WEAVE SPRINT . PAPER III

Child development

The developmental frameworks . The domains and the milestones . Development in context and clinical use

CONTENTS

- The developmental frameworks
- The domains and the milestones
- Development in context and clinical use
- Apply and consolidate

Dr. Wilfred D'souza . Dr. Niharika Reddy

WEAVE . CENTRE FOR INTEGRATIVE PSYCHIATRY

Weave
Centre for Integrative Psychiatry

WEAVE SPRINT
PSYCHIATRY OUTREACH PROGRAMME

Psychiatry that listens before it prescribes.

Therapy-informed psychiatry for adults, children, couples and families. Online across India, in person in Mumbai.





Assessments

ADHD, autism and developmental. Anxiety, mood, attention and personality patterns.



Consultations and sessions

Psychiatric consultations, therapy sessions, medication review and couples sessions.



Family Library

Free plain-language guides for families, in five languages.

`weave.clinic/family`

REFER, OR SEND SOMEONE OUR WAY

Your patient contacts Weave directly and decides whether to book.

You remain the referring clinician. Any coordination between clinicians happens with the patient's permission.

CONTACT

`weave.clinic/contact`
`WhatsApp +91 7625004229`

Dr. Niharika Reddy and Dr. Wilfred D'souza, Consultant Psychiatrists. Runwal Forests Clinic, Kanjurmarg West, Mumbai, and online.

WEAVE.CLINIC

Routine referrals only. This is not an emergency route.

Contents

Concept / rule Key number Trap

The developmental frameworks 3

1 Piaget stages of cognitive development 3

2 Erikson psychosocial stages 10

3 Freud psychosexual stages 18

4 Moral development (Kohlberg) 24

5 Mahler separation-individuation theory 29

6 Vygotsky sociocultural theory and zone of proximal development 35

7 Bowlby and Ainsworth attachment theory and Strange Situation 40

8 Temperament and goodness of fit (Thomas and Chess) 45

9 Theory of mind development 53

10 Language acquisition theories (Chomsky, Skinner, Vygotsky) 59

11 Parenting styles (Baumrind) and family influences on development 64

The domains and the milestones 72

12 Domains of child development (motor, language, cognitive, social, emotional) 72

13 Gross motor and fine motor milestones by age 78

14 Language and speech developmental milestones 83

15 Social and emotional developmental milestones 90

16 Primitive reflexes and their disappearance 98

17 Adolescent development and identity formation 103

18 Puberty, neurodevelopment of adolescence and risk-taking behaviour 110

19 Gender identity and psychosexual development in childhood 117

Development in context and clinical use 123

20 Developmental red flags and warning signs 123

21 Effects of deprivation, institutionalization and early adversity on development 129

22 Resilience and protective factors in child development 136

Apply and consolidate 141

23 Apply: worked cases 141

24 Consolidation 145

Previously asked 149

Quick review 151

References 154

Index 157

PAPER III

Normal child development & milestones

Three bands . one complete notes document

The developmental frameworks

1 . Piaget stages of cognitive development

Jean Piaget described cognitive development as an active construction of knowledge, not the passive accumulation of facts. The child acts on the world, builds organised patterns of understanding, finds that some patterns no longer explain experience, and modifies them. The theory therefore asks a more useful question than "What does the child know?": *what form of reasoning is available to the child, and what kind of problem can that reasoning solve?* Piaget proposed an invariant sequence of four broad organisations of thought: sensorimotor, preoperational, concrete operational and formal operational. The sequence is the examinable backbone. The age bands attached to it are textbook descriptors with source variation, not developmental screening cut-offs and never referral thresholds.

How to use this page. First learn the direction of change: action becomes mental representation; representation becomes logical but remains tied to concrete situations; logic then extends to possibilities, propositions and hypotheses. Next learn the characteristic achievement and characteristic error of each stage. Finally, separate three questions that are often collapsed in examinations and clinics: Piagetian stage theory describes the *organisation of cognition*; milestones describe observable developmental attainments across several domains; developmental surveillance and screening decide whether a child's course needs closer evaluation. A child does not "fail Piaget" because one conservation task is failed, and a Piagetian task is not a developmental screening instrument.

Must memorise: sensorimotor action becomes preoperational representation, concrete operations make representation logical for real and tangible problems, and formal operations extend logic to abstract and hypothetical possibilities.

MNEMONIC

"Sensorimotor - Preoperational - Concrete operational - Formal operational"

Sensorimotor action becomes preoperational representation, concrete operations make representation logical for real and tangible problems, and formal operations extend logic to abstract and hypothetical possibilities.

4	birth to 2 years	2 to 7 years	7 to 11 years
BROAD ORGANISATIONS OF THOUGHT	SENSORIMOTOR (BERK)	PREOPERATIONAL (BERK)	CONCRETE OPERATIONAL (BERK)

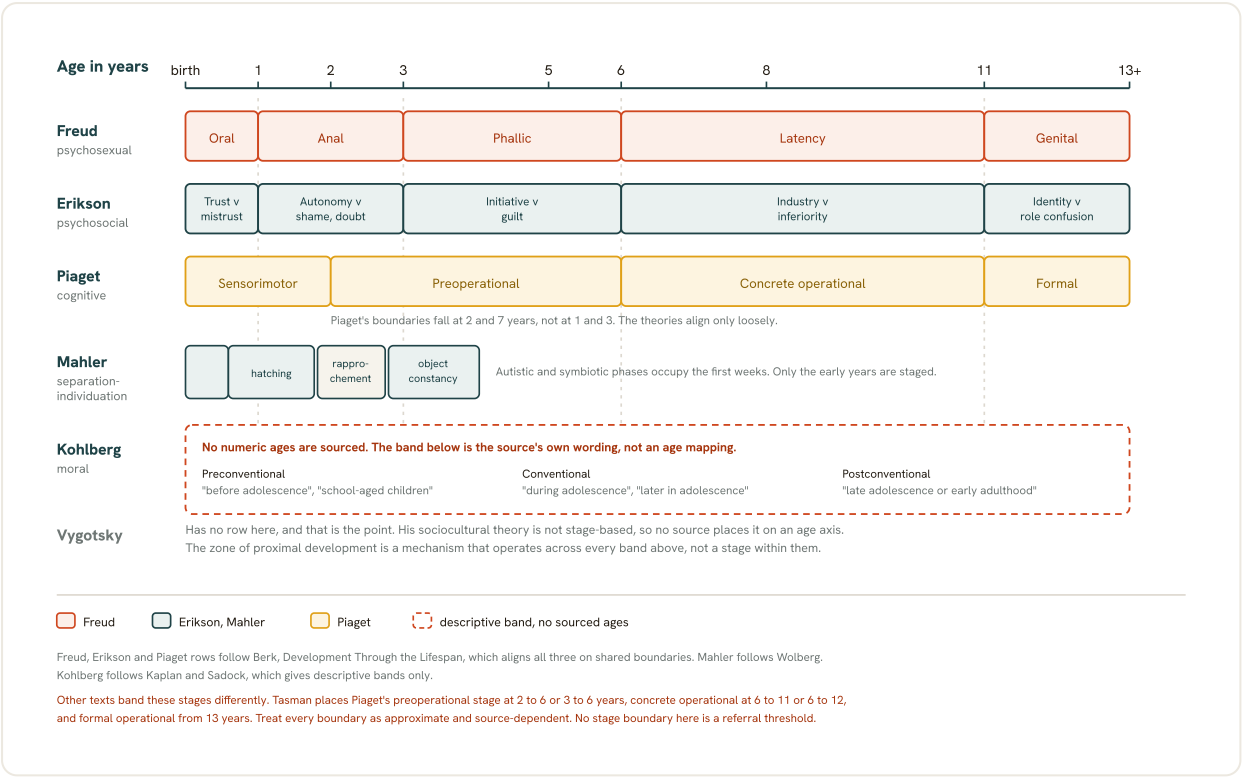


Fig 1.1 The developmental theories aligned on a shared age axis. Freud, Erikson and Piaget after Berk; Mahler after Wolberg; Kohlberg's levels as descriptive bands, since no numeric ages are sourced. Vygotsky carries no row because his theory is not stage-based. Boundaries are approximate and differ between texts.

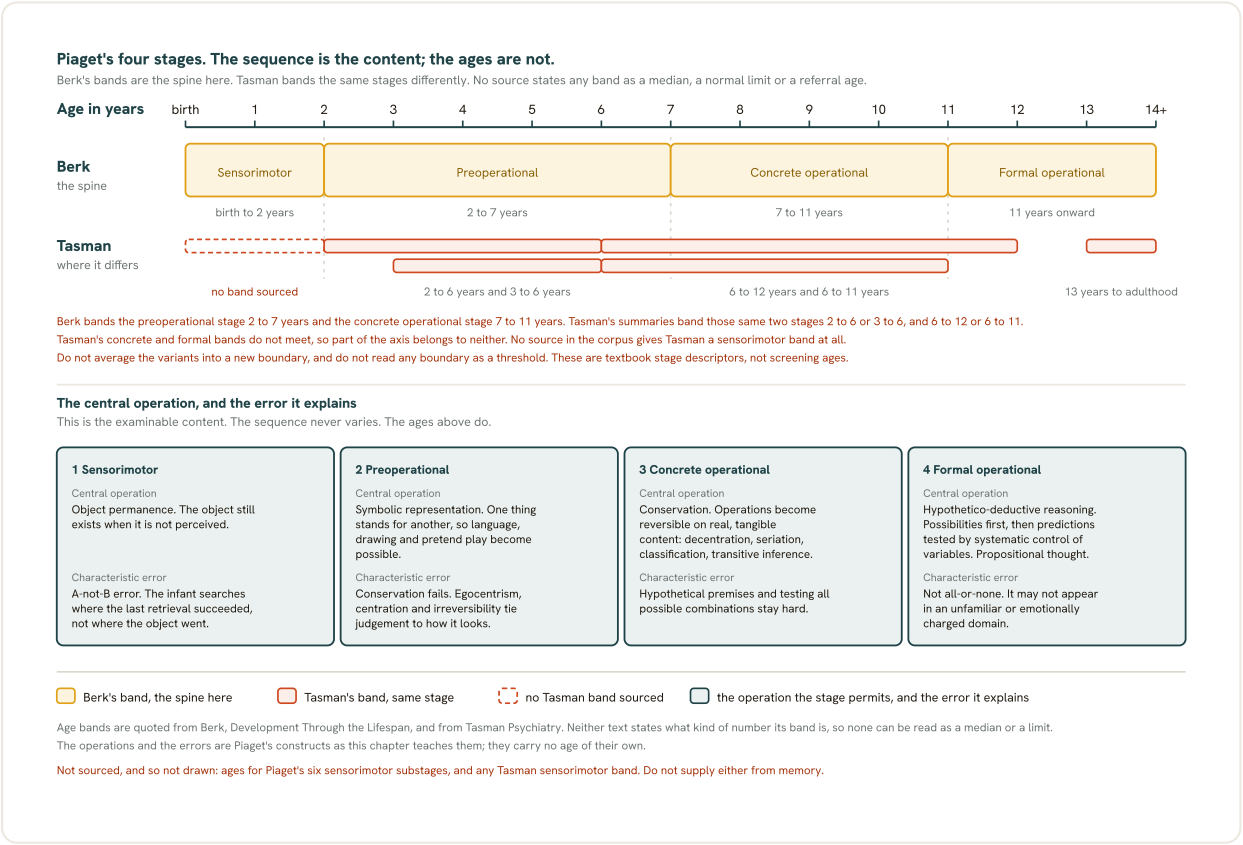


Fig 1.2 Piaget's four stages on an age axis, with the central operation each stage permits and the error it explains. The saffron spine follows Berk, Development Through the Lifespan; the coral bars are Tasman Psychiatry's differing bands for the same stages, shown rather than reconciled. No source states any band as a median, a normal limit or a referral threshold, and no source in the corpus gives Tasman a sensorimotor band.

1.1 The engine of Piaget's theory: schemes, adaptation and equilibration

A **scheme** is an organised pattern for acting on, representing or thinking about experience. An infant may have a grasping scheme; an older child may have a scheme for classifying animals or balancing an equation. Development occurs through **adaptation**, which has two complementary processes. In **assimilation**, the child interprets a new event through an existing scheme, as when every four-legged animal is initially treated as a dog. In **accommodation**, the scheme itself changes because the new event does not fit, so dogs and cows become distinct categories. Assimilation preserves continuity; accommodation permits novelty.

Organisation integrates separate schemes into larger cognitive systems. **Equilibration** is the regulatory process that moves thought from a less adequate balance to a more adequate one: a contradiction produces disequilibrium, and reorganisation restores coherence at a higher level. The theory is therefore *constructivist*. The child is neither a miniature adult nor an empty vessel, but an active reasoner whose errors disclose the structure of thought. In an examination, do not define a stage merely by its age band. Define it by the new operation it permits and the systematic limitation that remains.

RULE **Stage is inferred from the structure of reasoning, not from the answer alone.** Ask the child to explain, compare, predict and justify. A correct answer obtained by guessing or rote learning does not demonstrate an operation; an incorrect answer produced by misunderstanding the language of the task does not prove that the operation is absent.

1.2 Sensorimotor stage: knowledge through action

Berk's *Development Through the Lifespan* lists the **sensorimotor stage** as **birth to 2 years**. This wording is a textbook stage band, not a threshold. Cognition is initially organised through sensory experience and motor action. Repeated actions become circular reactions; schemes are coordinated into intentional means-end behaviour; experimentation becomes increasingly active; and, eventually, action can be represented mentally before it is performed. Piaget divided this progression into six substages, but the clinically useful principle is the movement from reflex-linked activity to deliberate action and internal representation.

The central achievement is **object permanence**, the understanding that an object continues to exist when it is no longer perceived. Before that representation is secure, searching is governed heavily by the immediate perceptual and motor situation. The classic **A-not-B error** occurs when an infant repeatedly retrieves an object from one location and then searches there again after seeing it hidden elsewhere. Later achievements include intentional problem-solving, imitation of an absent model, and the capacity to anticipate an outcome mentally. These are not isolated tricks. Together they mark the beginning of representation, which makes language, pretend play and later symbolic reasoning possible.

Clinical use. Observe how the child explores, searches, imitates and coordinates means with ends rather than relying on a verbal question. Interpretation must remain modest: visual access, motor ability, attention, fatigue, anxiety and familiarity with the task can all alter performance. Object-permanence tasks are demonstrations of a cognitive construct, not stand-alone diagnostic tests.

1.3 Preoperational stage: symbolic thought without reversible operations

Berk lists the **preoperational stage** as **2 to 7 years**. Tasman Psychiatry summaries use 2 to 6 years and 3 to 6 years in separate presentations. These variants should be retained as source conventions, not averaged into a new boundary. The decisive gain is the ability to use one thing to stand for another. Language expands, drawings carry meaning, and pretend play allows a block to become a car or an empty cup to contain imaginary tea. Thought has become representational, but it is not yet governed consistently by logical operations.

The characteristic limitations are linked. **Egocentrism** is difficulty coordinating one's own perspective with another person's perspective; it is not selfishness. The three-mountains task illustrates this failure of perspective-taking. **Centration** is attention to one striking dimension while other relevant dimensions are neglected. **Irreversibility** is difficulty mentally undoing a transformation. Together they explain failure of conservation: after the same quantity is rearranged into a taller or more spread-out appearance, the child judges by the perceptually dominant feature rather than by identity, compensation and reversibility.

Other characteristic forms include animism, in which life or intention is attributed to inanimate objects; artificialism, in which natural events are understood as made for human purposes; and transductive reasoning, in which one particular event is linked directly to another without a valid general principle. In clinical work, such reasoning can make illness, separation or family conflict feel caused by the child's thought or behaviour. The psychiatrist should explore the child's meaning and gently correct self-blame rather than treat developmentally shaped magical explanations as delusions.

1.4 Concrete operational stage: logical operations tied to tangible content

Berk lists the concrete operational stage as **7 to 11 years**; Tasman Psychiatry summaries use 6 to 12 years and 6 to 11 years. Again, these are alternate textbook mappings, not clinical cut-offs. The child can now perform an operation, an internalised mental action that is reversible and coordinated with other actions. Perceptual appearance no longer dominates every judgement, provided the problem concerns familiar or concretely imaginable material.

OPERATION	WHAT IT PERMITS
Conservation	Becomes possible because the child can use identity, compensation and reversibility.
Decentration	Permits simultaneous attention to more than one dimension.
Classification and class inclusion	Permit an item to belong to nested categories.
Seriation and transitive inference	Seriation orders objects along a dimension, and transitive inference coordinates relations to infer an unobserved relation.

Perspective-taking becomes more flexible, rules can be understood as coordinated systems, and explanations become less dependent on a single salient feature.

The limitation is contained in the name: the operations are most reliable when they can be anchored in actual objects, familiar events or imaginable transformations. Purely hypothetical premises, propositions contrary to fact, and systematic testing of all possible combinations remain difficult. For interviewing, use concrete language, timelines, drawings, demonstrations and examples from the child's experience. Abstract labels such as "mood," "risk" or "consequences" may need to be unpacked into observable situations.

1.5 Formal operational stage: reasoning about possibilities

Berk lists the formal operational stage as **11 years onward**, whereas a Tasman Psychiatry summary lists 13 years to adulthood. The two descriptions must not be collapsed into a falsely precise onset. The qualitative advance is that reasoning can operate on propositions and possibilities, not only on directly represented objects. The person can accept a hypothetical premise, derive its implications, and judge whether the conclusion follows even when the premise is not factually true.

- Hypothetico-deductive reasoning begins with possible explanations, derives predictions and tests variables systematically.
- Combinatorial reasoning considers the possible combinations within a problem rather than changing factors haphazardly.
- Propositional thought evaluates the logical relation between statements.
- Metacognition permits reflection on one's own thinking.

These abilities support scientific reasoning, long-range planning, moral debate, identity exploration and consideration of alternative futures.

Formal reasoning is not an all-or-none possession applied uniformly across every subject. Education, cultural tools, practice, interest, emotional arousal and domain knowledge shape whether it appears in a particular task. An adolescent or adult may reason formally in a familiar academic domain and concretely in an unfamiliar or emotionally charged one. The stage should therefore guide the form of questioning, not substitute for an assessment of actual comprehension, decision-making or capacity.

TRAP **Do not turn Piaget's age bands into milestone norms.** The cited texts do not label these bands as medians, normal limits or referral ages. They describe theoretical stages. Source variation, uneven performance and task demands make it incorrect to diagnose delay from a stage label or from one failed Piagetian task.

1.6 The classic tasks: what each task actually tests

A Piagetian task is valuable because the pattern of explanation reveals an underlying operation.

TASK	WHAT IT TESTS
Object-permanence task	The issue is whether the hidden object is represented despite absence from perception.
Perspective-taking task	The issue is coordination of viewpoints.
Conservation task	The examiner changes appearance while preserving quantity, then asks for both judgement and justification.
Class-inclusion task	The child must coordinate a subclass with the larger class.
Seriation and transitivity tasks	Relations must be ordered and mentally coordinated.
Formal-reasoning task	The examiner looks for generation of hypotheses and systematic control of variables.

Administration matters. Establish that the child understands the words, can see and manipulate the materials, and has not interpreted repetition of the question as a signal that the first answer was wrong. Ask "How do you know?" and record the reasoning rather than scoring only correct or incorrect. Repeating the same transformation with familiar objects can distinguish a conceptual limitation from confusion about the task. Do not coach the target operation and then claim to have measured spontaneous competence.

The best viva formulation is: *achievement, error, mechanism, task, limitation*. For preoperational thought, for example, the achievement is symbolic representation; the error is failure of conservation; the mechanism includes centration and irreversibility; the task is transformation of equal quantities; and the limitation is reliance on perceptual appearance. This structure prevents a recital of ages without psychology.

1.7 Strengths, limitations and contemporary reading

Piaget's enduring achievement was to show that children's errors are organised rather than random. He supplied testable constructs, linked knowledge to the child's own activity, and shifted developmental psychology from a catalogue of deficits to a study of changing cognitive structures. His tasks remain powerful teaching devices because they make abstract constructs visible in behaviour.

The limitations are equally examinable. Performance can improve when language is simplified, memory load is reduced or the situation is made familiar, suggesting that some classic tasks underestimate competence. Development is often gradual, overlapping and domain-specific rather than a clean step from one global structure to another. Social interaction, instruction, culture and the tools valued by a community receive less weight than in sociocultural theories. Formal reasoning is not consistently demonstrated across every person and every domain. The useful modern reading is therefore neither to discard Piaget nor to literalise him: retain the sequence as a model of increasingly coordinated representation and logic, while assessing the child's actual strategy in context.

1.8 Age alignment with Erikson, Freud, Kohlberg, Mahler and Vygotsky

The chapter's theory-alignment plate should be read horizontally: theories may discuss the same period of life while explaining different developmental work. Piaget explains the structure of knowing. Erikson's psychosocial stages explain successive tensions between the self and the social world. Berk places autonomy versus shame and doubt at 1 to 3 years, initiative versus guilt at 3 to 6 years, and industry versus inferiority at 6 to 11 years. Thus symbolic expansion, initiative and later school-age mastery overlap in time but are not interchangeable constructs.

Freud's psychosexual stages organise development around changing instinctual zones and conflicts. Berk lists the anal stage at 1 to 3 years, the phallic stage at 3 to 6 years, and latency at 6 to 11 years. Piaget's account does not explain libido or defence, and Freud's account does not test conservation or operations. Alignment helps recall; it does not imply that one theory validates another.

Kohlberg extended a structural approach to moral development, classifying the reasoning used to justify moral decisions rather than merely whether an answer was socially approved. Kaplan and Sadock describes preconventional morality before adolescence, conventional response levels during and later in adolescence, and a postconventional response level in late adolescence or early adulthood. Moral-stage reasoning and Piagetian cognition are related conceptually, but moral judgement also depends on social experience, values and context.

Mahler's separation-individuation theory concerns the child's emerging psychological separateness in relation to the caregiver. Kaplan and Sadock and Wolberg place the hatching period from about 4 or 5 months to 10 months; Wolberg places rapprochement onset between 15 and 18 months, describes the rapprochement crisis around 18 to 24 months, and places libidinal object constancy during the third year of life. These are the sources' own stage descriptions, not screening thresholds. Clinically, Mahler supplies relational language; Piaget supplies cognitive-structural language.

Vygotsky places greater weight on language, shared activity and culturally transmitted tools. The zone of proximal development is the gap between what a learner can do independently and what the learner can do with skilled support. Guided participation and scaffolding reveal emerging capacity that unsupported performance may conceal. Piaget asks what structure the child has constructed; Vygotsky asks what becomes possible in collaboration. The practical synthesis is dynamic: assess independent reasoning, then observe how performance changes with graduated help.

1.9 Piaget within the domains of child development

Piaget principally addresses cognition, although cognition is expressed through movement, language, play and social interaction. A child with a motor or language limitation may therefore perform poorly on a cognitive task for reasons other than the cognitive operation being tested.

1.10 Clinical use: developmental history, surveillance, red flags and Indian screening

Piaget calibrates the cognitive level of the interview; surveillance, red flags and screening are taught under the red-flags topic.

2 . Erikson psychosocial stages

Erik Erikson described personality development as a lifespan sequence of eight **psychosocial stages**. Each stage is organised around a **psychosocial crisis**, a tension between two necessary tendencies that arises from the interaction of biological maturation, the developing ego and the social world. A crisis is not a psychiatric emergency and it is not a choice in which one pole must be eliminated. It is a developmental turning point. A predominantly adaptive resolution strengthens the ego and yields a characteristic virtue; an unfavourable or markedly one-sided resolution leaves greater vulnerability when later tasks are encountered.

How to use this page. Learn the sequence as a chain of questions: *Can I rely on care? Can I act for myself? May I initiate? Can I master valued work? Who am I? Can I share myself without losing myself? What do I contribute? Can I accept the life I have lived?* Then attach the conflict, virtue, relational setting and common clinical distortion to each question. The age bands are textbook mappings whose normative construct was not specified by the sources. They are not medians, outer limits, screening cut-offs or referral thresholds. The theory-alignment plate may help compare Erikson with Piaget, Freud, Kohlberg, Mahler and Vygotsky, but temporal overlap never makes their constructs interchangeable.

Must memorise: trust gives hope, autonomy gives will, initiative gives purpose, industry gives competence, identity gives fidelity, intimacy gives love, generativity gives care, and integrity gives wisdom.

MNEMONIC

"Trust, autonomy, initiative, industry, identity, intimacy, generativity, integrity"

Trust gives hope, autonomy gives will, initiative gives purpose, industry gives competence, identity gives fidelity, intimacy gives love, generativity gives care, and integrity gives wisdom.

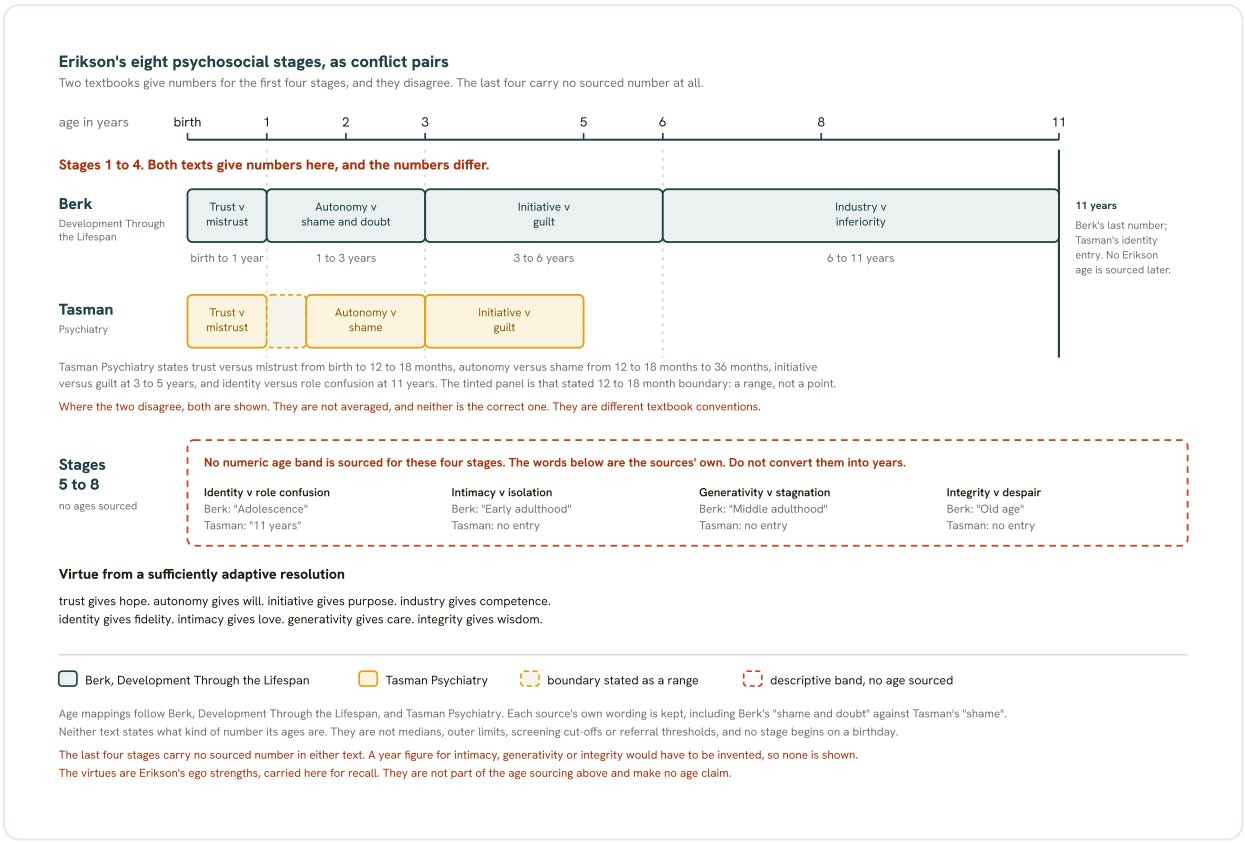


Fig 2.1 Erikson's eight psychosocial stages as conflict pairs. The first four sit on a sourced age axis, Berk's mapping above Tasman Psychiatry's; where the two disagree both are shown rather than averaged. The axis stops at 11 years because neither text gives an Erikson age past it, so the last four stages carry the sources' own life-period words instead of numbers. No boundary here is a referral threshold.

2.1 Architecture of the theory: epigenesis, crisis and ego strength

Erikson extended psychoanalytic development beyond childhood and beyond intrapsychic instinct. His **epigenetic principle** proposes that each psychosocial capacity has a period of relative ascendancy within an ordered sequence, while earlier themes remain active and can be revisited. Trust does not stop when autonomy begins; identity does not become irrelevant after intimacy. Later relationships, illness, migration, parenthood, loss and social change can reactivate earlier tensions and permit partial reworking. The model is therefore stage-like but not mechanically closed.

The two poles are sometimes called syntonic and dystonic tendencies. Healthy development does not mean total trust, autonomy or generativity. Some mistrust protects against exploitation, some shame supports social awareness, and some isolation preserves reflection and boundaries. The task is a workable ratio in which the adaptive tendency predominates without erasing the protective information carried by the other pole. The resulting **ego strength** is not a symptom score. It is a durable capacity, such as hope or fidelity, that supports later developmental work.

Erikson's distinctive contribution is the social location of the crisis.

- Caregiving relationships organise trust.
- Limits and bodily control organise autonomy.
- Family and play organise initiative.

- School and culturally valued work organise industry.
- Peers, ideals and social roles become increasingly important for identity.

Culture determines what counts as competence, legitimate independence, adulthood, contribution and a good life. The theory must therefore be used as a formulation scaffold, not as a culturally neutral measuring instrument.

RULE **Name four elements for every stage:** the conflict, the psychosocial task, the central relational or social field, and the virtue associated with a sufficiently adaptive resolution. Age alone is never an adequate answer.

2.2 Age alignment and how to state it safely

STAGE	BERK, *DEVELOPMENT THROUGH THE LIFESPAN*	TASMAN PSYCHIATRY
basic trust versus mistrust	**birth to 1 year**	trust versus mistrust, birth to 12 to 18 months
autonomy versus shame and doubt	**1 to 3 years**	autonomy versus shame, 12 to 18 months to 36 months
initiative versus guilt	**3 to 6 years**	initiative versus guilt, 3 to 5 years
industry versus inferiority	**6 to 11 years**	
identity versus role confusion	adolescence	11 years
intimacy versus isolation	early adulthood	
generativity versus stagnation	middle adulthood	
integrity versus despair	old age	

These are retained as each source states them. They must not be averaged into a new age boundary, treated as competing referral ages or presented as proof that a person has entered a stage on a birthday.

8 stages	Birth to 1 year	1 to 3 years	3 to 6 years
ONE LIFESPAN SEQUENCE	BERK TRUST MAPPING	BERK AUTONOMY MAPPING	BERK INITIATIVE MAPPING

2.3 Trust and autonomy: hope, will and the beginning of agency

Basic trust versus mistrust asks whether the world is sufficiently reliable for hope. The infant depends on caregivers for regulation, protection and the repeated relief of distress. Sensitive and reasonably predictable care supports a felt expectation that needs can be communicated and that another person may respond. The virtue is hope, the capacity to sustain expectation despite frustration. Mistrust is not produced by every delay or mismatch, and perfect gratification is neither possible nor desirable. The clinically important pattern is whether care is sufficiently coherent for the infant to tolerate absence and uncertainty without the world becoming wholly unsafe.

Trust is relational but not reducible to attachment classification. Attachment theory studies proximity, secure-base behaviour and reunion patterns in particular caregiver relationships; Erikson describes a broader ego expectation about self, others and the social world. Severe inconsistency, neglect or frightening care may compromise both, but a psychiatrist should not infer a specific attachment-pattern from the Eriksonian conflict or diagnose a caregiver from one observed interaction.

Autonomy versus shame and doubt asks whether emerging self-control can coexist with connectedness. Growing motor ability, language, choice, bodily regulation and the repeated use of "no" expand the child's sense of agency. Supportive adults offer bounded choices, tolerate safe attempts, set comprehensible limits and help after failure. The virtue is will, the capacity to choose and persist. Chronic overcontrol, humiliation, ridicule of accidents or demands far beyond capacity can make self-assertion feel dangerous and foster excessive shame or doubt. Permissiveness is not the opposite of shaming control: reliable limits help the child experience autonomy as organised and safe.

In a developmental history, ask how caregivers respond to distress, exploration, refusal, feeding, dressing and bodily-control struggles. Formulate the fit between the child's capacities, temperament and the caregiving environment. Do not attribute current anxiety, dependency or defiance to a single early-stage failure. Erikson supplies a hypothesis about meaning; history, observation and longitudinal evidence must test it.

2.4 Initiative and industry: purpose, competence and the social valuation of action

Initiative versus guilt asks whether the child may imagine, plan and act. Symbolic play, questions, fantasy, imitation of adult roles and self-started activity enlarge the field of action. Initiative is more than independence: it adds direction and purpose. Adults support it by taking ideas seriously, permitting safe experimentation and setting limits without treating curiosity or ambition as badness. The virtue is purpose. Guilt becomes excessive when wishes, questions, rivalry or ordinary attempts at action are repeatedly interpreted as harmful or unacceptable. Some guilt is developmentally useful because it permits concern for the effects of one's actions; incapacitating guilt suppresses initiative itself.

Industry versus inferiority asks whether effort can produce socially valued competence. Schooling, peer comparison, tasks, tools, rules and feedback move the child into a wider field of evaluation. The child learns to sustain attention, practise, cooperate, complete work and take justified pride in mastery. The virtue is competence. Repeated failure, unrecognised learning needs, exclusion, harsh comparison or praise detached from actual effort can undermine industry. Inferiority is not simply low self-esteem. It is the expectation that one's effort will not produce valued mastery.

In Indian clinical practice, marks and rank may dominate the family's account of competence, but industry is wider than examination performance. Practical skill, sport, art, caregiving, language, social contribution and persistence may all organise mastery. A child with ADHD, a specific learning disorder, chronic illness or sensory impairment may be industrious while producing

weak conventional outputs; those conditions themselves are developed in the ADHD and specific learning/communication disorders notes. Formulation should separate ability, opportunity, effort, accommodations and the social meaning attached to performance.

2.5 Identity versus role confusion: the central crisis of adolescence

Identity versus role confusion asks whether the adolescent can experience continuity while exploring possible selves. Identity formation integrates past identifications, bodily change, values, relationships, vocation, culture and imagined futures into a sufficiently coherent answer to "Who am I, and where am I going?" The virtue is fidelity, the capacity to commit to people and ideals while tolerating difference and remaining recognisably oneself. Role confusion may appear as unstable commitments, incompatible self-definitions, chronic diffusion or an identity chosen mainly to meet others' demands.

Erikson's **psychosocial moratorium** is a socially permitted interval for exploration before durable commitments are expected. It is not mere idleness. Marcia operationalised the identity theme along two dimensions, exploration and **commitment**, producing four identity statuses: diffusion, foreclosure, moratorium and achievement. These are statuses rather than an invariant stage sequence.

IDENTITY STATUS	DESCRIPTION
Foreclosure	describes commitment without meaningful exploration.
Moratorium	describes active exploration without settled commitment.
Achievement	combines exploration with commitment.
Diffusion	lacks both.

A person's status may differ across vocation, values and relationships.

Gender identity is a person's experienced sense of gender. It is distinct from gender expression, sexual orientation and sexual behaviour, and none of these should be treated as evidence of role confusion. Identity exploration can be developmentally normal. The clinical task is to assess distress, coercion, stigma, safety, family response, comorbidity and functioning without converting cultural nonconformity into psychopathology. Erikson's language can illuminate coherence and commitment, but it does not determine what a person's identity ought to be.

