ ,  $p < .05$ ;  $\Delta R^2 = .23$ ,  $F = 6.64$ ,  $p < .05$ . Sobel's test was performed to assess whether the mediation was

significant, finding that identification significantly mediated the effect of exposure type on both weight and appearance-related self discrepancies,  $S = 1.96$ ,  $SE = 0.02$ ,  $p < .05$ ;  $S = 1.98$ ,  $SE = 0.02$ ,  $p < .05$ .

## Discussion

The present study aimed to investigate the impact of music videos on adolescent girls' body image, compared to still images of the same body perfect models and neutral images, while examining body perfect internalisation as a moderator, and immediate wishful identification with the characters as a mediator. Videos produce physiological and psychological arousal, and it was found in the present study that, compared to still images of the same girls bands, videos produced more positive and less negative arousal. However, the intention, and methodological strength, of the present study was to control for arousal effects to make sure that any body image effects found were independent of general arousal.

First, it was hypothesised that girls exposed to media containing body perfect models would experience more negative body image than girls exposed to the control images. Although no significant differences were found between groups in terms of body dissatisfaction, girls exposed to images of body perfect models experienced significantly higher weight- and appearance-related self-discrepancies, in comparison to the control, therefore contributing to the substantial body of psychological literature that has demonstrated that exposure to body perfect model causes negative body image in girls and women (Grabe et al., 2008; Groesz et al., 2002; Holstrom, 2004; Want, 2009).

Furthermore, it was predicted that girls exposed to music videos would experience more negative body image, than girls exposed to still images of body perfect models. Although no body dissatisfaction differences were found, girls exposed to music videos did experience a significant elevation in both weight- and appearance-related self discrepancies,

in comparison to girls exposed to still body perfect images. The present study is the first to demonstrate experimentally that brief exposure to music videos containing body perfect models causes significantly more negative body image, than exposure to still images of body perfect models. Therefore, the findings of the present study support existing correlational research, which has found habitual levels of music video consumption to be more closely associated with negative body image, than other media types (Tiggemann & Pickering, 1996; Borzekowski et al., 2000). It furthermore helps to clarify the direction of this relationship by demonstrating that the music video format actually *causes* increased negative body image in adolescent girls. As still images of the body perfect are the most commonly used stimulus in exposure experiments, this has important implications, namely that these studies may be underestimating the effect of the media on adolescents' body image.

The greater impact of music videos on body image was found to be fully mediated by immediate wishful identification with the characters. There are a number of features of the music video format that may account for this increased identification, including the high volume of idealised imagery in music videos (Andsager & Roe, 2003; Englis et al., 1993; Martin & Collins, 2002; Martin & McCracken, 2001; Turner, 2011; Wallis, 2011), the strong emphasis placed on the body perfect by the filming techniques typically used in music videos (Audersheide, 1987; Gow, 1996; Wallis, 2011), and also the emphatic music content (Roberts & Christensen, 2001). Although it is likely that these components work together in an additive way, to produce a combined effect which is stronger than the sum of each separate part, future research may benefit from isolating the various components of music videos, in order to identify which aspects are most responsible for inducing greater wishful identification.

Furthermore, as wishful identification was found to fully mediate the impact of music videos on body image, then it is likely that other media formats, which also induce stronger



wishful identification with the characters contained within them, such as role-playing computer games (Klimmit et al., 2009), may also have a stronger negative effect on body image. As such media types are becoming increasingly popular amongst adolescents (Ziegler, 2007), future research should focus on examining the impact of these media types on body image, to determine whether they too, exert a greater influence on adolescents' body image.

Consistent with previous research, body perfect internalisation was found to moderate the negative impacts of body perfect exposure on adolescent girls (Chapter 4; Durkin et al., 2007; Hargreaves & Tiggemann, 2002). It was found that not only were girls who had internalised the body perfect most affected by experimental exposure, but they were also most affected by music videos; a finding that makes a novel contribution to the body image literature. The tendency to habitually engage in wishful identification with media models is an important sub-component of body perfect internalisation (Chapter 5), and in light of the finding that wishful identification mediates the negative impact of the media on body image, it seems likely that the increased negative body image experienced by girls with high levels of body perfect internalisation may also be mediated by wishful identification.

In the present study, exposure to body perfect models was not found to impact upon adolescent girls' body dissatisfaction. However, as increases in weight- and appearance-related self discrepancies were found, it is unlikely that this reflects a lack of impact of body perfect media on adolescent girls' body image. Instead, as outlined in the introduction, it is likely to reflect differences in the sensitivity of the measurement tools utilised to measure each construct. Whereas body dissatisfaction was measured using the PASTAS, which has a fixed response format, the weight- and appearance-related concerns were measured using the SDI, which has a participant-generated response format. It may be that participant-generated measures of body image may be the most sensitive tool for body image measurement in this age group, and research should focus on developing such tools. These differences in

measurement-tool sensitivity may explain the disparity between the findings of the present study and our previous research findings (Chapter 4).

The findings have important implications for future research and interventions. In emphasising the role of identification and internalisation in the media exposure and body image relationship, future research could benefit from explorations of factors that influence the extent to which girls internalise the body perfect and identify with media models. This would enable intervention to target these factors, therefore preventing, or reducing, identification and internalisation. In addition, research could focus on identifying the aspects of media formats that are most responsible for inducing wishful identification with the characters. Not only could knowledge of this could be used to inform media policy on body image, but it could also be used to improve the effectiveness of media-based interventions aimed at promoting positive body image.

In conclusion, the present study demonstrates that music videos featuring the body perfect have a significantly greater negative impact on adolescent girls' body image, than still images of the body perfect. Music videos were found to induce greater identification with the characters contained within them, and that it is this wishful identification that mediates their stronger negative impact on body image. Furthermore, girls with high levels of body perfect internalisation were found not only to be more affected by exposure to body perfect models, but also to be more affected by exposure to music videos, than still images.

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## **Chapter Seven**

### **The Role of Materialism and the Material Ideal within the Media, Body Image and Restrained Eating Behaviour Relationship**

#### **Abstract**

Idealised body perfect models in the mass media are ubiquitously presented alongside a second media ideal – the ‘material ideal’ (Dittmar, 2008) – however little research has investigated the role of the material ideal within the mass media, body image and restrained eating relationship. In study 1, 199 adolescent girls completed measures of media use, media ideal internalisation, body image and restrained eating. Structural Equation Modelling (SEM) was used to demonstrate that habitual media use predicted internalisation of both media ideals, however whereas the effect of body perfect internalisation on eating behaviour was fully mediated by body dissatisfaction, the effect of materialism on eating behaviour was direct, i.e. independent of body image. In study 2, this phenomenon was tested experimentally, by examining the impact of brief exposure to advertisements containing either the body perfect, the material ideal, both the body perfect and material ideal, or none, on body image and acute eating behaviour. It was found that body perfect adverts caused significantly more negative body image and diet-like behaviour than non-body perfect adverts, whereas material ideal adverts caused significantly more diet-like behaviours, but not more negative body image than non-material ideal exposure. Internalisation of each media ideal was found to moderate these effects. The implications of this novel and important potential pathway for disordered eating are discussed.

## Introduction

There is a strong body of psychological research implicating the mass media in the aetiology of negative body image and unhealthy restrained eating behaviour (Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002; Levine & Murnen, 2009); two of the most prevalent and deleterious problems afflicting adolescent girls within western society (Eisenberg, Neumark-Sztainer & Paxton, 2006; Neumark-Stzainer, Paxton, Hannan, Haines & Story, 2006). To date, the mass media's role in the onset and maintenance of these problems has typically been explained in terms of the over-representation and idealisation of an unrealistic female body and beauty ideal (Dittmar, 2008; Englis, Solomon & Ashmore, 1994; Fouts & Buggraf, 1999; 2000; Martin & McCracken, 2001; Spyeck, Gray, & Ahrens, 2004; Wallis, 2011). The unrealistic nature of this 'body perfect' ideal makes it impossible for the majority of girls to attain, leading them to experience negative feelings towards their own bodies, and also to engage in strategies aimed at modifying the appearance of the body, such as dietary restraint (Keery, van den Berg, & Thompson, 2004; Shroff & Thompson, 2006; Stice, Ziemba, Margolis, & Flick, 1996).

Throughout the mass media, the body perfect is typically presented alongside a second prominent media ideal – the material ideal (Dittmar, 2008) – wherein material wealth is similarly both over-represented (Martin & McCracken, 2001; O'Guinn & Shrum, 1997) and idealised (Dittmar, 2008). The material ideal – due to both its emphasis on the body perfect as a commodity and its inherent emphasis on appearance - may present an additional mechanism through which the mass media may impact upon body image and eating behaviour. However, materialistic messages and values have hardly been examined in relation to body image (for exception see Ashikali & Dittmar, 2011), and not at all in relation to eating behaviour. Therefore, the present research uses both correlational and experimental

methods to examine the impact of body perfect and material ideal as two potential influences on adolescent girls' body image and dieting behaviour.

### *Restrained Eating Behaviour, Negative Body Image and Adolescent Girls*

Restrained eating behaviour (dieting), the deliberate and prolonged restriction of food intake for the purposes of weight loss and weight maintenance (Burger & Stice, 2011; Ogden, 2010), has been identified as a central risk factor in the aetiology of more severe and dangerous eating behaviours, such as binge eating and binge-purge cycles (Johnson & Wardle, 2005; Stice, 2001), as well as being implicated in the onset and maintenance of clinical eating disorders, such as anorexia and bulimia (Killen et al., 1996). In turn, negative body image has been identified as one of the most consistent and potent proximal precursors of restrained eating in both correlational and longitudinal research (Keery et al., 2004; Neumark-Stzainer et al., 2006; Sarwer, Infield & Crerand, 2009; Shroff & Thompson, 2006).

Recent research suggests that negative body image and restrained eating behaviour are particularly prevalent amongst adolescent girls, having now both reached normative levels amongst this age group (Eisenberg et al., 2006; Neumark-Stzainer et al., 2006; Ricciardelli & McCabe, 2003). Girls experience negative body image, and engage in diet-like behaviour as a consequence of environmental pressure, from parents, peers, and - most potently - the mass media, to conform to a ultra-thin '*body perfect*' female physical attractive ideal (Keery et al., 2004; Shroff & Thompson, 2006). The heightened salience of identity- and peer- related concerns that characterise adolescence (Erikson, 1968; Lloyd, 2002), combined with the normative weight-gain associated with the onset of puberty (Hilman & Biro, 2010) is likely to make adolescent girls particularly vulnerable to environmental pressure to conform to the body perfect ideal, since biology moves them away from the ideal, at a time when psychologically, it has never been more important to conform to it.

### *The Body Perfect and Body Perfect Internalisation*

The mass media have been identified as the single biggest purveyor of the female ‘body perfect’ ideal. Body perfect models disproportionately feature in the majority of media typically consumed by adolescent girls, whereas overweight female characters are notably absent (Englis et al., 1994; Fouts & Buggraf, 1999; 2000; Martin & McCracken, 2001; Spyeck et al., 2004; Wallis, 2011), and as such, girls may feel pressure to conform to a body type that they mistakenly believe to be socially normative (Sanderson, Wallier, Stockdale, & Yopyvik, 2008). Furthermore, not only do body perfect models saturate the media, but they are also presented in a highly idealised way; possessing a number of ‘desirable’ characteristics – such as happiness, success and popularity (Dittmar, 2008; Englis, et al., 1994). Socio-cognitive learning theory, proposes that this idealisation serves as a form of vicarious positive reinforcement for the body perfect (Bandura, 2002; Hoffner, 1996; Hoffner & Buchanan, 2006), leading girls to endorse the media-promoted belief that ‘desirable’ life outcomes are contingent upon body perfect acquisition (Dittmar, 2008; Holstein, Smith, & Atlas, 1998).

As a consequence of exposure to body-perfect promoting media therefore, individuals may experience a combination of both pressure and desire to conform to the socio-culturally defined body perfect ideal. Habitual media exposure has been demonstrated to lead adolescent girls to internalise the body perfect (and the beliefs associated with its acquisition) as a personal goal (Blowers, Loxton, Grady-Flessner, Occhipinti & Dawson, 2003; Keery et al. 2004), fostering a trait-like desire to conform to the body perfect ideal (Thompson & Stice, 2001). In turn, this body perfect internalisation has been identified as a central vulnerability factor for body image and restrained eating behaviour (Cafri, Yamamiya, Brannick, & Thompson, 2005; Levine & Murnen, 2009; Thompson & Stice, 2001), leading to the proposition that internalisation of the body perfect actually mediates the impact of the mass

media on adolescent girls' body image and eating behaviour over time (Keery et al., 2004; Shroff & Thompson, 2006; Stice et al., 1996).

Similarly, acute exposure to media featuring body-perfect models has been demonstrated to elicit the immediate desire to both look and be like the models, amongst adolescent girls (Chapter 6). This desire consequently leads to acute feelings of body dissatisfaction, as girls experience a heightened salience of their perceived appearance shortcomings (Chapter 6; Dittmar, Haliwell, & Stirling, 2009). Girls who have internalised the body perfect as a personal goal, and as such display a habitual desire to emulate body perfect models, are most vulnerable to the impact of acute media exposure on body image (Chapter 4; Durkin, Sorbello & Paxton, 2007; Hargreaves & Tiggemann, 2002). However, there is likely to be a further factor influencing adolescent girls' body image and body-shaping behaviour.

