Table 1. Archaeological traits of 'modern human behaviour' (after Hensilwood and Marean 2003, McBrearty and Brooks 2000, Bar-Yosef 2002, Mellars, 2005; 2006)

Social structures and communication mechanisms
Long-distance exchange networks
Personal ornamentation
Symbolic expression and use of pigment
Notched and incised objects (bone, egg shell, ochre, stone)
Burials with grave goods, ochre, ritual objects

Technological changes in terms of adoption of innovative technology, standardisation, and precision in technical artefacts
New lithic technologies
'Improved' (more efficient) technology
Standardisation with formal tool categories
Complex tool designs eg Hafting and composite tools
Tools in novel materials eg bone, antler
Special purpose tools eg projectiles, geometrics
Increased number of tool categories

Subsistence changes, particularly with innovative and structured/standardised exploitation patterns
Increased diet breadth
Specialised hunting of large, dangerous animals
Scheduling and seasonality in resource exploitation
More efficient foraging strategies
Intensification of resource extraction (aquatic and vegetable)

Population dynamics
Increased population densities
Range of previously unoccupied regions
Geographic variation in formal categories
Temporal variation in formal categories
Long distance procurement and exchange of raw materials
Curation of exotic raw materials
Site reoccupation or longer occupation
Structured use of domestic space
Regional artefact styles

Table 2. Diagnostic Criteria for 299.80 Asperger's Disorder

[The following is from American Psychiatric Association *Diagnostic and Statistical Manual of Mental Disorders: DSM IV*]

(I) Qualitative impairment in social interaction, as manifested by at least two of the following:

(A) marked impairments in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body posture, and gestures to regulate social interaction

(B) failure to develop peer relationships appropriate to developmental level

(C) a lack of spontaneous seeking to share enjoyment, interest or achievements with other people, (e.g.. by a lack of showing, bringing, or pointing out objects of interest to other people)

(D) lack of social or emotional reciprocity

(II) Restricted repetitive & stereotyped patterns of behavior, interests and activities, as manifested by at least one of the following:

(A) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus

(B) apparently inflexible adherence to specific, nonfunctional routines or rituals

(C) stereotyped and repetitive motor mannerisms (e.g. hand or finger flapping or twisting, or complex whole-body movements)

(D) persistent preoccupation with parts of objects

(III) The disturbance causes clinically significant impairments in social, occupational, or other important areas of functioning.

(IV) There is no clinically significant general delay in language (E.G. single words used by age 2 years, communicative phrases used by age 3 years)

(V) There is no clinically significant delay in cognitive development or in the development of age-appropriate self help skills, adaptive behavior (other than in social interaction) and curiosity about the environment in childhood.

(VI) Criteria are not met for another specific Pervasive Developmental Disorder or Schizophrenia.

Table 3. Diagnostic Criteria for 299.00 Autistic Disorder

[The following is from American Psychiatric Association *Diagnostic and Statistical Manual of Mental Disorders: DSM IV*]

(I) A total of six (or more) items from (A), (B), and (C), with at least two from (A), and one each from (B) and (C)

(A) qualitative impairment in social interaction, as manifested by at least two of the following:

1. marked impairments in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body posture, and gestures to regulate social interaction
2. failure to develop peer relationships appropriate to developmental level
3. a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people, (e.g., by a lack of showing, bringing, or pointing out objects of interest to other people)
4. lack of social or emotional reciprocity (note: in the description, it gives the following as examples: not actively participating in simple social play or games, preferring solitary activities, or involving others in activities only as tools or "mechanical" aids)

(B) qualitative impairments in communication as manifested by at least one of the following:

1. delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)
2. in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
3. stereotyped and repetitive use of language or idiosyncratic language
4. lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

(C) restricted repetitive and stereotyped patterns of behavior, interests and activities, as manifested by at least two of the following:

1. encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
2. apparently inflexible adherence to specific, nonfunctional routines or rituals
3. stereotyped and repetitive motor mannerisms (e.g hand or finger flapping or twisting, or complex whole-body movements)
4. persistent preoccupation with parts of objects

(II) Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years:

(A) social interaction
(B) language as used in social communication
(C) symbolic or imaginative play

(III) The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder

Table 4. Characteristics of autistic conditions of particular significance for social roles of individuals on the autistic spectrum

Perception/Understanding

A particular focus on detail (O'Riordan et al 2001, Plaisted et al 1998, Baron Cohen 2006a, 2006b) and abilities to differentiate details within large patterns ('weak central coherence' Frith and Happe 1994, Shah 1988)

Sometimes exceptional memory capacities (Attwood 1998)

Literal, rule based understanding (Selfe 1983; Humphrey 1998; Myers et al 2004) of the world, ability to isolate rules and pattern within complex systems (eg engineering or weather patterns, Hermelin 2002, Baron-Cohen et al 2000)

'Obsessive' focus on their area of interest (Attwood 1998:15; Ehlers and Gillberg 1993; Gillberg and Gillberg 1989; Tantam 1988)

Motivation

Due to deficits in empathy (Attwood 1998:15), particular focus on psychological rewards in other realms than social relationships (Wing 1981; Fitzgerald 2004))

Focus on acquiring knowledge about the natural and physical world (Krevelen and Kuipers 1962; Fitzgerald 2004)

Tendency to social isolation, lack of desire to interact with others (Szatmari et al 1989; Attwood 1998: 25)

Effects on Others

Lack of concern/understanding of social norms (Wing 1981; Attwood 1998; Fitzgerald 2004)

Abilities to develop unique insights (Baron-Cohen 2006b: 4)

Desire to create predictable environments and controllable systems (extending to people) (Baron-Cohen and Wheelwright 2004: 253; Attwood 1998)

Misreading of emotional messages, challenges with understanding and communication (Attwood 1998: 25)

Lack of self-doubt, tendency to attempt to force own viewpoint and so create social tensions or be controlling or emotionally damaging (Attwood 1998:25; Fitzgerald 2004: 31; Baron-Cohen 2006c)

Lack of concern for or action on behalf of others, particularly where there are no rules to proscribe this (Ehlers and Gillberg 1993; Gillberg and Gillberg 1989; Fitzgerald 2004).

