

# EATING BEHAVIOUR NOTES

## (1) ROLE OF NEURAL MECHANISMS IN CONTROLLING EATING AND SATIATION

Neural mechanisms involve the brains ways of controlling feeding behaviour.

### 1. ROLE OF THE HYPOTHALAMUS (the dual hypothalamic process)

The hypothalamus is a gland in the brain that is responsible for homeostasis.

The dual hypothalamic process says that we have an on switch, the LH, and an off switch, the VMH, which controls eating behaviour.

#### **VENTROMEDIAL HYPOTHALAMUS (VMH):**

- 🐾 It is one part of the hypothalamus.
- 🐾 The “satiety (feeling full) centre” to inhibit feeding as a result of the many glucose receptors in this area.
- 🐾 It is assumed that when full or satisfied, the VMH inhibits feeding as it is *stimulated when our body produced high levels of glucose or leptin and produces CCK.*
- 🐾 Damage to this region causes hyperphagia (excessive hunger and so overeat)

#### **LATERAL HYPOTHALAMUS (LH):**

- 🐾 Another part of the hypothalamus
- 🐾 The “feeding centre” which stimulates feeding in response to signals from the body.
- 🐾 This was found because a lesion (damage) to this area in rats led to a loss of feeding behaviour.
- 🐾 *It is stimulated to make us feel hungry when our body produces high levels of ghrelin or low levels of either glucose or leptin.*

#### HOW DOES THIS CONTROL FEEDING? :

- 🌈 When glucose levels fall, it is sensed by the hypothalamus. The hypothalamus wants to maintain homeostasis and so hunger is experienced and the LH activated, leading to feeding behaviour.
- 🌈 Food then leads to increase in glucose which is picked up by the hypothalamus which activated the VMH to stop feeding.

#### **BUT WHAT SIGNALS ARE INVOLVED IN TELLING THE HYPOTHALAMIC CENTRES WHEN TO START OR STOP EATING?**

The neurotransmitter NEUROPEPTIDE Y (NPY)

Charlie cooper

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- When injected into the hypothalamus of rats, it caused them to immediately begin feeding even when satisfied.
- Its suggested that it plays a role in stimulating the LH and thus increasing eating behaviour

## GHRELIN

- An important hormone that is secreted from the stomach when it is empty.
- It is believed that ghrelin acts directly on neurones in the brain mechanisms of feeding behaviour, including the hypothalamus.
- This was studied by Cummings who found that Ghrelin levels fell after eating but then slowly began rising, peaking when people said they were most hungry. They concluded that ghrelin levels reflect stomach emptiness and acts as a key appetite signal.

## CHOLECYSTOKININ (CCK)

- A hormone that has the opposite effect to ghrelin.
- It's thought to be released in response to a full stomach and so signals satiety to the brain and hypothalamus to stop feeding.

## The fat hormone LEPTIN

- It is neuropeptide produced by fat tissue.
- It acts on neurones in the hypothalamus that are part of the satiety (fullness) centre.
- It is released from adipose tissue and acts as an indicator of body weight to hypothalamic mechanisms controlling long-term food intake.

## EVALUATION:

- ✓ **STELLAR**
  - Stimulated the LH and VMH separately in rats
  - He then measured the amounts of glucose, leptin, ghrelin and CCK in them
  - Found that LH did in fact turn off hunger and the VMH did make them feel full
    - Lacks external validity as carried out on rats not humans and they have a different psychological makeup
- ✗ **MARIE**
  - Genetically manipulated mice so they did not produce neuropeptide Y
  - There was found to be no decrease in their feeding behaviour
  - Suggesting neuropeptide Y is not linked to eating
    - Low in internal validity as GM mice may not perform the same once their biology has been modified.
    - Mouse's autonomy is different to humans. For example, mice do not have a functioning prefrontal cortex like humans and this helps us to make decisions.
- ✓ Gastric bands used in treating obesity have shown to reduce ghrelin secretion. Deficiencies in the neural mechanisms and the hypothalamus have thus contributed to our understanding of eating disorders.
- ✗ Sakurai believes that the LH does play a part in eating behaviour, but it is not the brain's "eating centre" as damage to the LH caused deficits in other aspects of behaviour rather than just hunger. Therefore LH may be overly simplistic.

- ✗ The problem with homeostatic explanations is that hunger mechanisms should, in theory, be adaptive to prevent deficits in energy rather than simply reacting to them. By having hunger triggered only due to low glucose does not fit with the evolutionary perspective in which our biology has evolved as we should be able to promote levels of consumption which keep us above our optimum level to buffer against future lack of food. However, the homeostatic mechanism could have evolved to stop us from storing fat and so keep us agile to be able to continue gathering food.
- ✓ REAL-LIFE APPLICATION – as neuropeptide Y is produced by fat cells it leads to a vicious cycle where it is produced in the brain, which leads to more eating and thus more fat cells which in turn leads to more of the neurotransmitters. So by targeting people at risk of increased levels of neuropeptide Y, it should be possible to treat obesity by giving them a drug that turns off NPY.
- ✗ REDUCTIONIST – assumes the only thing influencing eating are the VHM and LH. However, all scientific research does have to be quite specific to establish a causal relationship and so saying it is reductionist might be a bit too critical. Although we need to understand the biological mechanisms in order to provide a full picture, we also know that feeding is not only under biological control – people eat more of tastier foods and in the company of other people and mood and culture evidently influence feeding behaviour.
- ✗ DETERMINISTIC – by focusing on the role of nature. People with eating disorders may welcome this as it would mean that they are not responsible for their condition. It cannot account for free-will and how this can shape attitudes towards food and override biological urges e.g. dieting.
- ✗ The evidence still relies heavily on non-human research which raises the problem of generalising to humans.