#### *The Body Perfect and the Material Ideal*

Throughout the mass media, body perfect models are typically presented alongside a second media-promoted ideal – the *material ideal* – wherein material goods, products and services are similarly both over-represented (Martin & McCracken, 2001; O'Guinn & Shrum, 1997) and idealised as the means to desirable life outcomes (Dittmar, 2008). Images of affluence and wealth saturate the mass media (Martin & McCracken, 2001; O'Guinn & Shrum, 1997), with expensive material goods, products and services serving as visible symbolic indicators of this. Individuals in possession of this material wealth are depicted as possessing a number of desirable characteristics, such as happiness, popularity, success, and as such, affluence and material possessions have become synonymous with these desirable traits (Dittmar, 2008). Exposure to media containing the 'material-ideal' has been demonstrated to lead individuals to internalise it (and the beliefs associated with its

acquisition) as a personal goal (Shrum, Lee, Burroughs, & Rindfleisch, 2011), in a way that is analogous to how biased depictions of the body perfect are internalised as a personal goal.

The continual pairing of the two ideals within the media, serves to blend the two together, and so the media may be seen as presenting an image of an idealised identity or *future* self, which may only be attained through the acquisition of both beauty and wealth (Dittmar, 2008). Adolescent girls may therefore perceive the body perfect as being an integral part of the material ideal, and vice versa (Englis et al., 1994). As such, it may be expected that internalisation of the two media ideals may be highly correlated in adolescent girls - representing an underlying orientation towards desiring this media-promoted idealised self-image - and indeed, preliminary research has demonstrated this amongst young women (Ashikali & Dittmar, 2011).

#### *Material Ideal & Materialism*

Materialism – the internalisation of the material ideal - is typically defined within psychology as the extent to which individuals pursue material goods, products and services; believing that their acquisition will lead to psychological fulfilment (Richins & Dawson, 1992; Richins, 2004). Therefore, materialism transcends the mere pursuit of material goods for their functional value, and marks a shift towards pursuing them for the symbolic meaning that is attached to them (Dittmar, 2008). As such, highly materialistic individuals are likely to believe that highly desirable life outcomes - including personal, social and professional success - are dependent on the acquisition of material possessions, and so actively pursue them as a central life goal (Richins & Dawson, 1992; Richins, 2004).

However, though materialistic individuals endorse the myth that the acquisition of the latest material goods and possessions will lead to a desirable life outcomes, psychological research has ironically linked high levels of materialism to a diverse range of negative consequences, including lower psychological well-being, lower life satisfaction, insecurity,

lower academic achievement, peer rejection, and juvenile delinquency (Chang & Arkin, 2002; Flori, 2004; Froh, Emmons, Card, Bono & Wilson, 2011; Goldberg, Gorn, Peracchio & Bamossy, 2003; Kasser, 2005; Rahn & Transue, 1998). Self-determination theory provides a useful framework for understanding the negative impact of materialism on well-being, by arguing that materialism represents an extrinsically motivated goal that is often pursued at the expense of intrinsically motivated goals. According to this theory, the pursuit of any goal for extrinsic motivations will have aversive consequences for mental health, since they are incompatible with individuals' basic intrinsic needs for autonomy, belongingness and relatedness (Deci & Ryan, 2000; Sheldon, Ryan, Deci & Kasser, 2004; Vansteenkiste, Soenens, & Duriez, 2008).

#### *Materialism, Body Image and Eating Behaviour*

Though individual's materialistic values have been linked to a plethora of negative outcomes, one domain wherein their negative influence has not as yet been examined is body image and eating behaviour (for exception see Ashikali & Dittmar, 2011), however there is ample justification for proposing that materialism may influence body image and restrained eating behaviour. The continual pairing and blending of the body perfect and the material ideal throughout the mass media may lead to the body perfect being perceived as an integral part of the material ideal. As such, the emphasis on 'image' - external features as markers of an idealised identity - that is an inherent feature of materialism, may be generalised to the physical appearance of the body (Kasser, 2002), resulting in a materialistically motivated desire for the body perfect.

Furthermore, understood within the materialistic context in which it typically occurs, the body perfect may become seen as an object or commodity - analogous to material possessions - that can be acquired through transactions, such as cosmetic surgery, dieting and exercise (Bartky, 1982; Fawcett, 2004). Those who have internalised this viewpoint may



therefore pursue and desire the body perfect in the same way that they pursue and desire material possessions. Therefore, materialistic girls may be more likely to engage in ‘transactions’ aimed at changing the appearance of their own bodies, such as cosmetic surgery, dieting and excessive exercise. In support of this, Henderson-King & Brooks (2009) found that materialistic individuals were more likely to report that they would consider having appearance-modifying cosmetic surgery to modify their appearance, than their non-materialistic counterparts. Therefore materialism - due its inherent emphasis on the importance appearance and its commodification of the body perfect – may serve as an additional mechanism through which the mass media influences restrained eating behaviour.

### *The Present Research*

Existing research examining the role of the mass media within the body image and restrained eating behaviour relationship has focused on the causal role of body-perfect promoting media. The present research aims to extend this research, by additionally examining the potential causal role of the mass media’s promotion of a second media ideal – the material ideal - and its subsequent internalisation. Study 1 uses a correlational approach to produce a new theoretical model of the impact of habitual mass media use on adolescent girls’ body image and eating behaviour by examining the potential mediational roles of *both* body perfect internalisation and materialism. In Study 2, the acute causal impact of exposure to both body-perfect promoting and material-ideal promoting media - on acute body image and eating behaviour is established, while examining the role of pre-existing levels of body perfect internalisation and materialism as moderators of this effect.

## **Study 1**

Though high media use during adolescence has been implicated in the internalisation of *both* the body perfect and the material ideal (Grabe et al., 2008; Groesz et al., 2002),

theoretical accounts of how the mass media impacts upon adolescent girls' restrained eating behaviour have focused solely on the role of body perfect internalisation (Keery et al., 2004; Shroff & Thompson, 2006; Stice et al., 1996), thus neglecting the potential negative role of material values. The majority of these theoretical accounts have argued that body perfect internalisation causes restrained eating behaviour indirectly, mediated through its negative impact on body image (Keery et al., 2004; Shroff & Thompson, 2006; Stice et al., 1996). However, some have furthermore posited that body perfect internalisation may cause restrained eating behaviour directly (Anschutz, Engels, & Van Strien, 2008; Dunkley, Wertheim, & Paxton, 2001; Harrison & Cantor, 1997), perhaps reflecting girls who diet in order to maintain a body shape that they are satisfied with, rather than as a means of changing it (Ogden, 2010).

There is ample justification however, for assuming that materialism may also impact upon girls' body image and eating behaviour. Adolescent girls, whom endorse the material ideal, place particularly strong emphasis on the importance of external appearance; striving constantly to present an idealised self-image through the acquisition of material goods, products and services (Kasser, 2005). These beliefs surrounding the importance of appearance and image may become generalised to beliefs about the importance of physical appearance more generally – including the body (Ashikali & Dittmar, 2011). This is especially likely in light of the overlapping way in which the mass media presents the material ideal alongside the body perfect (Dittmar, 2008). Therefore the body perfect may be perceived as an integral part of the material ideal, and so may be pursued for materialistic motives, leading to body dissatisfaction and restrained eating behaviour, as girls feel unable able to meet the body perfect ideal that is their goal.

However, in perceiving the body perfect as a part of the material ideal, materialistic individuals may come to view the body perfect as a commodity that can be acquired through

transactional processes, such as dieting (Bartky, 1982; Fawcett, 2004). Perceiving the body perfect in this highly achievable way may increase the likelihood of girls engaging in unhealthy body shaping behaviours, such as surgery, excessive exercise or dieting, however it may also, quite paradoxically, serve as a protective factor for negative body-related affect. Research has demonstrated that the potential negative psychological impact of self-ideal discrepancies may be minimised if the perceived attainability of this ideal is increased (Lockwood & Kunda, 1997). Hence, it is also possible that materialism may also influence restrained eating behaviour directly, independent of body image.

#### *The present research: Aims and hypotheses*

The aim of the present research is to investigate the role of internalisation of both media ideals - namely body perfect internalisation and materialism— within the mass media consumption, body image and restrained eating behaviour relationship. It is hypothesised that media consumption will predict both materialism and body perfect internalisation, which, consistent with previous research by Ashikali and Dittmar (2011), will be highly correlated in adolescent girls. Furthermore, it is hypothesised that internalisation of both media ideals will predict restrained eating behaviour two key ways. First, it is expected that media ideal internalisation will predict restrained eating behaviour indirectly through their influence on negative body image. Second, it is hypothesised that both body perfect internalisation and materialism will predict eating behaviour directly, independent of negative body image. This hypothesised model is shown in Fig. 1.

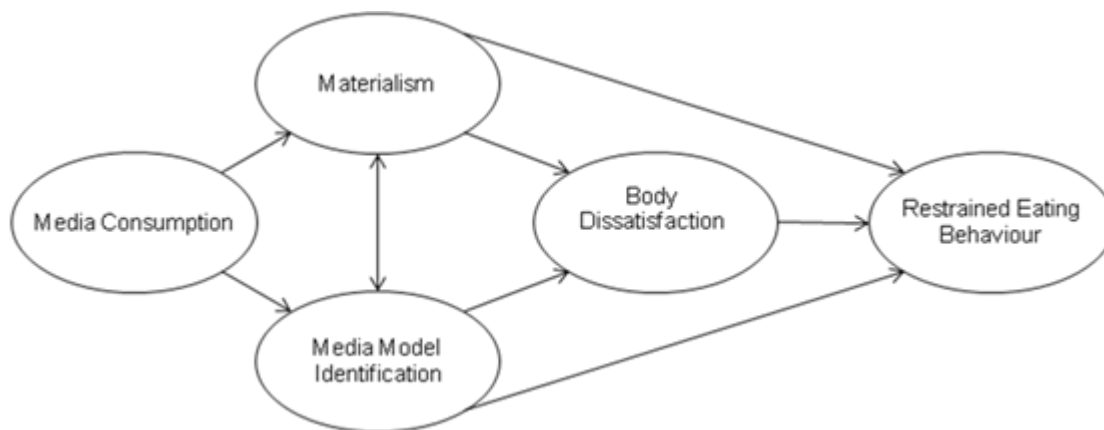


Figure 1. *The Hypothesised Model.*

## Method

### *Participants*

A volunteer sample of 199 adolescent females was recruited from an all-girls' high school in the South-East of England. Participants were aged between 14 and 16 years (*Mean* = 14.76, *SD* = 0.70), and were predominately white (87%). The average BMI (calculated as weight in kg / height (m<sup>2</sup>)) was 19.95 (*SD* = 4.21), with 9.1% girls classified as underweight, 85.9% as normal weight, 3% as overweight and 2% as obese, using population appropriate guidelines (Zaninotto et al., 2006).

### *Questionnaire and Procedure*

The study was introduced as a study of how different personality characteristics can influence media choice in adolescence. The questionnaire contained measures of media use, consumer culture values, body dissatisfaction and restrained eating behaviour. It had received ethical clearance from the relevant University committee and participating schools, complying fully with APA ethical guidelines.

*Media Use.* Media use was divided into five categories: Internet, TV, music video, magazines, and computer games. Participants were asked to estimate the number of hours

spent consuming each type of media on the average week-day and week-end day, so that their estimated weekly use could be calculated. Weekly media use estimates for each media type were summed in order to produce an estimate of overall weekly media consumption.

*Media Model Identification.* The most widely-used existing measure of body perfect internalisation, the Internalisation subscale of the Socio-Cultural Attitudes Towards Appearance Questionnaire (SATAQ-I3; Thompson, van den Berg, Roehrig, Guarga, & Heinberg, 2004) assesses the construct primarily in terms of how much girls identify with body perfect media models such as “I would like my body to look like the people who are in movies.” However, several items contained within the scale conflate the construct with body comparison tendency, e.g. “I compare my body to the bodies of TV and movie stars”, despite research demonstrating that body perfect internalisation and body comparison tendency are two psychological distinct constructs (Durkin et al., 2007).

The present research therefore introduces a new method of measuring body perfect internalisation (Media Model Identification; MMI) that measures the construct solely in terms of identification with media models and does not conflate the construct with body comparison tendency. The measure involved participants naming their two favourite TV programmes, music videos and magazines, and evaluating on five-point Likert scales (ranging from 1 to 5) how much they would like to look like the characters, and how much they would like to be like the characters. The scale was found to have good internal reliability  $\alpha = .82$

*Materialism.* Materialism was measured using the 9-item version of the Material Values Scale (MVS) by Richins (2004). The nine item scale has been shown to have good internal reliability and validity (Richins, 2004), which was also the case in the present study,  $\alpha = .82$ .

*Body dissatisfaction.* Body image was measured in terms of body dissatisfaction, as measured using a shortened trait version of the Physical Appearance State and Trait Anxiety Scale (PASTAS; Reed, Thompson, Brannick, & Sacco, 1991). This scale measures the negative affect associated with weight-related body parts, on five point Likert scale ranging from 1= Not anxious to 5 = Extremely anxious. Items were interspersed amongst other aspects of the self that adolescents may experience anxiety about, e.g. “social relationships” or “school work,” so as to help disguise the true purpose of the study. In the present study, the scale had excellent internal reliability,  $\alpha = .93$ .