Table 5: Archaeological evidence corresponding to key traits illustrating the integration of autistic minds within society

Integration of autistic individuals and autistic thinking into society	**Archaeological expression (in 'modern human behaviour')**	**Archaeological examples**
Mechanisms for integrating 'different minds':		
Material symbolism of complex emotional ties	Rise of personal ornamentation Elaborate burial	Appearance of body decorations such as shell beads (eg in the Levant, Kuhn et al 2001, or at Blombos Cave, Henshilwood 2004, or in the European Aurignacian White 1993, 1997) Burials with grave goods, ochre and ritual objects (eg in the Levant at Quafzeh Cave, 90,000 years ago, Hovers et al. 2003)
Clear material clues of meanings	Use of symbolism	Use of red ochre (eg at Blombos cave, Hensilwood 2002 or at Pinnacle Point, Marean et al 2007)
Mechanisms for clear communication/collaboration across different understandings and perceptions (eg 'tit-for-tat' social structures)	Long distance communication with other groups	Exchange of Venus figurines (eg of Venus figures in Europe, Gamble 1999) Long distance raw material movement (eg in South West Europe, Gamble 1999. Marwick 2003)
Mechanisms for dealing with social tensions	Evidence for social rituals and collaborative practices (music, dance, shamanism) Organised use of space	Evidence for music (eg Mithen 2005) and shamanic practices (eg Lewis Williams 2002) Widespread distinct spatial organisation (Pettitt 1997, Mellars 1996, though see also Vaquero 1999, Vaquero and Pastó 2001, Speth 2006), widespread structured hearths (Bar-Yosef 2002)
Mechanisms for dealing with controlling, emotionally damaging or dominant behaviour	Mechanisms to counteract dominance	projectile technology such as spear throwers (Bar-Yosef 2002, with long-

		distance combat possibilities, Shea 2003) group unity, moral emotions and group expulsions or assassinations (Boehm 1993, 1999)
Social roles for individuals with autistic talents		
Inclusion of individuals with unique capacities for understanding physical and mechanical systems	Rise of more efficient technology Development of new technological methods/innovations More complex technological designs	Bladelets, microliths and backing (eg Howiesons Poort technology, Mellars 2005: 17, Aurignacian bladelets in Europe Mellars 2006c) More efficient blade technology (eg 75,00-80,000 in the Levant, Shea 2003) Diversified projectile points (eg in the Levant and Europe, Shea 2003: 183, Knecht 1997, Larsen-Peterken 1993, Bar-Yosef 2002) Use of novel materials (eg bone artefacts at Blombos Cave, Henshilwood et al 2002) Rise of multi-component tools (eg hafted inserts at Klasies River Mouth, Deacon and Deacon 1999) More elaborate and technological use of fire in hearths (Bar-Yosef 2002) Use of grinding and pounding stones (Wright 1992, Bar-Yosef 2002)
Inclusion of individuals with unique capacities for understanding natural systems	More efficient exploitation patterns	More efficient scheduling of exploitation (eg circulating vs logistical mobility

		patterns in the Levant, Lieberman and Shea 1994)
	Understanding of behaviourally complex or difficult prey	Regular exploitation of more dangerous species (eg Cape buffalo and bushpigs at MSA sites in south Africa, Klein 1999)
	Exploitation of new ecological niches	Development of marine exploitation (eg of shellfish at Pinnacle Point, Marean et al 2007)
	Exploitation of new environments	Population regional expansion (eg into Europe, Mellars 2006b) and into more inhospitable environments (Finlayson 2004)
Inclusion of individuals with concern with small precise details	Precise and detailed technological innovations	Precise, detailed designs (eg Howiesons Poort industry, Mellars 2005, Aurignacian bladelets Mellars 2006c)
Inclusion of individuals with concern for 'rules'	Standardisation of tool technology	Formalised tool types (eg formalised end scrapers at Klasies River Mouth, Singer and Wymer 1983)
	Special purpose tools	Eg defined, specific forms (eg new end scraper forms, Klasies River Mouth, Singer and Wymer 1983, Mellars 2005)
Individuals with lack of understanding of social norms	Innovative technological or subsistence methods	Innovative categories of subsistence resources (eg of shellfish at Pinnacle Point, Marean et al 2007)
Population consequences of integrating autistic minds		
Individuals often desiring isolation, and with unique memory capacities	Population expansion, as new lands can be mapped by exploration (refs Mellars 2006)	Genetic evidence for population expansion (Mellars 2006b)
Social conflicts	Splits in populations	Regionally differentiated tools (eg in the European aurignacian and Gravettian,

		Mellars 1989, Gamble 1999, appearances of differences in style, Bar-Yosef 2002)
Biological consequences of increased efficiency in resource exploitation	Increased longevity Reduced trauma through foraging stress on limbs	Caspari and Lee (2006) Davies and Underdown (2006) Underdown (2006)