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## **2) EVOLUTIONARY EXPLANATIONS OF FOOD PREFERENCE**

The evolutionary explanation aims to discover the adaptive function of a particular behaviour and so we need to consider the problems faced by our distant ancestors to discover why behaviours such as food preferences have evolved.

Natural selection favoured adaptations that enabled survival in particular environments. Humans first evolved in the Environment of Evolutionary Adaptation (EEA) and consisted mainly of hunter-gatherer societies. #

### **EARLY DIETS:**

#### 1. **PREFERENCE FOR MEAT**

Hunter-gatherer diets included animals and plants. We know that we have evolved to be meat-eaters as we have a relatively long duodenum and small intestine that's specialised for the digestion of protein.

Our ancestors ate meat as it was available all year round and is a rich source of protein which is a far more efficient means of getting protein than the amount of plants that would have needed to be eaten and there was also a decline in plants due to receding forests.

Hunting required the development of specialised skills and so protein from meat would have provided a rich source of energy and nutrients which provided a catalyst for the growth of the brain as these skills developed and became more intricate.

However this cannot fully explain people on vegetarian diets who do not like meat.

## 2. PREFERENCE FOR FATTY FOODS

Would have been adaptive as it provides valuable energy resources and because calories were less available within the EEA

This was vital when eating the next meal was always uncertain

## 3. OTHER FOOD PREFERENCES

Adaptive food tastes and preferences would have been;

- **Sweet and umami** – indicate carbohydrates and protein that are basic to survival. Sweet would also have indicated that fruit was ripe
- **Salt** – essential for cell functioning
- **Sour and bitter** – indicate toxins and poisons and so help enable our survival. We contain around 30 genes coded for bitter taste receptors with each interacting with several compounds and so we have a wider scope to recognise bitter tasting foods. Children have also been found to be more sensitive to bitter tastes, supporting the evolutionary view as they are young and lack environmental experience to know which foods are safe to eat and so need to rely on bitter tastes more.



## 4. TASTE AVERSION LEARNING

If we taste a food and get ill after, we are likely to avoid that food again in the future which would affect our food preferences.

It was found that if mice were made ill through radiation after eating saccharin, they developed an aversion to it.

It helped enable survival for our ancestors.

## EVALUATION:

### Fatty foods:

- ✓ STANFORD
  - ❖ Found that, when coming close to starvation, chimpanzees will kill and eat the fattiest parts rather than the more tender and nutritious flesh which highlights how our behaviour may have been shaped in the EEA.
- ✓ GIBSON
  - ❖ He found that 4 year olds mostly preferred bananas and potatoes out of all the fruit and vegetables and he felt this way because they are rich in calories.
    - Lacks internal validity as only used children and maybe they were attracted to them because of their soft bright texture.

### Sweet:

- ✓ DESOR & STEINER
  - ❖ Found that children preferred sweet foods to bitter suggesting an innate preference.
    - it was based on judging their choice preferences and facial expressions. This could have been easily misunderstood and unreliable.
    - It helps rule out extraneous variables such as environmental and social learning factors as the children are too young to have learnt preferences.

## ✓ LOGUE

- ❖ Found that the human tongue has specific receptors for recognising sweet tastes which was not true for other tastes suggesting sweet preferences are a preferred adaptive advantage which has shaped genetic through evolution.

**Salt:**

## ✓ BEAUCHAMP

- ❖ Found that, even though children can't test saltiness until around 4 months old, at the age of two they reject food that does not contain the expected amount of saltiness.

**Bitter:**

## ✓ SANDELL

- ❖ 35 adults were screened for a gene that makes them more sensitive to bitter tastes
- ❖ They then ate vegetables, some which contained a mild toxin called Glucosinolates.
- ❖ He found that those with the sensitive version of the gene rated the vegetables with Glucosinolates as 60% more bitter
- ❖ Suggesting an adaptive ability to detect toxins which would explain why such genes are more widespread.

**Taste aversion:**

## ✓ GARCIA

- ❖ He fed poisoned lamb meat to wolves to make them ill
- ❖ After this the wolves avoided eating it in the future
  - This does lack external validity as it was carried out on wolves.