*Restrained eating behaviour.* Eating and dietary behaviours were measured using shortened versions of the restrained eating subscale of the Dutch Eating Behavior Questionnaire (Van Strien, Frijters, Bergers, & Defares, 1986). The shortened version was constructed by selecting the 6 items with the highest factor loadings from the restrained subscale. The scale has been widely used amongst adolescent samples and has demonstrated good reliability and validity (Van Strien, 1996). It had good internal reliability in the present study,  $\alpha = .88$ .

## Results

### *Descriptive Statistics*

The means, standard deviations and inter-correlations between all the modelling variables, including media consumption, media model identification, materialism, body dissatisfaction and restrained eating, and also the demographic variables, including age and BMI, are displayed in Table 1.

Table 1. *Mean, Standard Deviations and Inter-Correlations for Habitual Media Consumption, Media Model Identification, Materialism, Trait Body Dissatisfaction, Restrained Eating Behaviour, Age and BMI*

	1	2	3	4	5	6	<i>M</i>	<i>SD</i>
1 Habitual media consumption							57.41	27.17
2 Materialism	.18*						2.32	0.93
3 Media model identification	.18**	.25**					2.80	0.72
4 Body dissatisfaction	.11	.14*	.32**				2.73	1.12
5 Restrained eating behaviour	.06	.24**	.12	.52**			2.64	1.03
6 BMI	.11	.00	.17	.21*	-.06		19.24	3.92
7 Age	-.09	.08	.08	-.09	-.05	-.01	14.59	0.65

\*  $p < .05$ ; \*\*  $p < .01$

### *Structural Equation Modelling*

Structural equation modelling (SEM; AMOS 16.1) was used to test the hypothesised model of the relationship between media use, consumer culture values, body dissatisfaction and restrained eating behaviours. SEM has been shown to be advantageous over traditional regression and path analysis, especially when examining mediators of relationships (Baron & Kenny, 1986), since it models all interrelationships between variables at the same time.

According to the hypothesised model, overall media use was expected to predict materialism and media model identification, and these three in turn were expected to predict body dissatisfaction. Body dissatisfaction was expected to predict restrained eating behaviours (see Figure 1). To test the model, all variables were modelled as latent variables, indicated by their corresponding scale mean, with the error term fixed to the unexplained scale variance ( $s^2(1 - \alpha)$ , see Dittmar, 2005b).

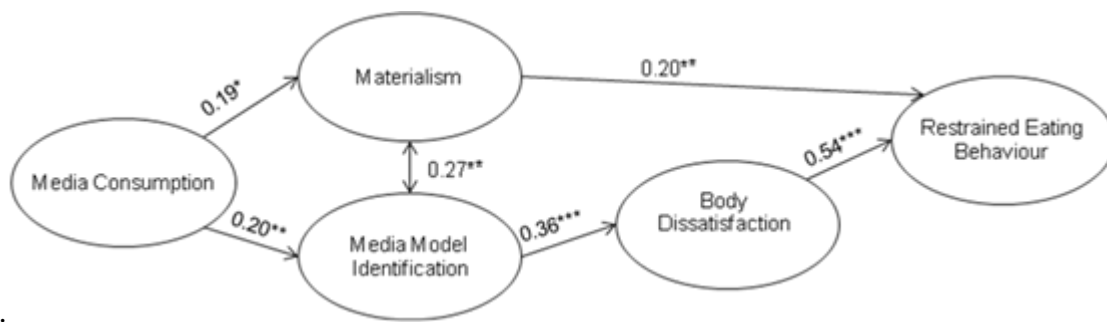


Figure 2. *The Final Model* (\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ )

The fit indices for the hypothesised model,  $\chi^2(2) = 0.31$ ,  $p = .86$ ; CFI = 1.00; RMSEA = .00, were found to be excellent, according to criteria by Kline (2005) and Hu and Bentler (1999). However, two of the pathways included within the model were non-significant, and so the pathways between materialism and body dissatisfaction,  $\beta = .06$ ,  $p = .49$ , and between media model identification and restrained eating,  $\beta = -.14$ ,  $p = .08$ , were removed, resulting in the final model. The fit indices of this final model were again excellent,  $\chi^2(4) = 3.9$ ,  $p < .42$ ; CFI = 1.00; RMSEA = .00, and all path-ways included were significant at the  $p < .01$  level or smaller. The final model is shown in Figure 2.

## Discussion

The findings of the present study provide partial support for the hypothesised model. As predicted, high levels of media consumption were found to predict both body perfect internalisation and materialism, supporting existing correlational research that has also found an association between high levels of media use and media ideal internalisation (Grabe et al., 2008; Groesz et al., 2002; Shrum et al., 2011). Furthermore, consistent with existing research (Ashikali and Dittmar, 2011), both body perfect internalisation and materialism were found to be highly correlated in adolescent girls - suggesting that the two are closely linked in the minds of media consumers. However, though it was hypothesised that body perfect



internalisation and materialism would predict restrained eating behaviour both directly and indirectly (mediated by body dissatisfaction), this was not supported by the findings. Body perfect internalization was found to predict restrained eating behaviour indirectly only; through its negative impact on body image. In contrast, in the context of body perfect internalisation, materialism was found to predict restrained eating behaviour only directly, independent of body dissatisfaction.

Therefore the findings of the present study suggest that media consumption leads to restrained eating behaviour through two key pathways – each mediated by internalisation of one of the two dominant media ideals. First, it is proposed that high media consumption may lead girls to internalise the body perfect as a personal goal, and that this body perfect internalisation may lead to body dissatisfaction, which in turn, causes restrained eating. This first pathway is consistent with existing correlational research which has proposed that the mass media's impact upon restrained eating behaviour is mediated by both body perfect internalisation and negative body image (Keery et al., 2004; Shroff & Thompson, 2006; Stice et al., 1996).

Second, the findings of the present study demonstrate that the mass media may also influence restrained eating behaviour through internalisation of the material ideal. This novel and important finding, suggests that highly materialistic adolescent girls may engage in restrained eating behaviour, regardless of how they feel about their body. The link between materialism and restrained eating behaviour may be explained in terms of the beliefs that materialistic individuals hold regarding both the importance and the achievability of having an idealised appearance, which both serve to increase the likelihood that materialistic girls will engage in dietary restraint. Such an effect may be independent of body image, as beliefs surrounding the attainability of the body perfect may additionally act as a 'buffer' against negative impact of the mass media on body image (Lockwood & Kunda, 1997).

## Study 2

Study 2 aimed to investigate the acute causal impact of exposure to both body-perfect promoting and material-ideal promoting media on acute body image and eating behaviour is established, while examining the role of body perfect internalisation and materialism as vulnerability factors of this effect, therefore supporting the potential causal pathways identified within Study 1. The causal impact of body perfect media on adolescent girls' body image has been tested experimentally by comparing the effects of short-term exposure to images of body perfect models on state body image, to that of neutral images. Such exposure experiments have consistently shown that body perfect media have a negative impact on girls' body image in comparison to a control group (Grabe et al, 2008; Groesz et al., 2002; Want, 2009).

Existing experimental research, investigating the causal impact of body perfect media on eating behaviour, focusing on adult women samples, has typically yielded mixed findings. Some studies have demonstrated that exposure to images of thin media models induces diet-like behaviour, such as eating less food (Anschutz, Van Strien & Engels, 2008) or opting for a diet version of a snack-bar (Krahe & Krause, 2010). Other studies have demonstrated that some women, particularly those who habitually engage in restrained eating strategies, experience a relief effect in response to such images – inhibiting their diet-like behaviour (Anschutz, Engels, Becker, & Van Strien, 2009; Mills, Polivy, Herman, & Tiggemann, 2002; Seddon & Berry, 1996).

Research in the domain of materialism, has demonstrated that exposure to media containing images of the material ideal heightens the cognitive salience of individuals' material values (Ashikali & Dittmar, 2011; Shrum et al., 2011), but little previous research has examined the impact of the material ideal on body image. Ashikali & Dittmar (2011)

demonstrated that materialistic media exposure increased the centrality of appearance to young women's self-concept, but did not lead them to experience feelings of negative body image. No previous research has examined the effect of materialistic images on eating behaviour.

If beliefs pertaining to the ideal body as a possession or commodity, which may be acquired through activities such as dieting, are an important aspect of material values, then they may become temporarily activated as a consequence of exposure to material-ideal promoting behaviour. Such materialistic beliefs may encourage girls to perceive the body perfect as being more achievable than it actually is, and as such may act as a buffer against the deleterious effects of the mass media on adolescent girls' body image – meaning that they may be unaffected by material-ideal promoting media. At the same, these beliefs may increase the likelihood that adolescent girls will engage in restrained eating behaviour, since this diet-like behaviour is perceived as legitimate means of bringing them closer to their ideal.

#### *Internalisation of Media Ideals as Vulnerability Factors*

Exposure experiments have consistently demonstrated that the extent to which adolescent girls have internalised the body perfect ideal moderates the impact of body perfect media on adolescent girls' body image, in that girls with high levels of body perfect internalisation experience more negative body image (Chapter 4; Durkin et al., 2007; Hargreaves & Tiggemann, 2002). Furthermore, as negative body image has been demonstrated to mediate the impact of the mass media on restrained eating behaviour (Keery et al., 2004; Shroff & Thompson, 2006), it is likely that girls with high levels of body perfect internalisation will engage in more restrained eating behaviour, as a consequence of this increased negative body image, although there has been no previous experimental investigation of this.

It is likely that materialism may act as a moderator of material-ideal promoting media on eating behaviour in the same way that body perfect internalisation moderates the impact of body-perfect promoting media. This is because materialistic media is believed to increase the cognitive salience of individuals' material values (Ashikali & Dittmar, 2011; Shrum et al., 2011), and so those with high levels of pre-existing materialistic values— i.e. those who have internalised the material ideal - may be more vulnerable to this effect. Thus, materialistic girls may experience a heightened reaction to material-ideal promoting media, making them more likely to engage in restrained dietary behaviour.

### *Aims and hypotheses*

The present study aims to examine the isolated impact of exposure to advertisements containing the 'body perfect' and the 'material ideal' on adolescent girls' body image and restrained eating behaviour. It utilises an exposure experiment methodology, wherein the impact of (1) advertisements featuring both the body perfect and the material ideal, (2) advertisements featuring the body perfect ideal only, (3) advertisements featuring the material ideal only, or (4) advertisements featuring neither the body perfect and the material ideal, on adolescent girls' acute body image and eating behaviour are compared, using a 2x2 design. Furthermore, the present study aims to identify vulnerability factors that make adolescent girls more susceptible to the negative impact of each media ideal on body image and eating behaviour. In particular, it examines both body perfect internalisation and materialistic values as potential moderators of media ideals. It is hypothesised that:

H1. Girls exposed to adverts containing the body perfect ideal will experience greater post-exposure negative body image and engage in more diet-like behaviour, in comparison to those who view non-body perfect adverts.

H2. Girls exposed to adverts containing the material ideal will engage in more diet-like behaviour, in comparison to those who view non-body perfect adverts, despite experiencing no post-exposure increase in negative body image.

H3. Following exposure to body perfect advertisements, adolescent girls who have internalised the body perfect as a personal goal will report increased negative body image and engage in more diet-like behaviour, than girls with lower levels of body perfect internalisation.

H4. Following exposure to materialistic advertisements, highly materialistic adolescent girls will report engaging in more diet-like behaviour, than girls with low material values<sup>2</sup>.

## Method

### *Participants*

A volunteer sample of 174 adolescent females was recruited from an all-girls' high school in the North-East of England. Participants were aged between 13 and 15 years (*Mean* = 14.23, *SD* = .68) and predominately white (97%). The average BMI (calculated as weight in kg/heightm<sup>2</sup>) was 20.71 (*SD* = 5.86), with 11.3% girls classified as underweight, 80.7% as normal weight, 5% as overweight and 3% as obese, using population appropriate guidelines (Zaninotto et al, 2006). There were 46 girls in the material ideal and body perfect condition, 43 girls in the material ideal only condition, 42 girls in the body perfect only condition and 49 girls in the control condition.

### *Exposure stimuli and presentation*

For each condition, five age-appropriate advertisements were produced. For the material ideal and body perfect condition, the five adverts featured materialistic products deemed highly desirable to adolescent girls (e.g. jewellery, mobile phone, mp3 player), accompanied by a body perfect model, wearing a bikini. In the material-ideal only condition,

the adverts featured the same products and texts, but without the model. For the body perfect alone condition, adverts were created for non-materialistic products, i.e. necessities that adolescent girls would need to buy, such as tampons, bottled water and hand sanitizer, featuring the same body perfect models that were contained within the material ideal and body perfect condition. Finally, the control condition featured adverts for the same non-materialistic products, but without the models.

Images were presented to the group on a large screen using a projector. Each image was shown for one and a half minutes, with exposure lasting seven and a half minutes in total in each of the four conditions.

#### *Post-exposure measures*

Immediately post-exposure, participants completed a questionnaire containing four core measures. As body image is a multi-faceted construct (Grogan, 2008), two measures of state body image were used in the present study, one focusing on weight specifically, and the other on appearance more generally. Dietary restraint was assessed using a measure of actual eating behaviour.