Psychosexual development is also broader than Freud's sequence of instinctual zones. In adolescence it includes bodily maturation, sexual feelings, relational boundaries, consent, values and the integration of sexuality into identity. The psychiatrist should distinguish normative exploration from exploitation, risky behaviour, compulsivity, trauma-related phenomena, mood-related disinhibition and distress driven by stigma.

The puberty reference plate should be read separately from Erikson's theory-alignment plate. The former describes bodily maturation; the latter aligns theoretical accounts of psychosocial, cognitive, psychosexual, moral and relational development. Physical maturation may alter the

social pressures surrounding identity, but no Tanner stage proves a level of identity formation, moral development or judgement.

2.6 Intimacy, generativity and integrity across adult life

Intimacy versus isolation asks whether identity can enter mutual commitment without dissolution. Berk places it in early adulthood. **Intimacy** includes emotional reciprocity, vulnerability, sexuality, friendship and durable commitment; it is not synonymous with marriage. Erikson's logic is that a sufficiently coherent identity makes it possible to share oneself without either fusion or defensive withdrawal. The virtue is love. Isolation may protect temporarily after loss or threat, but chronic avoidance of mutuality narrows the person's relational world.

Generativity versus stagnation asks what the adult creates, sustains and hands onward. Berk places it in middle adulthood. **Generativity** includes parenting but is not limited to biological parenthood. Teaching, mentoring, clinical service, productive work, institution-building, creativity and care for future generations can all express it. The virtue is care. Stagnation is an excessive narrowing toward self-absorption, repetition or the sense that one's activity does not nourish anything beyond the self.

Integrity versus despair asks whether the life course can be owned as a whole. Berk places it in old age. **Ego integrity** is not the belief that every decision was correct. It is the capacity to accept the singular life one has lived, integrate success with regret and face finitude without repudiating the self. The virtue is wisdom. Despair arises when time feels too short for repair and the life appears wasted, fragmented or intolerably unlike the life that should have been.

Adult developmental crises can organise the meaning of depression, caregiving burden, infertility, retirement, bereavement, migration or occupational disruption, but they do not replace diagnosis. A person without a partner is not necessarily isolated; a person without children is not necessarily stagnant; regret does not by itself mean despair. Ask what the person values, what social opportunities were available and how the present illness has altered the developmental task.

2.7 Alignment with Piaget, Freud, Kohlberg, Mahler and Vygotsky

The chapter's theory-alignment plate should be read horizontally, with one question attached to each theorist. Piaget asks how the structure of cognition changes. His sensorimotor account concerns knowledge through action and the emergence of representation; it does not explain trust. Freud asks how instinctual conflict is organised across the psychosexual stages; temporal overlap with an Eriksonian stage does not make autonomy equivalent to the anal stage or identity equivalent to the genital stage.

Kohlberg asks how reasons for moral decisions are structured. Kaplan and Sadock describe preconventional morality before adolescence, conventional response levels during and later in adolescence, and a postconventional response level in late adolescence or early adulthood. Moral development concerns the justification of right action, whereas Eriksonian identity concerns continuity, values and commitment. A sophisticated moral argument does not prove identity achievement, and social conformity does not by itself establish conventional moral reasoning.

Mahler asks how psychological separateness emerges within the caregiver relationship. Her separation-individuation theory includes a hatching period described by Kaplan and Sadock and Wolberg from about 4 or 5 months to 10 months. Wolberg places rapprochement onset between 15 and 18 months, the rapprochement crisis around 18 to 24 months, and libidinal object constancy during the third year of life. These are source descriptions, not screening thresholds. Mahler's individuation is not the same construct as Erikson's autonomy, although both attend to emerging separateness.

Vygotsky asks what development becomes possible through language, cultural tools and skilled collaboration. The zone of proximal development is the difference between independent performance and performance achieved with appropriate support. Erikson identifies the psychosocial meaning of mastery; Vygotsky helps the clinician observe how guided participation changes actual performance. A child who appears inferior in an unsupported task may reveal strong learning potential when the task is scaffolded.

The safest comparison formula in a viva is *same period, different explanatory target*. The theories can be placed beside one another for recall, but they cannot be added into a single universal clock. Their stage ages are descriptive conventions, their units of analysis differ, and none of the theoretical bands is a developmental referral threshold.

TRAP **Do not diagnose an "unresolved Erikson stage."** The conflicts are formulation constructs, not ICD diagnoses, psychometric scores or developmental-screening results. Avoid retrospective certainty, such as attributing adult symptoms to one caregiving event, and avoid reading age bands as deadlines.

2.8 Clinical formulation: strengths, limitations and cultural use

Erikson is clinically useful because he joins symptom, biography and social context. It prompts the psychiatrist to ask what developmental task the illness interrupts, what virtue remains available as a strength, and what social response is amplifying the conflict. Depression during vocational transition may be experienced through identity and competence; mania may destabilise commitments and intimacy; chronic psychosis may obstruct industry or generativity; caregiving and retirement may transform the meaning of contribution. These formulations enrich management when they remain hypotheses grounded in the person's narrative.

The model also has limits. Its broad concepts are difficult to operationalise, stage boundaries are not sharply defined, and development is more variable and recursive than a strict sequence suggests. The classical account can overprivilege individual autonomy, stable occupational identity and a linear adult life course. Collective identities, caste, class, gendered opportunity, disability, migration, chosen family and economic constraint may shape which resolutions are possible and valued. Indian family interdependence should not be mislabelled dependency merely because it differs from an individualist ideal.

Use **goodness-of-fit** to prevent moralising. **Temperament** refers to constitutionally influenced differences in reactivity and regulation; goodness-of-fit refers to the compatibility between those characteristics and environmental expectations. A cautious child in a patient environment may

develop competence, while the same child under ridicule and forced performance may experience inferiority. The temperament is not the Eriksonian crisis, but the fit can alter how the crisis is negotiated.

A sound formulation states the evidence and its limits: "The current transition appears to reactivate concerns about competence and identity" is defensible; "industry was not resolved, therefore this disorder developed" is not. Erikson should direct questions, identify strengths and organise meaning. It should not be used to blame parents, prescribe a culturally narrow life path or explain away neurodevelopmental, psychiatric and social causes.

2.9 Five worked cases: from recall to application

Worked case 1 - milestone-dating and red-flag reasoning. A child at 24 months of age is described as energetic, insistent on self-feeding and easily frustrated by adult help. The child does not use spontaneous two-word phrases. The Eriksonian reading is autonomy versus shame and doubt: the self-directed behaviour is developmentally meaningful and should be met with bounded choices rather than ridicule. The language finding is a separate red-flag: absence of spontaneous two-word phrases at 24 months of age warrants further developmental evaluation. Do not use "the autonomy stage" to normalise the language concern, and do not infer global delay from a single finding. Assess all developmental domains, hearing, regression and context.

Worked case 2 - attachment-pattern identification. In Ainsworth's Strange Situation, a young child explores while the caregiver is available, becomes distressed on separation, seeks contact on reunion and settles sufficiently to resume exploration. This pattern is most consistent with secure attachment because the caregiver functions as a secure base and haven. The Eriksonian link is supportive, not diagnostic: reliable care may contribute to basic trust, but secure attachment and trust are different constructs. One observation cannot establish the whole caregiving history or prove that an Eriksonian crisis is resolved.

Worked case 3 - temperament and goodness-of-fit. A child within Berk's 6 to 11 years industry-versus-inferiority mapping is slow to approach unfamiliar classroom tasks but works carefully after a demonstration. Repeated public comparison has led the child to say, "I am bad at everything." The theory-application is industry versus inferiority, but the mechanism is not laziness. A cautious temperament is meeting a poor goodness-of-fit. Assess learning, attention, sensory and emotional contributors; provide graduated demonstration, private feedback and tasks that permit observable mastery. The goal is evidence-based competence, not empty reassurance.

Worked case 4 - adolescent identity and risk-taking. An adolescent alternates between career plans, adopts different styles with different peers and takes a hazardous risk in a highly charged group setting, while reasoning thoughtfully about the same risk in clinic. Exploration without settled commitment may fit moratorium rather than pathology. The context shift is compatible with a dual-systems or maturational imbalance account of risk-taking, but it does not excuse harm or prove immaturity. Assess mood elevation, substance use, coercion, self-harm, sleep,

consequences and capacity. Explore identity formation and values without treating gender identity, appearance or nonconformity as role confusion.

Worked case 5 - adult theory-application. An older adult after bereavement reviews a life containing valued work, estrangement and choices now regretted, yet can hold gratitude and sorrow together and remains engaged in mentoring. The dominant Eriksonian formulation is integrity rather than despair, with generativity still active through mentoring. Integrity does not require a flawless or regret-free biography. If pervasive hopelessness, anhedonia, guilt or suicidal thinking is present, assess depressive illness directly; a developmental formulation must never replace risk assessment or diagnosis.

Exam synthesis. In any vignette, first identify the actual phenomenon: a developmental attainment, warning sign, relationship pattern, temperament-environment fit, physical pubertal stage, form of reasoning or psychosocial conflict. Then name the correct framework and state what it can and cannot infer. That separation prevents the commonest error in developmental psychiatry: using an elegant theory as if it were a measurement instrument.

3 . Freud psychosexual stages

Freud's psychosexual theory proposes that personality develops through a sequence in which **libido**, understood as psychic energy associated with the sexual drives, is organised predominantly around a different bodily zone and a different developmental conflict. In examination answers, "sexual" must be used in Freud's broad drive-theory sense rather than reduced to adult genital intercourse. The sequence is **oral, anal, phallic, latency and genital**. Each phase leaves residues in later personality, while excessive frustration or gratification may produce **fixation**; under stress, functioning may move back toward an earlier mode through **regression**. This is a historical psychoanalytic model of personality development, not a contemporary milestone schedule and not a method for diagnosing developmental delay.

How to use this page. First memorise the order, age brackets, principal zone and central conflict. Then add the characteristic mode of gratification, the proposed resolution and the classical fixation themes. Finally, separate three things that candidates commonly collapse: a psychosexual phase is not a developmental milestone, Freud's genital phase is not a Tanner stage, and a psychodynamic formulation is not proof that an early event caused the patient's current disorder.

> **Must memorise:** oral, anal, phallic, latency, genital; the drive focus moves from incorporation, through control and oedipal identification, to relative quiescence and then mature genital organisation.

3.1 The organising model and the five-stage sequence

A changing drive focus, a phase-specific conflict and a possible residue. Freud did not describe five watertight compartments. Earlier modes of pleasure and relating remain available after a later organisation becomes dominant. A stage is therefore best learnt through four linked questions:

1. *Where is gratification centred?*
2. *What conflict must be negotiated?*
3. *How is it resolved?*
4. *What pattern did Freud associate with fixation?*

The theory assumes that constitutional drives interact with caregiving and prohibition. The child's ego gradually develops ways of regulating these pressures, and identification contributes to internal structure, especially during the phallic phase.

Source-reported teaching brackets, not referral thresholds:

STAGE	BERK'S *DEVELOPMENT THROUGH THE LIFESPAN*	*TASMAN PSYCHIATRY*
Oral	Birth to 1 year	birth to 12-18 months
Anal	1-3 years	12-18 to 36 months
Phallic	3-6 years	3-5 years
Latency	6-11 years	
Genital	Adolescence	11 years plus for the adolescent genital phase

Birth to 1 year	1-3 years	3-6 years	6-11 years
ORAL - BERK	ANAL - BERK	PHALLIC - BERK	LATENCY - BERK

The sources state these ages without defining their normative construct. They should therefore be reproduced as the sources' approximate theoretical brackets, never converted into a median, an upper limit of normal or a when to refer threshold. Their overlap also warns against false precision. A child does not become abnormal because a psychodynamic theme appears outside its conventional bracket.

3.2 Oral stage: incorporation, dependence and the first relation to an object

The mouth is the principal zone, and feeding is both gratification and relationship. In the **oral stage**, sucking, swallowing and biting organise pleasure. The breast or feeding caregiver is not merely a source of nutrition in the theory; it is the first major **object**, meaning the person or representation toward whom a drive is directed. Satisfaction involves taking in, while delay and absence introduce frustration. The central developmental themes are receiving, incorporation, dependence and the beginnings of tolerating separation from immediate gratification.

Classical accounts distinguish an earlier *oral receptive* or incorporative mode from a later biting, aggressive mode. Freud and later psychoanalytic writers linked oral fixation with dependency, passivity, demandingness, gullibility or incorporative habits, and linked the biting mode with verbal aggression and hostility. These are theoretical associations, not validated one-to-one predictions. Feeding difficulty, smoking, overeating or dependency in an adult cannot by itself

demonstrate oral fixation, and a resident should never retrofit an infancy narrative merely because an adult symptom looks symbolically oral.

3.3 Anal stage: control, autonomy and the social demand for regulation

Pleasure in retention and expulsion meets the caregiver's demand for bowel control. In the **anal stage**, elimination becomes the principal bodily focus. Toilet training gives the child an arena in which bodily pleasure, autonomy, obedience, defiance, praise and shame can become linked. The theoretically important issue is not simply continence; it is the negotiation between the child's wish to control what is given or withheld and the environment's demand that discharge occur at an acceptable place and time.

Classical descriptions contrast anal-retentive themes, such as excessive orderliness, obstinacy, parsimony and control, with anal-expulsive themes, such as messiness, defiance and poorly regulated discharge. The familiar triad of orderliness, obstinacy and parsimony is a high-yield psychoanalytic association, but it is not a diagnostic triad. Contemporary formulation should ask how control, shame, autonomy and caregiver responses were experienced, while avoiding blame directed at toilet training or at the caregiver.

3.4 Phallic stage: oedipal conflict, identification and superego development

Genital awareness is organised around triangular attachment, rivalry and identification. The **phallic stage** centres on the phallus in Freud's theory and introduces the **Oedipus complex**: desire for the opposite-sex parent, rivalry with the same-sex parent and anxiety about the consequences of that rivalry. In Freud's account of the boy, castration anxiety promotes renunciation of the oedipal wish and identification with the father. This identification contributes to the consolidation of the superego and to the internalisation of prohibitions and ideals.

Freud's account of female development invoked penis envy and a different route through oedipal attachment. It has been criticised as androcentric, anatomically reductionist and based on male development as the norm. The term Electra complex is associated with Jung, not Freud's preferred terminology. In an examination, state the classical proposition accurately, then state the criticism. Resolution is described through relinquishment of the incestuous wish, identification and movement toward relationships outside the original triangle. Fixation has been associated with vanity, exhibitionism, rivalry, sexual inhibition or reckless assertion, but again these are hypotheses within a theory, not diagnostic findings.

TRAP **Phallic is not genital, and genital is not Tanner.** The phallic phase concerns oedipal organisation in early childhood. The later genital phase concerns the mature organisation of drives. Tanner staging describes observable pubertal anatomy and is a different construct altogether. Also remember that Jung, not Freud, popularised "Electra complex" as a label.

3.5 Latency: relative drive quiescence, sublimation and social learning

Latency is a relative reduction in overt psychosexual preoccupation, not the disappearance of libido. During the **latency stage**, oedipal wishes are held by repression and other defences, while energy is increasingly channelled into learning, peer relationships, play, competence and

culturally valued activity. **Sublimation** is the key mechanism: drive energy is redirected toward aims that are socially acceptable and psychologically productive.

Latency is sometimes described as an interval rather than a new erogenous-zone organisation, but it remains part of the five-part examination sequence. Its clinical themes include the capacity to learn, work with peers, follow rules and invest in interests outside the family triangle. It should not be mistaken for a period without sexuality, fantasy or conflict. The word *relative* protects the answer from that overstatement.

3.6 Genital stage: integration, reciprocity and mature object love

Adolescent drive reactivation is reorganised toward reciprocal relationships. In the **genital stage**, earlier partial drives are theoretically integrated under genital primacy. The developmental aim is not mere sexual activity. It is the capacity for reciprocal intimacy, concern for the other person, productive work and a balance between love and responsibility. Mature gratification now depends on recognising the object as a separate person rather than only as a source of need satisfaction.

Unresolved earlier conflicts may reappear when adolescent drives intensify, so the final phase includes both reworking and integration. The phrase *mature genital character* belongs to Freud's normative ideal and should not be treated as a contemporary measure of mental health. Sexual orientation, celibacy, disability, cultural restraint or absence of partnered sexual activity does not indicate failed genital development. This is another reason to keep the historical theory separate from moral judgement and from anatomical puberty.

3.7 Fixation and regression: the mechanisms that connect stages to adult formulation

Fixation is the persistence of a disproportionate libidinal investment in an earlier mode of gratification or conflict. Classical theory attributes it to marked frustration, excessive gratification or difficulty resolving the phase-specific conflict. Regression is a return, especially under stress, to a developmentally earlier organisation of wishes, defences, relationships or behaviour. Fixation describes a relatively enduring vulnerability; regression describes movement toward that point of vulnerability. They are related but not synonyms.

The clinically useful move is thematic and probabilistic. Dependency and taking-in may suggest an oral theme; control, withholding and shame may suggest an anal theme; rivalry, display and triangular relationships may suggest a phallic theme. The clinician then tests the hypothesis against the patient's history, current relationships, transference, defences and culture. The clinically unsafe move is deterministic: inferring a specific childhood event from an adult trait, or explaining a disorder solely by naming a stage.

RULE **A psychosexual formulation generates hypotheses; it does not establish causation.** Use stage language to organise recurring themes in gratification, control, rivalry, identification and intimacy. Do not use it as a developmental test, a diagnosis or proof of what happened in childhood.

3.8 Alignment with other developmental theories: same age axis, different constructs

The companion synthesis map aligns the major theories by age, but alignment means temporal overlap, not conceptual equivalence. Freud maps changing drive organisation through the psychosexual stages. Piaget maps cognitive structure, beginning with the sensorimotor period and moving through preoperational, concrete operational and formal operational thought. Erikson maps relational and social crises through the psychosocial stages. Thus an early-childhood conflict may simultaneously be described as anal in Freud, autonomy versus shame and doubt in Erikson, and sensorimotor or early preoperational in Piaget, without the terms meaning the same thing.

Kohlberg maps moral development from preconventional through conventional to postconventional reasoning. His sourced age relationships are descriptive bands such as before adolescence, during adolescence and later in adolescence, not numeric age ranges; adding numbers would manufacture precision. Mahler maps separation-individuation, including hatching, practising, rapprochement and movement toward object constancy. Vygotsky offers no stage sequence: the zone of proximal development, scaffolding, private speech and socially mediated learning are cross-cutting mechanisms. Vygotsky therefore belongs beside the age plate, not inside it as invented stages.

The clinical use of the alignment is to ask several different questions about the same child: how the child thinks, what social conflict is being negotiated, how drives and relationships are organised, how morality is reasoned, how separation is managed and what learning becomes possible with guidance. The plate prevents tunnel vision; it does not turn six theories into one grand developmental schedule.

3.9 Clinical value, cultural limits and contemporary critique

Freud's model remains important because it introduced developmental continuity, unconscious conflict, infantile sexuality, defence, symbolic meaning and the possibility that early relationship patterns recur in adult life. In psychodynamic assessment it can sharpen attention to how a patient receives care, manages dependency, uses control, enters triangles, responds to prohibition and negotiates intimacy. These themes can be observed in narrative, dreams, symptoms, transference and countertransference, then integrated with attachment, temperament, trauma, learning and the current social environment.

Its limitations are equally examinable. The theory was derived largely from retrospective clinical reconstruction rather than prospective developmental research; several central propositions are difficult to falsify; the account of female development is androcentric; the model can be heteronormative and overly centred on sexuality; and stage-to-trait links are vulnerable to circular explanation. Culture changes the meanings of feeding, sleeping, toilet training, bodily privacy, family hierarchy and adolescent intimacy. For Indian practice, joint-family structures and family-mediated caregiving may alter the relational expression of dependence or autonomy without indicating pathology. Use the theory as one formulation lens, not as a universal cultural ruler.

INDIA

The Freud brackets above come from general developmental and psychiatry texts and are not **Indian norms**. No verified India-specific psychosexual-stage age adaptation is supplied here, so none should be invented. Indian developmental instruments answer a different question: the **Trivandrum Development Screening Chart** screens development from **0 to 6 years** using 51 items, with one item delay constituting a positive screen, while **DASII** yields Motor DQ and Mental DQ, and a DQ below **85** is used as a delay marker in Indian follow-up practice. Neither instrument validates oral, anal or phallic fixation.

3.10 Spotting deviation from normal: developmental surveillance is a separate clinical task

Psychosexual stages do not define developmental red flags. Developmental surveillance is longitudinal observation of developmental progress, caregiver concerns and function, supported by milestone-based screening when indicated. It is the correct framework for spotting deviation, warning signs and deciding when to refer. Calling a child "fixated" does none of these jobs and may delay proper assessment.

High-yield developmental red flags include the following:

REFERRAL SIGNAL	AGE
Absent babbling	at **12 months**.
Absent single words	at **16 months**.
Absent spontaneous two-word phrases	at **24 months**.
Loss of language or social skills	at any age.

These are referral signals from *Developmental Psychopathology*, not Freud-derived ages. For gross motor development, the **WHO norms** are achievement windows bounded by the 1st and 99th centiles and are intended to signal the need for appropriate screening when a child appears late; they are screening signals, not diagnostic thresholds. India was one of the WHO study sites. Use the companion milestone plate for the individual windows rather than recreating it here.

The apparent Western-versus-Indian comparison must also be handled honestly. Freud's source brackets are theoretical ages, not **Western norms**, while the Trivandrum chart and DASII are Indian screening or assessment instruments, not psychosexual-stage adaptations. There is therefore no like-for-like set of **Indian norms** to place beside Freud's ages. Record genuine differences when two sources measure the same construct; when they do not, name the mismatch instead of forcing an alignment.

3.11 Consolidation: mnemonic, active recall and reconstruction

MNEMONIC

"Old Analysts Prefer Long Games"

O-A-P-L-G gives Oral, Anal, Phallic, Latency, Genital. Attach one organising word to each: *incorporation, control, identification, sublimation, reciprocity*. The mnemonic fixes order; the five organising words recover the theory.

Redraw from memory. Reconstruct the companion **synthesis map** with **theories by age** on separate horizontal lanes, place Freud's five stages on its lane, keep Kohlberg's bands descriptive, and draw Vygotsky as a cross-cutting mechanism. Then add the companion **milestone anchors** and developmental red flags on a separate clinical lane. Keeping the theory lanes separate from the surveillance lane is the final examination safeguard.

4 . Moral development (Kohlberg)

Lawrence Kohlberg's theory of moral development describes development in the *reasoning used to justify a moral decision*. It is not chiefly a theory of whether a person gives the examiner the approved answer, behaves well, obeys the law, or possesses a particular religious belief. Kohlberg extended Piaget's interest in the development of moral judgement and proposed an invariant sequence of increasingly differentiated ways of answering a central question: *why is an action right or wrong?* The sequence contains **three** levels, each containing **two** stages. The centre of moral authority shifts from externally imposed consequences, to interpersonal and social expectations, and finally to principles that can be used to evaluate the social order itself.

How to use this page. First fix the architecture: **preconventional**, **conventional**, and **postconventional**; then learn the contrast within each pair of stages. Stage 1 avoids punishment, stage 2 pursues exchange; stage 3 seeks interpersonal approval, stage 4 maintains the social system; stage 5 tests rules against rights and social contract, stage 6 reasons from universal ethical principles. In a dilemma, always identify the justification rather than the chosen act. Timing must remain descriptive: Kaplan and Sadock relates the stages to bands such as "school-aged children" and "during adolescence", but supplies no numeric ages for Kohlberg.

Must remember: Kohlberg stages the *reason for the judgement*, not the judgement itself.

MNEMONIC

"Punishment - Exchange - Approval - Law - Contract - Principle"

The sequence is punishment, exchange, approval, law, social contract, universal principle.

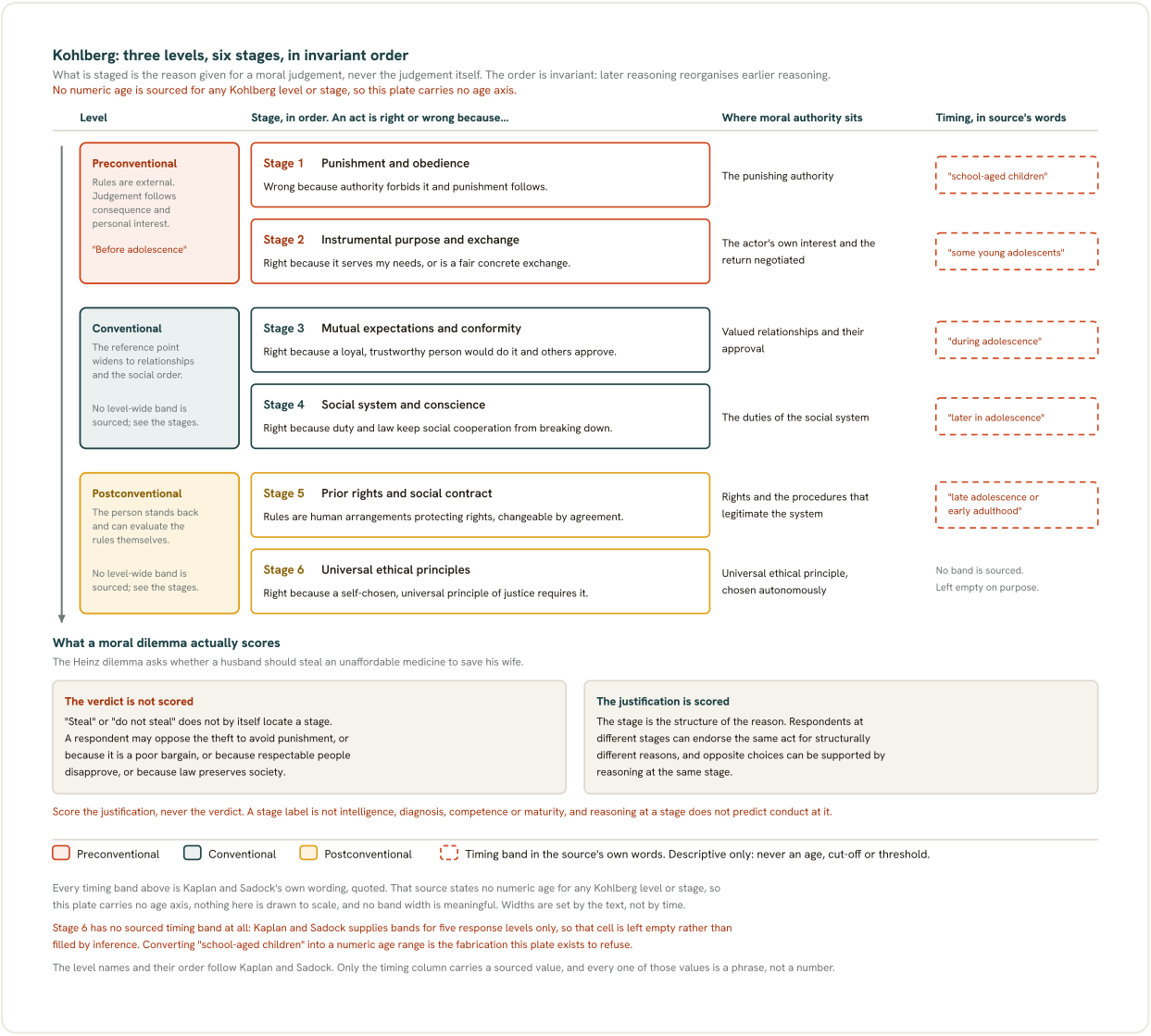


Fig 4.1 Kohlberg's three levels and six ordered stages, with what a moral dilemma scores. The timing column quotes Kaplan and Sadock's descriptive bands verbatim; that source gives no numeric age for any level or stage, so the plate has no age axis and nothing on it is drawn to scale. A level-wide band is sourced for the preconventional level only, and stage 6 has no band at all, so its cell is left empty rather than inferred.

4.1 Method and architecture: three levels, six ordered stages

A stage is a structure of reasoning, not a list of moral opinions. Kohlberg used hypothetical moral dilemmas, classically the Heinz dilemma, and questioned the respondent about the decision and its justification. In that dilemma, a person must consider whether a husband should steal an unaffordable medicine to save his wife. Saying "steal" or "do not steal" does not by itself locate a stage. A respondent might oppose theft because of punishment, because it is a poor bargain, because respectable people disapprove, because law preserves society, or because a law may be overridden by a more fundamental right. Conversely, respondents at different stages can endorse the same action for structurally different reasons.

3	6	2
LEVELS	ORDERED STAGES	STAGES PER LEVEL

The model is cognitive-developmental. Stages are proposed to occur in sequence, with later reasoning reorganising rather than merely adding to earlier reasoning. Movement depends on

cognitive development, perspective-taking and encounters with moral conflict. A person may show a dominant mode with adjacent-stage reasoning rather than perfectly pure performance in every situation. Developmental advance also does not guarantee moral conduct: behaviour is additionally shaped by emotion, impulse control, identification, attachment, reward, coercion, group norms and opportunity.

RULE **Score the justification, not the verdict.** Two people may make the same choice at different stages, and opposite choices may be supported by reasoning at the same stage.

4.2 Preconventional morality: consequences and personal interest

At the preconventional level, rules are experienced as external to the self. The child recognises authority and social rules, but moral judgement is organised around concrete consequences and personal advantage rather than around preserving a shared social system. Kaplan and Sadock describes this level as occurring **before adolescence**. This is a descriptive relationship, not a cutoff, expected range, or referral threshold.

Stage 1: punishment-and-obedience orientation. An act is wrong because authority prohibits it and punishment follows. Consequences are taken as evidence of wrongness, and the more severe the consequence, the worse the act may appear. Obedience is heteronomous: the rule comes from a powerful other, and the perspectives or intentions of those involved are poorly coordinated. Kaplan and Sadock associates this response level with **school-aged children**.

Stage 2: instrumental purpose, individualism and exchange. The person now recognises that different individuals have different interests. What is right serves one's needs and, where useful, the needs of others through a concrete exchange: "I will help you if you help me." Fairness is therefore understood as equal exchange or reciprocity, not yet as loyalty, social duty or impartial principle. Kaplan and Sadock notes this response level in **some young adolescents**. The phrase "some" matters: it must not be converted into a universal age norm.

4.3 Conventional morality: relationship approval and maintenance of society

At the conventional level, the reference point expands from the actor's immediate consequences to membership in relationships and society. The person values expectations, roles, rules and institutions because these sustain interpersonal trust and an ordered social world. "Conventional" here means conformity to a recognised social order, not shallow thinking.

Stage 3: mutual interpersonal expectations, relationships and conformity. The morally good person is kind, loyal, trustworthy and approved by significant others. Intentions become important, and the respondent can take the viewpoint of another person, but judgement remains tied to the expectations of close relationships and the wish to be seen as a "good" person. Kaplan and Sadock places this response level **during adolescence**.

Stage 4: social-system and conscience orientation. The frame widens from close relationships to society as an organised whole. Right conduct means performing one's duty, respecting legitimate authority and maintaining laws and institutions because social cooperation would otherwise break down. This is not simply fear of punishment: stage 1 obeys power to avoid

consequences, whereas stage 4 endorses law as necessary for the system. Kaplan and Sadock relates this response level to **later in adolescence**.

4.4 Postconventional morality: evaluating rules by principles

At the postconventional level, a person can stand back from a particular society's rules and ask whether they are justifiable. Laws remain important, but their legitimacy depends on values and principles that rational persons could endorse. The crucial move is from being governed by the social order to being able to evaluate it. Postconventional reasoning should not be confused with reflexive rebellion, personal preference, or disregard for law.

Stage 5: prior rights and social-contract orientation. Rules are understood as human arrangements designed to protect welfare, liberty and rights. Because arrangements are socially created, they may be changed by agreed procedures when they fail those purposes. Some values and rights retain priority even when a majority prefers otherwise. Kaplan and Sadock associates this response level with **late adolescence or early adulthood**; this wording is descriptive and does not imply that everyone reaches the stage.

Stage 6: universal ethical-principle orientation. Moral judgement is guided by self-chosen, generalisable principles of justice, equality and respect for human dignity. A valid principle applies consistently across persons, including oneself, and conscience follows the principle when ordinary law conflicts with it. Stage 6 differs from stage 5 in its source of obligation: stage 5 emphasises a fair social contract and basic rights, whereas stage 6 emphasises universal principles chosen through autonomous moral reasoning.

4.5 The sequence as a set of contrasts

The fastest way to retrieve the stages in an examination is to ask where moral authority sits. At stage 1 it sits with the punishing authority; at stage 2 with the individual's concrete interest and negotiated return; at stage 3 with valued relationships and approval; at stage 4 with the duties of the social system; at stage 5 with rights and procedures that legitimate the system; and at stage 6 with universal ethical principle. Three contrasts prevent most errors.

CONTRAST	DISTINCTION
Punishment versus law:	both may support obedience, but one avoids a consequence while the other preserves social order.
Approval versus contract:	one asks what a good person in the relationship would do, while the other asks what free and equal persons could justify.
Contract versus principle:	one revises law through shared procedures, while the other tests every law and procedure against a generalisable ethical commitment.

TRAP **Do not turn descriptive bands into numeric ages.** "School-aged children", "some young adolescents", "during adolescence", "later in adolescence", and "late adolescence or early adulthood" are Kaplan and Sadock's formulations. Kohlberg has no sourced numeric age row for the theory-alignment plate.

4.6 What the theory explains, and what it does not

Kohlberg explains the organisation of moral judgement. It does not provide a complete psychology of morality. Knowing what is right does not ensure doing it, and sophisticated reasoning can be used after the fact to rationalise conduct. Empathy, guilt, shame, temperament, attachment, modelling, cultural learning, power, material constraint and the immediate social context can all influence behaviour without being reducible to a reasoning stage. Nor should a stage label be mistaken for intelligence, diagnosis, legal competence, criminal responsibility or overall maturity.

The approach nevertheless made important contributions. It treated children as active constructors of moral meaning rather than passive recipients of rules; separated the structure of a reason from its surface content; and supplied a developmental account of perspective-taking, authority, reciprocity, obligation and justice. Its structured dilemmas also made moral reasoning open to systematic interview and longitudinal study.

4.7 Criticisms and later refinements

Justice is not the whole of morality. Carol Gilligan argued that an emphasis on rights, rules and abstract justice can undervalue an ethic of care centred on relationship, responsibility and response to need. The useful examination answer is not that one sex reasons by justice and another by care as a fixed biological divide. The stronger criticism is that the scoring framework privileged one moral voice and that care and justice may both be available across persons and contexts.

Culture shapes the meaning of mature reasoning. The proposed order has received support across settings, but the claim that abstract individual rights represent the highest endpoint can favour liberal, individualistic assumptions. Community, sacred obligation, family duty and relational responsibility may be morally elaborated rather than merely conventional. **Dilemma performance is also context-sensitive.** Hypothetical answers may not predict action under fear, loyalty, intoxication, peer pressure or personal loss; education and verbal ability influence how reasons are expressed; and the same person may reason differently across dilemmas. Finally, stage boundaries may be less discrete than a strict staircase suggests, with mixed and adjacent-stage responses occurring in practice.

4.8 Clinical use and relation to the other developmental theories

Use the framework to formulate reasoning, never to stamp a child with a stage. In a child or adolescent assessment, a clinician can ask how the patient understood a conflict involving rules, peers, harm or fairness, then explore intentions, consequences, perspective-taking and the perceived source of obligation. A shift from "I will be punished" to "people will be harmed" or "the rule protects everyone" adds clinically useful information about social cognition and judgement. Interpretation must remain contextual and should be integrated with cognitive ability, language, family values, school experience, neurodevelopment, affect regulation and actual behaviour. It is not a diagnostic test and should not be used alone for a forensic conclusion.