- ✓ Morning sickness in pregnant women. It is found in 75% of women and Profet suggests the reason they vomit is because their body is trying to get rid of anything that may harm the embryo ("embryo protection hypothesis") and it is also the reason why some women develop an aversion to certain foods during pregnancy. It would have been adaptive as in the EEA it would have been the only way the mother would have had to know which foods were harmful.

- ✓ Real-life application – it can be used to encourage farmers to use stronger poisons that don't allow pests to try a little and survive and so it will help them to remove pests from their crops.

**Overall Evaluation:**

- ✗ Our desire for salty, sugary foods like pizza, chocolate etc. could rather be explained because of the extensive amount of advertising, availability and convenience rather than evolutionary preferences.
- ✗ Evolutionary explanations cannot be scientifically proven as they speculate of the environment of the EEA and so they remain speculative and lacking in validity.
- ✗ More on the nature side as they see preferences dictated by biology which is shaped through genes. It is thus deterministic as it ignores the nurture side and does not allow for free will when, for example, many people enjoy bitter foods or foods that are actually poisonous to us (e.g. alcohol), which is clearly overriding genetic predisposition.

- ✗ It does not account for the broad range of food likes and dislikes that there is between cultures today. If it was an evolved response, we would all have the same preferences.
- ✗ Reductionist as it does not take into account other factors or appreciate cultural transmission of feeding behaviour.
- ✗ Cultural differences – children tend to show a dislike to spicy foods yet across the world chilli is only second to salt in its popularity as a food spice. This suggests that evolved factors are important but that they can be modified by our experiences with different foods and the culture that we are brought up in.
- ✗ Evolutionary preferences are maladaptive in the face of today's society as now that food is widely available we over consume sweet and fatty foods, leading to the rise in obesity.
- ✗ Some preferences are clearly a modern adaptation (e.g. low cholesterol foods) as they would have hindered our ancestor's survival.

### **(3) REASONS FOR THE SUCCESS OR FAILURE OF DIETING**

- It's estimated that 40% of the female population is trying to lose weight, usually by dieting.
- Possible factors contributing to the enormous amount of people who believe they need to diet include; the Media's influence, family, ethnicity, social class and peer groups & social learning.
- 3 basic forms of dieting include; (1) restricting amount of food (2) restricting certain types of food (3) avoiding eating for long period of time.

The failure of attempts to diet often arise from conflict between psychological factors and biological homeostatic mechanisms that attempt to restore the body to a weight set-point.

### **RESTRAINT THEORY AND THE BOUNDARY MODEL** (Herman and Polivy)

- ✗ It tries to explain why dieting might lead to overeating.
- ✗ It proposes that hunger keeps food intake above a minimum and satiety keeps food intake below a maximum. Between these two levels, psychological factors have the greatest impact.
- ✗ They argued that DIETERS HAVE A LARGER RANGE BETWEEN HUNGER AND SATIETY (as it takes longer to feel hungry and takes more food to satisfy them, than if they were not dieting)
- ✗ Dieters also have a self-imposed desired intake and once they've gone over this they will continue until they reach satiety (and thus they eat more than their maximum level as they're eating less than their body weight needs to maintain its weight and so it is hungry). This is because the "what the hell" effect takes over and eating is disinhibited.

### **EVALUATION:**

- ✓ Wardles and Beales
  - 27 obese women were put into either a diet group, exercise group or non-treatment group.
  - Assessments of food intake were made before and after they ate a snack at both 4 and 6 weeks.
  - They found dieting group ate more than the others at both periods.
- ✗ Doesn't apply to everyone – not all individuals who diet partake in overeating sessions, many dieters do manage to lose weight. For example, this doesn't happen in anorexics. However we could argue that anorexia is in fact a mental illness and often develops for reasons such as feeling a lack of control or an unwillingness to grow up and so may not have as much to do with a "normal" person's dieting behaviour.
- ✗ Additionally, if attempting not to eat results in eating that very thing, then how do vegetarians easily manage to not eat meat? This would make the theory reductionist as it focuses only on eating less as

Charlie cooper

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the sole cause for diets failing, and this may be too simplistic – there may be cognitive processes too, like Redden suggests. Thus we cannot conclude a cause and effect relationship into restrained eating leading to overeating as it is based on correlational research and does not specify the cognitive and emotional processes that lead to the what-the-hell effect.

✓ Ogden

- Gave a group of dieters and non-dieters a high or low calorie pre-load followed by a “taste preference” of foods to see how much “taste food” they ate
- He found the dieters who had a low calorie pre-load ate more showing that restrained eating is often associated with eating more.
  - Lab experiment = great control over IV (food preload) and DV (amount eaten), making it highly controlled and objective when drawing out cause & effect conclusions.
  - Participants believed they were being tested on taste preference and so cannot exhibit demand characteristics = high mundane realism
  - Deceived = breaches BPS’s ethical guidelines, making it unethical and unable to be reproduced.

### **IRONIC PROCESSES IN DIETING** (Wegner)

- ✘ The decision not to eat certain foods or to eat less of them seems to increase the dieters’ preoccupation with the very foods they are trying to deny themselves.
- ✘ This is why diets can often fail

### **EVALUTATION**

✓ Wagner

- People were asked not to think about a white bear but to ring a bell every time they did
- A control group were asked to actively think of it.
- They found those asked not to think about it rang the bell more

✓ Keys et.al.