*Weight- & appearance-related self discrepancies.* The *Self Discrepancy Index* (SDI) was used to measure post-exposure levels of weight- and appearance-related self discrepancies (Dittmar, Beattie & Friese, 1996; Dittmar, et al., 2009). Participants were asked to complete the following sentence up to three times; “In general, I ... , but I would like ...” by stating something about themselves that they would like to change, and then stating how they would ideally like to be. They then rated each generated statement on six-point Likert scales, ranging from 1 *very little* to 6 *extremely*, how different they are from their ideal (magnitude) and how concerned they are about the difference (importance).

The statements were coded as either weight-related, appearance-related (but non-weight related), or neither. Following Dittmar et al (2009), a Weight-Related Self-

Discrepancy Index (WRSDI) was calculated by multiplying the magnitude rating and the importance rating of each weight-related statement given, then summing these for each participant. Similarly, an Appearance-Related Self Discrepancy Index (ARSDI) was computed in the same manner using only the statements classified as being appearance-related.

*Eating behaviour.* Participants were given six sweets to eat (toffee chocolate éclairs wrapped in plain white papers) whilst completing the questionnaire. At the end of the study, participants were provided with an envelope to place any remaining sweets, along with the completed questionnaire. The number of sweets remaining for each participant was recorded.

#### *Follow-up Questionnaire*

Participants completed a questionnaire containing baseline measures of body image, consumer culture values and eating behaviour.

*Baseline measures.* A trait measure of weight- and appearance-related self discrepancies was collected using the SDI, and as such, instructions were modified to ask participants how they felt about the bodies “In general...”

*Materialism.* As with study one, materialism was measured using the MVS, which was found to have good internal reliability amongst the present sample,  $\alpha = .79$ .

*Body Perfect Internalisation.* Within the body image research literature, body perfect internalisation has typically been measured by assessing the extent to which girls desire to imitate the appearance of media models (Thompson et al., 2004). Though engaging in wishful identification with media models is an important indicator of body perfect internalisation, measuring the construct solely in this way is limiting, since it offers little indication of how much girls have internalised the beliefs associated with body perfect, nor the perceived importance of body perfect acquisition to girls’ self -concept and sense of identity - including their personal investment in it (Chapter 5).

During the interim period between study one and study two, the authors developed a new measure of body perfect internalisation; the Body Perfect Internalisation Scale (Chapter 5). The comprehensive measure assesses the extent to which girls identify with body perfect media models, how central the goal of body perfect acquisition is to girls' sense of self and how personally invested girls are in attaining the body perfect. It furthermore measures the extent to which girls have endorsed the media-promoted beliefs associated with body perfect acquisition. Not only does this new measure provide a more comprehensive and holistic measure of body perfect internalisation, but it is also more analogous with the measures typically used to measure materialism (Richins, 1994; Richins & Dawson 1992). The scale had excellent internal reliability in the present study,  $\alpha = .93$ , and furthermore found to be much more closely related to materialism,  $r = 0.54$ ,  $p < .001$ .

*Restrained Eating.* As with study one, restrained eating behaviour was measured using the DEBQ-R. The scale was found to have excellent internal reliability in the present sample,  $\alpha = .86$ .

#### *Procedure & Ethics*

Testing took place during the school registration period, at the beginning of the school day. Participants were tested in groups of approximately 25, whilst in their allotted mixed academic ability 'form' classes. Having been advised that they would be participating in a study regarding "How adolescents interact with the media, as research has shown that aspects of their personality may affect how they respond to the media", participants were then presented with the stimuli. Once the exposure time was over, participants completed the questionnaire containing the post-exposure measures and a packet of six sweets, and the remaining sweets were collected at the end along with the completed questionnaire and enclosed within an envelope. Participants then collected the snack-bar of their choice from the experimenter.



Four weeks after the exposure experiment, participants completed the time two questionnaire. The study had received ethical clearance from the relevant University committee and participating schools, and complied fully with BPS/APA ethical guidelines.

## Results

### *Descriptive Statistics*

The means, standard deviations and inter-correlations for each of the trait body-image related variables and also demographic variables are displayed in Table 1.

Table 2. Mean, Standard Deviations and Inter-Correlations for Trait Body Dissatisfaction, Weight-Related Concerns, Appearance-Related Concerns, Body Perfect Internalisation, Materialism, Restrained Eating Behaviour, BMI and Age.

	1	2	3	4	5	6	7	<i>M</i>	<i>SD</i>
<b>1 Body dissatisfaction</b>								2.79	0.83
<b>2 Weight-related concerns</b>	-.42**							10.50	12.38
<b>3 Appearance-related concerns</b>	-.18*	.23**						11.97	15.09
<b>4 Body perfect internalisation</b>	-.40**	.46**	.26**					3.26	1.01
<b>5 Materialism</b>	-.07	.17*	.12	.54**				3.09	0.66
<b>6 Restrained eating behaviour</b>	-.45**	.39**	.19*	.51**	.09			2.93	0.97
<b>7 BMI</b>	-.18*	.21**	-.04	.10	-.03	.21**		20.54	3.99
<b>8 Age</b>	-.09	.04	.10	.10	.11	.06	.08	14.30	0.65

\*  $p < .05$ ; \*\*  $p < .01$

Furthermore, the adjusted means for post-exposure weight-related concerns, appearance-related concerns and number of sweets eaten (controlling for the relevant trait measure) are displayed in Table 3 for each exposure condition.

Table 3. *Adjusted Means (and Standard Error) for Weight-Related Concerns, Appearance-Related Concerns and Number of Sweets Eaten across the Four Exposure Conditions.*

	Body Perfect	Material Ideal	Body Perfect + Material Ideal	Control
Weight-related concerns	9.64 (1.26)	4.90 (1.24)	7.26 (1.20)	7.41 (1.23)
Appearance-related concerns	16.67 (1.97)	8.81 (1.94)	11.74 (1.86)	15.32 (1.92)
Number of sweets eaten	1.83 (0.30)	2.04 (0.30)	1.30 (0.33)	3.23 (0.30)

\*  $p < .05$ ; \*\*  $p < .01$

### *Post Exposure Effects.*

In order to examine the impact of exposure to advertisements containing media ideals on adolescents' body image, separate hierarchical regression analyses were conducted for each measure of state body image. Predictors were entered in three steps. In the first model, age, BMI, habitual restrained eating behaviour and the respective trait variable (when applicable) were entered as control variables. The second model contained exposure effects, which were effect-coded as three orthogonal contrasts, assessing respectively, the differences between body perfect advertisements vs. non-body perfect advertisements ( $H_1$ ), and material ideal advertisements vs. non-material ideal advertisements ( $H_2$ ). A third contrast, which aimed to assess the interaction between body perfect advertisements and material ideal advertisements, was also included within the model. Furthermore, the design of the statistical analysis in the present study also examines the potential impact of the two moderator variables – body perfect internalisation and materialism - simultaneously, therefore establishing their individual contribution, relative to one another. Hence, the third model included body perfect internalisation and materialism (both mean-centred), the hypothesised interactions between body perfect internalisation and contrast one ( $H_3$ ) and materialism and contrast two ( $H_4$ ), and, the non-hypothesised interaction effects between body perfect internalisation and contrasts two and three, and between materialism and contrasts one and three. The change statistics for each model are shown in Table 4.

*Weight-Related Self Discrepancies.* Model 1 was significant,  $F(4, 160) = 10.99, p < .001$ , as both trait weight-related self discrepancies and habitual restrained eating behaviour were significant predictors of post-exposure weight-related self discrepancies,  $\beta = .31, p < .001$ , and  $\beta = .23, p = .01$ , respectively. The inclusion of the exposure contrasts in Model 2 significantly improved the amount of variance predicted by the model,  $\Delta F(3, 157) = 12.70, \Delta R^2 = .15, p < .001$ . However, only the first contrast was significant, indicating that only exposure to media containing body perfect models led to increases in post-exposure weight-related self discrepancies,  $\beta = .39, p < .001$ . The final model, Model 3 was a significant improvement,  $\Delta F(4, 149) = 5.43, \Delta R^2 = .16, p < .001$ , explaining 53% of the variance in post-exposure weight-related self discrepancies.

Table 4. *Change Statistics for Each Model within the Regression Analyses for Post-Exposure Body Image.*

	Weight-related self discrepancies		Appearance-related self discrepancies		Sweets eaten	
	<i>R</i> <sup>2</sup> change	<i>F</i> change	<i>R</i> <sup>2</sup> change	<i>F</i> change	<i>R</i> <sup>2</sup> change	<i>F</i> change
Model 1	.22	10.99***	.25	13.44***	.04	1.92
Model 2	.15	12.70***	.10	8.07***	.12	6.80***
Model 3	.16	6.25***	.02	1.30	.17	4.28***

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

The regression weights for each variable contained within this final model are shown in Table 5. Trait weight-related self discrepancies, habitual restrained eating behaviour and materialism were all found to significantly predict post-exposure weight-related self discrepancies:  $\beta = .43, p < .001$ ;  $\beta = .15, p < .05$ ;  $\beta = .19, p < .05$ . Contrast one was also found to be significant, indicating that girls exposed to body perfect advertisements reported significantly higher weight-related self discrepancies post-exposure,  $\beta = .40, p < .001$ ,

therefore supporting hypothesis one. Finally, significant interaction effects were found between body perfect internalisation and body-perfect exposure (contrast one), and, materialism and material-ideal exposure (contrast two):  $\beta = .19, p < .01, \beta = -.22, p < .01$ . Simple slopes analysis was used to interpret the nature of these interaction effects.

Table 5. *T-values, standardised and un-standardised beta-values, and standard errors, for the predictors of weight-related self-discrepancies contained within the final model.*

	Weight-related self discrepancies			
	<i>B</i>	<i>SE</i>	$\beta$	<i>T</i>
Trait weight-related self discrepancies	.45	.07	.43	6.73***
Habitual restrained eating behaviour	.09	.05	.15	2.12*
Age	.06	.06	.06	.31
BMI	.00	.01	.00	.99
Contrast 1: Body perfect adverts vs. Non-body perfect adverts	.50	.07	.40	6.93***
Contrast 2: Material ideal adverts vs. Non-material ideal adverts	-.02	.07	-.02	-.33
Contrast 3: Material ideal + body perfect adverts vs. Other adverts	.22	.15	.09	1.49
Body perfect internalisation	.06	.05	.09	1.09
Body perfect internalisation * Contrast 1	.23	.09	.19	2.68**
Body perfect internalisation * Contrast 2	.08	.09	.07	.95
Body perfect internalisation * Contrast 3	-.02	.09	-.01	-.09
Materialism	.18	.08	.19	2.32*
Materialism * Contrast 1	.24	.15	.13	1.62
Materialism * Contrast 2	-.42	.15	-.22	-2.91**
Materialism * Contrast 3	.34	.35	.19	.95

\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$

As Figure 3 shows, body perfect internalisation was found to moderate body perfect exposure in the expected direction, therefore supporting hypothesis three. Girls with low levels of body perfect internalisation appeared to be unaffected by exposure to body perfect advertisements, in terms of their weight-related self discrepancies. However, as girls levels of body perfect internalisation increased, they became increasingly affected by the body perfect exposure, reporting increasingly higher weight-related self discrepancies.

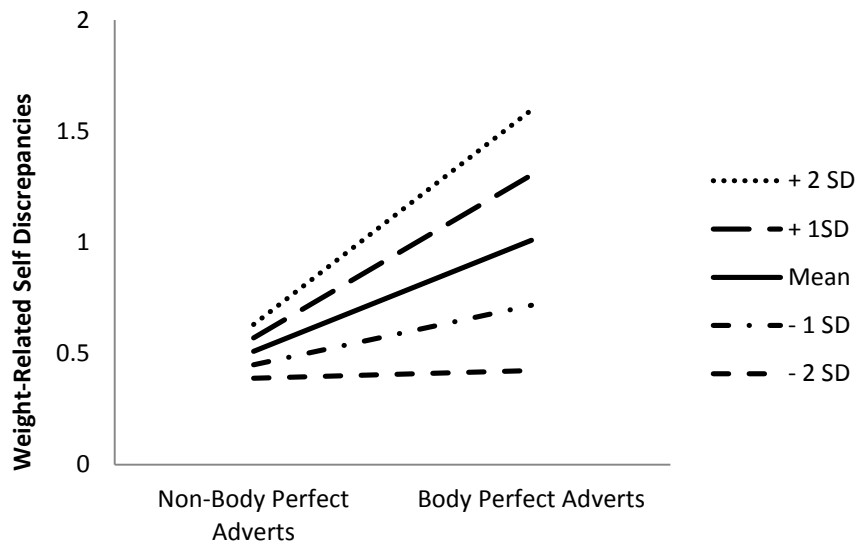


Figure 3. *Slopes Analysis for the Interaction between Body Perfect Internalisation and Body Perfect Media Exposure in Terms of Weight-Related Self Discrepancies.*

With regards to the second interaction effect, which was found between materialism and material ideal exposure, slopes analysis revealed an unexpected pattern of findings. As Figure 4 shows, highly materialistic adolescent girls exposed to the material ideal experienced to a decrease in weight-related self discrepancies, whereas girls with lower levels of material values experienced an increase in weight-related self discrepancies. Therefore it appears that highly materialistic girls experienced a ‘relief effect’ following exposure to the material ideal, whereby their body image was elevated, contrary to what was hypothesised (H<sub>4</sub>).

