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Tables and figures below

Published paper
http://dx.doi.org/10.1017/S0959774309000262

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

<table>
<thead>
<tr>
<th>Integration of autistic individuals and autistic thinking into society</th>
<th>Archaeological expression (in ‘modern human behaviour’)</th>
<th>Archaeological examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mechanisms for integrating ‘different minds’</strong>:</td>
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</tr>
<tr>
<td>Material symbolism of complex emotional ties</td>
<td>Rise of personal ornamentation</td>
<td>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)</td>
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<td>Elaborate burial</td>
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<td>Clear material clues of meanings</td>
<td>Use of symbolism</td>
<td>Use of red ochre (eg at Blombos cave, Hensilwood 2002 or at Pinnacle Point, Marean et al 2007)</td>
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<tr>
<td><strong>Mechanisms for clear communication/collaboration across different understandings and perceptions (eg ‘tit-for-tat’ social structures)</strong></td>
<td>Long distance communication with other groups</td>
<td>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)</td>
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<td>Organised use of space</td>
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<td><strong>Mechanisms for dealing with controlling, emotionally damaging or dominant behaviour</strong></td>
<td>Mechanisms to counteract dominance</td>
<td>Projectile technology such as spear throwers (Bar-Yosef 2002, with long-</td>
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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** | **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)  
**More complex technological designs** | **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**
<table>
<thead>
<tr>
<th>Understanding of behaviourally complex or difficult prey</th>
<th>Exploitation of new ecological niches</th>
<th>Exploitation of new environments</th>
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</thead>
<tbody>
<tr>
<td>Regular exploitation of more dangerous species (eg Cape buffalo and bushpigs at MSA sites in south Africa, Klein 1999)</td>
<td>Development of marine exploitation (eg of shellfish at Pinnacle Point, Marean et al 2007)</td>
<td>Population regional expansion (eg into Europe, Mellars 2006b) and into more inhospitable environments (Finlayson 2004)</td>
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<tr>
<th>Inclusion of individuals with concern with small precise details</th>
<th>Precise and detailed technological innovations</th>
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<td>Precise, detailed designs (eg Howiesons Poort industry, Mellars 2005, Aurignacian bladelets Mellars 2006c)</td>
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<th>Inclusion of individuals with concern for ‘rules’</th>
<th>Standardisation of tool technology</th>
<th>Special purpose tools</th>
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<tr>
<td>Formalised tool types (eg formalised end scrapers at Klasies River Mouth, Singer and Wymer 1983)</td>
<td>Eg defined, specific forms (eg new end scraper forms, Klasies River Mouth, Singer and Wymer 1983, Mellars 2005)</td>
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<th>Individuals with lack of understanding of social norms</th>
<th>Innovative technological or subsistence methods</th>
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<td>Innovative categories of subsistence resources (eg of shellfish at Pinnacle Point, Marean et al 2007)</td>
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<th>Population consequences of integrating autistic minds</th>
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<tr>
<td>Individuals often desiring isolation, and with unique memory capacities</td>
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<tr>
<td>Population expansion, as new lands can be mapped by exploration (refs Mellars 2006)</td>
</tr>
<tr>
<td>Genetic evidence for population expansion (Mellars 2006b)</td>
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<th>Social conflicts</th>
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<td>Splits in populations</td>
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<tr>
<td>Regionally differentiated tools (eg in the European aurignacian and Gravettian,</td>
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<tr>
<td>Biological consequences of increased efficiency in resource exploitation</td>
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