- Studied 36 people who were not dieters.
- He gave them half their usual food intake for 12 weeks
- Found that they lost around 25% of their starting body weight
- However, they became obsessed with food (many became binge eaters) showing that their cognitive state and attitude towards food changed.
  - However he did only use 36 people and they were only Korean so it is not a representative sample and lacks cultural and population validity.
  - It was also done over 60 years ago so may lack temporal validity.

✓ Ogden found that the more dieters tried to suppress thoughts on forbidden foods the more they actually thought about them

### **MOOD REGULATION**

- ✘ Keys et.al found that people who were deliberately given half their food intake experienced a decrease in mood.
- ✘ Poor mood can then also lead to over-eating in an attempt to mask the negative mood.

- ✘ Food can be used to raise mood, so restrained eaters should then have lower moods. This would give them increased motivation to want to eat and, if they did then violate their dietary limit, they tend to attribute it to their own useless nature and their inability to stick to the diet. So they continue to overeat, following the what-the-hell effect.

### **KEY TO A SUCCESSFUL DIET IS DETAIL**

- ✘ Redden believes if we pay attention to what we are eating, they become less monotonous and less boring and so people will be able to better maintain their diet.
- ✘ If, instead of thinking “not another salad!” they instead think of the different individual components in the salad they are thus focusing on the details of the meal.

### **EVALUATION:**

- ✓ Redden
  - He gave 135 people a jelly bean.
  - The bean was either described by a number or more detailed by their flavour
  - They found that participants took longer to get bored if they were told the details, suggesting a cognitive element to dieting that shapes attitude towards food.

### **Overall EVALUATION:**

- ✘ Many of the studies have been based on anecdotal accounts (based on their own account of themselves not actual scientific facts) and this anecdotal evidence is usually not 100% accurate, has a lack of controls in place and is difficult to replicate to ensure reliability.
- ✘ Many studies often lack ecological validity due to their unnatural setup (laboratory settings, being monitored on food intake) and therefore findings cannot be generalised to the wider population. However being carried out in a lab allows high levels of control over variables.
- ✘ Do people have the free will to control their weight loss or is it be biologically determined? Some genetically related causes may determine weight control and this may be outside an individual’s control. (E.g. LPL is produced by fat cells to help store calories as fat so if a person produces too much they may regain lost weight much faster than others). This may explain why some people find dieting easier while others struggle.
- ✘ Research into dieting is culturally biased as some cultural groups have been found to struggle with dieting with a natural inclination towards obesity. Adults from Asian backgrounds have been found to be more prone to suffer from obesity than

European adults (Park et al) Therefore culture itself and biology (nature) may be an influencing factor on the success of diets.

- ✓ Real-world applications into how we might help people trying to lose weight - if dieting is likely to fail because of cognitive or biological factors then diet plans have little justification. Evidence however has suggested a combined approach in a diet-plan actually works best. It involves dieting, trying to lose weight and group support. Diet plans represent the “nurture” side of the argument as people make environmental changes to influence their body shapes but genetic influences have shown to play a part and so new diet-plans could be developed by tackling the right foods through diet but also catering this for each individuals own biology.
- ✗ Most research into dieting is gender biased as participants are mostly women. Male eating differs as they have different requirements (e.g. more calories).

## **(4) ATTITUDES TO FOOD AND EATING BEHAVIOUR**

Despite feeding behaviour having basic biological functions, it can be modified by many other influences.

### **FACTORS:**

#### **1. CULTURAL INFLUENCES**

- Our eating behaviour can be explained by cultural factors and the culture we live in.
- Most cultures have their own ideas on which foods are allowed to be eaten, when and how they're eaten and how they should be prepared. These are usually traditional ideas passed on through generations.
- Culture also affects our attitudes to food due to the availability of different types of food in the different cultures around the world.
- In western societies, body dissatisfaction and related eating disorders are more a characteristic of white ethnicities as opposed to black or Asian. (as found by Khan et al.)
- There has been evidence found for the 'acculturation effect' whereby the more time spent in one particular culture, the more similar the eating behaviours became similar to the native people of that culture.
- However cultural affects are being reduced with the spread of highly processed fast foods becoming more widely available. This was found by Lawrence who concluded that women of Pakistani backgrounds took pride in cooking traditional foods but turned to western junk food when they had insufficient preparation time.

### **EVALUATION:**

- ✓ Wardle

- Surveyed the diets of 16000 young adults across 21 European countries.
- Generally, the amount of people eating a basic and healthy diet was low, with females doing better than males.
- There were also differences between countries with regards to the amount of fibre, fruit and salt eaten.

✓ Rozin

- Surveyed people from Belgium, France, USA and Japan on beliefs about the diet-health link and other food related issues
- In all areas except the diet-health link they found cultural differences.
- In all countries females showed a pattern of attitudes that was more like the Americans and less like the French.
- These differences may account for the national differences in rates of CHD.