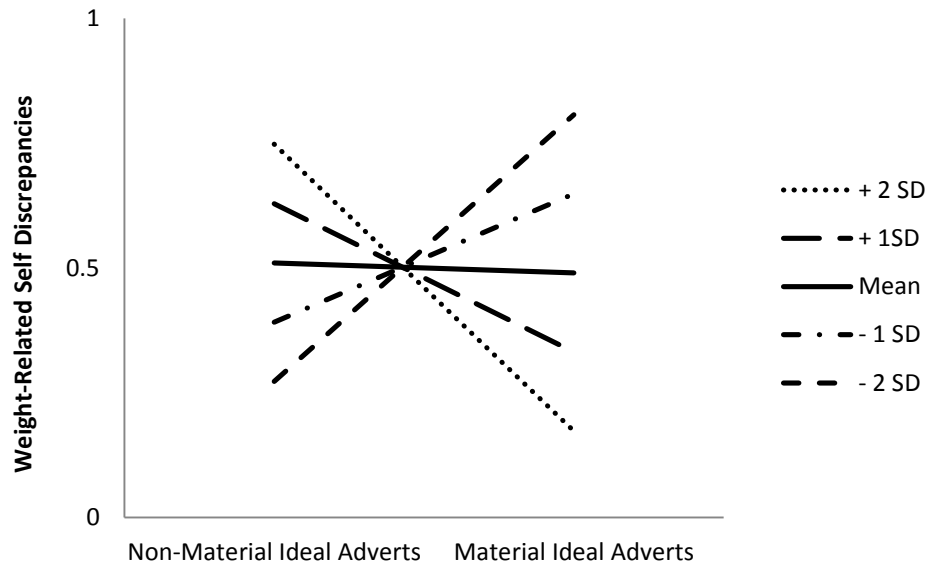


Figure 4. *Slopes Analysis for the Interaction between Materialism and Material Ideal Media Exposure in Terms of Weight-Related Self Discrepancies.*

*Appearance-related self discrepancies.* Model 1 was significant,  $F(4, 160) = 13.44$ ,  $R^2 = .25$ ,  $p < .001$ , as both trait appearance-related self discrepancies and habitual restrained eating behaviour were found to significantly predict post-exposure appearance-related self discrepancies:  $\beta = .39$ ,  $p < .001$   $\beta = .26$ ,  $p < .001$ . Model 2 explained a significant additional amount of variance,  $\Delta F(3, 157) = 8.07$ ,  $\Delta R^2 = .10$ ,  $p < .001$ . However, only exposure contrast one, which pertained to whether or not girls were exposed to media containing body perfect models, was found to be significant,  $\beta = .32$ ,  $p < .001$ , indicating that only girls exposed to body perfect models experienced a significant increase in appearance-related self discrepancies. Model 3, however was found to be non-significant, and so, the inclusion of the hypothesised moderation effects of both body perfect internalisation and materialism, did not provide a significant contribution the model,  $\Delta F(4, 149) = 1.30$ ,  $\Delta R^2 = .02$ ,  $p = .28$ .

*Sweets Eaten.* Model 1 was non-significant,  $F(3, 152) = 1.02$ ,  $R^2 = .03$ ,  $p = .13$ . However, the addition of the exposure contrasts in Model 2 significantly improved the variance predicted,  $\Delta F(3, 149) = 6.80$ ,  $\Delta R^2 = .12$ ,  $p < .001$ . Contrast one was significant, as girls exposed to adverts featuring body perfect models ate significantly less sweets than girls

exposed to non-body perfect adverts,  $\beta = -.22$ ,  $p < .01$ . Similarly, contrast two was significant, indicating that girls exposed to materialistic adverts ate significantly less sweets than those who viewed non-materialistic adverts,  $\beta = -.27$ ,  $p < .01$ . Finally, Model 3 provided a significant improvement in the amount of variance predicted,  $\Delta F(4, 141) = 4.28$ ,  $\Delta R^2 = .17$ ,  $p < .001$ , explaining 32% of the variance.

Table 6. *T-values, Standardised and Un-Standardised Beta-Values, and Standard Errors, for the Predictors of Number of Sweets Eaten, Contained within the Final Model.*

	Number of Sweets Eaten			
	<i>B</i>	<i>SE</i>	$\beta$	<i>T</i>
Habitual restrained eating behaviour	-.12	.19	-.06	-.65
Age	-.12	.23	-.04	-.52
BMI	-.02	.04	-.04	-.47
Contrast 1: Body perfect adverts vs. Non-body perfect adverts	-.70	.29	-.17	-2.39*
Contrast 2: Material ideal adverts vs. Non-material ideal adverts	-1.06	.30	-.26	-3.56***
Contrast 3: Material ideal + body perfect adverts vs. Other adverts	.55	.59	.07	.94
Body perfect internalisation	-.18	.22	-.09	-.85
Body perfect internalisation * Contrast 1	-.20	.36	-.05	-.56
Body perfect internalisation * Contrast 2	.02	.36	.00	.04
Body perfect internalisation * Contrast 3	-.47	.72	-.06	-.66
Materialism	-.09	.32	.03	.29
Materialism * Contrast 1	-1.89	.59	-.31	-3.20**
Materialism * Contrast 2	-1.84	.59	-.30	-3.15**
Materialism * Contrast 3	4.89	1.47	.36	3.33**

\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$

As Table 6 shows, in the final model, exposure contrasts one and two remained significant,  $\beta = .17$ ,  $p < .05$ , and  $\beta = .26$ ,  $p < .001$ , respectively, indicating that there was an overall main effect of body perfect exposure, and an overall main effect of material ideal exposure, on post-exposure eating behaviour. This supported hypotheses one and two. The only significant moderation effects found within the final model pertain to materialism,

which was found to moderate all three exposure contrasts; contrast one,  $\beta = .31, p < .01$ ; contrast two,  $\beta = .30, p < .01$ ; contrast three  $\beta = -.36, p < .01$ .

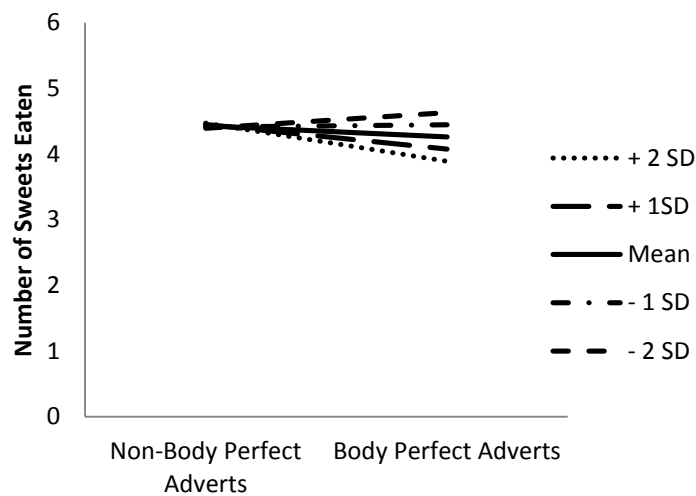


Figure 5. Slopes Analysis for the Interaction between Materialism and Body Perfect Media Exposure in Terms of Number of Sweets Eaten.

As previously, simple slopes analysis was used to interpret the nature of these interaction effects. First, as Figure 5 shows, materialism was found to moderate the impact of exposure to body perfect models on eating behaviour in the expected direction. Girls with high levels of materialism ate much fewer sweets following exposure to body perfect advertisements, whereas girls with low levels of materialism ate more sweets.

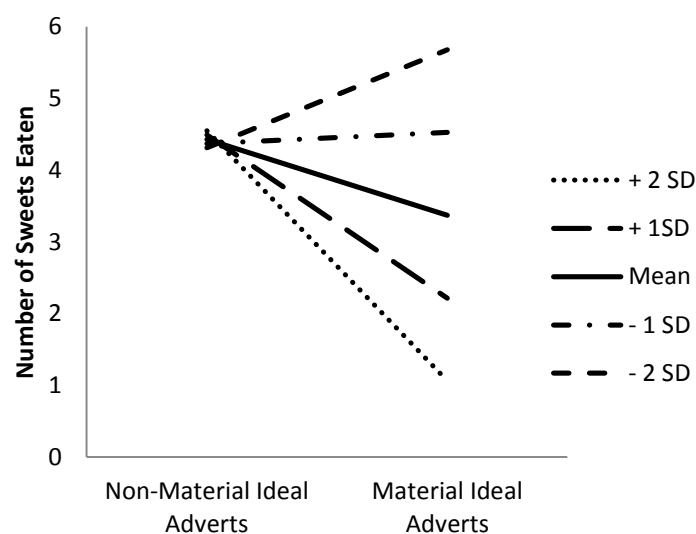


Figure 6. Slopes Analysis for the Interaction between Materialism and Material Ideal Media Exposure in Terms of Number of Sweets Eaten.



Similarly, as Figure 6 shows, materialism was found to moderate the impact of exposure to material ideal promoting advertisements on adolescent girls' eating behaviour in a similar way. Adolescent girls with mean levels, or higher, of materialism, ate much fewer sweets following exposure to the material ideal, in comparison to girls with lower levels of materialism. Finally, as Figure 7 shows, a very different moderation effect was found between materialism and the third contrast. Highly materialistic girls exposed to adverts that simultaneously featured the material ideal and the body perfect ate more sweets than girls with lower levels of materialism.

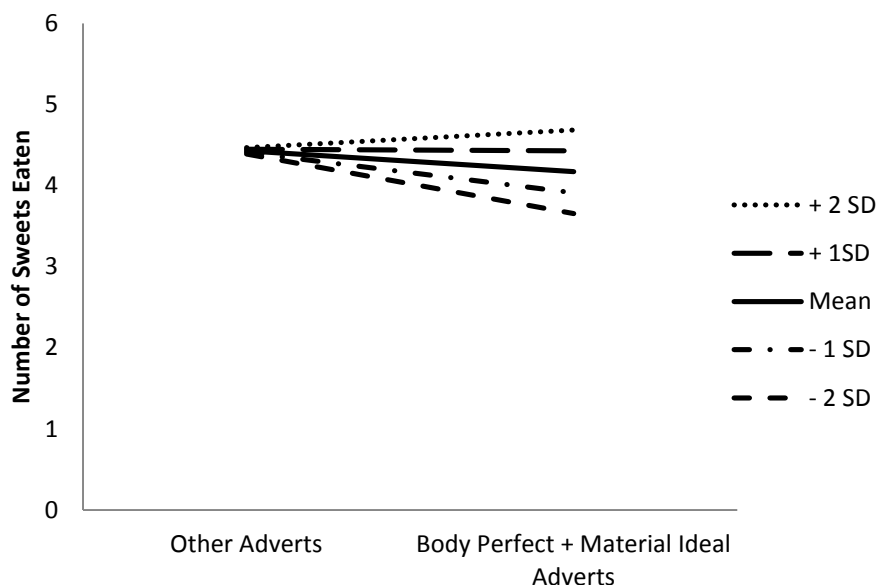


Figure 7. *Slopes Analysis for the Interaction between Materialism and Body Perfect and Material Ideal Media Exposure in Terms of Number of Sweets Eaten.*

## Discussion

The first aim of the study was to examine the impact of exposure of two prominent media ideals on adolescent girls' body image and eating behaviour. It was predicted that girls exposed to body perfect advertisements would report significantly more negative body image and engage in more diet-like behaviour, than those exposed to non-body perfect advertisements. This hypothesis was supported, as adolescent girls exposed to body perfect

advertisements reported significantly higher weight and appearance-related self discrepancies and engaged in more diet-like behaviour, than girls exposed to non-body perfect advertisements. The findings of the present study support the strong body of existing empirical research demonstrating that exposure to body perfect media causes increased negative body image in adolescent girls (Groesz et al., 2002; Grabe et al., 2008; Want, 2009). Moreover, the present study extends this research by demonstrating that brief exposure to body perfect media causes immediate acute diet-like behaviour in girls. This is important, as though a strong body of correlational evidence links media consumption to dietary restraint in adolescent girls (Groesz et al., 2002; Grabe et al., 2008), no study has demonstrated that acute mass media exposure may actually cause of restrained eating behaviour amongst this age group.

It was also predicted that adolescent girls exposed to material-ideal promoting advertisements would engage in significantly more diet-like behaviour, in comparison to girls exposed to non-materialistic advertisements, though their body image would be unaffected. This hypothesis was fully supported by the findings of the present study, as though no differences in adolescent girls' post exposure body image were detected, adolescent girls exposed to materialistic media did engage in significantly more diet-like behaviour. The present study therefore identifies a second mechanism through which the mass media may impact upon girls' dietary restraint, providing empirical support for the direct link between materialism and restrained eating behaviour identified in Study 1, by demonstrating that material-ideal promoting media causes acute dietary restraint, independent of body image. Existing research has demonstrated that exposure to material-ideal promoting media increases the cognitive salience of materialistic values (Ashikali & Dittmar, 2011; Shrum et al., 2011) - including beliefs about the importance of image and appearance to one's self concept (Ashikali & Dittmar, 2011). It may be that the heightened salience of these beliefs leads

adolescents to engage in diet-like behaviour when presented with highly calorific food, because they believe that this dietary restraint is more congruent with the media-endorsed ideal image that they desire - of which the ultra-thin body perfect is an integral part (Englis et al., 1994; Dittmar, 2008). Adolescent girls' body image may be unaffected by material-ideal promoting media due to the simultaneous activation of beliefs pertaining to the achievability of the body perfect.