CLINICAL USE

After a recurrent rule-breaking episode, ask the patient to explain why the act was acceptable or unacceptable, what each person believed, and whether the rule would remain fair if roles were reversed. The purpose is to sample perspective-taking and the structure of moral reasoning, not to demand a socially approved answer. A rehearsed answer without corresponding conduct is still clinically informative: it shows the gap between moral cognition and moral action.

Use the accompanying theory-alignment plate as a map of different questions, not as proof that the theories describe the same process.

- Piaget, from the sensorimotor period onward, maps changes in cognitive structure.
- Erikson maps psychosocial stages and their central conflicts.
- Freud maps psychosexual stages.
- Mahler describes separation-individuation.
- Kohlberg maps moral reasoning.

Vygotsky should sit beside, not inside, that stage sequence: sociocultural mediation, private speech and the zone of proximal development are cross-cutting mechanisms, not age-bound stages. Kohlberg likewise appears on the plate only in Kaplan and Sadock's descriptive bands, never on an invented numeric age axis.

5 . Mahler separation-individuation theory

Margaret Mahler's separation-individuation theory is a psychoanalytic account of how the infant moves from an experienced psychological unity with the mother toward a stable sense of being a separate person who can remain emotionally connected to her. Its subject is the ***psychological birth*** of the individual, not biological birth and not the attainment of a motor milestone. **Two** developmental lines proceed together but are not identical: **separation** is the emergence from symbiotic fusion and the differentiation of self from object, while **individuation** is the acquisition of a distinctive identity, autonomous ego functions and an enduring inner sense of self.

How to use this page. Fix the distinction between separation and individuation, then learn the sequence: the historical precursor phases of normal autism and normal symbiosis, followed by differentiation or hatching, practising, rapprochement, and consolidation toward libidinal object constancy. For each phase, ask what changes in self-object boundaries, exploration, use of the caregiver and mental representation. Finally, retain the limits: this is an object-relations formulation, not a developmental screening schedule, and its age brackets must not be converted into referral thresholds.

Must memorise: separation means "I am not you"; individuation means "I am me"; their sequence is hatching, practising, rapprochement and consolidation toward object constancy.

MNEMONIC

"Hatching - practising - rapprochement - consolidation"

separation means "I am not you"; individuation means "I am me"; their sequence is hatching, practising, rapprochement and consolidation toward object constancy.

5.1 The organising model: psychological birth through two intertwined lines

The child becomes separate without becoming unrelated. Mahler's model belongs to object-relations theory, where an ***object*** is a significant person as experienced and mentally represented, not an inanimate thing. Development requires a gradual reorganisation of the infant-mother relationship. Perceptual differentiation, locomotion and autonomous ego capacities support separation; the consolidation of identity and internal representations supports individuation. The endpoint is therefore neither fusion nor detachment. It is the capacity to function as a distinct self while maintaining a dependable emotional bond with a whole caregiver.

Mahler developed the theory through observations of young children and their mothers. In the classical vocabulary, *mother* denotes the central maternal object. In contemporary clinical use, *primary caregiver* is often the more accurate functional term, while the original terminology should still be named in an examination answer. The theory focuses on intrapsychic organisation inferred from behaviour within a relationship; it does not claim that visible independence alone proves psychological individuation.

Source-reported theoretical timings, not normative cut-offs:

TIMING	STAGE	SOURCE
The first weeks of the infant's life	normal autistic phase	in Wolberg's *Technique of Psychotherapy*
Three to four weeks	normal symbiotic phase	as reported by Wolberg
About 4 or 5 months to 10 months	hatching phase	in Wolberg
Between 15 and 18 months	onset of rapprochement	in Wolberg
15-24 months	is the rapprochement phase	in *Cognitive Therapy of Personality Disorders*
Around 18 to 24 months of age	rapprochement crisis	in Wolberg
During the third year of life	libidinal object constancy	in Wolberg



These sources state theoretical ages without identifying them as medians, expected ranges, upper limits or red-flag thresholds. They must therefore be repeated only as source-reported stage

timings. Overlap or variation between texts is not evidence of abnormal development, and none of these values tells a clinician when to refer a child.

RULE **Mahler's ages locate concepts within a theory; they do not define developmental normality.** Use developmental surveillance and validated screening instruments to detect delay. Do not diagnose a failed phase, fixation or developmental disorder from a child's calendar age.

5.2 Precursor phases: normal autism and normal symbiosis

Mahler begins with states in which self and other are not yet represented as clearly separate. In the historical **normal autistic phase**, the infant was described as predominantly invested in physiological regulation and protected from external stimulation by a relatively closed psychological barrier. The term *autistic* here belongs to Mahler's early psychoanalytic vocabulary. It does not mean autism spectrum disorder, does not predict it and should never be entered into a modern case record as though it were a diagnosis.

In the **normal symbiotic phase**, the infant is increasingly responsive to the mothering environment but is theorised to experience infant and mother as a dual unity within a common boundary. Symbiosis in this model is an intrapsychic state of undifferentiation, not merely closeness, dependence or frequent physical contact. The caregiver regulates tension and supplies gratification, while repeated experiences begin to organise an expectation of relief and relationship. Normal symbiosis is a precursor to differentiation; persistent adult dependency cannot simply be labelled proof that the person is "stuck" in it.

5.3 Differentiation or hatching: the beginning of separation

Attention turns outward and the infant begins to inspect the boundary between familiar self-object unity and the wider world. The **differentiation subphase**, also called hatching, marks the proper beginning of separation-individuation. The metaphor is psychological, not anatomical. The infant becomes more alert to the environment, studies the mother's face and body, compares familiar and unfamiliar people, and begins to move physically away while checking back perceptually. These behaviours are read as signs of emerging differentiation rather than complete selfhood.

The clinical emphasis is on discrimination and boundary formation. Familiarity becomes more organised, the external world acquires greater salience and the mother is increasingly apprehended as a particular object rather than merely part of a need-satisfying unit. Yet separation remains supported by the caregiver's availability. Hatching is therefore not abrupt detachment. It is a gradual opening of a relationship in which difference can be noticed without the bond disappearing.

5.4 Practising: locomotion, exploration and the exhilaration of autonomy

New autonomous capacities widen the child's psychological and physical world. In the **practising subphase**, locomotion and other developing ego functions permit active exploration away from the caregiver. Mahler described an exuberant investment in the wider world, with the child appearing temporarily absorbed in newly acquired competence and relative independence.

The caregiver remains the secure emotional centre. The child returns for brief contact or emotional refuelling, then ventures outward again.

The high-yield paradox is that apparent independence still rests on dependable availability. Exploration does not prove that the object is no longer needed; it shows that connection can support movement away. Clinically, this helps the resident observe how autonomy and dependence coexist rather than forcing behaviour into either "independent" or "dependent". Motor progress may facilitate practising, but Mahler's phase is a relational and intrapsychic construct, not a motor-development category.

5.5 Rapprochement: separateness becomes emotionally costly

The child now recognises separateness more fully and seeks renewed emotional closeness without surrendering autonomy. In the **rapprochement subphase**, the earlier exhilaration of practising gives way to a sharper awareness that the caregiver is a separate person who cannot be controlled by omnipotent wish. The child brings discoveries back to share, follows the caregiver, demands participation and alternates between bids for help and assertions of independence. Mahler described this push-pull as **ambitendency**: a simultaneous wish to move away and to be close.

The rapprochement crisis is the intensification of that conflict. Dependence may feel necessary, while closeness may threaten the new autonomy. Frustration exposes the fact that the loved object also disappoints, so affectionate and angry experiences must increasingly be held together rather than kept apart. A sufficiently available caregiver neither abandons the child nor erases every frustration. She permits approach, tolerates rejection and survives ambivalence, helping the child discover that separateness need not mean loss.

5.6 Consolidation and libidinal object constancy

A stable inner representation permits connection across absence, frustration and mixed feeling. During consolidation, individuation advances and self-other boundaries become more durable. **Libidinal object constancy** means that a predominantly positive, emotionally invested representation of the caregiver can be maintained when she is absent, unavailable or temporarily experienced as frustrating. Love and anger can be directed toward the same whole person without that person having to become entirely good or entirely bad.

Object constancy depends on integrating affectively contrasting representations of self and object. It supports tolerance of delay, separation and ordinary ambivalence, while stabilising identity and relationships. It is an achievement with degrees, not an all-or-none certificate permanently acquired at a single moment. Stress can still strain the capacity to hold a complex view of self and others.

TRAP **Object constancy is not Piagetian object permanence.** Object permanence is the cognitive understanding that an object continues to exist when not perceived. Mahler's object constancy is affective and representational: the relationship to a whole loved person remains internally available across absence and frustration. Also, Mahler's "normal autistic phase" is not autism spectrum disorder.

5.7 Clinical formulation: useful relational questions, not developmental verdicts

Mahler gives the psychiatrist a vocabulary for recurrent tensions between closeness and autonomy. In assessment, ask:

- whether separation evokes abandonment;
- whether intimacy evokes engulfment;
- whether the patient alternates between clinging and withdrawal;
- whether disappointment rapidly converts an admired person into a hated one;
- whether an absent attachment figure can remain emotionally real.

Similar patterns may appear in relationships, the therapeutic frame, transference and countertransference.

The model has been influential in psychodynamic formulations of borderline personality organisation, particularly accounts of unstable self-image, splitting, fear of abandonment and rapprochement-like oscillation. The safe formulation is analogical and probabilistic: a present pattern resembles a conflict described by the theory. The unsafe formulation is causal and retrospective: the patient has a disorder because a named Mahler phase failed. Adult symptoms cannot reconstruct infancy with that certainty, and no single relational pattern is specific to one developmental history.

Its limitations are examinable. The earliest phases rely on inferences about infant subjectivity; later infant research challenges the idea of an originally closed or wholly undifferentiated infant; the word *autistic* is now misleading; and the original mother-infant dyad may understate fathers, grandparents, siblings, multiple caregivers, temperament and the wider social environment. The theory may also invite caregiver blame if used crudely. Its continuing value lies in organising clinical questions about boundaries, ambivalence and internal representations, not in serving as a literal developmental test.

5.8 Alignment with the major developmental theories

The companion theory-alignment map places the models on a shared age axis, but temporal overlap does not make their constructs interchangeable. Mahler explains separation-individuation and self-object differentiation. Piaget explains changing structures of thought from the sensorimotor stage onward. Erikson organises development through psychosocial stages such as trust versus mistrust and autonomy versus shame and doubt. Freud organises drive and conflict through the psychosexual stages. The map supplies the source-reported age bands; the text must not turn lateral alignment into theoretical equivalence.

Kohlberg describes moral development in the ordered levels preconventional, conventional and postconventional. Kaplan and Sadock relate these to descriptive bands such as before adolescence, during adolescence, later in adolescence, and late adolescence or early adulthood; no sourced numeric ages should be invented. Vygotsky is not a stage theorist. His zone of proximal development, scaffolding, private speech and socially mediated learning are mechanisms that

operate across development, so he belongs beside the age-aligned stage theories rather than inside the plate as a fabricated sequence.

Clinically, each theory asks a different question of the same presentation: Piaget asks how the child represents and reasons; Erikson asks what social conflict is being negotiated; Freud asks how drive and defence are organised; Kohlberg asks how a moral judgement is reasoned; Mahler asks how separateness and connection are managed; Vygotsky asks what learning becomes possible with guided participation. A strong examination answer preserves those levels instead of blending them into a single omnibus theory.

5.9 Nearby relational constructs: theory of mind, language and parenting

Theory of mind is the capacity to attribute mental states to oneself and others and to understand that another person's belief may differ from reality and from one's own belief. *Psychotherapy for Borderline Personality Disorders* reports that passing a false-belief task is expected at **four or five years**. This is not Mahler's object constancy: theory of mind concerns representing another mind, whereas object constancy concerns sustaining an affective representation of a whole attachment object.

The major language acquisition theories also answer a different question.

THEORY	EMPHASIS
Chomsky	emphasises an innate biological preparedness for language and rule formation.
Skinner	emphasises operant learning, reinforcement, shaping and imitation.
Vygotsky	emphasises social mediation, shared activity and the transformation of interpersonal speech into private speech and self-regulation.

Contemporary understanding is not served by making any one of these a subphase of separation-individuation. Language can express emerging self-other distinction, but language development and Mahler's relational sequence are not the same construct.

Baumrind parenting styles classify patterns of warmth and behavioural demand. The classic styles are authoritative, authoritarian and permissive; the later two-dimensional extension adds uninvolved or neglectful parenting. They describe caregiving climate rather than the child's intrapsychic phase. In a clinical interview they help characterise limits, responsiveness and autonomy support, but they neither diagnose a Mahlerian disturbance nor prove how the child experiences the caregiver.

5.10 Indian clinical use and examination reconstruction

INDIA

Mahler's source-reported timings are not Indian developmental norms, and no verified India-specific age adaptation of the theory is supplied here. In Indian families, caregiving may be distributed across parents, grandparents, siblings and other relatives; proximity and interdependence may be valued without implying failed individuation. Formulate the child's actual pattern of boundaries, exploration, availability and emotional representation within that family and culture. Do not mistake a Western ideal of early behavioural independence for psychological health, and do not use Mahler in place of Indian developmental screening or formal assessment.

How to write the long answer. Begin with psychological birth and define separation and individuation separately. Name the precursor phases, then describe hatching, practising, rapprochement and consolidation in order. Attach one organising idea to each: *differentiation, exploration, ambivalence, integration*. Distinguish object constancy from object permanence, give one psychodynamic formulation use, and close with the empirical, cultural and caregiver-blame limitations.

6 . Vygotsky sociocultural theory and zone of proximal development

Lev Vygotsky's sociocultural theory explains cognitive development as a socially mediated process. The child does not develop as an isolated thinker who later enters society. Learning begins in shared activity with more knowledgeable people, is organised by culturally supplied tools and signs, especially language, and is gradually transformed into the child's own psychological functioning. The best-known construct is the **zone of proximal development** (ZPD): the region between what a learner can accomplish independently and what the learner can accomplish through effective guidance or collaboration. The theory is developmental, but it is **not stage-based**. It supplies no Vygotskian sequence of age-linked stages.

How to use this page. Build the answer around one movement: **from shared regulation to self-regulation**. First define social mediation and internalisation, then define the ZPD by its **two** boundaries, explain contingent support and its withdrawal, and connect private speech with the development of self-guidance. End with educational and clinical use, followed by the limits of inferring learning potential from a brief interaction. Schunk's *Learning Theories: An Educational Perspective*, Berk's *Development Through the Lifespan* and Ciccarelli's account support the conceptual treatment; none supplies age stages for Vygotsky.

Must memorise: Development moves from the social plane to the psychological plane: what the learner first does with guidance is gradually internalised and done independently.

6.1 The sociocultural proposition: mind develops through mediated participation

Higher mental functions have social origins and are culturally organised. Vygotsky distinguished elementary capacities with a biological basis from **higher mental functions**, such as deliberate attention, strategic memory, planning and conceptual thought. Higher functions do

not simply unfold from maturation. They are reorganised through participation in culturally structured activity. A caregiver labels objects, directs attention, breaks a task into parts, models a strategy and helps the child remember what to do next. In time, the child takes over these regulatory operations.

This account is dialectical: the social world shapes the child, but the child is not passive. The learner acts, responds, selects tools, alters the interaction and gradually becomes a participant with greater responsibility. Development is therefore neither the direct transmission of adult knowledge nor solitary discovery alone. It is the transformation of activity conducted between people into activity organised within the person.

6.2 Cultural tools, signs and internalisation

Human beings change cognition by using culturally inherited means. **Mediation** occurs when action is organised through a tool or sign rather than by a direct stimulus-response link. Material tools change the external environment; psychological tools and signs change how attention, memory and problem-solving are organised. Language, writing, counting systems, diagrams, mnemonics, maps and culturally taught problem-solving routines are examples. Because cultures provide different tools and practices, the form and priorities of cognition cannot be understood apart from the learner's social setting.

Internalisation is not the copying of an external act into an unchanged inner space. It is a transformation. An instruction first spoken by another person may later be spoken by the child to guide action, then become abbreviated as inner speech. The original interaction is reconstructed as a means of self-regulation. The common summary is that a higher function appears first on the *interpsychological* plane, between people, and later on the *intrapsychological* plane, within the person.

RULE **Social origin does not mean passive absorption.** Internalisation is an active reorganisation of shared activity into self-directed psychological functioning.

6.3 The zone of proximal development: actual and potential performance

The ZPD is defined by the difference that appropriate assistance makes. The learner's lower boundary is the level of **independent performance**, often called the actual developmental level. The upper boundary is the level of **assisted performance** that becomes possible with adult guidance or collaboration with a more capable peer. The ZPD is the region between these boundaries. It is not everything a child cannot do, and it is not a fixed store of hidden intelligence. A task lies beyond the useful zone when even well-matched assistance does not make performance possible.

Three

INSTRUCTIONAL LOCATIONS

INSTRUCTIONAL LOCATION	DESCRIPTION
Below the ZPD	already mastered independently, so extensive help adds little developmental value.
Within the ZPD	not yet independent, but achievable with responsive guidance, making it the principal teaching zone.
Beyond the ZPD	not achievable even with suitable support at that point, so prompting alone becomes unproductive.

The ZPD shifts attention from a static question, *What can this learner do now?*, to a developmental question, *What can this learner do with help, and how much help is required?* Two learners with the same unaided score may differ in responsiveness to modelling, prompts, feedback and transfer. Conversely, assisted success must not be counted as independent mastery. The quality of the support, the learner's familiarity with the language and task, motivation, anxiety, fatigue and the relationship with the examiner can all affect the observed zone.

6.4 Scaffolding: contingent support, fading and transfer of responsibility

Scaffolding is the instructional process most commonly used to operationalise the ZPD. The more knowledgeable participant recruits attention, simplifies the task, models a step, asks a leading question, supplies a cue, highlights an error or maintains motivation. Support is *contingent*: it increases when the learner is stuck and decreases when competence appears. The aim is not permanent assistance but a transfer of responsibility to the learner through fading.

The term *scaffolding* was introduced later by Wood, Bruner and Ross rather than coined by Vygotsky. It is compatible with his account, but the **two** terms are not synonyms. The ZPD describes a relation between present independent performance and assisted possibility; scaffolding describes one way of supporting activity within that relation. Good scaffolding is calibrated and temporary. Giving the answer, overprompting every step or withdrawing help abruptly can all obscure what the learner understands.

TRAP **ZPD is not the task itself, and scaffolding is not unlimited help.** The zone is defined by the learner's change in performance under appropriate assistance. Support must be adjusted and then faded until the learner regulates the task independently.

6.5 Language, private speech and the growth of self-regulation

Speech changes from a means of coordinating with others into a means of coordinating oneself. In shared activity, **social speech** allows a caregiver and child to direct attention, label a goal and organise action. The child later uses **private speech**, audible speech addressed to the self, to plan, inhibit an impulsive response, sequence steps and correct errors. With increasing internalisation, this becomes condensed **inner speech**. Inner speech is not merely ordinary conversation moved silently into the head; it becomes abbreviated and shaped for self-guidance.

Private speech is therefore functional rather than simply immature. It is especially likely when a task is difficult, novel or requires control, and overt self-talk may reappear when an older learner is challenged. The classic contrast is with Piaget, who treated egocentric speech mainly as

evidence that the young child had not yet fully accommodated the listener's perspective. Vygotsky instead emphasised its transition from interpersonal communication to intrapersonal regulation. The views address different features of children's self-directed talk and should not be reduced to a slogan that one theorist found it useless and the other useful.

6.6 Learning leads development: teaching within the emerging competence

Vygotsky rejected teaching that merely waits for fully formed capacities. Instruction is most developmentally productive when it engages functions that are emerging and supports performance within the ZPD. In this sense, appropriately organised learning leads development: guided participation creates opportunities for the learner to practise forms of attention, reasoning and self-regulation that later become independent. This does not mean that any teaching can override readiness, neurodevelopmental constraints or prior knowledge. The learner must be able to participate meaningfully in the supported activity.

Applications include modelling with gradual withdrawal, guided questioning, cooperative learning, peer tutoring, reciprocal teaching, cognitive apprenticeship and worked examples that become progressively incomplete. A more capable peer may support learning, but peer status alone does not guarantee effective mediation. The peer must understand the task, communicate accessibly, notice the learner's response and adjust help. Collaboration is valuable when responsibility and explanation are shared, not when one student completes the work for another.

6.7 Dynamic assessment and clinical use

Dynamic assessment extends the ZPD into assessment by embedding teaching within the evaluation. A test-teach-retest format, graduated prompts or mediated learning can show which cues unlock performance, how rapidly a strategy is acquired, whether improvement transfers to a related task and how much assistance remains necessary. This complements a static score by sampling learning processes and modifiability. It does not make standardised assessment redundant, and assisted performance should be reported separately from unaided performance.

> **CLINICAL USE**
>
> When a child cannot organise a multistep task, first observe independent performance. Then offer the least intrusive useful support, such as restating the goal, modelling the first step or giving a visual sequence, and record the response. Improvement with modest, transferable support suggests an accessible learning pathway; persistent difficulty despite well-matched help suggests the need to examine language comprehension, attention, memory, intellectual functioning, anxiety, sensory factors and the suitability of the task. This is formulation evidence, not a diagnosis.

In psychiatry, the same logic can guide cognitive remediation, executive-function support, psychoeducation and rehabilitation. The clinician identifies what the patient can manage alone, co-constructs the next step and withdraws prompts as self-management improves. The goal is agency, not dependence on the therapist. A person's need for scaffolding may vary across tasks and states, so the ZPD should not be treated as a single stable trait or converted into a global intelligence label.

6.8 Alignment with stage theories: a cross-cutting mechanism, not another row

The accompanying theory-alignment plate places different developmental questions beside one another. Piaget describes changes in cognitive structure from the sensorimotor period onward. Erikson organises development through psychosocial stages and their central conflicts. Freud proposes psychosexual stages organised around drive, bodily focus and conflict. Kohlberg describes ordered forms of moral development, but his sourced age relationships are descriptive bands rather than numeric ranges. Mahler describes separation-individuation and the development of psychological separateness in relationship.

Vygotsky differs structurally from all five: sociocultural theory and the zone of proximal development specify mechanisms through which learning and self-regulation can occur across development. There are no Vygotskian stages to align by age. The plate should therefore show Vygotsky beside the stage sequences as a cross-cutting mechanism, never as an invented age row. Temporal overlap between theories also does not make their constructs equivalent: cognitive structure, psychosocial conflict, psychosexual organisation, moral reasoning, separation and supported learning answer different questions.

6.9 Culture, Indian clinical interpretation and limitations

Culture is constitutive in the theory, not decorative context added after cognition develops. Languages, scripts, number systems, schooling practices, work routines, narratives and patterns of adult-child participation influence which skills are practised and how they are organised. This is a major strength of the framework. It also creates a methodological challenge: performance in an unfamiliar testing interaction may underestimate competence acquired through everyday participation, while familiarity with school-like dialogue may advantage another learner.

INDIA

In Indian practice, mediation may be distributed across parents, grandparents, siblings, teachers and peers, and learning may occur through observation, participation, recitation, demonstration or direct questioning. These forms should be described rather than ranked against a single classroom ideal. Language of testing matters in a multilingual child, as does familiarity with the examiner's style. No verified India-specific numeric ZPD norm or Vygotskian age-stage adaptation is supplied here, and none should be invented. The absence of an age table is expected because the ZPD is relational and task-specific, not an age stage.

The principal criticisms are equally examinable.

- The theory gives powerful concepts but less precise specification of how broad cultural processes produce particular individual cognitive changes.
- The boundaries of a ZPD can be difficult to measure reliably because assistance is interactive and examiner-dependent.
- A more capable partner may transmit error, prejudice or conformity as well as skill.
- Social mediation can be overstated at the expense of biological maturation, temperament, spontaneous exploration and individual construction.

- Successful performance with help does not prove durable learning unless support can be faded and the strategy transfers beyond the teaching episode.

6.10 Examination reconstruction

Long-answer sequence. Define sociocultural theory, state the social origin of higher mental functions, explain cultural tools and internalisation, define both boundaries of the ZPD, distinguish the ZPD from scaffolding, trace social speech to private and inner speech, then add dynamic assessment, one clinical use and the principal criticisms. Close by stating that Vygotsky proposed no age-linked stages.

MNEMONIC

Social activity - mediation - internalisation - ZPD - contingent support - fading - self-regulation.

It traces the movement from shared regulation to self-regulation. If that chain is intact, the rest of the answer can be rebuilt rather than recited.

7 . Bowlby and Ainsworth attachment theory and Strange Situation

Attachment is an enduring, selective emotional bond in which a child seeks proximity to a familiar caregiver, especially when frightened, tired, ill or uncertain. John Bowlby supplied the evolutionary and developmental theory; Mary Ainsworth converted that theory into naturalistic observation and a standardised laboratory assessment, the Strange Situation. The central idea is functional rather than sentimental: the caregiver becomes a **safe haven** under threat and a **secure base** from which the child can explore. The examiner usually wants **three** distinctions. Attachment is not simply feeding or dependency, an attachment pattern is not a fixed personality trait, and insecure attachment is not in itself a psychiatric disorder.

How to use this page. First learn Bowlby's attachment behavioural system and internal working model. Then learn why Ainsworth treated exploration, separation and reunion as one organised system. Finally, identify the **four** patterns from reunion behaviour: secure, avoidant, ambivalent or resistant, and disorganised. The final section connects attachment with normal adolescent development, because adolescence reorganises rather than abolishes the secure-base relationship.

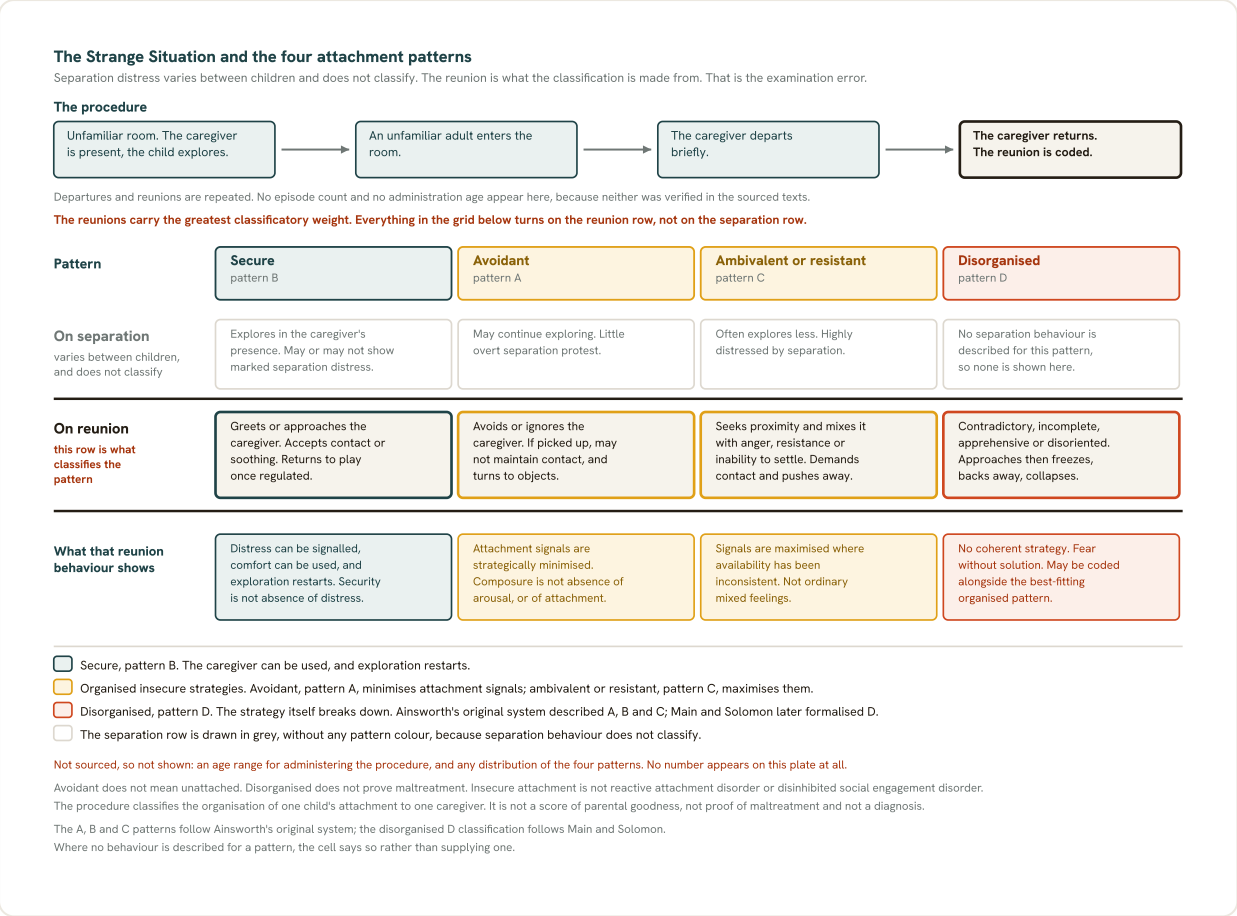


Fig 7.1 The Strange Situation and the four attachment patterns, keyed to behaviour on separation and on reunion. The separation row is drawn grey and undifferentiated because separation distress varies and does not classify; the reunion row carries the classification. The organised A, B and C patterns follow Ainsworth's original system, the disorganised D classification follows Main and Solomon. No age, episode count or pattern distribution appears, because none was verified in the sourced texts.

7.1 Bowlby: attachment as an evolved behavioural system

Proximity to a protective caregiver is the set goal. Bowlby rejected the drive-reduction claim that the infant becomes attached merely because the caregiver supplies food. He drew on psychoanalysis, ethology, control-systems thinking and observations of separation to propose an innate **attachment behavioural system**. Signals such as crying, smiling, calling, clinging and following increase caregiver proximity. The system is activated by threat, pain, fatigue, unfamiliarity or separation; it is relatively quiet when the child feels safe, allowing exploration and play. Attachment and exploration are therefore complementary systems. A securely based child is not continuously close to the caregiver. The child moves away to explore and returns when safety must be restored.

Bowlby's term monotropy described a tendency for one attachment figure to acquire special importance, not a biological rule that a child can form only one bond. Children can develop a hierarchy of attachments to several consistent caregivers. What matters clinically is not whether care matches a narrow family form, but whether available caregivers are familiar, responsive and sufficiently predictable. Bowlby's early writing on maternal deprivation was historically influential, but a modern reading separates the effects of prolonged loss, disrupted continuity,

insensitive care and the wider adversity that often accompanies them. The theory predicts risk, not destiny.

RULE **Attachment is a safety-regulation system, not a measure of how much a child loves a parent.** Read proximity-seeking, exploration and reunion as organised behaviour serving protection.

7.2 Internal working models and developmental organisation

Repeated interactions become expectations about self, others and help. Through recurrent caregiver responses, the child constructs **internal working models**: expectations about whether distress will be noticed, whether another person will be available, and whether the self is worthy and effective in eliciting care. These models guide attention, affect regulation, memory, help-seeking and later relationships. A history of responsive care favours open signalling and confidence in comfort; recurrent rejection may favour suppression of attachment signals; inconsistent response may amplify them. These are adaptive strategies in a particular relationship, not conscious decisions and not immutable templates.

Bowlby's developmental account is commonly organised as a phase sequence, and the qualitative progression runs as follows:

PHASE	QUALITATIVE PROGRESSION
Pre-attachment	broadly directed social signals.
Attachment-in-the-making	preference for familiar caregivers.
Clear-cut attachment	active proximity regulation.
Goal-corrected partnership	an increasing ability to represent the caregiver's goals and negotiate separation.

Working models are carried forward through continuity of expectations and relationships, but they remain open to revision through later caregiving, reflective capacity, psychotherapy and corrective relationships. Stability is therefore probabilistic, with both continuity and change expected.

7.3 Ainsworth: sensitivity, secure base and observational method

Ainsworth made caregiver-child organisation observable. Her naturalistic work in Uganda and later longitudinal observations in Baltimore refined Bowlby's theory. She described the infant's use of the caregiver as a secure base and emphasised **caregiver sensitivity**: noticing the child's signals, interpreting them accurately, and responding promptly and appropriately. Sensitivity is associated with security, but neither one interaction nor one caregiver characteristic mechanically produces a classification. Child temperament, caregiver state, cumulative experience, culture and the immediate context all contribute to observed behaviour.

Ainsworth's major methodological advance was to judge the organisation of behaviour rather than count isolated acts. Crying alone does not define insecurity, and a child who does not cry is not automatically secure. The question is whether the child can use the caregiver to regulate arousal and then resume exploration. This shift from single behaviours to the pattern linking

separation, proximity-seeking, contact, soothing and renewed play is the conceptual bridge to the Strange Situation.

7.4 Strange Situation: procedure, observations and scoring logic

A standardised, progressively stressful observation of attachment and exploration. The **Strange Situation Procedure** places a young child and caregiver in an unfamiliar room, introduces an unfamiliar adult, and includes brief caregiver departures and reunions. These manipulations activate the attachment system while leaving opportunities for play. Observers code exploration, distress on separation, response to the unfamiliar adult, proximity-seeking, contact maintenance, resistance, avoidance and the child's capacity to settle. The reunions carry the greatest classificatory weight because they show what the child does when the attachment figure becomes available after stress.

The procedure does not provide a global score of parental goodness, prove maltreatment, measure the total strength of the bond or diagnose a disorder. It samples behaviour in a structured context and classifies the organisation of one child's attachment to one caregiver. The original Ainsworth system described the organised A, B and C patterns. Mary Main and Judith Solomon later formalised the disorganised or D classification for behaviour that lacks a coherent approach to the attachment dilemma.

Must memorise: In the Strange Situation, reunion behaviour is decisive: secure children seek and use comfort, avoidant children minimise contact, resistant or ambivalent children seek yet resist it, and disorganised children show no coherent strategy.

MNEMONIC

"Seek, minimise, seek yet resist, no coherent strategy"

In the Strange Situation, reunion behaviour is decisive: secure children seek and use comfort, avoidant children minimise contact, resistant or ambivalent children seek yet resist it, and disorganised children show no coherent strategy.

7.5 Secure and avoidant attachment patterns

Secure, pattern B: distress can be signalled, comfort can be used, exploration can restart. A **secure** child generally explores in the caregiver's presence, may or may not show marked separation distress, greets or approaches the caregiver on reunion, accepts contact or soothing, and returns to play once regulated. Security is therefore not absence of distress. It is the flexible and effective use of the caregiver when distressed. The associated caregiving history is commonly sensitive, available and reasonably predictable, but the classification remains descriptive and probabilistic rather than a retrospective proof of caregiving quality.

Avoidant, pattern A: attachment signals are minimised. An **avoidant** child may continue exploring, show little overt separation protest, and avoid or ignore the caregiver on reunion. If picked up, the child may not actively maintain contact and may turn attention toward objects. The crucial interpretation is strategic minimisation of visible attachment behaviour in that

relationship, often associated with expected rejection or discomfort around bids for closeness. Apparent composure must not be equated with absence of arousal, absence of attachment or superior independence.

7.6 Resistant or ambivalent and disorganised attachment patterns

Resistant or ambivalent, pattern C: attachment signals are intensified but do not readily achieve settling. The **ambivalent** or resistant child often explores less, becomes highly distressed by separation, and on reunion combines proximity-seeking with anger, resistance or inability to settle. The child may demand contact and simultaneously push away, arch or remain preoccupied with the caregiver. This pattern is understood as maximising attachment signals when caregiver availability has been experienced as inconsistent. The word ambivalent refers to the observed mixture of approach and resistance, not to ordinary mixed feelings.