✓ Stefansson found that Copper Inuit's (who live on a diet of flesh and roots only) were disgusted by the taste of sugar. This is very different to the western world and thus shows a cultural difference as there is such different idea about the taste of a food-type between the two cultures.

✗ Mumford found the opposite – they found the incidence of bulimia was greater among Asian schoolgirls than their white counterparts.

✗ Striegel-Moore found more evidence for a 'strive for thinness' among black girls than white girls. This all could be explained because more research has been done on white cultures.

## 2. MOOD

- When people are sad they tend to eat more or 'comfort eat' to make themselves feel better.
- With people with bulimia, it has been found that they often report feelings of anxiety and low mood prior to a binge. However it has often been found that the binge does not in fact actually alleviate the mood at all.

## EVIDENCE:

- ✓ Garg found that people who watched a sad movie were more likely to go for a snack that tastes good such as popcorn to give them a sudden rush of euphoria whereas those watching a happy movie want to extend their upbeat mood and so choose healthy foods. However, this study does have extraneous variables as it is impossible to know what the participants had eaten before the study or if they actually liked the popcorn or not. This reduced validity.

## 3. LEARNING & EXPERIENCE (from parental attitudes)

- One explanation of our attitudes to food is outlined in the **social learning theory**.
- Parental modelling affects children's own attitudes as parent's control what's brought into the house and what meals are served. Children then learn their attitudes to food through observing their parents and the satisfaction they receive and through this vicarious learning they may come to model the behaviour themselves.
- SLT also predicts that the media will have an influence on eating behaviour and our attitude towards certain foods. As the media highlights different attitudes which people may observe and learn from. For example people may identify with celebrities who may highlight a particular food diet and the benefits gained.

- Birch proposes that we are not born with an innate preference to certain foods but that we have an innate ability (nature) to associate food taste and smells with the consequences of eating that food and so we learn from experience (nurture) the foods that are good for us and the foods that are not. (This shows a great interaction between both nature and nurture)

## EVALUATION:

- ✓ Odgen found a significant correlation between the diets of mothers and the diets of children.
- ✓ Meyer and Gast
  - Surveyed 10-12 year olds
  - Found a positive correlation between peer influence and disordered eating with the most important factor being 'likability' of peers, in line with SLT ideas that being able to identify with models would play a role in shaping behaviour.
- ✓ Fisher studied mother-daughter relationships and found that a good predictor of the daughters eating habits was their mother's dietary restraints and how they perceived the risk of their child becoming overweight. This would suggest the daughters were learning from their mothers their attitudes.
- ✓ Brown found a consistent correlation between the eating habits of parents and their children around snack food intake, motivation to eat and body dissatisfaction.
- ✗ Evolutionary explanations show that attitudes to food are clearly a produce of much more than just social learning as, for example, our preference for fatty and sweet foods is a result of an evolved adaption among our ancestors.

## 4. *HEALTH CONCERNS*

- In the western world there is increasing concern over diet and health.
- Obesity is increasing.
- This has led to many adults altering their attitudes to food and changing their diets and the diets of their children.

## EVALUATION:

- ✗ This can have a downside, as mothers dissatisfied with their own body shape may pass this concern to their child, potentially leading to an eating disorder.

## ATTITUDES:

## 5. *EMOTIONAL*

- Hunger is associated with increased arousal and irritability.
- Eating food is then usually associated with a better mood and more energy.
- Sweet foods in particular increase the release of endorphins in the brain. Therefore we feel better after eating sweet carbohydrates as these foods activate our natural reward pathways.

## OVERALL EVALUATION:

- ✗ Most studies have focused on women which suggests theories may suffer from gender bias and not necessarily generalise to men. Thus explanations may lack population validity.
- ✗ Further problems with generalisability as some studies are based on people with eating disorders and hence the findings may lack external validity as they are not measuring how eating behaviour is affected in a way that can be generalised beyond that niche group of people.
- ✓ Real world application – information promoting healthy eating can be used in advertising campaigns to reinforce these points through providing positive role models. This may help the NHS budget for obesity which is a growing problem.
- ✗ Deterministic – no free will. Although exposure through social learning, culture etc. can influence food choices, there are always people who are unaffected by them and thus highlight how free will also plays a role in shaping attitudes.

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## (5) PSYCHOLOGICAL EXPLANATIONS OF ANOREXIA

Main symptoms:

1. Body weight 85% or less than 'normal'
  2. Distorted perception of body shape, continuing to see themselves as fat
  3. Denial that the weight loss is severe
  4. Intense fear of becoming fat
  5. Amenorrhoea
  6. Unusual eating habits
- The 2 main types include AN restricting type (involving the refusal to eat) and AN binge eating/purging type (binge eating and purging by either vomiting, laxatives or enemas).
  - It has the highest mortality rate of any mental illness (with a mortality rate of around 8%).