The second aim of the present study was to identify which girls are most vulnerable to the negative effects of the media ideals on body image and eating behaviour. Girls with high levels of body perfect internalisation experienced increased negative body image in response to body perfect media, reporting higher weight-related self discrepancies, than girls with low levels of body perfect internalisation, however they did not engage in more restrained eating behaviour. These findings support existing research, which that has consistently demonstrated that adolescent girls who have internalised the body perfect as a personal goal, experience more negative body image following exposure to body perfect media (Chapter 4; Durkin et al., 2007; Hargreaves & Tiggemann, 2002).

Similarly, materialism was also found to be a significant moderator of the post-exposure effects of the material ideal exposure. Thus highly materialistic girls engaged in increased diet-like behaviour, in comparison to their non-materialistic counterparts, following exposure to the material ideal. Interestingly, materialism was also found to moderate the impact of material-ideal exposure on body image, as highly materialistic girls experienced a reduction in weight-related self discrepancies scores. Therefore girls who particularly endorse the material ideal experienced a positive boost in body image, possibly due to their heightened perceptions surrounding the attainability of the body perfect.

Finally, although no specific predictions were made, the present study also examined potential interaction effects that may occur when the body perfect and the material ideal are

presented simultaneously within the media. Only highly materialistic girls seemed to be affected by such an interaction of the ideals, as materialism was found to significantly moderate the interaction between body perfect and materialistic media, but only in terms of eating behaviour. Adolescent girls with high materialistic values, who were exposed to media that contained both body perfect and materialistic images, experienced an unexpected inhibition of dietary behaviours, actually eating more sweets than their non-materialistic counterparts. This is an interesting finding that warrants further investigation.

As with all studies that adopt an exposure experiment methodology, the present study is limited in that it demonstrates short-term media effects within a highly controlled and therefore artificial environment. Girls' acute reactions to the media clips featured within the present study may not reflect the cumulative interactions - within the naturalistic environment - between adolescents and the media that they choose for themselves. As such, caution must be taken when generalising the conclusions of the present study to everyday life.

### **General Discussion and Conclusion**

Historically, explanations of how the mass media exerts its negative impact upon adolescent girls' body image and restrained eating behaviour have focused on the media's prolific promotion of the body perfect ideal (Keery et al., 2004; Shroff & Thompson, 2006; Stice et al., 1996). However, throughout the mass media, the body perfect ideal is ubiquitously blended together with a second ideal – *the material ideal* – which may present an additional mechanism through which the mass media may exert its negative influence. Materialistic messages and values have hardly been examined in relation to body image and restrained eating behaviour (for exception see Ashikali & Dittmar, 2011) and so the present research provided a novel contribution to the research literature by examining the impact of repeated

and acute exposure to *both* media-promoted ideals on adolescent girls' body image and eating behaviour.

In Study 1, a comprehensive model of the relationship between media consumption and adolescent girls' body image and eating behaviour was developed; incorporating internalisation of the two media ideals as mediators of the mass media's negative influence. It was demonstrated that though habitual media use predicted both body perfect internalisation and materialism; the internalisation of each media ideal led to restrained eating behaviour through different mechanisms. Thus, whereas the effect of body perfect internalisation on eating behaviour was fully mediated by body dissatisfaction; the effect of materialism on eating behaviour was direct, i.e. over and above the impact of body image on eating behaviour. Study 2 aimed to examine these relationships experimentally, by examining the acute impact of brief exposure to advertisements containing these media ideals on acute body image and eating behaviour. It was found that body-perfect promoting adverts caused significantly more negative body image and diet-like behaviours than non-body perfect adverts, whereas material-ideal promoting adverts caused significantly more diet-like behaviours only. Furthermore, internalisation of each media ideal was found to significantly moderate the majority of these negative effects.

#### *Two Media-Influenced Pathways for Dietary Restraint*

In combination therefore, the findings of the two studies identify two distinct – yet overlapping - mechanisms through which habitual and acute media ideal exposure influence body image and eating behaviour; each influenced by the presentation and internalisation of media-promoted ideals. First, the findings of the present study contribute to the growing body of correlational and experimental research, which has demonstrated that exposure to body perfect media causes negative body image and restrained eating behaviour amongst adolescent girls. Consistent with existing correlational research, Study 1 demonstrated that

high levels of habitual media use during adolescence predicts the extent to which girls internalise the body perfect as a personal goal, which subsequently predicts body dissatisfaction – and in turn - restrained eating behaviour, as girls find themselves unable to meet the body perfect ideal that is their goal (Keery et al., 2004; Shroff & Thompson, 2006). Similarly, Study 2 supports the growing body of exposure experiments demonstrating that acute exposure to body perfect media actually *causes* increased negative body image (Groesz et al., 2002; Grabe et al., 2008; Want, 2009) and furthermore extends this research by demonstrating that body perfect media causes diet-like behaviour also. Consistent with this research, girls who had already internalised the body perfect ideal as a personal goal were found to be most vulnerable to the mass media's negative impact on body image (Durkin et al., 2007; Hargreaves & Tiggemann, 2002). Interestingly however, this moderation effect was not extended to eating behaviour.

Second, the present research identified an additional mechanism through which the mass media may impact upon restrained eating behaviour; mediated by the presentation and subsequent internalisation of a second media-promoted ideal – the material ideal. Study 1 found that – analogous to body perfect internalisation - high media consumption during adolescence predicts internalisation of the material ideal. However - unlike body perfect internalisation - materialism predicted restrained eating behaviour directly - independent of how girls' feel about their bodies. Study 2 tested this link experimentally; demonstrating that acute exposure to media-ideal promoting media actually *causes* immediate diet-like behaviour, despite having no impact on body image. Furthermore, materialistic girls were found to be most vulnerable to the negative effect of material-ideal media exposure on restrained eating behaviour; engaging in more dietary restraint than their non-materialistic counterparts. Interestingly, simultaneous with this increased dietary restraint, materialistic girls actually experienced a positive boost in body image.

By implicating the material ideal and its subsequent internalisation within the aetiology of restrained eating, the present research makes a novel and important contribution to the existing research literature. Future research may benefit from the more thorough examination of the ideas presented within this paper, in order to identify the precise psychological processes that underlie the role of materialism within the mass media and body image relationship. In the present research, it is speculated that the impact of materialism - both in the form of internalised values and also as temporally activated by exposure to material-ideal promoting media - on body image and eating behaviour may be a consequence of the continual pairing and shared meaning of the body perfect and the material ideal throughout the media. This dual presentation serves to blend the two ideals together; leading girls to perceive the body perfect as an integral part of the material ideal. As consequence of this, beliefs regarding the importance of image and appearance – which are a central tenet of materialism - may become generalised to the physical appearance of the body also (Ashikali & Dittmar, 2011). Furthermore, the blending of the two ideals may lead to the commodification of the body perfect; meaning that those who endorse the material ideal may perceive the body perfect as an object or commodity that can be acquired through transactional processes, such as dieting (Bartky 1982; Fawcett, 2004; Henderson-King & Brooks, 2004). Such beliefs surrounding the importance of physical appearance and commodification of the body perfect may render materialistic girls more likely to engage in eating behaviour designed at achieving the body perfect.

Though perceiving the body perfect in this highly achievable way may increase the likelihood of girls engaging in unhealthy body shaping behaviours, such as surgery, excessive exercise or dieting, it may also, quite paradoxically, serve as a protective factor for negative body-related affect. Research has demonstrated that the potential negative psychological impact of self-ideal discrepancies may be minimised if the perceived attainability of this ideal

is increased (Lockwood & Kunda, 1997). Thus “the realisation that one is currently less successful than another (in this case, an ideal self) may lose its sting if it is accompanied by the belief that one will attain comparable success in the future” (Lockwood & Kunda, 1997, p.93). This increased perception of the attainability of the body perfect may explain why the impact of materialism on restrained eating behaviour is apparently independent of body image.

#### *Linking the Body Perfect Internalisation and Materialism Research Literatures*

Existing research has separately demonstrated that high levels of habitual media exposure during adolescence is associated with the internalisation of the body perfect ideal (Cafri et al., 2005; Grabe et al., 2008) and the material ideal (Shrum et al., 2011). The findings of Study 1 consolidate and extend this research by demonstrating that not only is high habitual media consumption during adolescence closely associated with both body perfect and material ideal internalisation, but that furthermore, internalisation of the two media ideals is closely linked amongst girls – supporting existing research that has demonstrated the same in a sample of young adult women (Ashikali & Dittmar, 2011). This has important implications for psychological research, which to-date, has tended to examine the impact of body perfect internalisation and materialism separately, as it suggests that internalisation of the two media ideals may actually be two dimensions of the same underlying construct, representing an orientation towards the internalisation of media-promoted value systems. Future research may benefit from the examination of this proposition, and the further merging of the separate research literatures pertaining to the internalisation of these two media ideals.

Media literacy programmes are a commonly used intervention strategy, aimed at minimising the negative impact of the mass media on adolescent girls’ body image and eating behaviour by increasing their awareness of the unrealistic and artificial nature of body perfect



models in the media (Richardson, Paxton & Thompson, 2009; Yager & O'Dea, 2008). In light of the findings of the present research, media intervention strategies may benefit from increasing adolescent girls' comprehension of materialistic messages also. Furthermore, as existing research has shown that internalisation of media-promoted consumer culture values often occurs prior to adolescence (Buijzen & Valkenburg, 2003; Cusumano & Thompson, 2001; Sands & Wardle, 2003) intervention strategies may benefit target from targeting pre-adolescents and children, in order to maximise their efficacy.

Body image and restrained eating behaviour are just two of the highly deleterious outcomes that have been associated with internalisation of the two media-promoted ideals. Existing research that has linked the internalisation of the body perfect and the material ideal separately to a plethora of negative outcomes (Buijzen & Valkenburg, 2003; Cash & Prushinsky, 2002; Froh, et al., 2011; Grogan, 2008; Kasser 2002; 2005). In light of this, identifying the factors that make adolescent girls more vulnerable to internalisation of both the material ideal and the body perfect are of paramount importance. Existing research suggests that insecurity, low self-esteem, and peer rejection are important precursors in the development of materialistic values (Banerjee & Dittmar, 2007; Dittmar, 2008), and similarly low self-concept clarity has been implicated in the development of body perfect internalisation (Vartanian, 2009). Longitudinal research may therefore be needed in order to examine how these two ideals become internalised over time, and identify the factors that render individuals more vulnerable to this.

## Footnotes

<sup>1</sup>Other measures collected are analysed and presented in a different article, testing a new model of the impact of consumer culture values on adolescents' body image and eating behaviour (Chapter 4).

<sup>2</sup>Though it is likely that, due to the close conceptual links between the two, body perfect internalisation may moderate the negative effects of materialistic media, and that materialism may moderate the negative effects of body perfect media, such 'cross-over' moderation' effects may be due to the high correlation between the two constructs (Ashikali & Dittmar, 2011), and may not represent a unique moderation effect per se.

<sup>3</sup>Post exposure body image was also measured using a modified state version of the PASTAS, however no exposure effects were found using this measure. Rather than reflect a genuine null effect, it may be that the fixed response format of this scale is not sensitive enough to detect the subtle post-exposure changes in body image. This is consistent with research contained within Chapter 4 and 6.

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## Chapter Eight

### General Discussion

Previous research has suggested that adolescent girls are particularly vulnerable to the mass media's negative influence on body image and subsequent eating behaviour (Groesz, Levine & Murnen, 2002). However, even within this population, research has found considerable variation regarding the extent to which adolescent girls are affected by these media messages, with some being more vulnerable to the negative impact of the mass media on body image than others (e.g. Durkin, Paxton & Sorbello, 2007; Hargreaves & Tiggemann, 2002). The present thesis therefore contributes to this research literature by examining three factors - media type, body perfect internalisation and materialism – that may influence the extent to which the mass media impacts upon adolescent girls' body image. In Chapter 2, the three research aims of the thesis were identified; each separately pertaining to one of the three vulnerability factors being examined. This final chapter focuses on how the empirical programme fulfilled these aims by discussing each in turn. Finally, the implications of the thesis for theory and intervention are discussed, as well as its limitations.

#### *Media Type*

*“The first aim of the present thesis is to examine the role of media type, as a potential vulnerability factor within the mass media and body image relationship. In particular, the present thesis aims to systematically synthesise the highly fragmented body of existing research in this area. Moreover, it aims to use an adapted exposure experiment methodology, to determine whether different media types actually cause more negative body image than others, and to furthermore identify the mediational*

*processes that may underlie these hypothesised effects; focusing specifically on the role of wishful identification.”*

In Chapter 3, existing research that had examined the impact of the mass media on body image was synthesised in a two-part meta-analysis; revealing only very small and non-significant differences between the impacts of different media types on body image. In the meta-analysis of correlational research, it was demonstrated that the relationship between habitual media consumption and body dissatisfaction amongst adolescent girls is slightly stronger for some media types – namely, music videos, soap operas and magazines – than for others. Similarly, in the meta-analysis of existing experimental research, acute exposure to the body perfect in moving media – such as TV clips, music videos and video games – was found to cause slightly more acute negative body image than exposure to still media images of the body perfect, however this difference was non-significant. The small nature of the differences may be due a number of factors, including the lack of published research examining alternative media types on body image, and also the vast methodological differences between studies. The present thesis therefore aimed to clarify this existing research, by examining whether certain media types actually do cause more negative body image than others, in a controlled and systematised way. Therefore two exposure experiments were conducted (Chapter 4 and 6), in order to examine whether media type really does matter.