Disorganised, pattern D: the attachment strategy breaks down. A **disorganised** child shows contradictory, incomplete, apprehensive or markedly disoriented behaviour in the caregiver's presence, such as approaching and then freezing, backing away, collapsing, or displaying incompatible sequences without a stable strategy. The caregiver may be simultaneously the expected source of safety and a source of alarm, creating fear without solution. Disorganisation is associated with frightening or frightened caregiving, unresolved caregiver trauma, maltreatment and severe family stress, but it is not specific to any one cause. It may be coded alongside the best-fitting organised pattern and must never be treated as proof that abuse occurred.

TRAP **Do not convert attachment classifications into diagnoses.** Avoidant does not mean unattached, disorganised does not prove maltreatment, and insecure attachment is not synonymous with reactive attachment disorder or disinhibited social engagement disorder. RAD and DSED are separate clinical disorders linked to a history of severely insufficient care, and they are developed in the Child behavioural, emotional and other disorders notes.

7.7 Interpretation, cultural caution and clinical use

Classify the relationship in context, not the child's essence. Attachment security may differ across caregivers because each relationship has a different history. Classifications show moderate continuity at group level when care and context remain stable, but individual change is possible. Temperament can affect the intensity and style of distress without by itself determining security. Cultural practices also shape baseline separation experience, proximity, stranger familiarity and the social meaning of independence. Cross-cultural differences in pattern distribution therefore require ecological interpretation rather than a hierarchy of cultures.

Clinically, attachment theory helps formulate emotion regulation, help-seeking, interpersonal expectations and the meaning of separation. It does not justify diagnosing an attachment style from an adult's brief self-report, reading childhood causation directly from a current relationship, or blaming one caregiver. Adult attachment interviews and romantic-attachment questionnaires examine related but non-identical constructs and are not interchangeable with the Strange Situation. In a psychiatric assessment, ask:

- Who actually provided care.

- How the child sought comfort.
- How caregivers responded.
- Whether separations or changes in placement occurred.
- How the relationship functions now.

Use these observations to build a developmental formulation, not a label masquerading as explanation.

7.8 Attachment in adolescence: the secure base at a distance

Adolescence changes the regulation of closeness; it does not end attachment. In normal adolescent development, the secure-base function becomes less dependent on immediate physical proximity and more dependent on the expectation that support is available. Autonomy and attachment are not opposites. Security permits exploration of education, peers, values and intimate relationships, while caregivers remain a refuge under significant stress. Peers and romantic partners acquire attachment functions, but this redistribution is gradual and relationship-specific.

3	4
EXAM DISTINCTIONS	REUNION PATTERNS

8 . Temperament and goodness of fit (Thomas and Chess)

Temperament is the characteristic style with which a child responds to the world: the tempo, intensity, regularity and flexibility of behaviour rather than its particular content. Thomas and Chess captured the distinction neatly by asking *how* a child behaves, not *what* the child does or *why* the child does it. Temperament appears early, has a constitutional contribution and shows some continuity, but it is neither an immutable biological destiny nor a diagnosis. Its expression changes with development, relationships, learning, culture and context.

How to use this page. First learn the **nine dimensions**, then the **three types** derived from recurring combinations of those dimensions. Finally, understand **goodness of fit**, because that is the clinically important part of Thomas and Chess: adaptation depends not on a supposedly good or bad child, but on the match between the child's temperament and the demands, expectations and supports of the environment. In a theory answer, define temperament, list the nine dimensions, describe the three types with their classic proportions, explain goodness of fit and finish with clinical application and limitations.

> **The must-memorise line:** Thomas and Chess described nine dimensions and three temperamental constellations, but outcome depends chiefly on goodness of fit between the child and the environment.

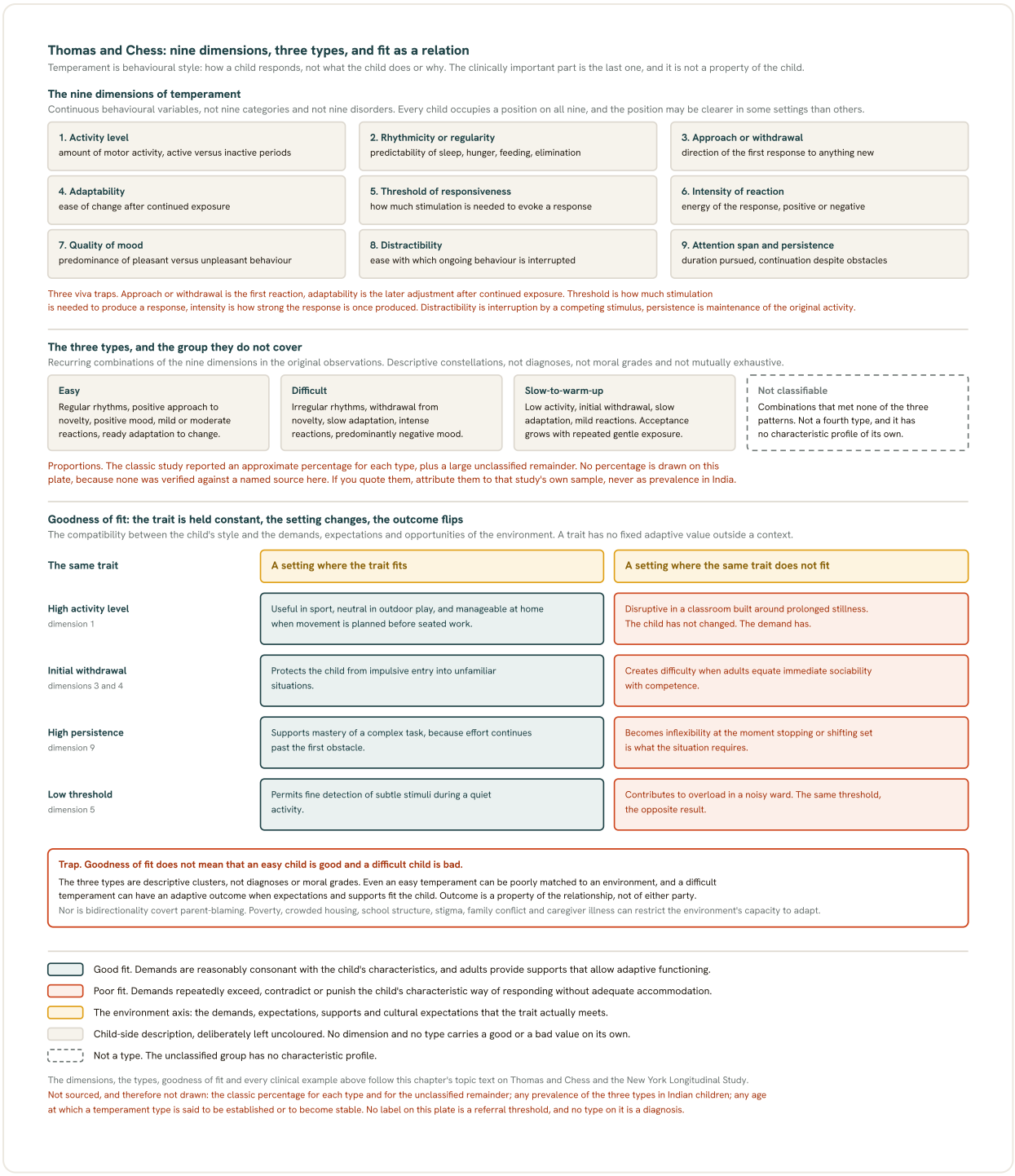


Fig 8.1 Thomas and Chess drawn as an interaction. The nine dimensions and the three types are the child side and are left uncoloured, because no dimension and no type carries a value on its own; a fourth box marks the group the three types did not cover, which is not a fourth type. Colour appears only in the fit table, where one trait is held constant and meets two settings, and the outcome reverses without the child changing. Content follows this chapter's topic text on Thomas and Chess and the New York Longitudinal Study. The classic proportions for each type are named on the plate but not drawn, because no percentage for them was verified against a named source here.

8.1 Thomas and Chess: the interactional view of temperament

Temperament is behavioural style, and development is transactional. In the New York Longitudinal Study, Alexander Thomas, Stella Chess and colleagues followed children and their families to examine early individual differences and later adjustment. Their work challenged explanations that attributed children's behavioural problems either entirely to innate defect or

entirely to parental handling. Children differ from the outset in how readily they become aroused, approach novelty, adapt to change, sustain activity and express mood. These differences alter how caregivers respond; caregiver responses then shape how the child's style is expressed and regulated. Child and environment therefore influence one another over time.

This is a **transactional model**, not a one-way causal model. A highly active child may invite more prohibition from an exhausted caregiver, while the resulting conflict may further amplify restless behaviour. The same child in a setting with safe movement, brief instructions and predictable transitions may function well. Conversely, an initially easy interaction can deteriorate when environmental demands change. Temperament contributes to the probability and form of an interaction; it does not independently dictate psychopathology.

RULE **Describe the child, the environment and the match.** A Thomas-and-Chess formulation is incomplete if it lists traits but does not show how environmental demands, caregiver responses and cultural expectations convert those traits into adaptation or difficulty.

8.2 The nine dimensions of temperament

The nine dimensions are continuous behavioural variables, not nine separate disorders. Each child occupies a position on every dimension, and the position may be more evident in some settings than in others. The examiner usually expects the complete list with a one-line meaning:

DIMENSION	MEANING
Activity level	the amount of motor activity and the relative proportion of active to inactive periods. Ask how much the child moves during play, meals, travel, learning and sleep-related routines.
Rhythmicity or regularity	the predictability of biological functions and routines, including sleep, hunger, feeding and elimination.
Approach or withdrawal	the direction of the initial response to a new person, place, food, activity or other stimulus. Approach means initial acceptance or engagement; withdrawal means initial hesitation, avoidance or distress.
Adaptability	the ease and speed with which behaviour changes after continued exposure to novelty or altered circumstances. It is distinct from the first response: a child may initially withdraw yet adapt well after familiarisation.
Threshold of responsiveness	the intensity of stimulation required to evoke a response. A low threshold means that weak light, sound, texture, temperature or social stimulation is sufficient; a high threshold means that stronger stimulation is needed.
Intensity of reaction	the energy level of the response, whether positive or negative. It concerns how strongly emotion or behaviour is expressed, not which emotion is expressed.
Quality of mood	the relative predominance of pleasant, friendly and joyful behaviour versus unpleasant, distressed or unfriendly behaviour.
Distractibility	the ease with which an ongoing behaviour is interrupted or altered by extraneous stimulation. It is not synonymous with a disorder of attention.
Attention span and persistence	the duration for which an activity is pursued and the tendency to continue despite obstacles. Attention span concerns sustained engagement; persistence concerns continuation when continuation becomes difficult.

Three distinctions prevent common viva errors. **Approach-withdrawal** is the initial reaction, whereas **adaptability** is the later adjustment. **Threshold** is the amount of stimulation needed to produce a response, whereas **intensity** is the strength of the response once produced. **Distractibility** is interruption by competing stimuli, whereas **attention span and persistence** describe maintenance of the original activity.

8.3 The three types: easy, difficult and slow-to-warm-up

The three types are clusters of dimensions found repeatedly in the original observations. They are descriptive constellations, not mutually exhaustive categories. A child's profile may resemble one constellation, contain features of several, or fit none. The labels are historically important and highly examinable, but the word *difficult* must be handled carefully because it describes a pattern of interactional challenge rather than a defective child.

TEMPERAMENTAL CONSTELLATION	CHARACTERISTIC PATTERN	LIKELY INTERACTIONAL ISSUE
Easy temperament	Regular biological rhythms, positive approach to novelty, relatively positive mood, mild or moderate reactions and ready adaptation to change	Usually elicits confident and rewarding caregiving, but genuine distress may be overlooked because the child is usually manageable
Difficult temperament	Irregular rhythms, withdrawal from novelty, slow adaptation, intense reactions and predominantly negative mood	May evoke coercion, criticism or inconsistent responses, producing escalating conflict when expectations are rigid
Slow-to-warm-up temperament	Low activity, initial withdrawal, slow adaptation and relatively mild reactions; acceptance increases gradually with repeated non-threatening exposure	May be misread as stubborn, uninterested or incapable if adults demand rapid participation

9	40%	10%	15%
DIMENSIONS IN THE THOMAS AND CHESS FRAMEWORK	APPROXIMATELY EASY IN THE CLASSIC CLASSIFICATION	APPROXIMATELY DIFFICULT IN THE CLASSIC CLASSIFICATION	APPROXIMATELY SLOW-TO-WARM-UP IN THE CLASSIC CLASSIFICATION

The proportions belong to the classic study classification and should not be presented as universal prevalence estimates for contemporary Indian children. Their examination value lies in showing that the three types never covered the entire population. The unclassified group is not a fourth type. In the classic study classification, **35%** were approximately mixed or not classifiable into the three types; their combinations did not meet one of the three characteristic patterns.

8.4 Goodness of fit: the central clinical proposition

Goodness of fit is the compatibility between the child's temperamental capacities and style, and the demands, expectations and opportunities of the environment. A good fit occurs when environmental demands are reasonably consonant with the child's characteristics and when adults provide supports that allow adaptive functioning. A poor fit occurs when demands repeatedly exceed, contradict or punish the child's characteristic way of responding without adequate accommodation or skill-building. The outcome is a property of the relationship between child and context, not a moral property located inside either one.

Consider high activity. It may be disruptive in a classroom built around prolonged stillness, useful in sport, neutral during outdoor play and manageable at home when movement is planned before seated work. Initial withdrawal may protect a child from impulsive entry into unfamiliar

situations, yet create difficulty when adults equate immediate sociability with competence. High persistence may support mastery of a complex task but become inflexibility when stopping or shifting is required. A low sensory threshold may contribute to overload in a noisy ward yet permit fine detection of subtle stimuli in a quiet activity. The trait has no fixed adaptive value outside a context.

Goodness of fit also includes culture. Families and schools differ in the value placed on quietness, assertiveness, emotional expressiveness, regularity, rapid sociability and obedience. A style praised in one setting may be discouraged in another. Cultural formulation does not mean accepting severe impairment or harmful caregiving. It means identifying whose expectation is being used, what the setting actually requires and whether that requirement can be modified without compromising the child's development or safety.

TRAP **Goodness of fit does not mean that an easy child is good and a difficult child is bad.** The three types are descriptive clusters, not diagnoses or moral grades. Even an easy temperament can be poorly matched to an environment, and a difficult temperament can have an adaptive outcome when expectations and supports fit the child.

8.5 From temperament to outcome: risk, protection and bidirectional effects

Temperament affects outcome through repeated transactions rather than direct determinism. A temperamental feature can influence exposure to situations, the responses elicited from other people, the child's interpretation of those responses and opportunities to practise regulation. When a mismatch is chronic, child and adult may enter a self-reinforcing sequence. Intense protest evokes harsh control; harsh control increases arousal and protest; both participants then anticipate conflict. When fit improves, the sequence can reverse: predictable preparation reduces arousal, calmer participation evokes more supportive responses, and successful experiences expand the child's tolerance.

Temperament can therefore function as a risk factor, a protective factor or a modifier of how other risks are expressed. It may influence the form of a symptom without being its cause. Inhibited approach can resemble anxiety, high activity can resemble hyperactivity, negative mood can resemble depression, irregularity can complicate sleep and feeding, and low persistence can look like defiance or inattention. The resident must establish pervasiveness, developmental change, subjective distress, functional impairment and the full syndrome before moving from style to disorder.

Parent and child effects are bidirectional, but bidirectionality must not become covert parent-blaming. Caregivers bring their own temperament, health, stress, beliefs, resources and expectations. A mismatch may occur between a highly intense child and a highly intense caregiver, or between an active child and a caregiver whose circumstances allow little safe movement. Poverty, crowded housing, school structure, stigma, family conflict and caregiver illness can restrict the environment's capacity to adapt even when the caregiver understands the child well.

8.6 Clinical assessment of temperament and fit

Assess a pattern across time and settings, not a single performance in the clinic. Begin with concrete examples rather than labels. Instead of asking whether the child is difficult, ask what happens with an unfamiliar person, an unexpected change, waiting, loud sound, a missed meal, a challenging task or a transition away from preferred play. Establish the trigger, initial response, intensity, duration, adaptability after continued exposure, recovery and effect on function. Map the answers onto the nine dimensions only after hearing the behaviour.

Take accounts from the child where developmentally appropriate, caregivers and teachers, because temperament is expressed differently across contexts and each observer has a relationship-specific view. Direct observation should sample free activity, structured demands, novelty, transition, frustration and recovery. The clinic itself is an unfamiliar and stimulating environment, so withdrawal, silence or high activity there cannot be assumed to represent the child's usual style. Look for both stable tendencies and situational exceptions; exceptions reveal environments in which fit is already better.

A useful formulation has four parts:

1. **Child profile:** identify the prominent dimensions and strengths using neutral behavioural language.
2. **Environmental profile:** identify family, school and cultural demands, available supports and the temperaments of important caregivers.
3. **Fit and transaction:** specify where mismatch occurs, how each participant responds and what cycle maintains the difficulty.
4. **Clinical boundary:** assess impairment and alternatives, including neurodevelopmental disorder, anxiety, mood disturbance, sleep or medical problems, trauma, attachment disturbance, sensory impairment and adverse environment.

Temperament is not a diagnosis of exclusion, but neither should it be used to explain away a disorder. The key question is whether the nine-dimension profile adequately describes a stable style or whether there is an additional syndrome with distress, impairment, developmental deviation or episodic change. A previously characteristic style that changes markedly should prompt assessment for state-related causes rather than being relabelled as temperament.

8.7 Management: change the fit, support regulation and preserve strengths

The intervention target is usually the transaction, not eradication of the trait. The clinician first reframes the behaviour in non-moral language, helps caregivers anticipate predictable points of mismatch and designs the environment so that the child can succeed while gradually building capacity. This is sometimes called temperamental guidance. It validates the child's style without allowing harmful behaviour and supports the caregiver without implying that every difficulty results from parenting.

Management follows the functional profile. An irregular child benefits from external predictability and consistent cues without punitive battles over perfect regularity. A child who

withdraws from novelty benefits from preparation, observation from a safe distance, gradual entry and repeated low-pressure exposure rather than forced sociability. A highly active child needs planned movement, brief achievable seated tasks and safe outlets. A child with intense reactions needs calm adult responses, simple limits and help labelling early arousal before escalation. A child with a low threshold may need reduction of avoidable sensory load and graded coping with unavoidable stimulation. Low persistence calls for task chunking, visible completion points and reinforcement of effort, whereas very high persistence may require supported transitions and practice shifting set.

The environment must adapt, but accommodation is not capitulation. A good fit both accepts the child's starting style and teaches the skills needed for wider participation. Expectations should be realistic, explicit and gradually increased. School collaboration is often decisive because the child may spend much of the waking routine under group demands. Review whether the change reduces conflict, improves participation and preserves the child's strengths; if impairment persists, reassess the formulation and comorbidity.

8.8 Strengths, limitations and later extensions

The model's enduring strength is that it moved child psychiatry from blame toward person-environment interaction. It offered an observable vocabulary for early behavioural individuality, recognised the child's active contribution to relationships and generated the clinically useful concept of goodness of fit. It also anticipated contemporary developmental psychopathology by treating outcome as the product of transactions over time rather than a simple line from one early trait to one later disorder.

Its limitations are equally examinable. The three types compress continuous traits and leave a substantial group unclassified. Several dimensions overlap conceptually, and ratings can be influenced by the observer's expectations, mood and relationship with the child. Stability is relative rather than absolute because the expression of temperament changes with maturation and context. The classic proportions arose from a particular sample and should not be universalised across socioeconomic and cultural settings. Finally, later temperament models organise traits differently and give greater attention to reactivity, self-regulation and biological mechanisms, so Thomas and Chess should be presented as a foundational framework rather than the final taxonomy of temperament.

The historical labels also require ethical translation. *Difficult* is useful in an examination when explicitly attributed to the Thomas-and-Chess classification, but clinical communication should describe the actual profile: irregular, initially withdrawing, slowly adaptive, intensely reactive or predominantly negative in mood. Precise description reduces shame and leads directly to intervention. A global label does neither.

8.9 Examination synthesis and retrieval

A complete short note can be built in five moves. Define temperament as behavioural style; name Thomas and Chess and the New York Longitudinal Study; list all nine dimensions; describe easy, difficult and slow-to-warm-up temperaments with the classic proportions and the

unclassified remainder; then explain goodness of fit with one clinical example, bidirectionality, management and limitations. If time is short, marks are lost most often by omitting threshold, confusing adaptability with approach, or listing the three types without explaining fit.

MNEMONIC

"move, clock, meet, change, notice, react, feel, shift, stay"

Move recalls activity level; clock, rhythmicity; meet, approach or withdrawal; change, adaptability; notice, threshold; react, intensity; feel, quality of mood; shift, distractibility; and stay, attention span and persistence. The sequence is only a retrieval aid. In the answer, use the formal terms.

Worked viva formulation: A child initially refuses unfamiliar classroom activities, reacts mildly and joins after repeated observation. This is closer to a slow-to-warm-up pattern than a difficult pattern because intensity is low and adaptation occurs gradually. If the teacher permits observation and phased entry, participation improves: that is better goodness of fit. If the child is forced to perform immediately and is repeatedly criticised, withdrawal may increase: that is poorer fit. Neither response alone establishes an anxiety disorder; distress, pervasiveness, persistence and impairment still require assessment.

Final clinical synthesis. Thomas and Chess supplied a vocabulary for the child's characteristic style, but their larger contribution was relational. Temperament describes how the child enters an interaction; goodness of fit explains why the same style can lead to competence in one environment and conflict in another. The mature answer neither blames the child nor idealises accommodation. It identifies the profile, maps the environment, changes the transaction and assesses separately for disorder.

9 . Theory of mind development

Theory of mind is the capacity to attribute mental states to oneself and to other people, and to use those attributions to explain and predict behaviour. The attributed states include intentions, desires, knowledge, beliefs, emotions and pretence. The decisive idea is representational: another person acts on how the world is represented in that person's mind, not necessarily on how the world really is or on what the observer knows. Theory of mind therefore permits the child to understand deception, surprise, misunderstanding, secrecy, irony and the fact that two people can interpret the same event differently. It is often called **mentalizing**, although clinical literature sometimes uses mentalizing more broadly for the imaginative interpretation of self and others in terms of intentional mental states.

This is not a single switch and not a synonym for sociability. Its development rests on an interacting set of capacities: social attention, joint attention, symbolic representation, language, executive control, autobiographical memory and experience of conversation. A child may be affectionate yet fail a formal false-belief task because the language is too difficult; another may pass a structured task yet misunderstand rapidly changing intentions in ordinary interaction. For an examination answer, define the construct, describe its precursors, explain the false-belief test,

compare the major explanatory models, and finish with clinical interpretation rather than treating one task as a diagnostic instrument.

Must remember: False belief is the examination pivot: the child must predict action from another person's belief even when that belief conflicts with reality and with the child's own knowledge.

9.1 What theory of mind includes, and what it does not

A representational account of minds, not merely a response to behaviour. At the simplest level, the child recognises that people are agents whose actions are directed toward goals. Development then involves distinguishing *desire* from *belief*: two people can want different outcomes, and two people can hold different representations of the same reality. Mature social understanding further requires recognising that access to information determines knowledge, that beliefs may be false, and that outward expression can differ from inner emotion. These strands do not have to develop at identical rates, which is why theory of mind is better considered a family of related abilities than a unitary faculty.

Cognitive theory of mind concerns beliefs, intentions and knowledge. **Affective theory of mind** concerns inference about another person's feelings. **Empathy** overlaps with the second but is not identical to it: affective resonance, concern and the motivation to help are separable from the ability to identify what someone feels. **Joint attention** is also distinct. It is the shared coordination of attention between a person and an object or event, and is a developmental foundation for learning what another person is attending to; it does not by itself demonstrate understanding of false belief. Likewise, mirror self-recognition concerns representation of the self, not direct proof that the child represents another person's mind.

RULE **Do not equate precursor, correlate and criterion.** Joint attention, pointing, pretend play, language and executive control support theory of mind. The classic explicit test is false-belief reasoning. None of these observations alone diagnoses or excludes a neurodevelopmental disorder.

9.2 Developmental sequence: from shared attention to represented belief

The sequence is more reliable than a rigid age ladder.

1. Early face-to-face reciprocity and turn-taking make interaction predictable.
2. The infant then coordinates gaze and attention with another person, follows what the other person is attending to, and uses gestures such as pointing to request or share interest.
3. Symbolic and pretend play show that one object or action can stand for another, an essential representational step.
4. The child subsequently reasons about desires, perception and access to knowledge, then understands that belief can diverge from reality.

MNEMONIC

"Share - Symbolise - Believe"

Shared attention follows what another person is attending to; symbolic and pretend play show that one object or action can stand for another; then the child understands that belief can diverge from reality.

Conversation with caregivers and peers supplies repeated evidence that different people know, want, remember and feel different things.

8 to 12 months	Around 12 months	18 months of age	Four or five years
JOINT ATTENTION ACCURACY	JOINT ATTENTION AND POINTING	SYMBOLIC PLAY	EXPLICIT FALSE-BELIEF TASK PERFORMANCE

Berk describes joint attention as becoming more accurate across 8 to 12 months. This is a developmental description, not a referral cutoff. The *New Oxford Textbook of Psychiatry* describes joint attention and pointing as expected in most typically developing children around 12 months. Dulcan describes symbolic play as expected at 18 months of age. *Developmental Psychopathology* places its expected appearance at approximately **20 months of age**. These are source-specific descriptions, not interchangeable thresholds. *Psychotherapy for Borderline Personality* describes explicit false-belief task performance as expected at four or five years. Berk also reports performance after **three and a half years** and describes a span between **four and six years**, but those statements do not establish referral thresholds.

The source language matters clinically. An expected attainment age describes what usually occurs; it is not an upper limit and it is not a red-flag threshold. The range reported by Berk is also not permission to refer every child outside an average-looking point. Development must be interpreted longitudinally and in context, especially when task language, hearing, schooling or cultural familiarity may alter performance.

9.3 False-belief tasks: the classic demonstration

The test asks whether the child can suppress reality and answer from another mind. In the classic change-of-location task, a protagonist puts an object in one location and leaves. In the protagonist's absence, the object is moved. The child is asked where the protagonist will look on returning. The reality-based answer is the new location; the belief-based answer is the original location, because that is where the protagonist falsely believes the object remains. A correct response therefore requires the child to represent the protagonist's informational access separately from the child's own knowledge.

The unexpected-contents task uses a familiar container whose actual contents violate its appearance. After discovering the contents, the child is asked what another, uninformed person will think is inside. Related paradigms test appearance versus reality, knowledge from seeing, hidden emotion, deception, irony and social faux pas. **First-order false belief** has the form, "She thinks X." **Second-order false belief** embeds one mind within another, "He thinks that she

thinks X." No verified numeric attainment age for the second-order form is supplied here, so it should not be placed on an age axis.

Good testing includes control questions. The examiner checks whether the child remembers the object's original and current locations, follows the story, identifies who saw the transfer, and understands the question. Failure can arise from receptive-language load, working-memory demand, inattention or difficulty inhibiting the true location. Success can also be achieved through learned verbal rules rather than flexible social understanding. Spontaneous behaviour in natural interaction and performance across several tasks are therefore more informative than a single pass or fail.

TRAP **"The child knows where the object really is" is not the target answer.** False-belief tasks deliberately pit the child's true knowledge against the protagonist's outdated belief. Also avoid converting expected performance at four or five years into a diagnostic or referral cutoff.

9.4 Competing explanations of theory of mind development

No single account explains every finding.

ACCOUNT	EXPLANATION	QUALIFICATION
Theory-theory account	Proposes that children build and revise an informal causal theory of mind, much as they revise explanations in other knowledge domains. Observed action, testimony and conversational correction provide evidence; conceptual change moves the child from desire-based explanations toward representational belief.	Its strength is developmental change, but the metaphor of a child scientist can understate embodied and relational learning.
Simulation account	Proposes that the child predicts another person's action by using their own mind as a model, imaginatively placing themselves in the other's situation and adjusting for differences. It captures perspective-taking and the intimate relation between self-knowledge and understanding others.	It struggles when the other person's beliefs, motives or emotional responses are very unlike the child's own.
Modular or domain-specific accounts	Propose a specialised mechanism for representing propositional attitudes such as belief. They explain the apparently distinctive problem posed by mental representations and the characteristic social-cognitive profile seen in some neurodevelopmental conditions.	However, a strongly encapsulated module can underplay the effects of language, executive function, teaching and social experience.
Executive-function accounts	Emphasise working memory, cognitive flexibility and inhibitory control. The child must hold two representations in mind and inhibit the salient true state of affairs.	
Language and sociocultural accounts	Emphasise mental-state vocabulary, complement syntax, narrative, sibling and peer discourse, and conversation about reasons for behaviour. Complement constructions such as "She thinks that..." permit one proposition to be represented inside another, mirroring the representational structure demanded by false-belief reasoning.	Association does not establish that language alone causes theory of mind: linguistic competence, executive control and social understanding remain partly dissociable. The most defensible synthesis is interactive: representational competence, executive control, language and social experience constrain one another across development.

Applied to theory of mind, the sociocultural frame directs attention to joint activity, conversation about feelings and reasons.

Responsive mental-state conversation supports theory of mind.

9.5 Psychopathology: delayed, reduced and excessive mentalizing

Clinical interpretation. Theory of mind disturbance is clinically important but diagnostically non-specific. In autism spectrum disorder, whose fuller treatment is in the Intellectual disability and autism spectrum disorder notes, difficulties may involve spontaneous joint attention, integrating contextual cues, inferring intentions or applying explicit knowledge rapidly in everyday interaction. Some verbally able individuals pass standard false-belief tasks through language or learned strategies while continuing to find unstructured social inference effortful. A failed task is not sufficient for diagnosis, and a passed task does not exclude autism.

In schizophrenia and other psychotic states, difficulty may involve both under-attribution and distorted attribution of intention, especially under ambiguity. In personality pathology, particularly borderline presentations, the problem may be unstable or excessive inference about mental states, sometimes termed hypermentalizing, rather than a simple absence of theory of mind. Mood, arousal, trauma, attachment insecurity and interpersonal threat can transiently reduce the accuracy of mentalizing. The useful clinical contrast is therefore hypomentalizing, too little or overly concrete inference; hypermentalizing, elaborate inference unsupported by evidence; and reasonably calibrated mentalizing, which remains tentative and revisable.

Performance is also affected by intellectual functioning, language disorder, attention, executive dysfunction, hearing impairment and limited familiarity with the test format. Deficits can be trait-like, state-dependent or secondary to another cognitive limitation. Theory of mind should therefore contribute to formulation, never substitute for the full developmental and mental-state assessment.

9.6 Clinical assessment and examination synthesis

Assess development, task performance and real-world use separately. Begin with caregiver history of early reciprocity, gesture, joint attention, pretend play, language development, peer relationships, understanding of deception and humour, and any loss of language or social skills. Observe gaze coordination, sharing of interest, response to another person's distress, flexibility during misunderstanding and the person's tendency to check uncertain interpretations. In a formal task, simplify the language without changing the logic, establish that the person understood and remembered the story, and include reality, memory and information-access controls.

Interpret the result against receptive and expressive language, attention, working memory, inhibition, general cognitive level, hearing, educational exposure and cultural-linguistic context. Repeating the same task with translated words is not automatically a valid cultural adaptation. In multilingual Indian settings, establish the language in which the child normally discusses intentions and emotions, and use collateral examples from home and school. When developmental concern is broader than theory of mind, use an appropriate validated developmental screening or assessment pathway, developed in the Child psychiatry: assessment, treatment, services and protection notes, rather than inventing a false-belief referral age.

The short-answer synthesis is compact. Theory of mind is the capacity to represent one's own and others' mental states and predict behaviour from them. Joint attention and symbolic play are precursors; explicit false-belief reasoning is the classic test. Development reflects interacting domain-specific, simulation, executive, language and sociocultural processes. Clinically, failure is non-specific, success can be scaffolded, and the valid unit of assessment is the developing person in context rather than a single task score.

10 . Language acquisition theories (Chomsky, Skinner, Vygotsky)

Language acquisition asks how a child moves from hearing speech in social interaction to understanding and producing a rule-governed, productive language. **Three** classic answers emphasise different causal levels. B. F. Skinner treats verbal behaviour as behaviour shaped by its consequences and controlling context. Noam Chomsky argues that the speed, uniformity and generativity of acquisition require an innate, species-typical capacity for grammar. Lev Vygotsky places language within socially mediated development: speech first coordinates activity between people and is then internalised as a tool for thought and self-regulation. The most defensible contemporary answer is not to declare one winner. Biological preparedness, learning mechanisms and communicative participation operate at different levels and answer different parts of the problem.

How to use this page. Learn each theory through **four** questions: *what is acquired, what drives acquisition, what evidence supports it, and what does it fail to explain?* For Skinner, the unit is a functional verbal response and the driver is its learning history. For Chomsky, the central object is grammatical competence and the driver is an innate language faculty constrained by universal principles. For Vygotsky, the unit is mediated social activity and the developmental movement is from shared speech to inner regulation. In a long answer, compare mechanisms rather than writing three disconnected biographies.

> **Must memorise:** Skinner explains language through learning contingencies, Chomsky through innate grammatical preparedness, and Vygotsky through social mediation and internalisation.

10.1 The problem every theory must solve

Children acquire more than a stock of copied words. They learn a sound system, a lexicon, rules for combining words, meanings, conversational intentions and the social conditions under which an utterance is appropriate. They also produce sentences they have never heard, understand that the same form can serve different functions, and make systematic errors that reveal an active rule rather than random failure. Any adequate theory must therefore explain productivity, generativity, comprehension, social use, variation across languages and the transition from assisted participation to increasingly independent communication.

The theories differ partly because they choose different explananda. Skinner asks what environmental variables control a verbal act. Chomsky asks what internal system makes grammatical knowledge possible. Vygotsky asks how culturally organised interaction becomes a

psychological tool. A behavioural account can explain why a request occurs in one context without specifying the child's abstract grammar. A grammatical account can explain structural knowledge without explaining why the child chooses a tact, request or reassurance in a particular relationship. A sociocultural account can explain guided participation without, by itself, providing a formal grammar. Apparent contradiction often falls once the level of explanation is named.

3	1	0
CAUSAL EMPHASES	DEVELOPMENTAL PROBLEM	THEORIES SUFFICIENT ALONE

10.2 Skinner: language as learned verbal behaviour

Speech is behaviour whose form and probability are shaped by antecedents and consequences. In Skinner's operant account, the child emits vocal behaviour; caregivers and the wider verbal community selectively respond; useful forms become more likely in relevant contexts. Positive reinforcement, shaping of closer approximations, imitation, prompting, stimulus discrimination and generalisation all contribute. Reinforcement need not mean sweets or praise. Receiving the requested object, attracting attention, continuing a pleasurable exchange or obtaining information can itself strengthen a verbal response.

Skinner classified verbal behaviour by its controlling relation rather than by conventional grammar.

VERBAL OPERANT	CONTROLLING RELATION
A mand	is controlled by a motivating condition and specifies its characteristic consequence, as when a thirsty child requests water.
A tact	is evoked by an object, event or property and maintained by socially generalised consequences, as when the child names a dog.
An echoic response	has point-to-point similarity with heard speech.
An intraverbal	is occasioned by other verbal behaviour without simply reproducing it, as in answering a question or completing a familiar phrase.
Autoclitic behaviour	qualifies or organises other verbal responses, indicating relations such as certainty, negation or attribution.

The same spoken word can therefore belong to different operants depending on what controls it and what consequence follows.

The account is strongest where the learning history is visible: vocabulary taught through joint activity, requests shaped by successful communication, pronunciation altered by feedback, and context-specific use acquired through modelling and consequences. It also gave language research an insistence on observable function. Its central weakness is explanatory reach. Children generate novel utterances, acquire complex structure without explicit reinforcement of every form, and

produce rule-based overgeneralisation rather than merely imitating adult speech. Caregivers also respond to meaning, truth and conversational success, not consistently to grammatical form. Conditioning is therefore relevant, but a complete language theory cannot be a catalogue of reinforced sentences.