### PSYCHOLOGICAL CAUSES:

## BEHAVIOURIST APPROACH - SOCIAL LEARNING AND THE MEDIA'S INFLUENCE

In western societies, beauty is usually equated to being slim. The media then reinforces this through the influence of TV, magazines, celebrities etc. which reinforce this cultural ideal.

SLT states that culture and role models can influence the onset of AN as it creates a tension between the real self and the ideal self which leads to body dissatisfaction. People may then observe and pay attention to celebrity role models who are extremely thin, retain this information and, in some vulnerable girls, this can lead to a fully-fledged ED if the person decides to reproduce the behaviour through excessive dieting. Additionally, seeing celebrities who are rich and famous may lead them to think that being thin is what is required to achieve success or to become accepted.

The constant portrayal of slim models leads people to question their own body types, causing them to strive to be thin. A survey found that 16% of 15-18 year old girls were currently on a diet. A reason for this could be that girls have internalised culturally defined standards of female beauty which leads to unhappiness over their own

body type when it does not match with this ideal and thus an obsession with dieting and food could occur, leading to AN.

The whole process is helped along by direct reinforcement and operant conditioning when friends and family praise them for losing weight.

### **EVALUATION:**

- ✓ Becker found that once television was introduced to Fiji, the girls there stated a desire to lose weight to become more like western characters.
  - However, personality factors could be a confounding variable affecting the DV as other explanations suggest those with low self-esteem, perfectionism or OCD are also more susceptible to influence.
  - Lack internal validity as we cannot say for sure that a change in attitude towards image can directly lead to the development of AN. Other factors may contribute as many people diet without developing an ED. Thus the findings lack external validity when we try to generalise findings.
- ✓ Groesz did a meta-review of 25 studies and concluded that body dissatisfaction significantly increased after exposure to media images of thin women.
- ✓ Forehand found that 27% of girls felt that the media pressure them to strive to have a perfect body.
- ✓ Real world application by acknowledging the damaging effects of the media. On the 17<sup>th</sup> of December 2015, France passed a law to ensure that all photoshopped photos in magazines had to be clearly stated and all models had to have a doctor's note stating they were physically healthy. Failure to do so could result in 6 months in jail and a fine of €75,000. This is in the hope to prevent the damaging effects of constantly viewing underweight models.

### **ETHNICITY**

In many non-western cultures there are more positive attitudes towards large body sizes.

The incidence of AN in non-western cultures and in black populations is much lower than in white western populations.

### **EVALUATION:**

- ✗ Hoek examined the records of 44192 people admitted to hospital between 1987 and 1989 in a non-western Caribbean island (where it is acceptable to be overweight). They found 6 cases of AN, a rate that they claim is within the range of rates reported in western countries too, suggesting cultural influences may not explain this.
  - Methodological issues – based on a small sample of people on one island = culturally biased and thus lack external validity and generalisation, so we cannot draw definite conclusions.
- ✗ Regan found no significant differences in prevalence of disordered eating between African-American and White-Caucasian participants.
- ✗ Lai found the rates of AN began to increase for the Chinese people of Hong Kong as the culture became more westernised.
  - However, it was based on correlational findings and so no cause and effects.

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- There may also be other confounding variables such as personality factors or individual differences that caused these people to be more influenced by western culture.
- ✗ Keel did a major review of a cross-cultural studies of ED and found that AN is not culture-bound as it is found in all of the cultures studies, even in those not exposed to western influences. (However, the frequency is proportional to the degrees of influence of western cultures.

## **PERSONALITY**

Personality traits are often seen to play an important causal role as eventhough everyone is exposed to the same factors, only a few people developed ED's.

PERFECTIONISM – has been found in 73% of the girls and 50% of the boys with AN in one study.

IMPULSIVENESS – it's thought that people with AN act more impulsively that they often self-report about as Butler found that patients with AN responded rapidly (but inaccurately) to a performance task, indicating behavioural impulsiveness.

Research has found that women are more at risk than men and other possible contributing factors could revolve around low self-esteem, OCD, high social anxiety and perfectionism.

### **EVALUATION:**

- ✓ Nilsson found that people who had short illness duration had lower levels of perfectionism and those with high levels were more at risk of long illness duration.
- ✗ However, there are methodological problems as some short-lived personality traits may be a direct result of having starved their body for so long and thus may be an effect rather than a cause of AN.

## **PEER GROUPS**

One study found that dieting among friends was significantly related to unhealthy weight control behaviours (see below)

A specific mechanism is teasing as it has been found that overweight girls and underweight boys were most likely to be teased by their peers, suggesting that peers enforce gender-based and cultural ideals of what body types should be like.

Tied in with this concept is that of reinforcement – if peer groups tease girls that are overweight, then often what happens when they lose weight is that they are praised for “looking good” and this acts as positive reinforcement to continue losing more and more weight until it all becomes uncontrollable and the mental illness that is AN takes over.

### **EVALUATION:**

- ✗ Shroff found no correlation among friends on measures of disordered eating in adolescents.