Chapter 4 used exposure experiment methodology to compare the impact of exposure to body perfect models in three different types of media – music videos, magazines and as de-contextualised still images – on adolescent girls’ body image. Though exposure to media containing body perfect models was found to cause significant increases in adolescent girls’ body dissatisfaction amongst those who identified with the models, no differences between the different media types were found. However, despite no media type effects being found in

terms of body dissatisfaction, girls exposed to music videos did report an elevation in post-exposure weight and appearance-related concerns. This finding was not reported in the published article, because the percentage of girls who had completed the measure of weight and appearance-related concerns correctly, just 69%, was considered too small. Chapter 6 aimed to clarify this finding, by comparing the impact of exposure to body perfect models in music videos on adolescent girls' body image to that of de-contextualised still images of body perfect. In this study, though no differences between the two conditions were found in terms of body dissatisfaction, music videos were found to cause significantly more weight and appearance-related concerns than still images.

The discrepancy between the findings may be due to the sensitivity of the measurement tools utilised. In both studies, body dissatisfaction was measured using the Physical Appearance State and Trait Anxiety Scale (PASTAS; Reed, Thompson, Brannick, & Sacco, 1991) which asks participants to rate their satisfaction with various body parts on a Likert scale. In contrast to this fixed-item measure, weight and appearance-related concerns were measured using the Self-Discrepancy Index (SDI; Dittmar, Beattie & Friese, 1996; Dittmar, Halliwell & Stirling, 2009) which has an open-ended format, allowing participants to report on any aspect of their life that they are concerned about. Adolescent girls may be reluctant to report their bodily concerns when directly asked to evaluate body parts, but may feel more confident reporting them in their own words when asked more indirectly. The implication is that participant-generated response formats may be the better tools to detect the subtle changes in negative body image caused by different media formats.

Furthermore, in Chapter 6, the increased impact of music videos on body image was found to be fully mediated by wishful identification with the characters contained within them. Girls who had internalised the body perfect as a personal goal, and were more prone to engage in wishful identification with body perfect media models, were found to be more

susceptible to media type effects. It is therefore suggested that wishful identification with media models is a two-way process. Music videos may elicit more wishful identification with the media models featured within them, due to way in which their content interacts with the unique features of the music video format. However, adolescent girls are not passive viewers of this media, and some may be more prone to engaging in wishful identification with the models contained within them than others, including those who have internalised the body perfect as a personal goal. Understanding media interactions as a reciprocal process may aid our understanding of why research into media type effects has yielded inconsistent findings – particularly in correlational research, wherein this reciprocal process may ‘mask’ the impact of certain media types on body image over time.

In conclusion, the present thesis found some support for the hypothesis that some media types cause more negative body image than others. Music videos were found to elicit more wishful identification with the characters contained within them than still images, leading adolescent girls to feel increased negative body image following exposure to them. Though it is unclear which aspects of the music video causes this increased wishful identification, it is likely that other media types, which have similarly been associated with increased wishful identification - such as soap operas (Greenwood, 2009) or videogames (Klimmit, Hefner, & Vorderer, 2009) - may also cause more immediate negative body image, following acute exposure to them. It is also likely that due the reciprocal nature of the wishful identification process, these media type effects may only be detected in controlled experiments using very sensitive measures of body image. Future research should continue to examine the impact of newer and more alternative media on body image, as though differential effects due to media type are subtle, one cannot deny the prominence and popularity of these media types within contemporary western society (Van den Beemt, Akkerman & Simons, 2010; Ziegler, 2007).



### *Body Perfect Internalisation*

*“Second, the thesis aims to build on the growing body of existing research that has examined the role of body perfect internalisation within the mass media, body image and restrained eating behaviour. In particular, the thesis aims to address the measurement issues that have been associated with the construct, by developing a conceptually ‘pure,’ yet comprehensive, measure of body perfect internalisation. It is furthermore intended that the present thesis will build on existing research in this area, by piloting improved measures of body perfect internalisation within psychological research, and by examining as yet unstudied aspects of the role of body perfect internalisation within the mass media, body image and restrained eating behaviour relationship.”*

Secondly, the present thesis aimed to provide an important contribution to the research literature that has identified body perfect internalisation as an important vulnerability factor within the mass media and body image relationship, by developing an improved measure of the construct. The most popular and widely-used existing measure of socio-cultural body and beauty ideal internalisation – the Socio-cultural Attitudes Towards Appearance Questionnaire (SATAQ, Thompson et al, 2004) - measures the construct in terms of the extent to which girls habitually engage in wishful identification with the models featured in them. However, the SATAQ has received some criticism, as some of the items contained within the scale, e.g. “I compare my body to the bodies of TV and movie stars” or “I compare my appearance to the appearance of people in magazines” appear to conflate body perfect internalisation with body comparison tendency, a closely correlated, yet psychological distinct construct (Dittmar & Howard, 2004; Durkin et al., 2007). In Chapter 4, the Media Model Identification scale (MMI) was developed, which aimed to measure the construct in an unpolluted way, by asking adolescent girls to rate the extent to which they wished to look and

be like the models featured in their favourite media, across a range of media types. The MMI was found to have good internal reliability.

However, measuring body perfect internalisation solely in terms of the extent to which girls habitually engage in wishful identification with media models may be limiting in several ways. First, it provides no indication of the extent to which girls have internalised the beliefs that are associated with body perfect acquisition in the media, including the notion that acquiring the body perfect will lead to popularity, success and happiness. Research pertaining to the internalisation of a second media ideal - the material ideal - has suggested that understanding the way in which individuals associate certain extrinsic outcomes - such as popularity and success - with material wealth is important to understanding how internalisation of the material ideal impacts negatively upon well-being (Kasser, 2002), and so may be important in understanding the negative impact of body perfect internalisation also (Vansteenkiste, Soenens, & Duriez, 2008)<sup>2</sup>. As such, assessment of such beliefs, which are a prominent feature of the most popular and widely-used measures of materialism (Richins & Dawson, 1992; Richins, 2004), should also feature on measures of body perfect internalisation.

Second, measuring body perfect internalisation solely in terms of wishful identification with media models provides no indication of how important the goal of body perfect is to an individuals' sense of self. Research has consistently demonstrated that goals and values that are regarded as important by individuals are more likely to influence their cognitions and behaviours (Verplanken & Holland, 2002), and so assessing girls' perceived importance of body perfect acquisition may enhance the predictive utility of body perfect internalisation measures. Finally, existing measures have provided no indication of adolescent girls' investment in attaining the goal of body perfect; measurement of adolescent

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<sup>2</sup> This is discussed in more depth in the theoretical implications section of this chapter

girls' investment in body perfect acquisition, in terms of energy, time and money, may also provide an important indicator of how strongly they have internalised the body perfect as a personal goal.

The Body Perfect Internalisation Scale (BPIS) developed within Chapter 5, incorporates these three considerations to provide conceptually pure, yet comprehensive, measurement of body perfect internalisation, by assessing the construct across three distinct, yet closely correlated, subscales; identification, importance and investment. Therefore, in addition to providing an indication of the extent to which adolescent girls' desire the body perfect as it is represented in the socio-cultural environment (i.e. as body perfect internalisation has traditionally been measured), the scale provides an important indication of the psychological importance of the 'body perfect' goal to girls and the extent to which they associate its acquisition with happiness, and also, the extent to which they are invested in attaining it and endorse the belief that body perfect acquisition will bring popularity. As such, it provides an important indication of the extent to which adolescent girls have internalised the media-promoted beliefs associated with body perfect acquisition, the importance they attach to it and their personal investment in attaining it, which may play a particularly important role in motivating their desire for the body perfect during adolescence.

The BPIS was found to have excellent internal reliability and convergent validity amongst adolescent girls (Chapter 5). However, it may not be appropriate to use the measure with other genders and age groups. For example, questions regarding popularity as a consequence of attaining the body perfect may be less suitable for adult women, as concerns regarding popularity amongst peers tend to peak in adolescence (Lloyd, 2002), and may therefore need to be replaced by more age-appropriate questions assessing the extent to which adult women equate career success, social status, and power with perfect body acquisition. In the thesis, body perfect internalisation - as measured by the BPIS - was found to moderate the

impact of brief exposure to body-perfect promoting media images on adolescent girls' acute body image within the empirical investigations reported in Chapters 6 and 7. This evidence highlights the potential value of the BPIS within media effects research.

In the present thesis, body perfect internalisation was also found to mediate the impact of the mass media on adolescent girls' trait body image over time (Chapter 7), supporting existing research that has found the same (Keery et al., 2004; Shroff & Thompson, 2006). It was also found to moderate the impact of acute media exposure on adolescent girls' state body image (Chapter 4, 6 and 7), again consolidating existing research that has found the same (Durkin et al., 2007; Hargreaves & Tiggemann, 2002). Combined, these two findings highlight the complexities of the role of body perfect internalisation within the mass media and negative body image relationship. Furthermore, in Chapter 6, body perfect internalisation was found to moderate the media type effects; as girls with high levels of body perfect internalisation reported stronger wishful identification with characters and greater negative body image in response to viewing music videos, rather than still images. It is therefore likely that girls who have internalised the body perfect are more likely to engage in wishful identification with body perfect media models and that this identification explains their heightened increase in negative body image. Future research should focus on examining this process and other processes that underlie the heightened sensitivity of adolescent girls, who have internalised the body perfect, to acute exposure to media containing body perfect models.

### *Materialism*

*“The third aim of the present thesis is to investigate the previously neglected role of materialism as a vulnerability factor within the mass media, body image and restrained eating behaviour relationship. In particular, the thesis examines the role of materialism as a potential mediator of the mass media's impact on body image and restrained eating*

*behaviour over time, using structural equation modelling in order to suggest predictive pathways between the four constructs. It furthermore complements this correlational approach with exposure experiment methodology, in order to assess whether acute exposure to media promoting the material ideal actually has a role in causing negative body image and restrained eating behaviour; examining girls' pre-existing material values as a potential moderator of these effects."*

Chapter 7 consists of two studies demonstrating the important role which the material ideal and materialism play within the mass media, body image and eating behaviour relationship, therefore contributing to the third aim of the present thesis. In Study 1, structural equation modelling was used demonstrate that the impact of the mass media on restrained eating behaviour is partially mediated by materialism, through a mechanism which is independent of body image. In Study 2, an exposure experiment demonstrated that brief exposure to materialistic media causes acute diet-like behaviours but not increased negative body image in adolescent girls, and this effect that was found to be strongest amongst those who had internalised the material ideal. Therefore, materialism was found to both mediate the influence of the mass media on restrained eating behaviour over time, and to also moderate the acute impact of exposure to materialistic media on restrained eating behaviour.

By implicating the material ideal and materialism within the aetiology of restrained eating, the present thesis makes a novel and important contribution to the existing research literature, by identifying a second mechanism though which the mass media may impact upon restrained eating behaviour. It is speculated that the impact of materialism - both in the form of internalised values and also as temporally activated by exposure to material-ideal promoting media - on eating behaviour may be a consequence of the continual pairing and shared meaning of the body perfect and the material ideal throughout the media, which serves to blend the two ideals together; leading girls to perceive the body perfect as an integral part

of the material ideal (Dittmar, 2008; Englis, Solomon & Ashmore, 1994). As consequence of this, materialistic beliefs surrounding the importance of the importance of outwardly appearance may become generalised to the physical appearance of the body.

Interestingly, the impact of materialism on eating behaviour was found to be independent of negative body image. Understood within the context of the material ideal, the body perfect may be perceived as a commodity that can be by achieved through investing in certain goods, products and services, and by engaging in unhealthy body-shaping behaviours, such as surgery, excessive exercise or dieting. This may serve to increase the perceived attainability of the body perfect, and research has demonstrated that the potential negative psychological impact of self-ideal discrepancies may be minimised if the perceived attainability of this ideal is increased (Lockwood & Kunda, 1997). Alternatively, viewing the body as a commodity may create a sense of distance between the self and the body, and this disassociation between the two may explain why negative body image is not elicited following exposure to, or adoption of, materialistic values.

Future research should focus on examining the processes that mediate the impact of acute exposure to materialistic media on eating behaviour, in order to gain a deeper understanding of its role within the mass media and restrained eating behaviour relationship. Furthermore, research should also consider the role of materialism as a moderator of this effect, and examine the processes that underlie materialistic girls heightened sensitivity to the acute impact of materialistic media on restrained eating behaviour.

#### *Theoretical Implications: Self Determination Theory*

The present thesis highlights the importance of individual differences within the mass media and body image relationship; demonstrating that the extent to which adolescent girls endorse media promoted ideals is particularly important in understanding why some are more vulnerable to the mass media's negative effect on body image and restrained eating than

others. In the introductory chapter, socio-cultural theory was introduced as the dominant theoretical framework, through which media effects are typically understood. According to socio-cultural theory, individuals adopt the body perfect as a personal goal because they feel pressure from socio-cultural agents, including parents, peers and – most importantly – the mass media, to conform to a culturally prescribed ideal (Keery et al., 2004; Shroff & Thompson, 2006; Stice, Ziemba, Margolis & Flick, 1996). However, socio-cultural theory struggles to explain why some individuals are more vulnerable to endorsing and internalising media promoted ideals than others.