10.3 Chomsky: an innate capacity for generative grammar

Finite exposure yields knowledge capable of generating indefinitely many sentences. Chomsky's nativist theory begins from the mismatch between the linguistic input available to the child and the structured grammatical knowledge eventually acquired. The input is variable, incomplete and not organised as a formal lesson, yet children converge on complex rules and recognise relations that cannot be reduced to adjacent word associations. This is the classic **poverty-of-the-stimulus argument**: experience is necessary to select and develop a language, but experience alone appears insufficient to specify every constraint the learner comes to respect.

The traditional examination formulation is an innate **language acquisition device**, a theoretical language-learning capacity that allows the child to extract grammatical structure from speech. In later generative accounts, the more important idea is **universal grammar**: species-typical initial constraints or principles that delimit the kinds of grammar a human learner can acquire. The child is not born knowing English, Hindi, Kannada or any other particular language. The claim is that human biology supplies a structured readiness, while exposure determines which language-specific system develops.

Chomsky also distinguished **competence**, the speaker-hearer's internal knowledge of language, from **performance**, actual language use under limits of attention, memory, motivation and context. A hesitant or incomplete utterance does not necessarily reveal an absent rule. The theory explains productivity, rapid rule extraction and patterned errors more convincingly than simple imitation does. Its limitations are equally important: the proposed innate content is difficult to specify and test independently; formal grammar does not by itself explain vocabulary learning, communicative intention, caregiver-child interaction or cultural variation; and usage-based evidence shows that distributional learning and repeated constructions carry more information than a stark poverty account sometimes assumes.

RULE **Innate capacity is not innate vocabulary.** Chomsky proposes biological preparedness for acquiring grammatical structure. The particular language, its words and its conventional uses still require exposure and participation.

10.4 Vygotsky: language is socially mediated and then internalised

Language develops in joint activity before it becomes a means of organising the self. Vygotsky's sociocultural theory treats language as both a cultural sign system and a psychological tool. A more knowledgeable participant directs attention, labels experience, interprets the child's attempts, models a form, asks questions and structures the activity. Through such mediated participation, the child gains not only words but culturally patterned ways of remembering, planning, categorising and solving problems. Acquisition is therefore inseparable from the purposes for which people communicate.

The **zone of proximal development** (ZPD) is the region between what the learner can perform independently and what becomes possible with responsive guidance or collaboration. Language supports learning within this zone through modelling, prompts, recasts, expansion of the child's utterance, shared attention and dialogue. Scaffolding is the later term commonly used for contingent support that is adjusted and gradually withdrawn. It is compatible with Vygotsky, but was not his own term and is not synonymous with the ZPD.

Development proceeds through the following sequence.

1. Social speech, used to coordinate with another person.
2. Private speech, audible self-directed language used to guide action.
3. Condensed inner speech.

Private speech is therefore a transitional instrument of self-regulation rather than meaningless immaturity. Vygotsky's theory is developmental but **not stage-based**. It provides no sequence of Vygotskian stages and no age row for the accompanying theory-alignment plate. Its major strengths are the integration of language, culture, teaching and self-regulation. Its limitations include imprecise measurement of the ZPD, dependence on the skill of the assisting partner, and less specification of biological constraints and formal linguistic structure.

10.5 Direct comparison: what changes the child's language?

Skinner locates change in contingencies. The child repeats and differentiates verbal acts because their consequences vary across situations. The adult is a source of models, prompts and reinforcement. Error is a response not yet adequately shaped or brought under the relevant stimulus control. **Chomsky locates change in the growth of an internally constrained grammar.** Input triggers and informs a biologically prepared system. The adult provides linguistic data, but need not explicitly teach every rule. Error can reveal a productive rule that has been extended too widely. **Vygotsky locates change in participation and internalisation.** The adult or capable peer co-regulates attention and meaning within activity, then transfers responsibility as the child appropriates language for communication and thought.

Their signature predictions also differ. A Skinnerian analysis asks whether changing antecedents and consequences changes the target utterance. A Chomskyan analysis asks whether the child's output displays rule-governed structure not directly copied from the input. A Vygotskian analysis asks how performance changes under calibrated assistance and whether socially organised speech becomes independent self-guidance. These predictions can coexist in one episode. A caregiver may reinforce a request, supply grammatically structured input, and scaffold the child's participation at the same time.

TRAP **Do not write "Skinner equals nurture, Chomsky equals nature, Vygotsky equals both" and stop.** A scoring answer names the mechanism: operant contingencies, innate grammatical constraints, and socially mediated internalisation.

10.6 What later evidence adds: interaction, statistics and use

Later approaches weaken the idea that acquisition must be assigned to a single mechanism. Social-interactionist accounts emphasise joint attention, turn-taking, communicative intention and responsive caregiver speech. Usage-based accounts propose that children learn recurring constructions from meaningful use and gradually abstract patterns across exemplars. Statistical learning shows that learners can extract distributional regularities from sequences, while connectionist models demonstrate how graded patterns may emerge without an explicitly represented rule for every construction. These approaches challenge a rigid version of both imitation-only behaviourism and richly pre-specified grammar.

They do not erase the classic theories. Reinforcement and modelling demonstrably alter language behaviour; human neurobiology constrains which communication systems can be acquired and how readily; and language develops in relationships structured by culture. The useful synthesis is biopsychosocial and developmental: biologically prepared learning systems detect structure in socially meaningful input, while interaction supplies motives, feedback, shared reference and opportunities for practice. The relative contribution of each process varies across phonology, grammar, vocabulary, pragmatics and inner speech.

10.7 Clinical and Indian interpretation

A theory is not a milestone chart and cannot diagnose delay. Chomsky, Skinner and Vygotsky explain proposed mechanisms of acquisition; developmental surveillance asks whether communication skills are emerging as expected and whether a sourced referral signal is present. The accompanying language-milestone plate should be read according to the construct attached to each value: expected attainment, expected range, median, upper limit and red flag are not interchangeable. A child outside an expected description is not automatically disordered, while a sourced red flag warrants further evaluation rather than a theory-based label.

INDIA

Assessment in India must establish the child's exposure and competence across all languages used at home, school and the wider community. Code-switching, language mixing and unequal vocabulary across languages can reflect ordinary multilingual use rather than deficient grammar. Ask who speaks which language with the child, for what purpose, with what consistency, and whether the concern appears across languages. Skinner directs attention to opportunities and consequences for communication; Chomsky prevents low exposure from being mistaken for absent human language capacity; Vygotsky directs attention to family dialogue, siblings, teachers, cultural tools and the child's response to support. None justifies judging competence from performance in the examiner's preferred language alone.

Clinically, use the theories to generate questions, not conclusions. Does the child initiate communication when it produces a meaningful consequence? Can a model, prompt or expansion elicit a more advanced form? Does the child produce novel combinations rather than echoes alone? How does performance change with a familiar communication partner? Is language being used for joint attention, requests, comment, play and self-guidance? Hearing, oral-motor function,

cognition, social communication, the language environment and regression must be assessed separately. Loss of language or social skill is a red flag at any age and is never explained away as a preferred theoretical pathway.

10.8 Examination reconstruction

Long-answer sequence. Define language acquisition, state the problem of productivity, then write Skinner as operant learning with verbal operants, Chomsky as innate grammatical preparedness with universal grammar and competence-performance, and Vygotsky as social mediation with the ZPD, private speech and internalisation. Compare the role of input, adult, child and error; add one strength and one limitation of each; end with an interactionist synthesis and the statement that Vygotsky has no age-linked stages.

MNEMONIC

"Consequence - grammar - mediation"

Skinner shapes use, Chomsky constrains structure, Vygotsky transforms shared speech into self-regulation.

11 . Parenting styles (Baumrind) and family influences on development

Parenting style is the relatively stable emotional climate in which caregivers exercise authority, express warmth, communicate expectations and respond to the child. It is broader than a single parenting practice. A practice is a specific act, such as praising effort, supervising internet use or imposing a consequence; a style is the recurring relational pattern within which such acts acquire meaning. Baumrind's work made this pattern examinable by distinguishing authoritative, authoritarian and permissive parenting. Maccoby and Martin later organised the framework along two dimensions, **responsiveness** and **demandingness**, and separated an uninvolved pattern from permissiveness.

How to use this page. Learn the two dimensions before the four labels. Then connect parenting with development through modelling, reinforcement, attachment, language, emotion socialisation and family systems. In a long answer, define style, draw the two-by-two classification, distinguish each pattern, discuss associated outcomes without claiming causation, and finish with bidirectionality, culture, socioeconomic context and clinical assessment. The central correction is simple: families influence development powerfully, but neither parenting style nor family structure mechanically determines a child's outcome.

The must-memorise line: authoritative parenting combines high responsiveness with high demandingness: warmth without structure is permissive, and structure without responsiveness is authoritarian.

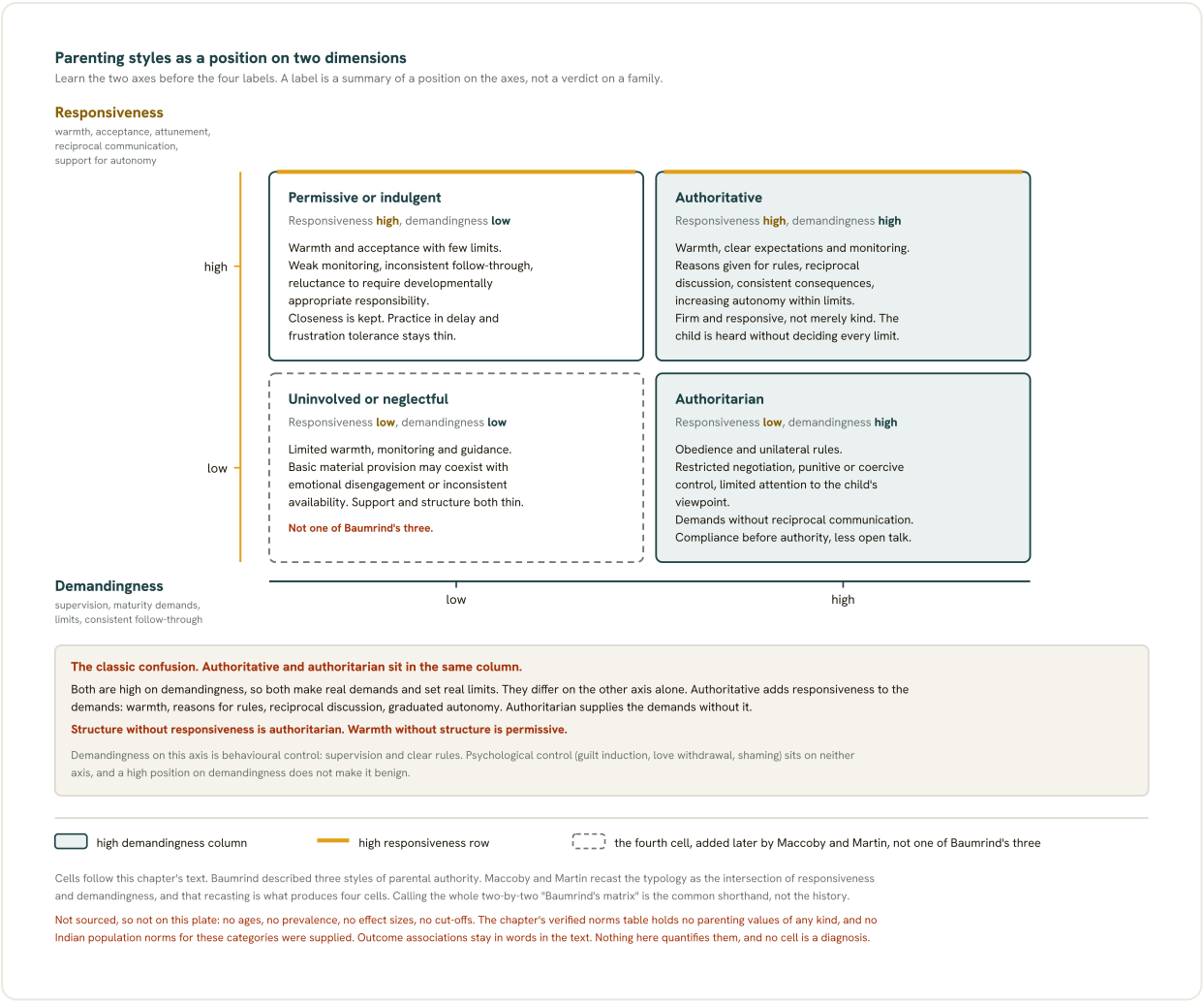


Fig 11.1 The parenting styles placed on responsiveness and demandingness. Fill marks the high-demandingness column and the saffron edge marks the high-responsiveness row, so authoritative and authoritarian are visibly the same column and a different row: they differ on responsiveness alone. The low-low cell is drawn dashed because it is Maccoby and Martin's addition, not one of Baumrind's original three styles. No ages, prevalence figures or effect sizes appear because none were sourced for this chapter.

11.1 From Baumrind's three styles to the two-dimensional model

Baumrind described patterns of parental authority; the familiar four-cell matrix is a later extension. Diana Baumrind distinguished three broad parenting styles from observations of parent-child interaction. **Authoritative parenting** combined firm standards with warmth and communication. **Authoritarian parenting** emphasised obedience and control with relatively little reciprocal discussion. **Permissive parenting** was accepting and non-punitive but placed few consistent demands on the child. Maccoby and Martin subsequently recast the typology as the intersection of responsiveness and demandingness, producing four cells and adding the low-low pattern commonly called **uninvolved** or neglectful parenting.

Responsiveness refers to warmth, acceptance, attunement, reciprocal communication and support for age-appropriate autonomy. It asks whether the caregiver notices and responds to the child's needs while recognising the child as a separate person. Demandingness refers to supervision, maturity demands, behavioural expectations, limit-setting and consistent follow-through. It asks whether the caregiver provides an organised structure and expects the child to participate in it. Neither dimension is intrinsically good at its maximum. Responsiveness without

boundaries can fail to contain behaviour, while demandingness that becomes rigid, humiliating or coercive is not healthy structure.

2	3	4
CLASSIFICATION DIMENSIONS: RESPONSIVENESS AND DEMANDINGNESS	STYLES IN BAUMRIND'S ORIGINAL TYPOLOGY	CELLS IN THE LATER MACCOBY-MARTIN FORMULATION

MNEMONIC

"High responsiveness + high demandingness = authoritative"

Authoritative parenting combines high responsiveness with high demandingness: warmth without structure is permissive, and structure without responsiveness is authoritarian.

11.2 The four parenting styles

Classify the observed pattern on both dimensions, then describe what the caregiver actually does. The labels are useful summaries, but behavioural description prevents them from becoming moral verdicts.

STYLE	RESPONSIVENESS	DEMANDINGNESS	CHARACTERISTIC FAMILY CLIMATE
Authoritative	High	High	Warmth, clear expectations, monitoring, reasons for rules, reciprocal discussion, consistent consequences and increasing autonomy within limits
Authoritarian	Low	High	Obedience, unilateral rules, restricted negotiation, punitive or coercive control, and limited attention to the child's viewpoint
Permissive or indulgent	High	Low	Warmth and acceptance with few limits, weak monitoring, inconsistent follow-through or reluctance to require developmentally appropriate responsibility
Uninvolved	Low	Low	Limited warmth, monitoring and guidance; basic material provision may coexist with emotional disengagement or inconsistent availability

RULE **Authoritative means firm and responsive, not merely kind.** It preserves parental authority while making rules predictable, proportionate and open to explanation. The child may be heard without being allowed to decide every limit.

Three distinctions carry marks:

Authoritative and authoritarian parenting
are not synonyms: both contain demands, but only the former combines them with responsiveness and reciprocal communication.

Permissive and uninvolved parenting
both have low demandingness, but permissive parenting retains warmth and engagement.

behavioural control from psychological control
Behavioural control, such as supervision and clear rules, differs from psychological control, such as guilt induction, love withdrawal, shaming or intrusion into the child's emotional world. The former can be protective; the latter constrains autonomy and can be harmful even when the household appears orderly.

11.3 Developmental correlates and the problem of causal overclaim

Parenting styles are associated with developmental outcomes, but the associations are probabilistic and context-dependent. Across much of the literature, authoritative parenting is associated with stronger self-regulation, social competence, academic engagement and psychological adjustment. Its proposed advantage is not leniency. Predictable limits reduce uncertainty, warmth preserves connection, explanations help the child internalise rules, and graduated autonomy gives repeated practice in decision-making. These processes can support both competence and relatedness.

Authoritarian parenting is commonly associated with compliant behaviour in the immediate presence of authority but less spontaneous autonomy, lower open communication and, in some settings, more internalising or externalising difficulty. Permissive parenting may preserve closeness but provide insufficient practice in delay, frustration tolerance and responsibility. Uninvolved parenting is associated with broad developmental risk because both relational support and behavioural organisation are reduced. None of these statements diagnoses an individual child or proves that a parenting style caused an outcome. Effects vary with temperament, developmental capacity, caregiver consistency, neighbourhood safety, peer context, culture and the meaning the child assigns to control.

TRAP **Do not turn an association into parent-blaming.** Child temperament and behaviour alter parenting, caregiver stress and illness constrain responsiveness, and social adversity can make consistency difficult. A style label describes a pattern in a system; it does not identify a single cause or assign guilt.

11.4 Why parenting has effects: six developmental pathways

Parenting influences development through repeated transactions, not through the label itself. Six pathways organise the answer:

DEVELOPMENTAL PATHWAY	HOW IT INFLUENCES DEVELOPMENT
Attachment and co-regulation:	sensitive, predictable responses help the child use the caregiver as a source of safety and regulation. Repeated co-regulation contributes to later self-regulation, although attachment is relationship-specific and should not be inferred from a global style label alone.
Modelling:	children observe how adults manage anger, disagreement, affection, work, substances, gender roles and help-seeking. What caregivers enact may teach more strongly than what they instruct.
Reinforcement and discipline:	attention, praise, withdrawal of attention and consequences alter the probability of behaviour. Harsh or inconsistent discipline can create a coercive cycle in which escalating child behaviour and escalating adult control reinforce one another.
Emotion socialisation:	caregivers label emotions, validate or dismiss them, model regulation and teach which expressions are acceptable. Emotion coaching can build recognition and modulation; ridicule or punishment of emotion may produce concealment without regulation.
Cognitive and language stimulation:	conversation, shared attention, play, explanation and responsive expansion of the child's communication provide material for language, executive control and social understanding.
Opportunity and monitoring:	families shape exposure to peers, education, sleep routines, media, risk, responsibility and supportive adults. Monitoring is protective when it is informed and proportionate, but becomes intrusive when it denies developmentally appropriate privacy and autonomy.

These pathways interact. A caregiver who calmly labels distress, maintains a clear limit and helps the child recover is simultaneously providing co-regulation, modelling, language, reinforcement and emotion socialisation. Conversely, chronic conflict can occupy attention, disturb sleep, reduce exploration and make even ordinary demands feel threatening. The developmental effect lies in the recurring pattern and its meaning, not in one isolated exchange.

11.5 The family as a system: bidirectionality, relationships and context

A child develops within a network of relationships whose members continually influence one another. A transactional model rejects a one-way arrow from parent to child. The child's temperament, neurodevelopmental profile, health and behaviour evoke responses from caregivers; those responses alter the child's subsequent behaviour; the new behaviour then changes the caregiver again. An irritable child may meet an exhausted caregiver, escalating both distress and control, whereas the same child may settle with predictable routines and a caregiver who has support. This is an interaction, not proof that either participant is intrinsically difficult.

Family systems theory adds that each dyad is affected by the larger system. The quality of the couple or co-parenting relationship can increase consistency or draw the child into conflict. Triangulation occurs when tension between adults is displaced through the child or the child is recruited into an alliance. Boundaries can become excessively diffuse or rigid, roles can reverse through parentification, and one member can be designated as the problem-bearer for a wider family difficulty. These concepts are hypotheses for assessment, not labels to impose after a single interview.

Family influence extends beyond parents. Siblings provide companionship, conflict, imitation, comparison and practice in negotiation; differential parenting may be as important as average parenting. Grandparents and other caregivers can supply continuity and protection, or create conflicting rules when caregiving authority is unclear. The developmental importance of family structure depends largely on relationship quality, stability, resources and conflict. A single-parent, joint, blended, adoptive or same-sex-parent family is not inherently pathogenic. Structure tells the clinician who is present; process tells the clinician what happens between them.

11.6 Language acquisition: what the family supplies and what it cannot explain alone

The family creates the language-learning environment, but no single language acquisition theory is sufficient. Skinner emphasised learning through imitation, shaping and reinforcement. Caregivers do reinforce communicative success, model words and expand incomplete utterances, but children generate novel sentences and acquire grammar too rapidly for direct reinforcement to be the whole account. Chomsky emphasised an innate biological preparedness for language and the child's capacity to infer an underlying grammar from limited input. This explains productive rule learning but does not make social interaction dispensable.

Vygotsky treated higher mental functions as socially mediated and later internalised. In the zone of proximal development, a child performs with guidance beyond what can yet be done independently; scaffolding is the temporary support that is adjusted and withdrawn as competence grows. Dialogue with caregivers becomes increasingly internalised, including through private speech, and supports planning and self-regulation. Vygotsky proposed a cross-cutting developmental mechanism, not a sequence of age-defined stages, so he should not be forced onto a numeric stage axis.

The useful synthesis is interactionist. Biological preparedness makes language possible; exposure supplies a linguistic system; attention and memory extract regularities; reinforcement shapes communicative effectiveness; and responsive interaction gives words shared reference and social purpose. Family practices matter through turn-taking, joint attention, contingent response, elaboration, mental-state talk and opportunities to speak. Parenting style changes the climate of these exchanges. Authoritative dialogue invites explanation within structure, authoritarian exchanges may privilege commands and obedience, permissive interaction may be rich but inconsistently organised, and uninvolved parenting may provide less contingent communication. These are tendencies, not fixed predictions about any family or language community.

11.7 Theory of mind, false belief and family conversation

Social understanding develops through representing minds as well as observing behaviour. Theory of mind is the capacity to attribute beliefs, desires, intentions and emotions to oneself and others, and to understand that another person's mental state may differ from one's own and from reality. A standard false-belief task tests whether the child predicts behaviour from an actor's mistaken belief rather than from the child's own knowledge. The cited developmental source describes success on such a task as expected at **four or five years**. This is an expected attainment statement, not a diagnostic or referral threshold.

Family interaction can support theory of mind through conversation about feelings, motives, mistakes, deception and different viewpoints; shared reading and sibling disputes also provide occasions to explain why people act as they do. Language is both a medium for discussing mental states and a cognitive resource for holding competing representations in mind. Performance also depends on comprehension, attention, memory, inhibition, task wording, familiarity and culture. Failure on one false-belief task therefore does not establish a global absence of theory of mind, identify a parenting style or diagnose a disorder.

11.8 Broader family influences on development

Parenting occurs inside social conditions that can protect or constrain the family. Development is influenced by caregiver mental and physical health, substance use, marital and intergenerational conflict, domestic violence, bereavement, migration, discrimination, poverty, housing, nutrition, educational access, neighbourhood safety and social support. These factors may act directly on the child and indirectly by altering caregiver availability, predictability and emotional reserve. Treating a resource-constrained family as simply inconsistent confuses a social determinant with a character judgement.

Risk is cumulative but not destiny. Stable relationships, a caregiver who can repair after conflict, supportive kin, school connection, safe routines and access to treatment can buffer adversity. Family conflict is particularly harmful when it is intense, chronic, unresolved or draws the child into adult disputes. In contrast, observing disagreement followed by negotiation and repair can teach that relationships survive conflict. The clinically relevant variables are exposure, meaning, persistence, protection and recovery.

Family transmission is also not purely environmental. Parents and children share genetic liabilities, and genetically influenced child characteristics can shape both the environments selected by the family and the responses evoked from others. This does not reduce development to heredity. It explains why an observed association between parenting and child outcome may contain inherited, evocative and environmental pathways at the same time. Developmental formulation should keep all three visible.

11.9 Culture and the Indian family context

The two dimensions travel better across cultures than stereotypes about the four labels. Responsiveness and demandingness can be described behaviourally in any family, but the meaning of obedience, autonomy, proximity, privacy and interdependence varies. Firm control

may be interpreted differently when it is embedded in warmth, shared obligation and credible concern for safety. This cultural moderation does not make humiliation, violence, terror or coercive psychological control benign. Culture explains meaning; it does not excuse harm.

INDIA

Assessment should identify the actual caregiving unit rather than assuming a nuclear household. Grandparents, older siblings and other relatives may share authority, care and financial responsibility. Educational pressure, respect for elders, family interdependence and collective decision-making may be valued, while autonomy may be expressed through negotiated responsibility rather than early separation. Ask who sets rules, who comforts, who supervises, whether caregivers agree, and how the child understands these practices. Do not label joint-family involvement, close parent-child proximity or deference to elders as pathology without evidence of distress, coercion or impairment. Equally, do not hide abuse or severe restriction behind the phrase "Indian culture." No verified Indian population norms for Baumrind-style prevalence or comparative effect sizes are supplied here, so Western associations must not be relabelled as Indian norms.

11.10 Clinical assessment, formulation and intervention

Translate labels into observable sequences and modifiable processes. Ask each caregiver and the child, when developmentally appropriate, for concrete recent examples of praise, rules, refusal, anger, affection, supervision, privacy, conflict and repair. Establish what happened before the interaction, what each person did, what followed immediately and what happened the next time. Observe tone, turn-taking, intrusiveness, warmth, limit-setting and the child's bids for help or autonomy. Obtain information across home, school and other caregiving settings because a family may be structured in one domain and overwhelmed in another.

A useful formulation has **five** layers:

1. The child's temperament and developmental capacities.
2. The caregiver's style, health and history.
3. Specific parenting practices.
4. Relationships and alliances across the family.
5. The wider cultural, socioeconomic and safety context.

Then identify the feedback loop maintaining the difficulty and the protective processes already present. Screen directly for violence, maltreatment, caregiver mental illness, substance problems and risk to the child rather than allowing a benign style label to obscure safeguarding concerns.

Intervention targets the process that can change. Core elements include predictable routines, developmentally appropriate expectations, clear brief instructions, positive attention for desired behaviour, consistent non-violent consequences, emotion coaching, collaborative problem-solving, graduated autonomy and repair after conflict. Parent-management approaches are especially useful for coercive cycles and inconsistent reinforcement; family work is useful when conflict, alliances or contradictory caregiving maintain the problem; treatment of caregiver

illness and practical social support may be prerequisites for change. The aim is not to manufacture an idealised parent. It is to increase safety, responsiveness, effective structure and the family's capacity to adapt as the child develops.

Final synthesis. Baumrind's framework is a map of the caregiving climate, not a verdict on a family. The strongest answer begins with responsiveness and demandingness, distinguishes the original three styles from the later fourth, explains developmental pathways, and then qualifies every outcome claim with bidirectionality, temperament, culture and social context. Family relationships provide the setting in which language, emotion regulation, theory of mind and autonomy are practised. Their influence is profound precisely because it is repeated, relational and modifiable, not because it is deterministic.

The domains and the milestones

12 . Domains of child development (motor, language, cognitive, social, emotional)

Child development is an ordered but variable acquisition of function across five interacting domains: **gross motor**, **fine motor**, **language and speech**, **cognitive development**, and **social and emotional development**. The domains are separated for examination and screening, not because they develop independently. A child who cannot explore because of a motor impairment receives a different stream of cognitive and social experience; a child with impaired hearing may appear delayed in language, play and social reciprocity; a child exposed to chronic adversity may show effects across attention, learning, affect regulation and relationships. The clinically useful question is therefore not merely, "Has the child acquired the milestone?" It is, "What is the pattern across domains, what is the trajectory, and is there loss, asymmetry or a qualitative abnormality?"

How to use this page. First learn the architecture: the five domains, the principles of developmental progression, and the distinction between a typical age, a normal window and a referral threshold. Then use the milestone, stage-alignment and primitive-reflex plates as reference tools rather than as lists of isolated dates. Finally, learn how normal variation becomes a clinical signal: developmental surveillance detects a trajectory, screening estimates risk, assessment characterises the profile, and diagnosis explains it. The central exam skill is to move from a remembered milestone to a domain-specific interpretation without turning a screening cut into a diagnosis.

Development is a trajectory across domains: loss at any age, marked asymmetry, or a milestone outside a construct-explicit window demands explanation, not a reflex label.

MNEMONIC

"G F L C S: five interacting domains"

Gross motor, **F**ine motor, **L**anguage and speech, **C**ognitive development, and **S**ocial and emotional development are the five interacting domains.

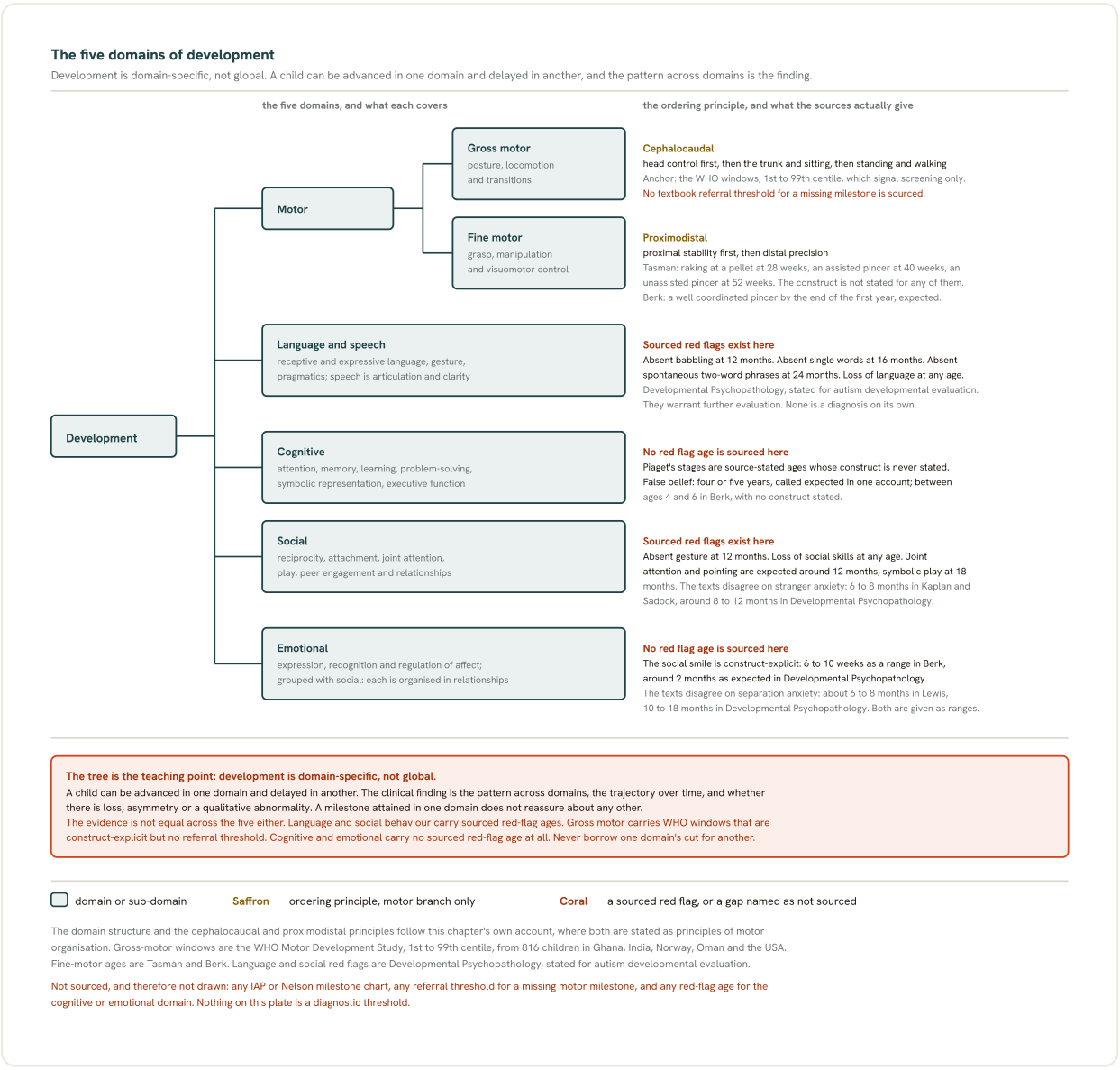


Fig 12.1 The five domains as a classification tree, with the two ordering principles that govern the motor branch only. Gross-motor windows are the WHO Motor Development Study, 1st to 99th centile; fine-motor ages are Tasman and Berk; language and social red flags are Developmental Psychopathology, stated for autism developmental evaluation. Cognitive and emotional development carry no sourced red-flag age, and that absence is drawn rather than filled in.

12.1 Organising development: domains, direction and developmental constructs

Development is orderly, cumulative and uneven. The sequence is usually more stable than the precise timing. Motor control proceeds broadly cephalocaudal, from head control towards control of the trunk and lower limbs, and proximodistal, from central and proximal stability towards distal precision. General movements become differentiated skills; reflex-dominated behaviour gives way to voluntary control; receptive capacities commonly precede expressive performance; and regulation is first shared with a caregiver before it becomes increasingly internal. Earlier

skills constrain later ones, but a child need not advance at the same rate in every domain. A jagged profile may be more informative than a uniformly low profile.

The five-domain formulation prevents two common errors. First, *motor* must be divided into gross motor posture and locomotion, and fine motor grasp, manipulation and visuomotor integration. Second, *language* is not synonymous with speech: language includes receptive and expressive symbolic communication, pragmatics and gesture, whereas speech concerns the motor production and intelligibility of sounds. Cognition includes attention, memory, learning, problem-solving, symbolic representation and executive functions. The social domain concerns reciprocity, attachment, joint attention, play and relationships; the emotional domain concerns expression, recognition and regulation of affect. These last two are often combined as social and emotional development because each is organised within relationships.

RULE **Always attach an age to its construct.** "Half of children by" states a median; "usually by" states an expected attainment; "normally between" states an expected range; "still normal up to" states an upper limit; and "refer if absent by" states a red flag. One cannot be substituted for another.

A milestone is a conveniently observable marker, not the whole developmental process. Milestones by age are useful only when the source and normative meaning are retained. Many textbook milestone ages are presented without saying whether they are averages, typical attainments or outer limits. Such values can be repeated as the source states them, but they cannot honestly be converted into "when to refer" thresholds. The reference plates therefore distinguish construct-explicit ranges from source-stated ages whose statistical role is unclear.

12.2 Motor development: posture, locomotion, grasp and visuomotor control

Gross motor development builds an antigravity platform; fine motor development uses that platform for exploration. Gross motor examination follows head control, rolling, sitting, transitional movements, standing, gait, running, jumping and stairs. Fine motor examination follows visual regard and reach, grasp pattern, transfer, release, pincer control, block construction, scribbling and copying. Quality matters as much as attainment: persistent fisting, early fixed hand preference, asymmetry, abnormal tone, unusual movement strategies or loss of a skill cannot be reassured away by the presence of another milestone.

The most defensible infancy anchor is the WHO Motor Development Study, which followed children in Ghana, India, Norway, Oman and the USA. Its windows run from the 1st to the 99th centile and are explicitly screening signals, not diagnostic thresholds. The gross-motor milestone plate gives all six windows, from sitting without support through walking alone, with the centile construct visible beside each value. Their breadth is a corrective to the false precision of a single milestone date. They signal the need for screening when a child appears late; they do not by themselves diagnose developmental delay.