- ✓ Jones found overweight girls and underweight boys were in fact more likely to be teased, but that these differences do not emerge until adolescence.
- ✓ Eisenberg found unhealthy dieting (such as using diet pills, laxatives or purging) was apparent within peer groups, suggesting this too could contribute towards the development of AN

## **UPBRINGING ENVIRONMENT AND CHILDHOOD (PSYCHODYNAMIC EXPLANATION)**

Bruch claimed that the origins of AN are in early childhood and is caused by how parents respond to their child's needs and thus AN was an attempt by the individual to exert some kind of control (as eating behaviour is one area they could control and thus increase their self-efficacy).

She believed it was due to *effective parents* (who respond appropriately to their child's needs such as by feeding them when hungry) and *ineffective parents* (who fail to respond to their child's internal needs for example, if their child cries because they are anxious they may feed them or conversely they may comfort them when they are actually hungry).

Children of ineffective parents may grow up confused about their internal needs, becoming overly reliant on their parents. And thus when they reach adolescence and a desire to establish autonomy increases, they may find that they are often unable to do so, feeling that they do not own their body and to overcome this sense of helplessness they can take excessive control over their body shape as they feel a lacking sense of control in all other aspects of their life.

In addition to this, Crisp believed that AN was an attempt by the girl to postpone adulthood due to the resulting amenorrhoea and the breast development stopping. He believed this was because they couldn't cope with adulthood. Additionally, it is also suggested that pregnancy and a fat stomach are unconsciously linked in an anorexic's mind.

### **EVALUATION:**

- ✓ Steiner found that parents of adolescents with AN had a tendency to define their children's physical needs rather than allowing them to define their own.
- ✓ Research has found that people with AN rely excessively on the opinions of others, worry about how others view them and feel a lack of control over their lives.

### **OVERALL EVALUATION:**

- ✗ REDUCTIONIST and OVERSIMPLIFIED – this is because a more complex process beyond simply a single explanation seems to be the case; a combination of processes may be interacting such as the media's influence, cultural attitudes and even personality factors. This is supported by the fact that now everyone who diets, lives in a particular country or admires a certain celebrity develops AN.
- ✗ Focus on the NURTURE side as it suggests it's all due to environmental factors. However, biological explanations put forward a case for neural or genetic causes, suggesting nature might be the cause. Thus a diathesis stress model may explain it all better by demonstrating how both play a role with some people having the genetic pre-disposition for an ED providing sufficient environmental triggers are there to cause the onset of AN.
- ✗ GENDER BIASED – most research is focused on females. The same psychological factors that affect women may not be the same for men due to them perceiving environmental factors differently.

- ✗ It is hard to identify the problems that cause the ED and problems that are caused by the ED.

## **(6) BIOLOGICAL EXPLANATIONS OF AN**

### **1. EVOLUTIONARY APPROACH**

#### **🐾 The Adapted To Flee Hypothesis**

Guisinger developed this hypothesis which proposes that the typical symptoms of AN (food restriction, hyperactivity and denial of starvation) reflect the operation of adaptive mechanisms that would have helped survival and migrate during famine as extreme weight loss among ancestors lead to the adaption that increases desire for food to be turned off. Thus symptoms of AN seemed adaptive for the EEA and, among those who are genetically vulnerable to AN, losing too much weight may trigger these ancestral mechanisms.

#### **EVALUATION:**

- ✗ No direct evidence and is impossible to test scientifically and so remain speculative and lack validity.
- ✗ It cannot explain why AN is found predominantly in females when it would have seemed sensible for it to have affected both men and women in the EEA.
- ✗ It can explain some of the characteristics of AN such as the denial of hunger and the increased level of activity.
- ✗ We could question how the symptoms of AN might be passed on by natural selection as they decrease fertility and could even kill the individual.
- ✗ However, overall the condition seems more maladaptive – it leaves the individual weak, frail and vulnerable as well as a liability to the group. The basics for survival (such as hunting for food) also becomes difficult.

#### **🐾 The Reproductive Suppression Hypothesis**

Surbey suggests that girls control their weight as it is an evolutionary adaptation to delay the onset of sexual maturation in response to cues about the probability of poor reproductive success.

Therefore the ability to delay reproduction is adaptive as it enables a female to avoid giving birth as a time when conditions would not be best for the survival of her offspring or they are in poor physical condition.

Surbey therefore says AN is a disordered variant of this adaptive ability to alter the timing of reproduction at a time when they would be unable to cope with the biological, social and emotional responsibilities of womanhood.

### **2. GENETIC'S EXPLANATION**

We can compare MZ twins (who share 100% of genes) with DZ twins (who share 50%).

Both sets of twins are usually brought up in similar environments.

If MZ twins have a higher concordance rate for AN than DZ twins then we can say that anorexia is likely to be due to genetic factors.