Self-determination theory may provide a useful supplementary framework for understanding why adolescent girls are vulnerable to the internalisation of media ideals. According to self determination theory, individuals have three basic psychological needs – competence, relatedness and autonomy – which, when satisfied, lead to psychological growth, integration, and positive well-being (Deci & Ryan, 2000; Vansteenkiste et al., 2008). Competence may be defined as feeling effective in one's ongoing interactions with the social environment. Relatedness refers to feeling connected to others, and having a sense of belongingness with other individuals and with one's community. Autonomy refers to being the perceived origin or source of one's own behaviour. Through interactions with the socio-cultural environment, individuals have experiences which may lead to the satisfaction of needs or alternatively, the thwarting of them. There is a plethora of psychological evidence demonstrating that need satisfaction leads to positive mental and physical health, and that conversely, need thwarting leads to detrimental consequences (Deci & Ryan, 2002; Kasser & Ryan, 1996; Vansteenkiste et al., 2008).

Though individuals are inherently motivated to pursue intrinsic goals that fulfil their three basic psychological needs, repeated need thwarting experiences within the environment may lead individuals to engage in strategies aimed at minimising the psychological deficit

that arises as a consequence of this (Verstuyf, Patrick, Vansteenkiste, & Teixeira, 2012). Such strategies may include the adoption of need substitutes; goals that are pursued because of perceived external value attached to them, such as status, fame, and power; often at the expense of intrinsic goals (Sheldon, Ryan, Deci & Kasser, 2004; Verstuyf et al., 2012). The mass media actively promotes two prominent need substitutes in the form of the body perfect and material ideal, equating the two with happiness, popularity and success (Dittmar, 2008). According to self determination theory therefore, individuals who have had repeated need thwarting experiences may therefore internalise these media promoted ideals as a personal goal because of the perceived desirable outcomes associated with them.

Therefore, self determination theory provides an important interactionist account of how media ideal internalisation occurs, wherein the mass media promotes the body perfect and material ideal as the means to desirable outcomes and the internal psyche of the individual determines how these messages are received and interpreted. In support of this, existing research has demonstrated that, in addition to high levels of media consumption, need thwarting experiences, such as peer rejection (Banerjee & Dittmar, 2007), and the psychological consequences of need thwarting experiences, such as lack of self concept clarity (Vartanian, 2009) and feelings of insecurity (Kasser, 2002; 2005), are strong predictors of media ideal internalisation. Future research may benefit from the further examination and clarification of the interaction between need thwarting and media consumption in determining media ideal internalisation in adolescent girls. Furthermore, understanding the internalisation of media ideals as need substitutes may also explain why internalisation of the two media ideals are closely correlated in girls and women (Ashikali & Dittmar, 2011; Chapter 7).

In addition to explaining how media ideal internalisation occurs, self determination theory may also provide a useful macro-theory for understanding why internalisation of



media ideals leads to deleterious outcomes. Research has shown that though the pursuit and acquisition of any extrinsically motivated goal may bring some feelings of short-term satisfaction, as they are typically pursued at the expense of intrinsic need fulfilment, they are likely to cause further need thwarting and negative well-being over time (Deci & Ryan, 2002; Sheldon et al., 2004). Therefore self-determination theory may provide a useful over-arching framework for understanding some of the key findings of the present pertaining to media ideal internalisation.

In Study 1 of Chapter 7, it was found that media consumption predicted the extent to which adolescent girls internalised the body perfect, which in turn predicted body dissatisfaction, consequently predicting restrained eating behaviour. Understood within the context of self determination theory, high media consumption (coupled with need thwarting experiences, though these were not measured in the study) may lead girls to adopt a need substitute (body perfect internalisation). However, the body perfect is highly unrealistic, and nearly impossible for girls to achieve, and so body perfect internalisation may consequently lead to body dissatisfaction, as girls feel unable to meet the unrealistic standards of their ideal, and/or pursue it at the expense of intrinsic need fulfilment (need thwarting). Engaging in restrained eating behaviour, may be seen as compensatory behaviour, performed to alleviate the feelings of negativity associated with the body (Ogden, 2010; Verstyfl et al., 2012).

Similarly, in Chapter 7, media consumption was found to predict materialism, which in turn, was found to directly predict restrained eating behaviour. Therefore, similar to body perfect internalisation, it is likely that high levels of media consumption (potentially coupled with need thwarting experiences, though these were not measured in the study) may lead girls to internalise the material ideal as a need substitute. As the material ideal represents a highly unattainable and unrealistic goal, which is often pursued at the expense of intrinsic goals

(Richins & Dawson, 1992; Richins, 2004), materialism is likely to lead to need thwarting experiences, and the negative affect associated with such experiences. There is a plethora of evidence linking materialism to lowered generalised well-being (Kasser 2002; 2005), however, unlike those who desire the body perfect, the negative feelings associated with failure to meet the material ideal, are not linked to the body, and so were not detected by the measure of body dissatisfaction in the study. As a consequence of this lowered well-being, materialistic individuals may engage in restrained eating behaviour as a compensatory behaviour, performed to alleviate the feelings of negativity associated need thwarting (Ogden, 2010; Verstyfl et al., 2012). However, as the feelings of negativity experienced by materialistic individuals are not explicitly linked to the body, the reason why materialistic individuals engage in restrained eating as a coping strategy is unclear, and further investigation in this area is required.

In conclusion, self determination theory provides a useful theoretical framework for understanding why some individuals are more prone to internalising media ideals than others, and also how this internalisation leads to negative outcomes such as body dissatisfaction and restrained eating behaviour. However, much more research in this area is needed. In particular, future research should adopt a longitudinal approach to studying the relationship between media consumption, media ideal internalisation, body dissatisfaction and restrained eating behaviour in more depth, by considering the role that need thwarting and self determination theory plays within this.

### *Intervention*

The findings of the present thesis have important implications for intervention programmes aimed at minimising the negative impact of the mass media on adolescent girls' body image. Media literacy programmes are a commonly-used intervention strategy, aimed at minimising the negative impact of the mass media on adolescent girls' body image and eating

behaviour, by increasing their awareness of the unrealistic and artificial nature of the body perfect models contained within the media. Traditionally media literacy programmes have focused on deconstructing the unhealthy body-perfect messages contained within fashion magazines (Richardson, Paxton, & Thompson, 2009; Yager & O'Dea, 2008), however the present thesis highlights the increasing popularity of alternative media types amongst adolescent girls (Chapter 4), and as such, media literacy interventions need to address deciphering the messages contained within these newer and more alternative forms of media. It may be that girls may engage with such programmes more easily if they address exactly the types of media in which they typically encounter body perfect models, such as music videos, and this may improve their efficacy.

Furthermore, as the present thesis demonstrates that the materialistic messages contained within the mass media provide an additional mechanism through which the mass media may impact negatively upon adolescent girls' eating behaviour, media literacy programmes should also educate adolescent girls on how to de-code the unrealistic images and discourses contained within the material ideal. Such an approach may not only have important implications in reducing the mass media's negative impact on body image and eating behaviour, but may also have the additional benefit of minimising the negative impact of the material ideal on well-being more generally.

An alternative approach to intervention may aim to prevent internalisation of media ideals occurring and may be developed based on Self Determination Theory. Research has demonstrated the young women who generally behave in a self-determined way are less likely to feel pressure to conform to socio-cultural body and beauty ideals and are less likely to internalise the body perfect as a personal goal (Pelletier, Dion, & Levesque, 2004). Therefore, rather than focus on decoding unrealistic media messages, intervention may be more broadly aimed at encouraging adolescent girls to pursue more intrinsically motivated

goals, and adopt a more self-determined approach to life, as this may protect them against negative media influences on a deeper level.

### *Limitations*

*Sampling Limitations.* The present thesis specifically focuses on identifying the factors that increase *adolescent girls'* vulnerability to the negative impact of the mass media on body image and eating behaviour. This is both a strength and a limitation. In terms of strength, the present thesis provides a deeper understanding of the factors that are likely to make adolescent girls an age and gender group especially vulnerable to the negative influence of the mass media on body dissatisfaction (Groesz et al, 2002). However, this carries with it the limitation that the findings may not be generalisable to other gender and age groups.

Throughout western society, greater emphasis is placed on the physical appearance of women than males (Howson, 2004), and this is reflected in the media that permeates it, with content analyses demonstrating that the physical appearance of women is inordinately emphasised relative to males (Luff & Gray, 2009; Martin & McCracken, 2001; Spyeck, et al., 2004; Wallis, 2011). Previous research has indicated that females are more likely to experience socio-cultural pressure to conform to the culturally prescribed body and beauty ideals, and are also more likely to experience body dissatisfaction as a consequence of this (Eisenberg, Neumark-Sztainer, & Paxton, 2006; Knauss, Paxton, & Alsaker, 2007; McCabe & Ricciardelli, 2003). However, the meta-analysis contained within Chapter 1 found little evidence of gender differences in terms of the extent to which body perfect ideals impact on body image. Instead, the meta-analysis found a research bias, wherein much less research examining the mass media's negative influence on body image had been conducted amongst male samples.

Though males were found to be as susceptible to the negative impact of the mass media on body image as their female counterparts, it is unclear how generalisable the

findings of the present thesis would be to samples of adolescent males, as there are important culturally-embedded differences between the male and female ideal and the way that this is portrayed in the media. For example, the male body and beauty ideal is muscular and lean (Leit, Gray, & Pope, 2001), making it very different to the predominantly thin female ideal (Grabe & Hyde, 2009), and so it is unclear whether important patterns of findings pertaining to restrained eating behaviour uncovered in Chapter 7 would be relevant to males. Therefore, rather than engage in restrained eating behaviour, it is possible that adolescent boys may engage in other unhealthy body shaping strategies, such as excessive exercise or anabolic steroid use (Neumark-Stzainer, Paxton, Hannan, Haines, & Story, 2006; Sarwer, Infield & Crerand, 2009), as a consequence of media ideal internalisation over time. Furthermore, in Chapter 6 music videos were found to be a particularly potent source of body dissatisfaction for adolescent girls, however as research shows that they do not emphasise male appearance in the same way that they emphasise female appearance, it is unlikely that the same effect would be found amongst males (Turner, 2011; Wallis, 2011).

However, despite these gendered differences, it is still possible that many of the processes identified by the thesis as underlying the impact of the mass media on adolescent girls' body image are relevant to males. For example, though music videos may not cause greater body dissatisfaction in males, other media types which emphasise male appearance and are similarly associated with increased identification, such as video games (Klimmit et al., 2009; Martins, Williams, Ratan, & Harrison, 2011), may pose a particularly potent threat to adolescent body image. Similarly, findings pertaining to the internalisation of media ideals as important vulnerability factors in the mass media and body image relationship may also be transferrable across genders. Future research should focus on exploring these possibilities; examining whether the patterns of findings that emerged in the present thesis may be adapted and applied to adolescent boys.

Furthermore, though it is unclear how the findings of the present thesis would apply to older female populations, by drawing on self-determination theory, several key predictions can be made. Adolescents are believed to be particularly susceptible to the mass media's influence on body image due to the physical, psychological, and social challenges that characterise this important developmental period, and also the important role that the mass media plays within this (Lloyd, 2002). Understood within a self-determination theory framework however, these physical, psychological, and social challenges may increase the susceptibility of adolescents to need thwarting experiences and as such, render them more receptive to media messages. Therefore it is probable that many of the findings from the present thesis may be generalisable to other populations and individuals who are similarly faced with need-thwarting experiences.

*Methodological Limitations.* Furthermore, as with all psychological research, there are various problems with methodologies used within the present thesis to investigate the mass media, body image and restrained eating behaviour relationship. Correlational research techniques, such as those utilised in Chapters 4 and 7 in order to investigate the relationships between adolescents' habitual media use and body-image related constructs, are limited in that causality cannot be inferred from the findings. And furthermore, though exposure experiments - such as those utilised in Chapters 4, 6 and 7 - enable causal inferences, such experiments only examine the impact of acute media exposure within a highly controlled context and therefore girls' acute reactions to the media clips featured within these experiments may not be reflective of the cumulative interactions between adolescents and the media within the wider world.

Longitudinal and prospective research may provide a solution to these research issues, by allowing for the investigation of how the relationship between media consumption and body image emerges and develops over time. As discussed previously, future longitudinal

research may particularly benefit from the examination of how the relationships between media use, internalisation of media ideals, body image and restrained eating behaviour develop over time, from a perspective of self-determination theory.

### *Conclusion*

Despite these limitations, the present thesis may be seen as providing an important and novel contribution to the media effects, body image and materialism research literatures, by highlighting the complexities of the relationship between media consumption, body image and restrained eating behaviour. Media type, body perfect internalisation and materialism were identified as important factors that render adolescent girls vulnerable to the mass media's negative influence. Therefore it is suggested that it is not just how and what the mass media portrays that is detrimental to body image and restrained eating behaviour, but also how these messages are interpreted by adolescent girls. The findings of the present thesis have important implications for psychological research, theory and intervention. Future research should particularly focus on the examination of the mass media and body image relationship within the context of self determination theory.

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