4.3%	90%	5 sites
OF CHILDREN IN THE WHO STUDY DID NOT EXHIBIT HANDS-AND-KNEES CRAWLING AT ALL	APPROXIMATELY ACHIEVED FIVE GROSS MOTOR MILESTONES IN A COMMON SEQUENCE	INCLUDED INDIA, MAKING THE WHO WINDOWS DIRECTLY RELEVANT TO INDIAN TEACHING

Crawling is the classic trap. It is common but not universal, so absence of crawling alone is not a developmental red flag. Look instead at the child's overall locomotor strategy, tone, symmetry, transitions and progression towards supported and independent mobility. The full gross-motor milestone plate should be read as a set of windows, not a railway timetable.

Fine motor progression illustrates proximodistal organisation. An early palmar or raking approach becomes increasingly radial and then finger-thumb controlled; voluntary release and construction follow. The fine-motor milestone plate preserves Berk's expected ranges alongside the source-stated ages from Indian and international clinical references whose normative construct is unclear. It carries the longer sequence from grasp and transfer through block construction, scribbling and copying forms. At examination, link a failure to vision, tone, coordination, opportunity and comprehension before calling it an isolated fine-motor delay.

12.3 Language and speech: receptive, expressive, pragmatic and phonological development

Communication begins before words and comprehension generally outruns production. The sequence runs through social attention, reciprocal vocalisation, cooing, babbling, gesture, understanding of familiar words and commands, meaningful single words, word combinations, increasingly grammatical sentences, narrative and conversational competence. **Receptive language** is what the child understands; **expressive language** is what the child communicates through gesture, words and sentences; **pragmatics** is the social use of communication; and speech is the articulation, fluency, voice and motor realisation of language. A child may therefore have normal language with a speech-sound problem, or intact speech production with impaired social communication.

Source-stated expectations provide useful anchors without pretending to be universal deadlines. The language milestone plate separates cooing and babbling, receptive language, gesture, meaningful words, word combinations, vocabulary growth, grammar and intelligibility, and labels whether a value is expected, a range, a median or merely source-stated. One especially examinable construct error concerns Tasman's median expressive vocabulary of **50 words at 18 months** in US toddlers: this means half had reached that number, not that every child below it has delay. Expected intelligibility values in Kaplan and Sadock and DSM-5-TR are likewise not automatic referral thresholds.

The Indian Psychiatric Society clinical reference places babbling at 4 to 5 months, picking up familiar objects on request at 1 year, and two- to three-word sentences at **2 years**, but does not state the normative construct for these ages. Berk, in contrast, gives **18 to 24 months** as an expected range for combining two words. These statements should remain side by side rather than being collapsed into one falsely exact Indian or Western cut-off.

Language assessment begins with hearing and the communication environment, then separates comprehension, expression, gesture, reciprocity, speech clarity and oral-motor function. Ask about the languages used with the child and judge competence across the entire linguistic repertoire. Multilingual exposure does not justify loss of language, absent gesture or poor

reciprocity. Conversely, a smaller vocabulary in each individual language can mislead if the child's total conceptual vocabulary and communicative effectiveness are ignored.

12.4 Cognitive development, language acquisition and theory of mind

Cognition develops through action, representation, language and increasingly organised reasoning. Piaget's account remains the standard examination scaffold.

1. The sensorimotor stage emphasises knowledge through perception and action and the emergence of object permanence.
2. The preoperational stage brings symbolic representation but reasoning remains intuitive and vulnerable to centration and egocentrism.
3. Concrete operations bring conservation, reversibility and logical operations on tangible material.
4. Formal operations permit systematic abstraction and hypothetical reasoning.

The stage-alignment plate gives the source-stated age ranges. The clinical use is not to "diagnose a Piaget stage" but to pitch questions, explanations and testing tasks at the child's representational capacity.

Vygotsky offers a complementary, non-stage account. Cognitive development is socially and culturally mediated; skills first occur between people and are then internalised. The zone of proximal development is the distance between what a learner can do independently and what becomes possible with competent assistance. Scaffolding supplies temporary structure and is withdrawn as mastery grows; private speech helps organise behaviour and becomes internal speech. In assessment, compare unsupported performance with the child's response to graded prompts. The amount and kind of help that unlocks performance may reveal learning potential that a static score misses.

Three broad families explain language acquisition. Skinner's learning account emphasises imitation, shaping and reinforcement of communicative behaviour. Chomsky's nativist account argues that the speed and generativity of grammar require an evolved language capacity rather than reinforcement alone. Social-interactionist accounts, including Vygotsky's, emphasise joint activity, caregiver responsiveness, shared attention and language used within the zone of proximal development. Contemporary clinical reasoning is integrative: biological preparedness, auditory and cognitive capacities, social motivation, exposure and contingent interaction all matter. The practical use is causal restraint. Delayed language is not automatically poor parenting, and a rich language environment does not exclude hearing impairment, neurodevelopmental disorder or oral-motor difficulty.

Theory of mind is the capacity to represent mental states as mental states and to understand that another person may hold a belief different from reality and from one's own. Passing a false-belief task is expected at about **4 or 5 years** in the cited account. Failure on one task is not synonymous with autism: performance also depends on language comprehension, working memory, attention and the exact task demands. Clinically, theory of mind is examined through

pretend play, perspective-taking, deception, humour, social inference and the child's explanation of other people's actions, not through one laboratory item alone.

12.5 Social and emotional development: attachment, play, temperament and parenting

Social-emotional development is regulation within relationships. Early reciprocal attention and the social smile are followed by selective attachment behaviour, wariness of unfamiliar people, separation protest, joint attention, imitation, symbolic play, peer engagement and increasingly reflective emotion regulation. The social-emotional milestone plate sets out the source-stated windows and expected attainments for these behaviours. Observe whether they are spontaneous, shared for enjoyment and integrated with eye gaze, affect and gesture, rather than merely present on command.

The literature gives different expected windows for the normal anxieties of attachment. The plate therefore keeps Lewis, Kaplan and Sadock, and Developmental Psychopathology side by side instead of collapsing them into one cut-off. The examinable principle is qualitative: separation and stranger anxiety reflect discrimination of familiar caregivers and attachment, and become concerning when intensity, persistence or developmental context causes marked impairment.

Thomas and Chess describe **temperament** through nine dimensions: activity level, rhythmicity, approach or withdrawal, adaptability, threshold of responsiveness, intensity of reaction, quality of mood, distractibility, and attention span or persistence. Their three types are easy, difficult, and slow-to-warm-up. These are descriptive constellations, not diagnoses, and many children do not fit a pure type. **Goodness of fit** is the match between the child's temperamental characteristics and the demands, expectations and supports of the environment. A highly active child may function well where movement is permitted and poorly where prolonged stillness is demanded. Clinical intervention can therefore alter the fit without pathologising the child.

Baumrind parenting styles organise caregiving by responsiveness and demandingness.

PARENTING STYLE	PATTERN
Authoritative parenting	Combines warmth with clear, developmentally appropriate limits.
Authoritarian parenting	Is controlling with lower responsiveness.
Permissive parenting	Is responsive with few consistent demands.
The later uninvolved category	Describes low responsiveness and low demandingness.

These patterns are associations, not deterministic labels, and must be interpreted in cultural, socioeconomic and safety context. The clinical use is to translate a style label into modifiable behaviour: predictability, contingent warmth, supervision, repair after conflict and limits that match the child's developmental capacity.

12.6 Stage theories on one axis: psychosocial, psychosexual, moral and relational development

Stage theories ask different questions and should be aligned, not blended. The alignment plate places the source-stated numeric stages on a shared axis while leaving genuinely non-

numeric theories non-numeric.

12.7 Primitive reflexes: emergence, integration and neurological meaning

Primitive reflexes are expected early patterns whose interpretation depends on the specific reflex, the method and the neurological context. The primitive-reflex plate shows appearance, how each reflex is elicited, and the source-stated disappearance. At the bedside assess symmetry, vigour, habituation where relevant, and persistence alongside tone, posture and voluntary movement. Absence when expected, marked asymmetry, or persistence that interferes with voluntary control may indicate central or peripheral dysfunction, but gestational age, illness and state of arousal matter.

The sources do not always give one disappearance age. Berk, Hutchison and Tasman differ for Moro and palmar grasp, while Babinski has separate expected, upper-limit and red-flag statements. The primitive-reflex plate displays these source-specific claims without forcing them into one value. Hutchison also gives a general warning about persistence of primitive reflexes, yet its reflex-specific entries show why the honest answer must name the reflex and construct rather than manufacture a universal cut-off.

TRAP **A disappearance age is not automatically a referral age.** Textbooks may report different expected ages for the same reflex. State the source, preserve whether it is expected, an upper limit or a red flag, and interpret the reflex within the neurological examination.

Reflexes should not be recited in isolation from developmental organisation. Their integration permits increasingly selective voluntary movement, but development is not a simple switch from "reflex present" to "reflex absent". The reflex table is a reference for examination; the clinical task is to decide whether the entire motor pattern is coherent.

12.8 Developmental surveillance, red flags and Indian assessment pathways

A concise clinical synthesis. Name the affected and preserved domains; describe onset, sequence, rate, plateau or regression; compare performance with construct-appropriate norms; examine hearing, vision, growth, neurology and dysmorphism; document the relational and learning environment; and choose screening or assessment deliberately. The diagnostic question comes last. Developmental competence is not the accumulation of dates but the organisation of increasingly adaptive function across motor, language, cognitive, social and emotional systems.

13 . Gross motor and fine motor milestones by age

Developmental milestones are landmarks in an unfolding process, not deadlines stamped onto a child. The exam task is therefore twofold: know the age-linked sequence well enough to recognise a delay, and know what kind of age each source is giving you. An **expected range** describes variation in attainment; an **expected age** describes what a typical child usually does; an **upper limit** marks the outer boundary of normal; and a **red-flag threshold** triggers further assessment. Most textbook ages do not identify which of these constructs they represent. Those ages may be repeated in the source's own terms, but they must never be promoted into referral rules.

How to use this page. Begin with the two orienting maps: the **developmental-theory alignment** and the **domains-and-milestones framework**. Then use the accompanying milestone plates to learn sequence and age together. Read gross motor against the construct-explicit WHO windows, read fine motor as source-labelled examination anchors, and finish by asking whether the child is following the expected sequence, whether skills have been lost, and whether screening rather than diagnosis is the next step.

The must-memorise line: an age is not a referral threshold until the source identifies it as an upper limit or a red flag.

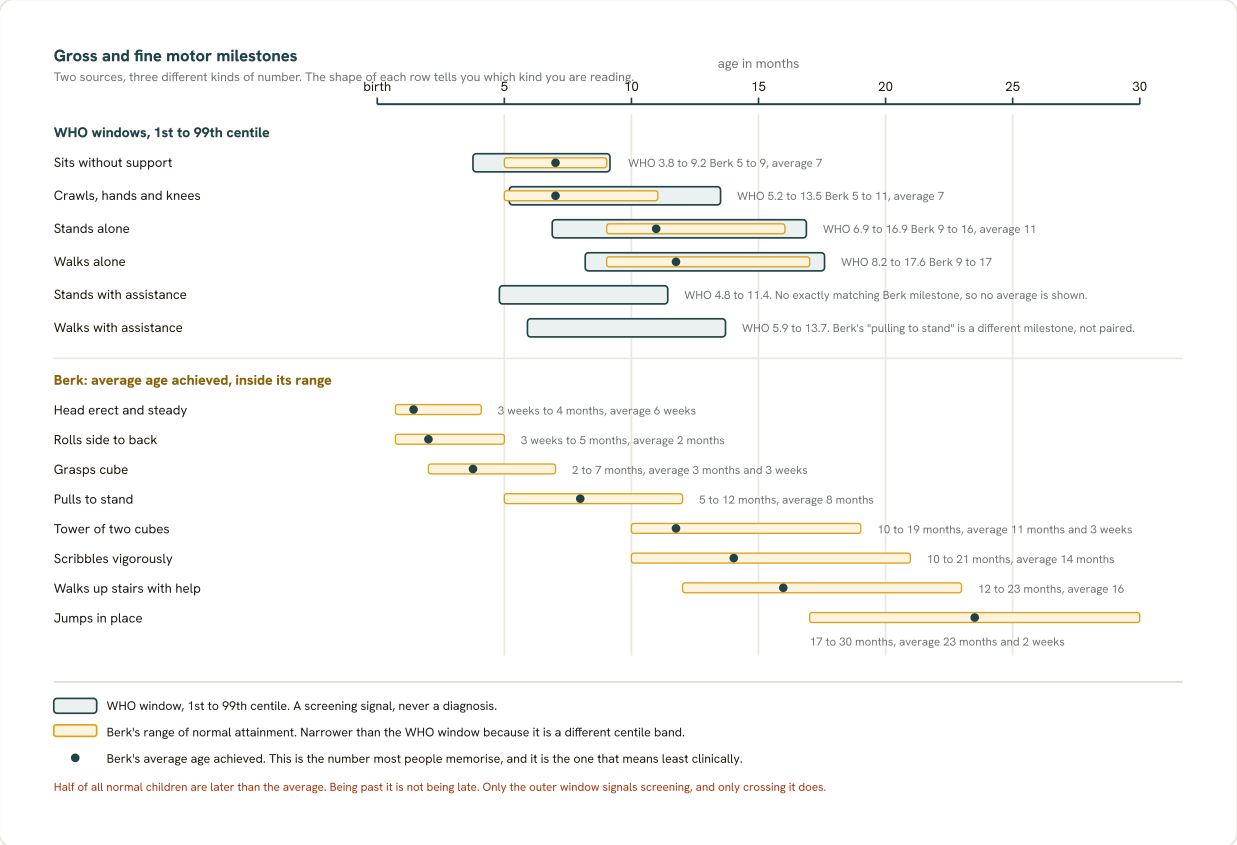


Fig 13.1 Motor milestones from two sources, drawn so the kind of number is visible. Outer bars are the WHO Motor Development Study windows between the 1st and 99th centiles, from 816 children in Ghana, India, Norway, Oman and the USA. Inner bars and dots are Berk's ranges and average ages. Where no Berk milestone matches a WHO one exactly, no average is shown rather than pairing an approximate equivalent.

13.1 The twin orienting maps: theories by age and domains and milestones

One map explains the child; the other describes the child's observable development. The developmental-theory alignment places the stage theories beside one another so that the resident can compare what each theory foregrounds at the same period: cognition in Piaget, psychosocial conflict in Erikson, drive organisation in Freud, separation-individuation in Mahler and moral reasoning in Kohlberg. Vygotsky belongs beside, not inside, this age axis because his sociocultural account is not a stage sequence. The second map is the domains-and-milestones framework: gross motor, fine motor, language and speech, social and emotional development, and cognitive or adaptive functioning. Together they prevent a common error, which is to confuse a theory about development with a milestone used to observe it.

The maps also operate at different levels. A **stage theory** supplies a broad organising idea, while a **milestone** is a directly elicited or observed behaviour. Neither is a diagnosis. A child may attain motor skills within a wide normal window while showing difficulty in another domain, and apparent delay may reflect opportunity, illness, sensory impairment or cultural variation rather than a unitary disorder. The developmental framework is therefore always domain-specific before it becomes global.

RULE **Separate sequence, age and construct.** First ask whether the skill appears in the expected developmental order; then identify the source's age; finally decide whether that age is an expected range, an upper limit, a red flag or an age whose normative role is unclear.

MNEMONIC

"SAC: Sequence, Age, Construct"

First ask whether the skill appears in the expected developmental order (Sequence), then identify the source's age (Age), and finally decide whether that age is an expected range, an upper limit, a red flag or an age whose normative role is unclear (Construct).

13.2 Band A: the stage-theory alignment

The theories by age plate is an alignment device, not a claim that the theories are interchangeable. Read its source-specific age bands horizontally, but keep each theory's question distinct. Piaget's sequence of sensorimotor, preoperational, concrete operational and formal operational stages helps the clinician pitch explanations and tasks to the child's mode of reasoning. Erikson's psychosocial stages, from trust through autonomy, initiative, industry and identity, organise the age-salient relational conflict. Freud's psychosexual stages, oral, anal, phallic, latency and genital, remain historically important for formulation and examination theory. The age bands on the plate are source descriptions whose normative construct is unclear; none defines a clinical threshold.

Mahler's separation-individuation model follows differentiation, practising, rapprochement and object constancy, and is clinically useful when thinking about autonomy in relation to a caregiver. Kohlberg's moral development must not be assigned invented numerical ages: Kaplan and Sadock uses descriptive bands such as before adolescence, during adolescence and late adolescence or early adulthood. Vygotsky proposed no age stages. His zone of proximal development, scaffolding, private speech and socially mediated learning are cross-cutting mechanisms that guide how much support permits the child's next level of performance. The plate therefore shows Kohlberg as descriptive bands and Vygotsky beside the age axis, never as fabricated numeric rows.

13.3 Band B: the five domains and the organisation of motor development

The domains of child development are related but not reducible to one another. **Gross motor** development concerns posture, balance and large antigravity movements; **fine motor** development concerns reach, grasp, release, manipulation and visuomotor construction. The remaining domains are language and speech, social and emotional development, and cognitive or

adaptive functioning. Examination should therefore be domain-specific: delayed independent walking is not equivalent to delayed pincer grasp, and either may occur with preserved language and social reciprocity.

Motor control generally becomes organised in a **cephalocaudal** direction, with control of the head and upper trunk preceding control needed for standing and walking, and in a **proximodistal** direction, with shoulder and arm control preceding refined finger use. These are organising gradients, not clocks. The milestones by age plates convert the gradients into observable behaviours, while the clinician tests quality as well as attainment: symmetry, tone, postural control, movement strategy, persistence of primitive patterns and spontaneous use of both hands.

13.4 Gross motor milestones by age: use WHO windows as screening signals

The WHO Motor Development Study gives the most defensible construct-explicit gross motor framework. It followed 816 children from Ghana, India, Norway, Oman and the USA and derived windows bounded by the 1st and 99th centiles. These are *windows of achievement*, intended to support descriptive population comparisons and to signal the need for screening when a child appears late. They are not diagnostic boundaries. The gross motor plate therefore owns the complete sequence, while the prose here teaches how to interpret it:

1. sitting without support;
2. standing with assistance;
3. hands-and-knees crawling;
4. walking with assistance;
5. standing alone;
6. walking alone.

3.8 to 9.2 months	8.2 to 17.6 months	4.3 percent
WHO 1ST-TO-99TH-CENTILE WINDOW FOR SITTING WITHOUT SUPPORT	WHO 1ST-TO-99TH-CENTILE WINDOW FOR WALKING ALONE	CHILDREN DID NOT SHOW HANDS-AND-KNEES CRAWLING AT ALL

The span between the two anchors matters. Standing alone has the widest WHO window, from 6.9 to 16.9 months, while sitting without support has the narrowest. About **90 percent** of children achieved five of the milestones in a common sequence, but crawling was not universal. India was one of the WHO study sites, so the WHO norms are not simply Western norms imported into Indian practice, although they are still multinational rather than an Indian-only reference.

Source-specific differences must remain visible. For Western norms, Berk reports a U.S. expected range of 5 to 9 months for sitting alone and 9 to 17 months for walking alone. WHO gives **3.8 to 9.2 months** and **8.2 to 17.6 months** respectively. Kaplan and Sadock gives 9 to 15 months as an expected range for independent walking. These figures answer different source questions and should not be averaged into a new norm.

TRAP **Failure to crawl is not, by itself, a red flag.** WHO found that 4.3 percent of children never exhibited hands-and-knees crawling. The examination error is to convert a non-universal milestone into a compulsory gateway to walking.

13.5 Fine motor milestones by age: grasp, transfer, pincer and construction

Fine motor development is a progression from whole-hand contact to precise opposition and planned construction. The fine motor plate should be learned as a sequence:

SEQUENCE	FINE MOTOR MILESTONE
1	early grasp;
2	purposeful transfer between hands;
3	radial hand use;
4	pincer opposition;
5	spontaneous scribbling;
6	block construction;
7	copying forms.

The child's posture and vision matter throughout; a poor reach may arise from proximal instability, and an apparent manipulation problem may reflect visual or asymmetric motor difficulty.

The source labels must be preserved. The IPS child and adolescent psychiatry guideline lists bidextrous grasp at 3 months, monodextrous grasp and object transfer at 6 months, and pincer grasp at 9 months, but does not state whether these are expected ages, averages or limits. Kaplan and Sadock says the pincer grasp is first seen at about 9 months, again without converting the statement into a threshold. Berk makes the stronger construct-explicit claim that a well-coordinated pincer grasp is expected by the end of the first year. For a U.S. reference range, Berk places vigorous scribbling between 10 and 21 months and building a tower of two cubes between 10 and 19 months.

Tasman supplies the familiar examination sequence for block towers and copied forms, but those entries have an unclear normative construct. They belong on the milestone plate as source-listed anchors, not in a referral algorithm. The same caution applies when different books disagree: Tasman lists copying a cross and a square at 48 months, while the IPS guideline lists copying a cross at 3 years. Record both source claims; do not collapse them, choose a hidden average or describe either as an upper limit.

13.6 Primitive reflexes: appearance, disappearance and the meaning of persistence

Primitive reflexes are normal early motor phenomena whose later persistence may indicate impaired cortical maturation or neurological dysfunction. The accompanying reflex table owns the verified appearance and disappearance ages and should be used during revision to pair each reflex with how it is elicited. In prose, the high-yield principle is that a reflex age remains

source-specific: Moro disappearance is expected at 12 weeks in Tasman but at 6 months in Berk and Hutchison, while asymmetric tonic neck reflex disappearance is expected at 4 months in Berk. The disagreement must be shown rather than silently harmonised.

Hutchison treats persistence of primitive reflexes beyond the fourth month of life as a general red flag, but its individual-reflex statements must still be respected. The extensor plantar response may remain within the upper limit up to 18 months, whereas Babinski persistence beyond 2 years is a red flag. Thus, primitive reflexes are interpreted by reflex, context and source, not by applying one disappearance age indiscriminately to all.

13.7 Step 5: developmental history, screening and Indian clinical use

A milestone concern becomes clinically meaningful only after a developmental history and direct observation. The developmental history establishes pregnancy and birth context, illness, opportunity for movement, the sequence and quality of attainment across all five domains, asymmetry or early hand preference, functional impact, family observations and any loss of previously acquired skills. Loss of language or social skills at any age requires assessment. Developmental screening then identifies children who need fuller evaluation; it does not itself provide an aetiological diagnosis.

WHO norms contribute a multinational motor reference that included an Indian site.

14 . Language and speech developmental milestones

Language development is not a list of words tied to birthdays. It is the progressive organisation of attention, comprehension, symbolic representation, vocabulary, grammar, speech-sound production and social communication. The examination task is to recognise the sequence, separate receptive language from expressive language and speech, preserve the normative meaning of every age, and identify the few absences that are genuine developmental red flags. An expected age describes what a typical child usually does; a median means that half of the reference group has attained the skill; an upper limit marks the outer boundary of normal; and a red-flag threshold warrants further assessment. A textbook age whose construct is unclear must never be converted into a referral rule.

How to use this page. Start with the twin orienting maps, the **developmental-theory alignment** and the **domains-and-milestones framework**. Then follow communication from prelinguistic vocalisation to words, combinations, grammar and intelligibility. Read the accompanying milestones by age plate for the full source-labelled sequence, not as a set of deadlines. Finish with worked cases and retrieval prompts. Throughout, ask four questions:

- what domain is being tested;
- whether the skill is understood or produced;
- what construct the stated age carries; and
- whether the finding requires observation, screening or referral.

The must-memorise line: refer for absent babbling or gestures at **12 months**, absent single words at **16 months**, absent spontaneous two-word phrases at **24 months**, or loss of language or social skills at any age.

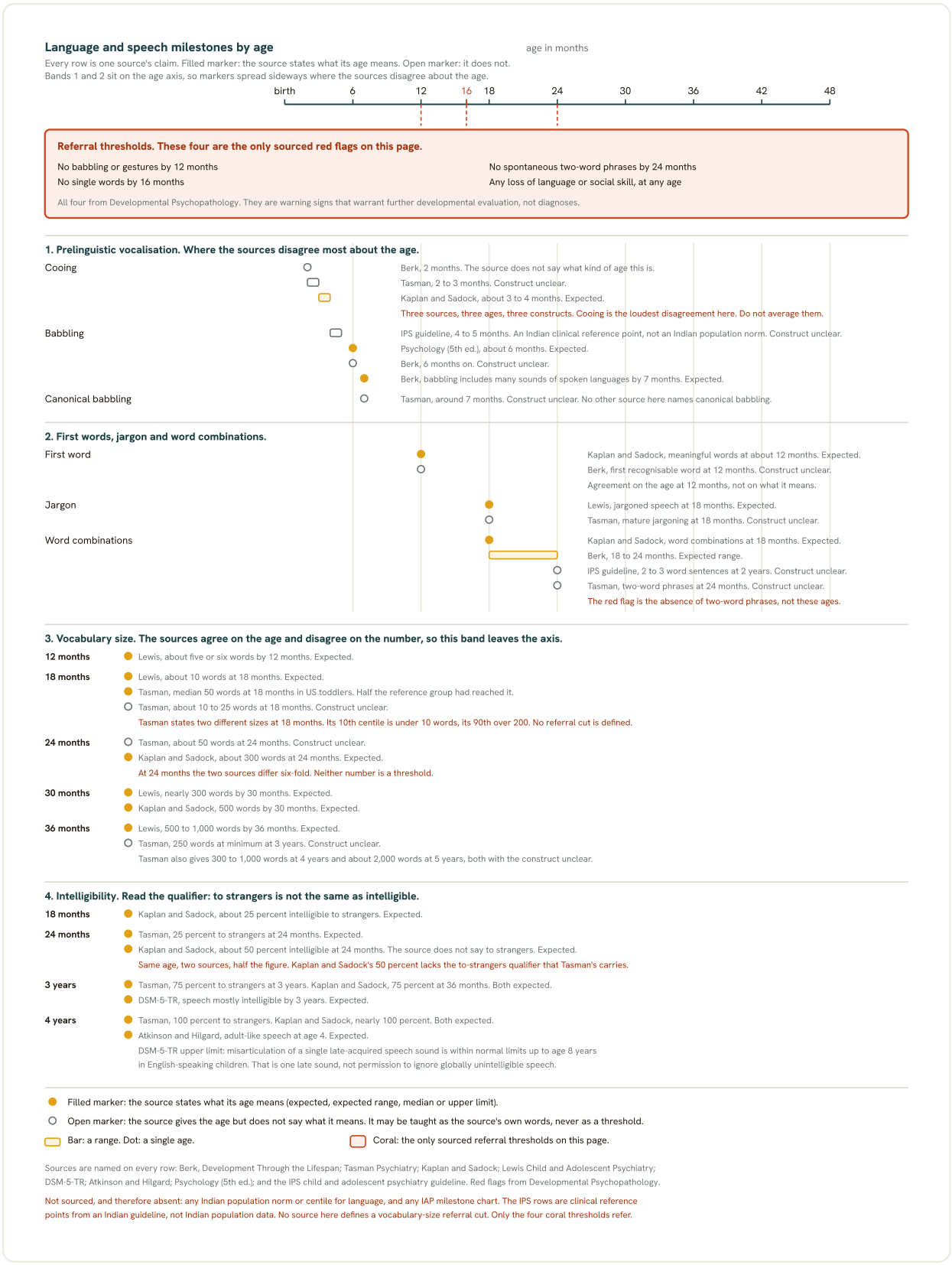


Fig 14.1 Language and speech milestones, drawn so that source and construct stay visible. Each row is one source's stated claim: Berk (Development Through the Lifespan), Tasman, Kaplan and Sadock, Lewis, DSM-5-TR, Atkinson and Hilgard, Psychology (5th ed.) and the IPS child and adolescent psychiatry guideline. Filled markers are ages whose normative construct the source states; open markers are ages it leaves unclear. Cooing, babbling and vocabulary size are shown as disagreements rather than averaged, because no source reports an average. The coral band carries the four red flags from Developmental Psychopathology, which are the only referral thresholds here.

14.1 The twin orienting maps: developmental theories and observable milestones

One map explains development; the other records what the child can do. The developmental-theory alignment places major theories by age on a shared axis without pretending that they describe the same process. Piaget's sensorimotor, preoperational, concrete operational and formal operational stages concern the organisation of thought and help the clinician pitch explanations and tasks. Erikson's psychosocial stages concern trust, autonomy, initiative, industry and identity and help frame the child's age-salient relational task. Freud's psychosexual stages, oral, anal, phallic, latency and genital, remain historically important in examination theory and psychodynamic formulation. The accompanying alignment plate owns the source-specific age bands. Their normative construct is unclear, so none is a clinical threshold.

Mahler's separation-individuation theory follows differentiation, practising, rapprochement and object constancy and is useful when formulating autonomy in relation to the caregiver. Its sourced ages remain on the alignment plate because their normative construct is unclear. Kohlberg's moral development must remain in Kaplan and Sadock's descriptive bands: before adolescence, school-aged children, some young adolescents, during adolescence, later in adolescence, and late adolescence or early adulthood. These bands help the clinician examine the structure of moral reasoning, but no numeric age may be manufactured from them. Vygotsky did not propose age stages. His zone of proximal development, scaffolding, private speech and socially mediated learning sit beside the age axis as mechanisms that explain how supported performance can exceed independent performance.

The second orienting map is the domains-and-milestones framework. It divides observable development into gross motor, fine motor, language and speech, social and emotional, and cognitive or adaptive domains. A theory is an explanatory lens; a milestone is an observed or elicited behaviour. The distinction matters clinically: a child may have age-appropriate gross motor and fine motor skills but delayed language, or may speak little because hearing, opportunity or social reciprocity is impaired. The developmental framework is therefore domain-specific before it becomes a global judgement.

RULE **Name the construct before using the age.** Say "expected" only when the source says typical attainment, "median" only when it identifies the 50th percentile, "upper limit" only for an outer normal boundary, and "red flag" only for a stated referral threshold. Otherwise attribute the age to its source and leave its normative role unclear.

14.2 Band A relational and constitutional frameworks

Attachment, temperament, theory of mind, language-acquisition theory and parenting style influence the communicative environment. In practice, biology, learning and responsive interaction work together.

14.3 Band B: the five domains and the architecture of communication

Language is one developmental domain, but it recruits all the others. The five domains of child development are gross motor, fine motor, language and speech, social and emotional, and cognitive or adaptive functioning. Gross motor development concerns posture and large

movement; fine motor development concerns reach, grasp, manipulation and visuomotor construction. Motor control is commonly organised along cephalocaudal and proximodistal gradients. Language and speech concerns comprehension, symbolic communication, words and grammar, plus the motor production of intelligible sounds. Social and emotional development supplies reciprocity and joint engagement, while cognition supports representation, memory and rule learning.

Within communication, keep four components separate.

COMPONENT	FUNCTION
Receptive language	is what the child understands.
Expressive language	is what the child communicates.
Speech	is the motor and acoustic production of sounds.
Pragmatics	is the socially appropriate use of communication.

Infants understand more than they can produce, so the absence of spoken words does not by itself define the level of comprehension. Assessment must sample response to name, words and commands, gestures and joint attention, spontaneous communication, vocabulary, sentence structure, articulation, voice, fluency and intelligibility. Hearing must be examined because a sensory limitation can mimic or compound language delay.

The milestone framework is sequential rather than rigidly universal. Prelinguistic vocalisation precedes meaningful words; single words precede productive combinations; vocabulary and grammar expand; and speech becomes increasingly intelligible. The accompanying domain-specific plates own the full motor, language and social and emotional milestone reference tables. They should be read horizontally across age and vertically within each domain, without duplicating them into a second prose table.

14.4 From cooing and babbling to words and combinations

Early communication moves from vocal play to symbols shared with another person. Kaplan and Sadock describes cooing as expected at about 3 to 4 months and meaningful words as expected at about 12 months. *Psychology* (5th ed.) describes babbling as expected at about 6 months, while Berk states that babbling includes many sounds of spoken languages by 7 months. These expected claims should be distinguished from source-listed ages whose construct is unclear, such as cooing at 2 months in Berk, canonical babbling around 7 months in Tasman, and first recognisable word at 12 months in Berk.

The Indian clinical reference in the IPS child and adolescent psychiatry guideline lists babbling at 4 to 5 months, understanding "no" at 9 months and picking up familiar objects when asked at 1 year. The source does not say whether these are expected ages, averages or limits. They should therefore be retained as IPS clinical reference points, not labelled Indian population centiles and not converted into referral thresholds. Western and Indian-source statements stay visible side by side because silently averaging them creates a norm that no source reported.

Kaplan and Sadock describes word combinations as expected at 18 months. Berk gives an expected range of 18 to 24 months for combining two words, while the IPS guideline lists 2- to 3-word sentences at 2 years without specifying the normative construct. Lewis describes one-word sentences as expected at 18 months, jargoned speech at 18 months, and three- to four-word sentences by 3 years. The correct examination answer names the behaviour, the source and the construct, then uses the explicit red-flag thresholds for referral rather than treating any one textbook anchor as a deadline.

14.5 Vocabulary, grammar and intelligibility

Vocabulary size varies widely; communicative organisation and intelligibility provide the more useful sequence. Lewis gives expected expressive vocabulary anchors of about five or six words by 12 months, about 10 words at 18 months, nearly 300 words by 30 months, and 500 to 1,000 words by 36 months. Tasman reports a median of 50 words at 18 months among US toddlers, meaning half had attained that vocabulary size by that age. It also reports fewer than 10 words at the 10th percentile and more than 200 at the 90th percentile at 18 months, but does not define a referral cut. These values demonstrate variability and must not be collapsed into a single universal minimum.

about 25 percent	about 50 percent	about 75 percent	nearly 100 percent
SPEECH INTELLIGIBLE TO STRANGERS AT 18 MONTHS	EXPECTED SPEECH INTELLIGIBILITY AT 24 MONTHS	KAPLAN AND SADOCK EXPECTS INTELLIGIBILITY TO STRANGERS AT 36 MONTHS	EXPECTED SPEECH INTELLIGIBILITY AND ADULT-LIKE AT 4 YEARS

DSM-5-TR says speech is mostly intelligible by 3 years.

Grammar changes alongside vocabulary. **Telegraphic speech**, in which content words carry meaning while smaller grammatical elements are sparse, is expected around a year and a half in *Psychology* (5th ed.). Two- and three-word sentences are expected at about 2 years in Atkinson and Hilgard, and sentences become progressively more grammatical. By about 6 years, children are expected to be nearly as fluent as adults. Fluency, grammar and articulation are related but separable, so a child may have age-appropriate ideas and sentence structure yet remain difficult to understand.

Speech-sound expectations must also preserve their construct. DSM-5-TR states that most speech sounds and words become clear with development, while misarticulation of a single late-acquired English speech sound can remain within normal limits up to 8 years. That is an upper-limit statement for a specific late-acquired sound in English-speaking children, not permission to ignore globally unintelligible speech or impairment in another linguistic context.

TRAP **Do not turn a vocabulary count into a universal referral threshold.** At 18 months, Lewis expects about 10 words, while Tasman reports a US median of 50 words and a very wide percentile spread. The four explicit communication red flags, functional impairment, trajectory, comprehension, hearing and social communication decide escalation.

14.6 Primitive reflexes, adolescence and the wider developmental axis

Communication must be interpreted within neurological and maturational development. **Primitive reflexes** are expected early neurological responses. The accompanying reflex table owns their verified appearance, method by which each is elicited, and source-specific disappearance. The high-yield lesson is not to harmonise disagreement: Tasman expects Moro disappearance at 12 weeks, whereas Berk and Hutchison give 6 months; Berk expects asymmetric tonic neck reflex disappearance at 4 months. Hutchison treats persistence of primitive reflexes beyond the fourth month of life as a general red flag, but allows an extensor plantar response up to 18 months as an upper limit and treats Babinski persistence beyond 2 years as a red flag. Each reflex must therefore be interpreted individually.