#### **EVALUATION:**

- ✓ Holland found that concordance rates for MZ twins was significantly higher (55%) than those for DZ twins (7%)
  - This study assumed that environmental influences were the same for both types of twin and that the only difference is genetics. However MZ twins are more likely to be treated similarly and this extra closeness may contribute to the higher concordance rate.
  - The concordance rate was only 55% not 100% (showing environmental factors too)
  - Only used a small sample of 30 pairs of twins.
- ✓ Klump has reviewed many studies and concluded that the genetic contribution for AN is between 50 and 80%.
- ✗ However, concordance rates for MZ twins are not 100% and thus this can provide evidence for an environmental effect. Therefore eating disorders may reflect neither nature or nurture but rather an interaction between the two.
- ✗ AN is a relatively rare condition and thus some genetic studies are based on a low number of participants and so lack reliability.
- ✗ Most studies are done in western cultures and so we don't know if the same results would be found in non-western countries.
- ✗ Even if we do establish a genetic contribution, we have no idea what it might be that is inherited. For example, we cant really believe there is a gene for body dissatisfaction.
- ✗ Families do pass on their genes to the next generation however they also transmit social and cultural values. For example, families who have immigrated into western cultures go on to develop AN at the same rate as people from families who have always lived in the west.

### 3. NEURAL EXPLANATION

#### 🐾 SEROTONIN

In early studies, researchers found a reduction in levels of the important serotonin metabolite 5-HIAA in people with ED's, suggesting that brain serotonin pathways were underactive.

However, these early studies were probably on people with ongoing AN so it's possible the illness had caused differences in serotonin rather than serotonin causing the illness.

Nevertheless, brain-scans have that there are far few serotonin receptors in the brains of people with eating disorders and these changes are also found in people who have recovered from AN and so are not directly linked to the symptoms to the illness.

#### EVALUATION

- ✓ Serotonin is likely to have an influence as it is also part of the neurotransmitter system of the hypothalamus that controls feeding behaviour.
- ✓ Serotonin also has been linked to personality traits such as perfectionism, anxiety and depression and it is known that people with AN often have these personality traits.
- ✗ We still cannot conclude that it causes AN as symptoms, such as the loss of weight, produces changes in the body's physiological systems and these alterations may be so profound that they persist even after the person has recovered.
- ✗ It is hard to see if they cause ED's as the only way to show that is to demonstrate that dysfunctions in serotonin were there before the illness developed, however ED's are so rare that it would be impossible to test loads of people and see who developed AN.

- ✓ Bailer found that when studying women with anorexia, the women who had the highest levels of serotonin were in the women who showed the most anxiety, suggesting that persistent disruption of serotonin levels may lead to increased anxiety which may trigger AN.
- ✗ SSRI's alter brain serotonin levels, yet they are ineffective when used with AN patients. However, this may be because of malnutrition-related changes in the body as Kaye found that the drugs were effective in preventing relapse when a person had reached a healthy weight.

#### 4. **NEURODEVELOPMENT (pregnancy/birth complications)**

Researchers have found that often mothers with girls who later develop AN have more difficult pregnancies.

The babies are more likely to be premature and of low birth weight and the mothers tend to have high levels of anxiety during the pregnancy and this are more likely to be over-protective with the new baby leading to an insecure attachment.

Birth complications may lead to brain damage caused by hypoxia (lack of oxygen) which would impair the neurodevelopment of the child.

Animal studies have shown that stress before birth and poor mothering afterwards can upset the HPA stress response in the developing child so the child has an over-reactive stress system and this copes poorly with stress and high levels of stress affect neurotransmitters like serotonin. In AN the stress response is hyper-reactive, leading to a failure to cope successfully with adolescence and so attempts to cope leads to the behavioural symptoms of AN.

#### **EVALUATION:**

- ✓ Lindberg found a significant association between premature birth and the development of AN.
- ✓ Favaro found that the birth complications of obstructed blood supply in the placenta, early eating difficulties and low birth weight were associated with the risk of developing AN.

#### **OVERALL EVALUATION:**

- ✓ Biological explanations offer the promise of a range of treatment possibilities such as drug therapies to normalise neurotransmitter levels or even gene replacement therapy.
- ✓ Biological explanations allow people to realise they are dealing with a dysfunctional *biology* (which can be treated) rather than a dysfunctional *family* (which often cannot)
- ✓ Biological explanations reduces guilt generated by the view that it is the parents who cause the development of ED's.
- ✓ Real world application – in the US treatment for AN is restricted under many insurance plans as it is not considered to be “biologically based” however biological explanations and research creates a case for insurance companies to considered AN in the same way as other psychiatric conditions that are considered biologically based.
- ✗ Gender biased –most studies have focused on women even though statistics show 25% of adults with ED's are men.
- ✗ Reductionist – trying to explain a complex illness down to one component such as neurotransmitter levels while ignoring other contributing factors such as stressors or life events.
- ✗ Psychological approaches such as SLT appear to offer an explanation with copious amounts of supporting evidence (such as the influence of the media) and this further undermines biological

explanations. Therefore it may be best to take an integrated approach using both psychological and biological explanations.

- ✘ Deterministic – it assumes people have no control over biology or AN which is evidently not true as highlighted by Holland's study (see above) as the MZ twins share identical genetic makeup yet concordance rates are only 55% and so this highlights the role of free will people have to override their biological pre-dispositions.