Adolescent development extends the same developmental method beyond childhood. Its tasks include identity formation, autonomy, peer and intimate relationships, values, gender identity and continuing psychosexual development. Puberty describes biological maturation, while Tanner staging records morphology rather than assigning a fixed age. Girls are staged separately for breast and pubic-hair development; boys for genital and pubic-hair development. Stage I is preadolescent and stage V is mature or adult distribution. The verified puberty plate retains sex-specific ranges without inventing Indian timing data.

The neurodevelopment of adolescence is often framed through a dual-systems or maturational imbalance account, in which reward and socioemotional salience can exert strong influence while cognitive control continues to consolidate. This helps explain peer-sensitive risk-taking without treating normal exploration as pathology. Clinically, the resident asks about persistence, context, impairment, mood, substance use, trauma and coercion rather than applying a moral label.

14.7 Step 5: developmental red flags, surveillance and Indian screening

Screen and refer. The practical question is when to refer, and these explicit thresholds answer it more safely than an unlabelled textbook milestone. Arrange comprehensive developmental, hearing and communication assessment when concern persists or a red flag is present.

14.8 Step 6: five worked cases

Worked case 1, milestone-dating: An 18-month-old uses about 10 words, understands familiar requests and has started combining words. Lewis treats about 10 expressive words as expected at this age, Kaplan and Sadock expects word combinations, and Tasman reports a much higher US median of 50 words. The correct conclusion is that the sources describe different constructs and populations. Assess trajectory, comprehension, hearing and function; do not diagnose delay from the median.

Worked case 2, red-flag: A child has no single words at 16 months. This meets a verified red-flag threshold for further developmental evaluation. Take a full developmental history, test hearing, observe gestures, joint attention and reciprocity, screen development, and refer. Waiting for an unlabelled later textbook anchor would misuse the evidence.

Worked case 3, attachment-pattern: In a Strange Situation vignette, a child explores with the caregiver present, is distressed by separation, seeks comfort on reunion and then returns to play.

The pattern is secure attachment because the caregiver functions as a secure base and reunion restores regulation. The answer describes the observed strategy, not the worth of the parent.

Worked case 4, temperament and goodness-of-fit: A slow-to-warm-up child speaks freely at home but becomes silent when repeatedly pressed to perform before unfamiliar adults. Thomas and Chess directs attention to approach or withdrawal, adaptability and intensity. A slower, predictable introduction improves goodness of fit. The theory explains context-sensitive performance without assuming a fixed language deficit.

Worked case 5, theory-application: A child can complete a verbal classification task with graduated prompts but not independently. Vygotsky locates this performance in the zone of proximal development and supports scaffolding followed by withdrawal of help. Piaget asks what kind of reasoning the task demands, while Erikson asks how the encounter supports initiative or industry. The theories illuminate different aspects of one observation and do not replace direct assessment.

14.9 Step 7: consolidation, retrieval and synthesis

MNEMONIC

"Hear, Share, Say, String, Clear."

Hear stands for receptive language and hearing; *Share* for gesture, joint attention and pragmatics; *Say* for meaningful words and vocabulary; *String* for word combinations and grammar; *Clear* for articulation and intelligibility. Run the mnemonic in that order during a developmental history. Add the red-flag ladder separately: 12 for babbling or gestures, 16 for a single word, 24 for a spontaneous pair, and any age for loss.

Synthesis map: redraw from memory two parallel lines. On the first, place the sourced theories by age, keeping Kohlberg as descriptive bands and Vygotsky as a cross-cutting mechanism. On the second, place milestone anchors from cooing and babbling through words, combinations, grammar and intelligibility. Beneath both, write the five domains and the four red flags. This makes the theory-alignment map explain the child while the milestone map records the child's observable function.

Final clinical synthesis. Language assessment is developmental reasoning in miniature: identify the domain, distinguish understanding from production, describe the sequence and trajectory, preserve the source's normative construct, look for regression and social-communication change, examine hearing and the caregiving environment, and use screening to decide who needs formal assessment. The safest resident is not the one who recites the most ages, but the one who knows exactly what each age is allowed to mean.

15 . Social and emotional developmental milestones

Social and emotional development is the progressive organisation of reciprocal engagement, attachment behaviour, shared attention, play, self-awareness, understanding of other minds and regulation of affect within relationships. It is not a single skill and it cannot be judged from eye

contact alone. A child may produce a behaviour on request yet rarely use it spontaneously to share interest; another may show an age-listed behaviour but with poor reciprocity, little affective integration or loss of previously acquired skills. For the psychiatry resident, the decisive task is therefore to combine milestone timing with quality, context, trajectory and function.

How to use this page. Begin with the five domains of child development, then learn the social and emotional sequence from social reciprocity through joint attention, symbolic play, peer engagement and theory of mind. Use the accompanying social and emotional milestone plate for the domain-specific reference table. This page explains what the entries mean, why normal anxiety windows differ across sources, and how to move from milestones by age to developmental surveillance and referral without converting an expected age into a red-flag threshold.

In social and emotional development, timing starts the assessment; spontaneity, reciprocity, integration, trajectory and loss decide its clinical meaning.

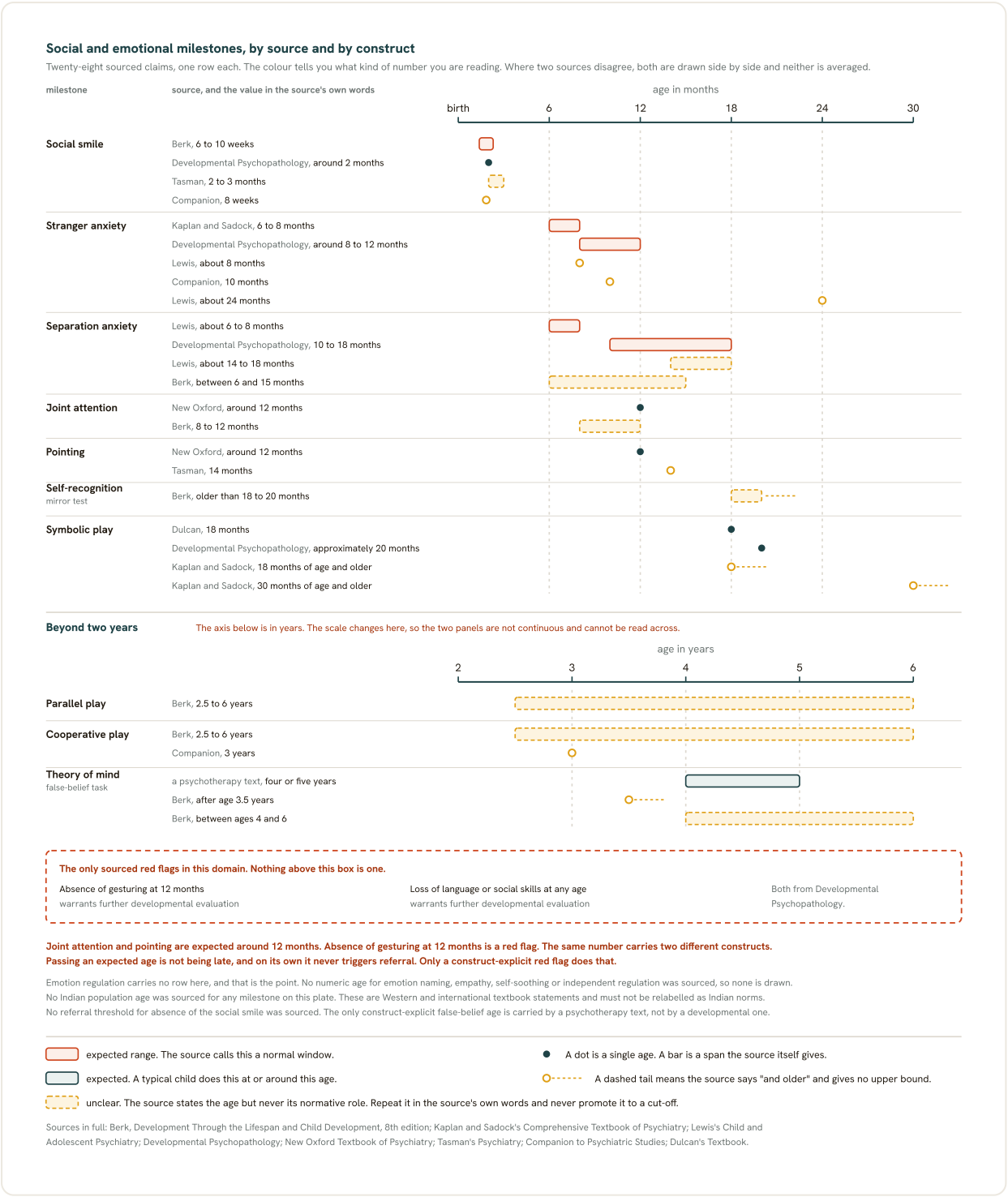


Fig 15.1 Social and emotional milestones, drawn one row per sourced claim so that disagreement between texts stays visible. Colour encodes the normative construct each source states for itself: an expected range, an expected age, or an age whose role the source never states. Stranger anxiety is 6 to 8 months in Kaplan and Sadock and around 8 to 12 months in Developmental Psychopathology; separation anxiety is about 6 to 8 months in Lewis and 10 to 18 months in Developmental Psychopathology. Both windows are kept side by side and neither is averaged. No milestone on this plate is a referral threshold; the only two sourced red flags for this domain are boxed separately. The lower panel is on a years axis, not months.

15.1 The domain within the five-domain developmental map

The domains are examined separately but develop as one system. The five domains are gross motor, fine motor, language and speech, cognitive or adaptive development, and social and emotional development.

DOMAIN	CONTRIBUTION
Gross motor development	supplies posture and mobility.
Fine motor development	supplies reach, grasp and manipulation.
Language and speech	supplies comprehension, expression and verbal communication.
Cognition	supplies representation, learning and problem-solving.
Social and emotional development	supplies reciprocity, relationships, play and regulation.

Social behaviour therefore recruits every other domain. A child must be able to perceive a social cue, orient and act on it, understand its meaning, and regulate the resulting arousal.

The general motor principles of cephalocaudal and proximodistal progression explain why early postural control and proximal stability support later exploration and gesture, but they are not laws for dating social milestones. Social-emotional progression is better understood as widening organisation: regulation is initially supported by a caregiver, dyadic engagement becomes shared engagement around an object or event, symbolic play permits representation, peer interaction becomes more coordinated, and the child increasingly understands mental states. These are linked developmental achievements, not isolated party tricks.

RULE **Name the construct whenever you name an age.** An expected age says what usually occurs; an expected range describes a normal window; a source-stated age with an unclear construct must remain source-stated; and a red flag says when absence warrants further evaluation. None can silently substitute for another.

The accompanying plate owns the full domain-specific social and emotional milestone reference table. Read it horizontally to see the child's profile across functions and vertically to follow one function over time. Where two sources give different windows, retain both. Where a source does not identify its value as expected, median, upper limit or red flag, do not promote that value into a clinical cut-off.

15.2 Early reciprocity and the social smile

The earliest useful observation is not whether the infant smiles, but whether the smile is socially organised. A **social smile** is elicited in reciprocal interaction and is integrated with orientation, facial affect and the other person's behaviour. Berk gives an expected range of **6 to 10 weeks**; *Developmental Psychopathology* describes it as expected at around 2 months in typically developing infants. These are compatible expected statements, not referral thresholds. Tasman lists 2 to 3 months and *Companion to Psychiatric Studies* lists 8 weeks, but neither source states the normative construct, so those values should be repeated only in the source's own descriptive role.

During examination, create an opportunity for mutual engagement rather than commanding a performance. Observe orientation to the caregiver's face and voice, change in affect with

interaction, reciprocal vocal or facial response, ease of soothing and recovery after arousal. A single smile is weak evidence if it is not socially directed; limited eye contact is also nonspecific when considered alone. Vision, hearing, illness, fatigue, temperament, unfamiliar surroundings and the caregiver-child interaction can all change what appears in the room. The correct mental status description is behavioural and present tense, while the developmental history establishes whether the pattern is typical, delayed, inconsistent or lost.

15.3 Selective relationships: stranger anxiety and separation anxiety

Wariness and protest can be normal signs that the infant now discriminates familiar relationships. **Stranger anxiety** refers to wariness or distress in response to an unfamiliar person. Kaplan and Sadock gives an expected range of 6 to 8 months, whereas *Developmental Psychopathology* gives an expected range of 8 to 12 months. Lewis describes about 8 months and about 24 months, and *Companion to Psychiatric Studies* lists 10 months, but those source statements have an unclear normative construct. The expected ranges must remain side by side; averaging them would create a norm reported by neither source.

Separation anxiety is distress associated with separation from a familiar caregiver. Lewis gives an expected range of about 6 to 8 months, while *Developmental Psychopathology* gives an expected range of 10 to 18 months. Lewis also describes about 14 to 18 months and Berk describes 6 to 15 months, but those two statements do not specify their normative role. This source variation is itself examinable: the behaviour is developmentally intelligible, but the literature does not provide one universal date that separates normal from abnormal.

TRAP **Normal anxiety is not defined by one birthday.** Do not diagnose from the mere presence or absence of stranger or separation anxiety at one visit, and do not merge differing source windows. Judge intensity, persistence, context, recovery with the caregiver, functional impairment and the wider developmental profile.

Clinically, observe whether the caregiver functions as a source of regulation and whether distress settles sufficiently for exploration to resume. The form of the response matters more than its theatrical intensity. A tired infant in an unfamiliar clinic may protest strongly; a quiet infant may freeze rather than cry. The resident should document the trigger, proximity-seeking, consolability, recovery, exploration and consistency across settings before inferring a relational pattern.

15.4 Joint attention and pointing: from dyadic to shared engagement

Joint attention turns a two-person exchange into a shared mental focus on something in the world. **Joint attention** requires coordinated attention between child, another person and an object or event. It includes following another person's gaze or point and actively directing another person's attention for sharing, not merely to obtain an object. The *New Oxford Textbook of Psychiatry* states that joint attention is expected around **12 months** in most typically developing children. Berk describes increasing accuracy between 8 and 12 months, but does not specify the normative construct for that age band.

Pointing is likewise expected around 12 months in most typically developing children according to the *New Oxford Textbook of Psychiatry*; Tasman lists 14 months without defining whether that is an expected age, average or limit. The important distinction is functional. Imperative pointing requests something; declarative pointing shares interest for its own social value. Assessment should therefore sample gaze-following, showing, giving, pointing, shifting gaze between object and person, and checking the adult's response. A hand movement without coordinated gaze or shared affect is not equivalent to spontaneous declarative communication.

Because social communication and language develop together, ask how the child communicates wants, enjoyment and surprise before relying on spoken vocabulary. Hearing and vision must be considered. So must opportunity: the meaning of a behaviour depends on whether it appears spontaneously across familiar settings, not merely after repeated prompting in a clinic. Around 12 months is an expected attainment statement for joint attention and pointing, whereas absence of gesturing at 12 months is the separately sourced red-flag statement. The identical number does not make the constructs interchangeable.

15.5 Symbolic play, self-recognition and peer sociability

Play reveals representation, social reciprocity and flexibility in a natural behavioural sample.

Symbolic play, also called pretend play, uses an action or object to stand for something else. Dulcan describes symbolic play as expected at **18 months**; *Developmental Psychopathology* describes it as expected at approximately 20 months in most children. Kaplan and Sadock lists symbolic play at 18 months and older and at 30 months and older in clinical play descriptions, but those statements do not identify a normative construct. The expected values belong on the milestone plate as separate source claims, not as a new averaged deadline.

Examine play for initiation, imitation, shared enjoyment, symbolic substitution, sequencing, flexibility and inclusion of another person. Functional use of an object is not yet symbolic use; repetitive manipulation is not equivalent to pretend play; and reproducing a prompted action once is weaker evidence than spontaneous flexible play. The play sample should be interpreted with fine motor ability, language comprehension, cognitive level, sensory profile, familiarity with the materials and prior opportunity.

Self-recognition in the mirror test is reported by Berk in children older than 18 to 20 months, but the source does not say whether this is an average, range or limit. Keep it as a source-stated observation. For peer sociability, *Companion to Psychiatric Studies* lists cooperative play at 3 years, while Berk describes both parallel play and cooperative play across 2.5 to 6 years. Their normative constructs are unclear. These figures describe patterns in the cited sources and must not be treated as referral deadlines.

Parallel and cooperative play are also not mutually exclusive stages through which every child marches on a fixed timetable. Ask what the child actually does with peers: watches, imitates, plays alongside, exchanges objects, negotiates roles, sustains a shared theme, tolerates frustration and repairs conflict. Context matters. Solitary play in a new clinic cannot establish the child's usual

peer competence, while school reports and direct observation in familiar settings may reveal a very different profile.

15.6 Understanding minds and regulating emotion

Later social competence depends increasingly on representing internal states rather than responding only to visible behaviour. **Theory of mind** is the capacity to understand that another person can have thoughts, intentions, desires and beliefs different from one's own. Success on a standard false-belief task is expected at **4 or 5 years** in the cited source. Berk reports performance after 3.5 years and between 4 and 6 years but does not identify the normative construct of those values. Failure on a single task is not a diagnosis because language comprehension, attention, working memory and task demands contribute to performance.

Emotional development includes recognition and expression of affect, use of another person's signals, tolerance of arousal, recovery after frustration and an increasing capacity to regulate behaviour in context. The clinically useful sequence is qualitative: regulation begins in interaction with a caregiver and becomes progressively internalised, flexible and responsive to social rules. No verified numeric ages for specific emotion-labelling or self-regulation milestones were supplied, so none should be invented. Assessment instead compares behaviour across home, school and clinic, noting triggers, strategies, recovery, caregiver support and impairment.

Social cognition and emotion regulation must be interpreted culturally. Eye gaze, proximity, independence, deference, emotional display and adult-child conversation vary with family and community expectations. Culture does not explain away regression, marked functional impairment or absence of basic communicative gesture, but it changes the form in which competence is expressed. A sound answer describes the observed behaviour first, then considers developmental level, language, sensory capacity, temperament, context and culture before drawing a clinical inference.

15.7 Step 5: spotting deviation from normal and deciding when to refer

Developmental red flags are construct-explicit escalation signals, not retrospective labels. The verified social-communication warning signs are absence of gesturing at **12 months** and loss of language or social skills at any age. Both warrant further developmental evaluation. Because language and social communication are tightly coupled, absence of babbling at 12 months, absence of single words at 16 months and absence of spontaneous two-word phrases at 24 months are additional communication red flags that should be checked in the same assessment. A red flag indicates when to refer; it does not establish aetiology or diagnosis.

Spotting deviation requires more than threshold checking. Look for regression, plateau, marked unevenness across domains, lack of spontaneous reciprocity, poor integration of gaze, gesture and affect, unusual rigidity or repetitive play, weak generalisation across settings, and functional impact on learning or relationships. Only those two social-communication findings above are verified referral thresholds in the supplied evidence. Expected ages for the social smile, joint attention, pointing or symbolic play must not be relabelled as red flags merely because the child has passed them.

A focused developmental history records pregnancy and birth context, health, hearing and vision, opportunities for interaction, caregiver concerns, the sequence of attainment across gross motor, fine motor, language and speech, cognition, and social and emotional development, plus any loss of skills. Observe the child with the caregiver and during free play. Sample response to social bids, shared enjoyment, gesture, joint attention, imitation, symbolic play, flexibility, regulation and recovery. Seek reports across settings because a short clinic encounter can under-sample both strengths and difficulties.

Developmental surveillance is the longitudinal clinical process of eliciting concerns, observing development and following trajectory. **Developmental screening** uses a standardised tool to identify children who need comprehensive assessment. Screening is not diagnosis. Refer promptly for comprehensive developmental assessment when a verified red flag is present, when skills are lost, or when persistent concern and functional impairment remain despite an apparently reassuring single observation. Hearing and vision assessment are integral where communication or social response is in question.

15.8 Indian screening context without invented Indian milestones

Indian practice has validated screening instruments, but the available evidence does not supply an Indian social-emotional milestone table. The Trivandrum Development Screening Chart, developed at the Child Development Centre in Kerala, covers 0 to 6 years and contains 51 items. In the validation study by Nair and colleagues, one item delay was the operational positive result called TDSC delay, with DDST as the reference standard. This is a screening rule for the instrument as a whole, not permission to reconstruct individual item ages or to convert a textbook social milestone into a TDSC cut.

1,183 CHILDREN IN THE TDSC VALIDATION SAMPLE	**84.62%** SENSITIVITY, WITH A 95 PERCENT CONFIDENCE INTERVAL FROM 71.92 TO 93.12	**90.8%** SPECIFICITY, WITH A 95 PERCENT CONFIDENCE INTERVAL FROM 88.97 TO 92.43	**99.23%** NEGATIVE PREDICTIVE VALUE, WITH A 95 PERCENT CONFIDENCE INTERVAL FROM 98.48 TO 99.67

The DASII yields separate Motor DQ and Mental DQ values, and Indian follow-up practice uses a DQ below 85 as a delay marker. That marker is instrument-level evidence, not a milestone age. The Baroda Development Screening Test was India's first developmental screening tool, introduced in 1991. These instruments help organise referral after developmental surveillance raises concern; they do not replace a social history, direct observation, sensory assessment or a fuller developmental evaluation.

No verified Indian population ages for the social smile, stranger anxiety, separation anxiety, joint attention, pointing, symbolic play, peer play or false-belief performance were supplied. The Western and international textbook statements on the milestone plate therefore remain labelled by source and population where known. They must not be relabelled as Indian norms. This is especially important in viva answers: name the source construct, describe the behaviour and use the validated Indian screening pathway without claiming an Indian centile that has not been published in the material available here.

15.9 Clinical application and retrieval

- **Worked vignette 1, expected age versus red flag:** A caregiver reports no communicative gestures, including no pointing, showing or giving, at 12 months. Pointing itself is expected around 12 months in the *New Oxford Textbook of Psychiatry*, while absence of gesturing at 12 months is separately sourced as a warning sign. Clarify gaze shifts and shared enjoyment as part of the wider social-communication profile. Because the red-flag construct is met, arrange further developmental evaluation; do not diagnose from that finding alone.
- **Worked vignette 2, source variation:** An infant becomes wary of an unfamiliar examiner. Kaplan and Sadock gives a stranger-anxiety range of 6 to 8 months, while *Developmental Psychopathology* gives 8 to 12 months. The correct answer preserves both expected ranges and interprets the behaviour through familiarity, intensity, consolability and recovery. It does not average the ranges and does not call ordinary wariness pathological.
- **Worked vignette 3, play quality:** A child reproduces feeding a doll after repeated demonstration but does not initiate pretend actions, share enjoyment or vary the play. The observed imitation is real, but it does not by itself establish spontaneous flexible symbolic play. Sample familiar materials and caregiver interaction, assess language, cognition and fine motor ability, and obtain behaviour across settings before interpreting the finding.

MNEMONIC

"smile, selective relationships, share, symbol, self and minds"

Smile recalls early reciprocity. Selective relationships recalls stranger and separation anxiety. Share recalls joint attention and pointing. Symbol recalls pretend and peer play. Self recalls self-recognition. Minds recalls false-belief understanding.

Then add the clinical spine: five domains, spontaneous quality, trajectory, loss, developmental surveillance, screening and referral.

Final clinical synthesis. Social and emotional milestones are best understood as an expanding capacity to engage, share, represent, relate and regulate. The safe examination answer names the behaviour, gives the source's normative construct, preserves population and source differences, describes quality and context, looks for loss and functional impairment, and uses construct-explicit warning signs to decide when to refer. Recitation earns a mark; disciplined interpretation prevents harm.

16 . Primitive reflexes and their disappearance

Primitive reflexes are stereotyped, involuntary motor responses elicited by a defined sensory or positional stimulus in the immature nervous system. Their orderly appearance in the newborn and subsequent disappearance reflect intact lower neural pathways followed by increasing supraspinal control. They are therefore neither ordinary voluntary milestones nor isolated curiosities. In an examination, each reflex must be judged by four questions:

1. Is it present when it should be?

2. Is it elicited correctly?
3. Is it symmetrical?
4. Has it been inhibited when expected?

The accompanying reflex table is the visual reference for appearance and disappearance ages. Use it as a source-labelled map, because several respected textbooks give different disappearance points for the same reflex. The safe clinical answer is not to average discrepant ages. State the reflex, demonstrate how it is elicited, quote the named source or range, and distinguish an expected disappearance from an upper limit or a red-flag threshold.

Must memorise: A primitive reflex is interpreted by expected presence, adequate elicitation, symmetry and timely disappearance, never by presence or absence alone.

MNEMONIC

"Present, elicit, symmetry, disappear"

Interpret a primitive reflex by whether it is present when it should be, elicited correctly, symmetrical and inhibited when expected.

Primitive reflexes: elicitation, appearance, disappearance

Persistence beyond the disappearance age is the sign, not the reflex itself. Read one reflex across its row. Do not collapse the table into a single disappearance rule.

Reflex	How it is elicited, and the response	Appears	Disappears, by named source
Rooting	Stroke the cheek or corner of the mouth. The neonate turns toward it, opens the mouth.	● neonate Morgan	● Berk: 3 weeks, becomes voluntary turning ● Neuroanatomy atlas: about 1 year of age
Sucking	Contact with the lips or palate produces rhythmic sucking.	● neonate Kaplan and Sadock	● Berk: after 4 months ● Neuroanatomy atlas: about 1 year of age
Moro	Infant fully supported, a brief controlled head-position change. Never an actual drop.	● Neonatal period, first 4 weeks Tasman	● Tasman: 12 weeks ● Berk and Hutchison: 6 months
Asymmetric tonic neck	Turn the supine infant's head to one side. Face side extends, occiput side flexes: fencer.	○ 4 weeks Tasman	● Berk: 4 months
Palmar grasp	A finger laid across the palm, gentle pressure. The fingers flex around it.	● neonate Kaplan and Sadock	● Hutchison: 2 months ● Berk: 3 to 4 months
Plantar grasp	Pressure at the base of the toes produces toe flexion.	Not sourced No age in the cited texts.	● Hutchison: 2 months
Stepping	Held upright, soles on a firm surface, the body inclined forward. Alternating steps.	● Neonatal period, first 4 weeks Tasman	● Hutchison: 2 months ○ Berk: 2 months, in relation to weight gain
Babinski extensor plantar	Stroke the lateral sole, heel to forefoot, then medially. Great toe extends, toes fan.	● newborns New Oxford	● Berk: 8 to 12 months ● New Oxford: during the first 2 years of life ● Hutchison: extensor plantar up to 18 months

Five of the eight reflexes carry more than one disappearance age. Both claims are shown. Never average them into a false consensus.

Rooting, sucking, Moro and palmar grasp genuinely disagree between texts. Babinski's four boundaries are complementary: a range, a broader range, an upper limit, a red flag.

Red flags. These three are the only ones sourced in this chapter, and all three come from Hutchison's Clinical Methods.

Sucking reflex absent beyond the 36th week of gestation.
Primitive reflexes persisting beyond the fourth month of life.
Babinski reflex persisting beyond the age of 2 years.

The fourth-month statement is a general screening prompt. It does not override the later reflex-specific expectations above for Moro, sucking and the extensor plantar response.

● expected: a typical infant, per the source ● expected range: the normal window ● upper limit: the outer bound of normal
○ construct not stated by the source: teach its own words, never convert it into a referral threshold

Every age is quoted from a named text and stays attached to it. Sources: Hutchison's Clinical Methods, Berk's Development Through the Lifespan, Tasman, Kaplan and Sadock, the New Oxford Textbook of Psychiatry, an atlas of neuroanatomy, and Morgan's Introduction to Psychology. Elicitation follows this chapter's text.

Not sourced and therefore not shown: an appearance age for plantar grasp, and any Indian normative reflex schedule. No Western age is relabelled as an Indian norm.

Fig 16.1 The primitive reflexes, with each age kept attached to the text that states it. Disappearance ages come from Hutchison's Clinical Methods, Berk's Development Through the Lifespan, Tasman, and the New Oxford Textbook of Psychiatry; appearance ages from Kaplan and Sadock, Tasman, the New Oxford Textbook of Psychiatry and Morgan. Dots mark what kind of number each age is, because an expected age, an upper limit and a red flag are not interchangeable. Where texts disagree, both claims are shown rather than averaged. The three red flags are the only ones sourced.

16.1 What primitive reflexes signify

They test maturation as well as pathway integrity. A primitive reflex is produced by a relatively fixed sensorimotor circuit that is clinically visible while **descending inhibition** is immature. With maturation, the response is inhibited, incorporated into voluntary movement or replaced by a more purposeful response. Thus, normal development has two examinable directions: an early reflex should be obtainable at the relevant stage, and it should later recede. Persistence, asymmetry, failure to elicit an expected response, or re-emergence after it has disappeared can each be abnormal, but they point to different problems.

Presence alone does not certify a normal nervous system. A response may be weak because the infant is drowsy, recently fed, unwell or poorly positioned; it may be absent because the stimulus was inadequate; and it may be asymmetric because of a peripheral injury even when central maturation is otherwise appropriate. Conversely, persistence suggests deficient inhibition only after the reflex-specific expectation and the rest of the neurologic examination are considered.

16.2 Examination technique: make the response interpretable

Standardise the infant's state before interpreting the movement. Examine in a warm, safe setting, preferably when the infant is awake and settled. Observe spontaneous posture and

movement first. Then apply one clear stimulus, support the head and trunk throughout, compare the two sides where the response permits, and describe the actual movement rather than merely writing “reflex present”. Repeat only when necessary, because habituation, crying and repeated stimulation can alter the response. Record gestational context and the infant's behavioural state.

RULE **First prove that the test was valid.** Name the stimulus, the motor response, its symmetry and the infant's state. Only then compare the finding with the expected disappearance age.

The usual bedside sequence is efficient: test the orofacial responses, then upper-limb grasp, the startle and postural responses, stepping, plantar grasp and the plantar response. This reduces unnecessary repositioning and makes side-to-side comparison easier.

16.3 Disappearance ages are source-specific constructs

Do not convert a textbook age into a referral threshold.

CONSTRUCT	MEANING
An “expected” disappearance	describes what the source presents as usual.
An “expected range”	describes a window.
An “upper limit”	marks the outer boundary of normal.
A “red flag”	is the point at which persistence or absence warrants concern.

These constructs are not interchangeable. If two books differ, retain both claims with attribution rather than creating a false consensus.

TRAP **“All primitive reflexes must disappear by the fourth month” is unsafe.** *Hutchison's Clinical Methods* gives persistence beyond the fourth month of life as a general red flag, but the same source and other textbooks give later reflex-specific expectations for Moro, sucking and the extensor plantar response. Use the general statement as a screening prompt, not as a universal cut-off that overrides the named reflex.

the fourth month of life	36th week of gestation	18 months of age	2 years
GENERAL RED FLAG	ABSENCE RED FLAG	UPPER LIMIT	RED FLAG

The disagreement often reflects differences in elicitation, the strength counted as “present”, whether a response has become voluntary, and the population or edition being described. The accompanying plate therefore keeps each age attached to its source. It should be read horizontally, one reflex at a time, not collapsed into a single disappearance rule.

16.4 Rooting and sucking: feeding-related primitive responses

Rooting is elicited by stroking the cheek or the corner of the mouth; the neonate turns toward the stimulus and opens the mouth. Its appearance is described in the neonate. Berk and a neuroanatomy atlas give markedly different disappearance points, shown with their attributions in the accompanying reflex table. These values should not be averaged. The difference may reflect

distinct operational boundaries between a reflexive turn and a residual feeding response, so the source must travel with the age.

Sucking is elicited by contact with the lips or palate and produces rhythmic sucking. Kaplan and Sadock describe its appearance in the neonate. *Hutchison's Clinical Methods* treats absence beyond the **36th week of gestation** as a red flag. Berk and the neuroanatomy atlas again give different expected disappearance points; retain both as source-specific values from the plate. The clinically important distinction is between an absent feeding response when it should be established and persistence of a reflexive pattern after voluntary feeding control develops.

16.5 Moro and asymmetric tonic neck reflex

Moro reflex is tested with the infant fully supported: a brief, controlled change in head position produces abduction and extension of the upper limbs, followed by adduction and flexion. The manoeuvre is a **supported head-extension stimulus**, never an actual drop. Tasman describes Moro as present in the neonatal period and gives an earlier disappearance point than Berk and *Hutchison's Clinical Methods*. The plate preserves both claims. Quote the source rather than turning either value into an unsupported universal limit.

For the asymmetric tonic neck reflex, turn the supine infant's head gently to one side. The limbs on the face side extend and those on the occipital side flex, producing the “fencer” posture. Tasman records its early presence without defining the normative construct; this must not be restated as a referral threshold. Berk supplies an expected disappearance point in the plate. Marked obligatory persistence can interfere with midline hand use and rolling, while asymmetry requires a broader neurologic and musculoskeletal assessment.

16.6 Grasp and stepping responses

Palmar grasp is elicited by placing a finger across the palm and applying gentle pressure; the fingers flex around it. Kaplan and Sadock describe appearance in the neonate. Berk gives an expected disappearance range, whereas *Hutchison's Clinical Methods* gives a different expected point; both remain source-labelled in the plate. For plantar grasp, pressure at the base of the toes produces toe flexion. Hutchison supplies its expected disappearance point, but no appearance age was available from the cited sources.

Stepping is elicited by supporting the infant upright, allowing the soles to contact a firm surface and inclining the body slightly forward; alternating step-like movements follow. Tasman describes it as expected in the neonatal period. Hutchison gives an expected disappearance point. Berk also describes disappearance in relation to weight gain but does not define the normative role of that statement, so it should not be converted into an upper limit or referral threshold. The exact source-specific entries belong to the accompanying plate.

16.7 Babinski response: expected early, concerning when persistent

The Babinski reflex, or **extensor plantar response**, is elicited by stroking the lateral sole from heel toward the forefoot and then medially. Extension of the great toe, often with fanning of the other toes, is expected in newborns according to the *New Oxford Textbook of Psychiatry*. It is

commonly taught beside the primitive reflexes because its interpretation changes with nervous-system maturation.

The sources offer complementary, not identical, boundaries, and the plate keeps them separate. Berk supplies an expected disappearance range, the *New Oxford Textbook of Psychiatry* gives a broader expected range, and Hutchison states that an extensor plantar response may occur up to **18 months of age**, an upper limit, while persistence beyond **2 years** is a red flag. Therefore an extensor response at the end of infancy is not automatically an upper motor neuron sign, whereas persistence beyond the sourced red-flag boundary requires neurologic assessment.

16.8 Clinical interpretation: pattern before label

Abnormality lies in the pattern. Bilateral absence of a response expected in a newborn raises questions about gestational maturity, arousal, systemic illness, medication effect or diffuse neurologic dysfunction. A consistently asymmetric Moro or grasp response raises a different set of possibilities, including a focal central lesion, peripheral nerve injury or painful limb movement. Persistence of several primitive responses, particularly with abnormal tone, posture or delayed voluntary motor control, is more concerning for impaired **central inhibition** than a single borderline response.

Re-emergence later in life is described as a frontal release sign. Grasping, rooting, snout and palmomental responses may appear with frontal or diffuse cerebral dysfunction, including neurocognitive disorders, but one isolated sign has limited specificity. In psychiatry, these signs strengthen a neurologic formulation only when they fit the cognitive examination, functional decline and the rest of the neurologic findings.

> **INDIA**
>
> The cited disappearance values are textbook schedules, not Indian normative percentiles. Do not manufacture an India-specific age conversion. In an Indian infant, retain the named source and interpret the response with gestational context, longitudinal development and the complete neurologic examination.

In a short case or viva, the highest-scoring formulation is compact: “I elicited the reflex with the appropriate stimulus; the response was present or absent, graded by quality and symmetry; I compared it with the source-specific disappearance expectation; and I interpreted it with tone, posture, voluntary movement and the rest of development.” That answer demonstrates technique, developmental reasoning and restraint. It avoids the two common errors: treating every age as a hard cut-off and diagnosing neurologic disease from one reflex in isolation.

17 . Adolescent development and identity formation

Adolescence is the developmental transition from childhood dependence toward adult roles, marked by pubertal change, reorganisation of cognition and emotion, increasing importance of peers and intimate relationships, and the construction of a more coherent identity. It is neither a prolonged childhood nor an incomplete adulthood. Development is asynchronous: physical

maturation, reward sensitivity, abstract reasoning, self-regulation, autonomy and social opportunity do not move in lockstep. The psychiatrist therefore judges the adolescent against developmental trajectory, pubertal status, context and functioning, not against a single stereotype of maturity.

How to use this page. Build the answer in **four** layers. Begin with puberty and Tanner staging, then explain the neurodevelopmental basis of context-sensitive risk-taking, then describe identity formation through Erikson and Marcia, and finally integrate gender, sexuality, peers, family and culture. Keep **three** distinctions intact: Tanner stage is based on physical characteristics rather than chronological age; exploration is not itself pathology; and gender identity, gender expression and sexual orientation are separate constructs.

The must-memorise line: Adolescence is an asynchronous transition in body, brain and social role, while identity is formed through exploration and commitment within family, peer and cultural relationships.

RULE **The psychiatrist therefore judges the adolescent against developmental trajectory, pubertal status, context and functioning, not against a single stereotype of maturity.** Development is asynchronous: physical maturation, reward sensitivity, abstract reasoning, self-regulation, autonomy and social opportunity do not move in lockstep.

TRAP **Exploration is not itself pathology.** Normal diversity in tempo and expression is expected, but marked distress, sustained impairment, coercion, regression or a clear episodic change requires assessment rather than automatic attribution to adolescence.

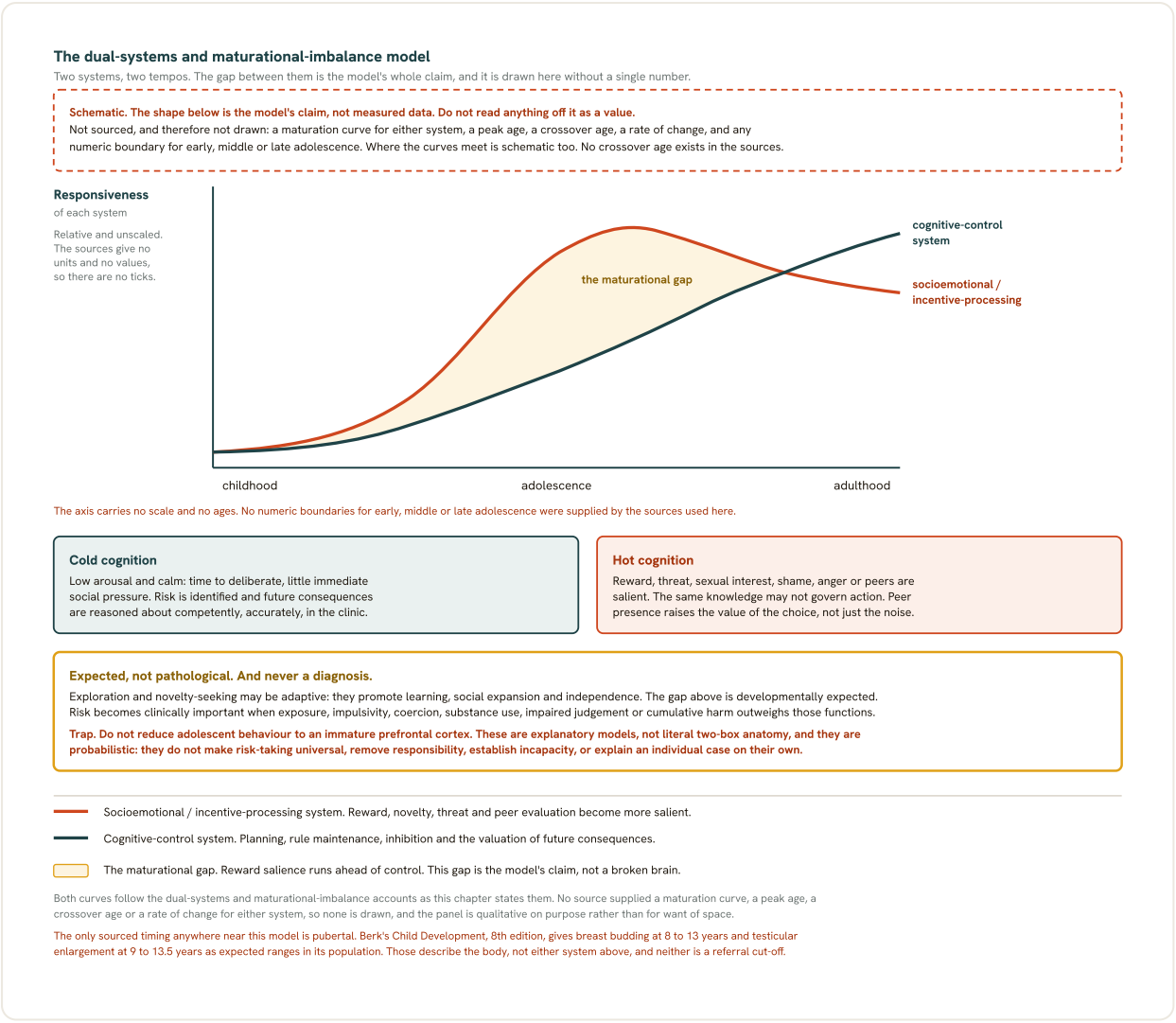


Fig 17.1 The adolescent dual-systems and maturational-imbalance model, drawn qualitatively. The curves carry the model's claim, that a fast-changing socioemotional system runs ahead of a more slowly stabilising cognitive-control system, and that the gap between them is the window in which risk-taking is developmentally expected rather than pathological. The shape is schematic: no source supplied a maturation curve, peak age, crossover age or rate for either system, so none is drawn and the axis carries no ages. The only sourced timing shown is pubertal, from Berk's Child Development, 8th edition, as expected ranges.

17.1 A developmental frame: simultaneous change across interacting systems

The central principle is uneven but coordinated development. Puberty changes the body, sleep, affective salience and how other people respond to the young person. Cognitive development expands hypothetical, future-oriented and self-reflective thought. Social development shifts toward greater privacy, peer affiliation, reciprocal intimacy and negotiation of authority. Identity development integrates bodily experience, values, relationships, education, work, culture, gender and sexuality into an account of who the person is and where life is going. Change in one system alters every other system: earlier or later pubertal change can affect body image and peer position, while family response can amplify or buffer its psychological impact.

Developmental tasks are therefore better treated as linked processes than as a checklist. The adolescent must:

- incorporate a changing body; become more autonomous without losing secure relatedness;

- form increasingly mutual peer relationships; develop values and future goals; regulate strong affect;
- make decisions under social pressure; establish a workable sense of self.

Progress is non-linear. A person may reason abstractly in a calm classroom yet decide impulsively in an emotionally charged group, appear independent with peers yet seek parental regulation during illness, or explore one identity domain while remaining committed in another.

The useful clinical model is **transactional**. Biological changes alter behaviour and social signalling; family, school, peers, media and culture shape the opportunities and meanings attached to those changes; repeated experiences then modify self-concept and regulation. Neither biology nor environment alone explains the outcome. Normal diversity in tempo and expression is expected, but marked distress, sustained impairment, coercion, regression or a clear episodic change requires assessment rather than automatic attribution to adolescence.

17.2 Puberty: biological maturation, variable timing and psychological meaning

Puberty is the biological process of sexual maturation, whereas adolescence is the broader psychological and social transition. Gonadal maturation produces secondary sexual characteristics and reproductive capacity; adrenarche is a related but distinct process involving adrenal androgen effects. The order and tempo of visible changes matter more clinically than a single calendar age. Pubertal events also acquire personal and social meaning through comparison with peers, cultural expectations, gender experience, body ideals, family communication and the adolescent's readiness for change.

Psychological effects depend on timing relative to peers and on context, not merely on whether a value falls inside a range. Ask about the adolescent's understanding of changes, body satisfaction, teasing, sexualisation, sports or school consequences, privacy, menstrual experience where relevant, and whether physical development is congruent with gender experience. Puberty may increase visibility and social expectations before cognitive or emotional capacities have developed to the same degree.

17.3 Cognitive and moral development: expanding capacity with uneven performance

Adolescent thought increasingly permits abstraction, hypothesis, metacognition and projection into possible futures. In Piaget's scheme this is **formal operational thought**: reasoning about propositions and possibilities rather than only concrete events. It supports scientific reasoning, ideological debate, imagining alternative selves and considering long-term consequences. It also enables heightened self-consciousness because the adolescent can represent how others might be evaluating them. Formal reasoning is not used uniformly; familiarity, education, emotion and task demands strongly influence performance.

Two classic descriptions help explain adolescent egocentrism. The **imaginary audience** is the sense of being continuously observed or judged, which can intensify concern about appearance and embarrassment. The **personal fable** is a felt uniqueness of one's experience and, at times, a sense that ordinary consequences do not fully apply. Neither construct should be used to

caricature all adolescents. Both are hypotheses about self-focused social cognition and must be distinguished from delusional conviction.

Kohlberg's moral development should be taught in sequence without invented numeric ages. Kaplan and Sadock describes:

LEVEL	KAPLAN AND SADOCK DESCRIPTION
Preconventional morality	before adolescence
Some second-level reasoning	in young adolescents
Third-level conventional reasoning	during adolescence
Fourth-level conventional reasoning	later in adolescence
Fifth-level postconventional reasoning	in late adolescence or early adulthood.

Moral reasoning on a dilemma is not identical to moral conduct: emotion, relationships, incentives, culture and power affect what a person actually does.

17.4 Erikson and Marcia: identity as exploration and commitment

Erikson locates the central psychosocial task of adolescence in identity versus role confusion. Identity is a workable sense of continuity and sameness across time, combined with a social recognition that one is the person one understands oneself to be. It integrates earlier identifications with present capacities and future roles. Role confusion refers to difficulty organising these elements into a sufficiently coherent direction, not ordinary uncertainty during exploration. Successful development yields fidelity, the capacity to sustain commitments while recognising ideological and interpersonal difference.

James Marcia operationalised identity through two processes: **exploration**, the active consideration of alternatives, and **commitment**, an investment in chosen goals, values or roles. Their combinations produce four **identity statuses**:

IDENTITY STATUS	DESCRIPTION
Identity diffusion	neither active exploration nor stable commitment.
Foreclosure	commitment adopted without meaningful exploration, often from family or authority expectations.
Moratorium	active exploration without a settled commitment.
Identity achievement	commitment formed after meaningful exploration.

four
IDENTITY STATUSES

These are statuses, not fixed personality types and not an irreversible staircase. The same adolescent may be achieved in religion, foreclosed in vocation, in moratorium regarding relationships and diffuse about politics. Status can change when education, migration, conflict, discrimination, illness or new relationships reopen a domain. Moratorium can be

developmentally productive, while commitment itself is not proof of maturity if it was coerced or cannot be revised in response to experience.

17.5 Identity develops in relationships, culture and digital spaces

Healthy individuation changes the form of attachment rather than requiring emotional separation from the family. The adolescent seeks greater privacy, agency and reciprocal negotiation while still using caregivers as sources of security, values and practical support. Conflict may increase around boundaries, education, relationships, technology and appearance, but conflict alone does not demonstrate dysfunction. The clinically useful questions are whether disagreement can be negotiated, whether the adolescent has a voice, whether caregivers remain available, and whether autonomy is expanding in a way that is safe and culturally intelligible.

Peers provide comparison, belonging, rehearsal of adult-like intimacy and feedback about possible selves. Close friendships become more reciprocal and self-disclosing; peer groups can support exploration but can also enforce conformity. Social exclusion, bullying and minority stress can become incorporated into self-concept. Digital spaces extend these processes through persistent audiences, curated self-presentation, rapid feedback and access to identity communities. Online identity is not necessarily false; it may be experimental, aspirational, fragmented or more authentic than the identity permitted offline.

INDIA

In Indian practice, identity may be negotiated within strong family interdependence, educational competition, linguistic and religious communities, caste and class location, migration, gendered expectations and collective decisions about work or relationships. Do not equate autonomy with Western-style separation or assume that family commitment means foreclosure. Ask what the commitment means to this adolescent, whether alternatives were thinkable, how much choice was available and what consequences followed dissent. Assess the young person privately as well as in the family context, while explaining confidentiality and its safety limits.

17.6 Gender identity and psychosexual development

Gender identity, gender expression and sexual orientation answer different questions.

Gender identity
is the person's internal sense of gender.

Gender expression
is how gender is communicated through appearance, behaviour, name or social role.

Sexual orientation
concerns patterns of romantic or sexual attraction.

None can be inferred reliably from the others, from Tanner stage, from play or clothing, or from a single sexual experience. Exploration or nonconformity is not in itself a disorder.

Psychosexual development during adolescence includes integration of the sexually maturing body, desire, fantasy, attraction, values, consent, boundaries, behaviour, intimacy and relationship expectations. Pubertal capacity does not equal emotional readiness, informed decision-making or

consent. History-taking should separate attraction, identity, behaviour and distress because they may not align, particularly where stigma or safety concerns limit disclosure. Ask neutrally about relationships, coercion, online contact, contraception and infection protection where clinically relevant, without assuming heterosexuality or sexual activity.

In Freud's historical stage scheme, the genital stage is placed in adolescence. This remains examinable as theory but is not a contemporary developmental norm and does not provide a clinical threshold. Current assessment focuses on the adolescent's lived development, bodily experience, relationships, safety and functioning. Distress associated with gender incongruence must be distinguished from distress produced by rejection, bullying, family conflict or discrimination. A respectful interview uses the adolescent's stated name and pronouns, establishes what can safely be shared with caregivers, and assesses mood, self-harm risk and support without treating identity diversity as pathology.

17.7 Clinical assessment: normal exploration, developmental vulnerability and disorder

The assessment unit is the adolescent in a developmental system. Interview the adolescent privately for at least part of the assessment, interview caregivers, and obtain school or other collateral information when indicated. Explain confidentiality at the outset and state the circumstances in which safety requires disclosure. Establish pubertal trajectory and body experience, sleep, nutrition, cognition and school function, family relationships, peers, romantic and sexual development, gender experience, online life, substances, risk-taking, values, future plans and identity commitments.

For any concerning behaviour, reconstruct the sequence: developmental baseline, onset, triggers, context, frequency, persistence, degree of control, consequences and recovery. Ask whether it occurs mainly in hot peer contexts or also in calm solitary settings; whether it is exploratory, compulsive, coerced, intoxication-related or driven by elevated mood, depression, anxiety, trauma or neurodevelopmental difficulty; and whether it produces sustained impairment. Episodicity, loss of previously stable functioning, pervasive impairment, dangerous consequences, marked distress or a pattern grossly discordant with context weighs against a purely normative explanation.

Pubertal assessment requires the same construct discipline. Record Tanner morphology and source-stated expected ranges, but do not diagnose from an endpoint that was not validated as a clinical cut-off. When timing, sequence or physical findings raise concern, undertake appropriate paediatric or endocrine evaluation rather than converting an expected range into a referral rule. Identity assessment likewise avoids premature closure: uncertainty may be normal exploration, a stable commitment may be healthy or coerced, and apparent confusion may reflect unsafe disclosure conditions rather than lack of identity.

17.8 Examination synthesis and retrieval spine

A complete long answer moves from maturation to meaning. Define adolescence as a broad biological, psychological and social transition. Describe puberty and Tanner staging, making clear that stages are morphological and components are scored separately. Explain dual systems and

maturational imbalance as context-sensitive accounts of risk-taking. Add cognitive and moral development, then make identity formation the centre of the answer through Erikson's identity versus role confusion and Marcia's exploration-commitment statuses. Finish with family, peers, culture, gender, psychosexual development and clinical differentiation from disorder.

MNEMONIC

"body, brain, bond, belief and becoming"

Body recalls puberty and Tanner morphology. Brain recalls control, reward and hot-context decisions. Bond recalls family, peers and intimacy. Belief recalls abstract thought, values and moral reasoning. Becoming recalls identity exploration, commitment, gender and future roles.

Final clinical synthesis. Normal adolescent development is organised variability, not uniform instability. The safe psychiatric formulation links bodily maturation, neurodevelopment, relationships and culture to the adolescent's pattern of exploration and commitment. It respects diversity, preserves confidentiality, identifies coercion and impairment, and avoids turning either an expected age range or an identity difference into a diagnosis.

18 . Puberty, neurodevelopment of adolescence and risk-taking behaviour

Adolescence is a developmental transition, not merely an age band. Three processes run together but are not interchangeable: **puberty**, the biological maturation of the reproductive system and secondary sexual characteristics; **adolescent neurodevelopment**, the continuing reorganisation of brain structure, connectivity and function; and psychosocial development, in which the young person negotiates autonomy, identity, sexuality, peer belonging and adult roles. Their partial mismatch explains much of normal adolescent behaviour. Reward, emotion and social evaluation can acquire unusual motivational force while cognitive control is still becoming more consistent across situations. The result is not global irrationality. It is a context-sensitive period in which judgement may be good in calm conditions and less reliable under arousal, peer observation, immediate reward or threat.

How to use this page. Keep five distinctions clean. Puberty is not the whole of adolescence. Gonadarche is not adrenarche. Tanner stage describes physical maturation and does not assign a chronological age. Capacity for abstract reasoning does not guarantee self-regulation under emotional load. Finally, risk-taking is neither inevitable nor uniformly pathological: some exploration is developmentally useful, but its probability and consequences depend on the person, the peer group, the family, the opportunity and the behaviour involved.

MNEMONIC

"Body, brain, context"

Puberty is the biological maturation of the reproductive system and secondary sexual characteristics; adolescent neurodevelopment is the continuing reorganisation of brain structure, connectivity and function; and psychosocial development is the negotiation of autonomy, identity, sexuality, peer belonging and adult roles. Their partial mismatch explains much of normal adolescent behaviour.

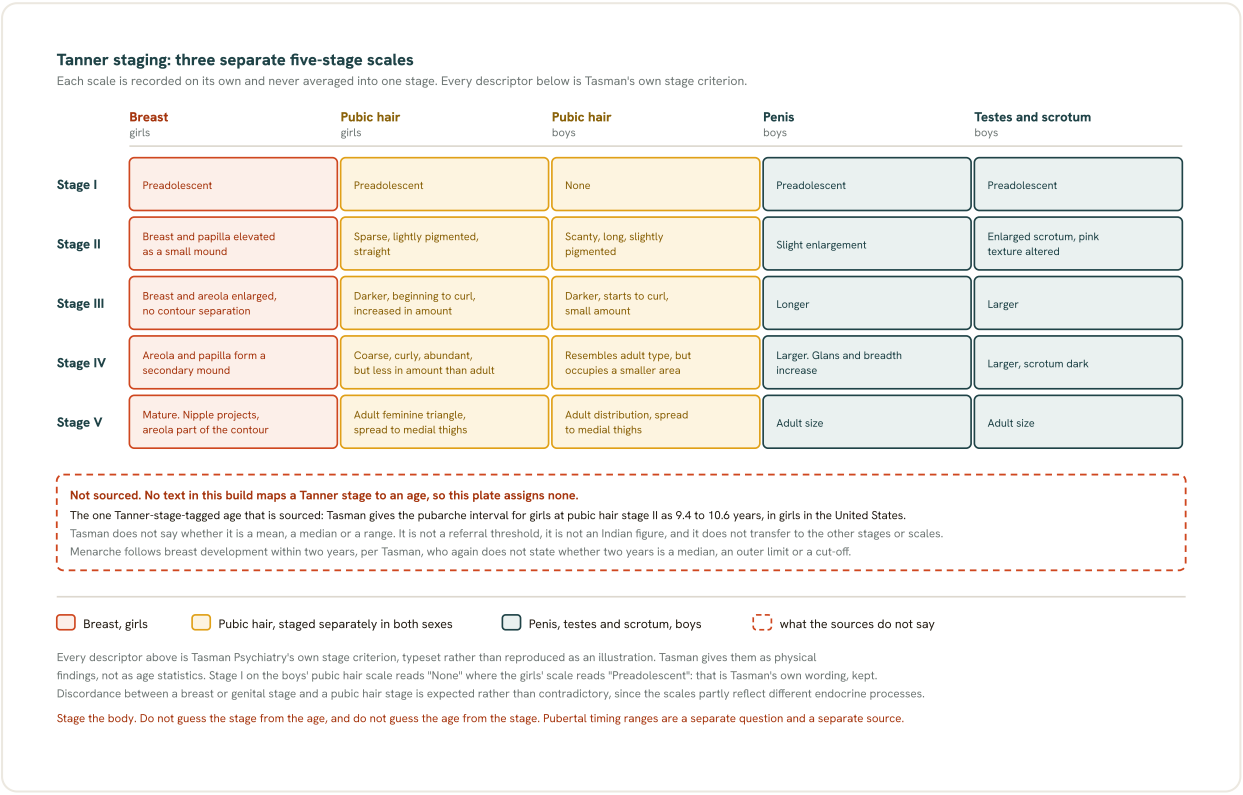


Fig 18.1 Tanner staging as three separate five-stage scales, after Tasman Psychiatry. The descriptors are typeset from Tasman's own stage criteria rather than reproduced as an illustration. No age is attached to any stage, because no source in this build maps one; the single Tanner-stage-tagged age that is sourced is named in the band below the grid, with the source's silence about what kind of number it is.

18.1 Puberty: endocrine activation and physical maturation

Puberty is driven by coordinated endocrine change, with gonadal and adrenal maturation proceeding through related but distinct pathways. Reactivation of the hypothalamic-pituitary-gonadal axis produces pulsatile gonadotropin-releasing hormone secretion, pituitary luteinising hormone and follicle-stimulating hormone release, and increasing gonadal steroid production. This **gonadarche** produces maturation of the testes or ovaries, the growth spurt and the development of secondary sexual characteristics. **Adrenarche** is the increase in adrenal androgen production; it contributes particularly to pubic and axillary hair, body odour and skin changes, but it is not evidence by itself that the gonadal axis has matured. Lewis describes adrenarche as beginning at **6 to 8 years**; because that source does not define the value as a normal limit or a referral threshold, it must not be used as either.

The observable sequence matters more than a single calendar age. In girls, breast development, pubic hair, acceleration in linear growth and menarche are related markers but need not advance in exact synchrony. In boys, enlargement of the scrotal-genital complex, pubic hair, penile growth, change in body composition, the growth spurt and spermarche similarly form a sequence rather than one event. Sex steroids also act on bone, muscle, adipose distribution, skin, sleep, sexual motivation and the brain. These biological effects interact with the meaning assigned to bodily change by the adolescent, family and peer culture. Thus an identical physical event can be experienced as welcome maturation, embarrassment, loss of control, gender incongruence or social advantage.

RULE **Stage the body; do not guess the stage from age.** Tanner stage is a physical examination description. Chronological age, menarche, height and the adolescent's own report may support the history, but none substitutes for the relevant stage criteria.

18.2 Tanner staging: what the five stages actually describe

Tanner staging uses separate five-stage scales for breast development, male genital development and pubic hair. Stage I is preadolescent. In girls, breast stage II is elevation of the breast and papilla as a small mound; stage III adds enlargement of the breast and areola without separation of their contours; stage IV produces a secondary mound of areola and papilla; and stage V is the mature contour, with a projecting nipple and the areola returning to the general breast contour. In boys, genital stage II is marked by scrotal enlargement with altered pink texture; stage III is characterised particularly by penile lengthening; stage IV adds increasing breadth and glans development with darker scrotal skin; and stage V is adult size. These are morphological descriptions, not age labels.

Pubic hair is staged separately in both sexes. Stage I has no pubic hair. Stage II is sparse and lightly or slightly pigmented hair, initially relatively straight. Stage III hair is darker, begins to curl and increases in amount. Stage IV is coarse, curly and adult-like but occupies a smaller area. Stage V has adult distribution, extending to the medial thighs; in girls it forms the adult feminine triangle. Discordance between genital or breast stage and pubic-hair stage is therefore not a contradiction: the scales partly reflect different endocrine processes. The examiner records each component separately rather than averaging them into a synthetic stage.

Use the Tanner reference plate for the visual sequence. Do not attach ages to its rows. Tasman states that menarche occurs within **2 years** after breast development, but the source does not identify that interval as a median, outer limit or referral cut-off; it should be repeated only as Tasman's descriptive statement. Menarche also does not mean that all physical maturation is complete.

Tanner stage is a clinical descriptor, not a judgement of psychological maturity, consent capacity, sexual experience or gender identity. Examination requires explanation, assent or consent as applicable, privacy, respectful exposure limited to what is necessary, and a chaperone according to clinical policy and the adolescent's needs. Self-assessment may support history-taking when

examination is not appropriate, but it is less reliable than a properly conducted clinical examination.

18.3 Pubertal timing: expected ranges, sequence and tempo

Normal timing is broad, and a range is not a diagnosis. Berk's *Child Development*, 8th edition, reports expected ranges for major pubertal events. These values describe windows in the cited population and must not be converted into medians, guarantees or stand-alone referral thresholds.

8 to 13 years	10.5 to 14 years	9 to 13.5 years	12 to 16 years
GIRLS: BREAST BUDDING AND ONSET OF THE HEIGHT SPURT	GIRLS: MENARCHE	BOYS: TESTICULAR ENLARGEMENT	BOYS: SPERMARCHE

SEX	PUBERTAL EVENT	EXPECTED RANGE
Girls	Breast budding and onset of the height spurt	8 to 13 years
Girls	Peak height spurt	10 to 13.5 years
Girls	Appearance of pubic hair	8 to 14 years
Girls	Breast-growth completion	10 to 17 years
Girls	Menarche	10.5 to 14 years
Boys	Testicular enlargement	9 to 13.5 years
Boys	Penile enlargement	10.5 to 14.5 years
Boys	Onset of the height spurt	10.5 to 16 years
Boys	Peak height spurt	12.5 to 15.5 years
Boys	Appearance of pubic hair	10 to 15 years
Boys	Spermarche	12 to 16 years
Boys	Completion of penile and testicular growth	12.5 to 16 years

Interpretation requires **timing**, **sequence** and **tempo**. Timing asks when change begins relative to the reference population; sequence asks whether expected components are appearing in a coherent order; tempo asks how the changes progress over time. A young person at one edge of a wide expected range may still be developing normally. Conversely, an unusual sequence, arrest or very rapid progression can warrant assessment even when one observed event happens within an expected range. Evaluation should integrate growth trajectory, nutrition and chronic illness, medication and substance exposure, neurological and endocrine symptoms, family pattern, psychosocial distress and examination findings. The ranges above are reference information, not permission to dismiss a concerning trajectory.

INDIA

No Indian population-specific pubertal timing ranges were available in the supplied sources. Do not silently relabel the ranges from Berk as Indian norms. In an Indian examination answer, state the source and population limitation, use the physical sequence and longitudinal growth record, and seek locally validated paediatric or endocrine guidance for clinical thresholds.

18.4 The adolescent brain: remodelling, connectivity and context

Adolescent neurodevelopment is network reorganisation, not simple growth of an unfinished brain. Experience-dependent synaptic stabilisation and pruning make frequently used circuits more efficient while reducing redundant connections. Progressive myelination improves the speed and reliability of long-range communication. White-matter organisation, cortical specialisation and integration among prefrontal, striatal, limbic and temporoparietal regions support gains in working memory, planning, response inhibition, error monitoring, future simulation, social cognition and emotion regulation. These processes do not mature in lockstep, and performance varies with task demands and emotional state.

The prefrontal cortex contributes to planning, rule maintenance, inhibition and valuation of future consequences. The ventral striatum and related dopaminergic circuits participate in reward anticipation, reinforcement learning, novelty and action selection. The amygdala and broader limbic circuitry help assign emotional salience, while medial prefrontal and temporoparietal systems contribute to self-referential and social inference. Development changes the balance and connectivity among these systems. Pubertal hormones can influence motivational and affective processing, but puberty and neural maturation are neither identical processes nor reducible to one hormone level.

A crucial distinction is between **cold cognition** and **hot cognition**. Cold cognition is reasoning under low arousal, with time to deliberate and little immediate social pressure. Hot cognition occurs when reward, threat, sexual interest, shame, anger or peers are salient. An adolescent may explain consequences accurately in the clinic and still choose differently in the heat of the real situation. The discrepancy does not prove deceit or incapacity. It shows that knowledge of risk and regulation of behaviour are separable functions.

TRAP **Do not teach adolescence as a defective-adult brain with a single completion age.** The examinable account is uneven, experience-sensitive network maturation. Adolescents can reason competently, especially in calm settings; vulnerability rises when immediate reward, emotion and peer evaluation load the system.

18.5 Dual-systems and maturational-imbalance models

The dual-systems family of models explains risk as a temporary imbalance between motivational drive and regulatory control. One system is often described as socioemotional or incentive-processing, involving reward-sensitive striatal and limbic circuits that become highly responsive to novelty, immediate gain and social evaluation. The other is a cognitive-control system, relying substantially on prefrontal and frontoparietal networks that support inhibition, planning and resistance to distraction. When incentive salience is high and control is not

consistently recruited, behaviour can shift toward immediate reward despite an intact verbal understanding of later costs.

The **maturational-imbalance model** makes the same broad point while emphasising developmental differences in the timing and coordination of subcortical affective systems and cortical control systems. Peer presence matters because it can increase the subjective value of reward and social approval rather than merely "pressure" the adolescent through explicit persuasion. A choice that looks reckless to an adult may therefore be locally rational within the adolescent's current valuation: the social reward is immediate, visible and identity-relevant, while the harm is delayed and probabilistic.

These models are useful, but they are not complete theories of every adolescent. They do not imply that all adolescents take more risks, that the brain mechanically causes misconduct, or that control always loses to reward. Risk depends on trait impulsivity and sensation seeking, prior adversity, mood and substance use, sleep and arousal, family monitoring, peer norms, opportunity, expected benefit and the severity and reversibility of possible harm. Nor do the models erase agency. They identify situations in which scaffolding, delay, environmental design and supportive adults can make self-control easier to deploy.

> **Must remember:** adolescent risk-taking is best understood as *context-sensitive motivational imbalance*, not absence of knowledge, absence of control or inevitable recklessness.

18.6 Gender identity and psychosexual development

Sex characteristics, gender identity, gender expression and sexual orientation are distinct constructs.

- Sex characteristics include chromosomal, gonadal, hormonal and anatomical features.
- Gender identity is the person's internal sense of gender.
- Gender expression is how gender is communicated through appearance, behaviour and social role.
- Sexual orientation concerns patterns of romantic or sexual attraction.

None can be inferred reliably from the others, and gender-nonconforming expression is not by itself psychopathology.

Puberty can make these domains more salient because the body changes visibly, sexual interest may intensify, peers classify one another more sharply and future relational roles become imaginable. For some adolescents, bodily change is congruent with identity; for others it produces or intensifies distress. The psychiatrist's task is not to force an identity conclusion. It is to clarify the adolescent's own experience over time, the degree of distress and impairment, body-related discomfort, family and peer response, bullying or violence, mood and self-harm risk, and the presence of coexisting neurodevelopmental or psychiatric needs without treating those needs as explanations that invalidate gender experience.

Psychosexual development includes integration of the sexually maturing body, attraction, fantasy, intimacy, values, consent, boundaries and responsibility. Freud's genital stage is historically examinable and is placed in adolescence, but it is not an adequate contemporary account of sexuality. A clinical formulation should instead be developmental, non-judgemental and safeguarding-aware. Ask in private, use the adolescent's terms, distinguish consensual exploration from coercion or exploitation, assess digital as well as in-person contexts, and explain confidentiality and its safety limits before eliciting sensitive information.

18.7 Risk-taking: adaptive exploration, hazardous exposure and individual difference

Risk-taking is any choice made under uncertainty in which an outcome of value is accompanied by a meaningful possibility of harm. It is broader than impulsivity. Impulsivity is poorly controlled action with insufficient forethought; sensation seeking is preference for novel, intense experience; risk-taking may be planned or spontaneous and may involve social, physical, sexual, financial, academic or legal consequences. Substance use, dangerous driving, unsafe sexual behaviour, aggression, self-harm challenges and online exposure are clinically important examples, but so are positive risks such as trying a difficult skill, leaving a familiar peer group or speaking publicly. Development requires exploration; prevention should reduce catastrophic and irreversible harm without attempting to abolish autonomy.

Risk rises when several layers converge. At the individual level consider reward sensitivity, impulsivity, attention and executive function, mood elevation or depression, trauma responses, substance intoxication, sleep loss and beliefs about invulnerability. At the interpersonal level consider peer norms, desire for status, romantic context, family conflict, supervision and modelling. At the environmental level consider access, anonymity, commercial persuasion, unsafe roads, weapons or substances, and online algorithms that amplify novelty and social comparison. Protective factors include a warm relationship with at least one dependable adult, clear and proportionate limits, prosocial peers, school connection, meaningful roles, future goals, emotion-regulation skills and practical barriers to the most dangerous opportunities.

The intervention follows the mechanism. Information alone is weak when the adolescent already knows the hazard. Use collaborative motivational interviewing, identify the reward the behaviour provides, rehearse implementation intentions, reduce access to lethal or irreversible means, create an exit plan for peer situations, move decisions out of high-arousal contexts and enlist supportive adults with the adolescent's participation whenever safety permits. Harm reduction and autonomy-supportive boundaries are often more developmentally effective than shame, surveillance without relationship or an abstract lecture about consequences.

18.8 Clinical assessment and the examination answer

Assess the adolescent confidentially, developmentally and systemically. Begin with the adolescent and caregiver together, then interview the adolescent alone for part of the consultation. Explain confidentiality and its limits in plain language before asking about risk. A HEEADSSS-style review keeps the field broad: home; education or employment; eating; activities and peers; drugs; sexuality; suicide, self-harm and mood; and safety. Add sleep, online

behaviour, bullying, violence, legal exposure, strengths and future goals. Obtain collateral information where necessary, but preserve a private space so disclosure is possible.

The formulation should connect the behaviour to development rather than merely name it. Describe pubertal status and trajectory, cognitive and neurodevelopmental strengths or vulnerabilities, identity tasks, emotional state, the immediate reward, peer and family context, access to means, previous consequences, protective factors and readiness to change. Separate experimentation from a persistent syndrome, and separate chronological age from decision-specific capacity. Capacity is functional: the young person must understand, retain, use or weigh relevant information and communicate a choice in the actual context being assessed.

For a long-answer question, use a disciplined sequence: define adolescence and puberty; describe gonadarche, adrenarche and Tanner staging; state the sourced timing ranges with their population limitation; explain pruning, myelination and changing frontostriatal-limbic connectivity; compare dual-systems and maturational-imbalance accounts; integrate identity, gender and psychosexual development; then finish with determinants, protective factors and clinical management of risk-taking. The highest-scoring conclusion is balanced: adolescence brings increased opportunity for hazardous behaviour, but also exceptional learning, flexibility, social sensitivity and capacity for growth. Developmental vulnerability is real without being destiny.

19 . Gender identity and psychosexual development in childhood

Gender identity and psychosexual development emerge through the continuing interaction of bodily maturation, cognition, attachment, learning, family relationships, peers and culture. They are not single milestones reached on a fixed birthday. The child gradually makes sense of bodily sex characteristics and social categories, develops an internal sense of gender, learns how gender is expressed and regulated in the surrounding culture, acquires privacy and interpersonal boundaries, and later integrates puberty, attraction, values, intimacy and consent into a more coherent identity. Variation is expected. The clinical task is to distinguish diversity and exploration from distress, impairment, coercion, trauma and disorder without making any one form of play, dress, friendship or attraction carry more meaning than it can support.

How to use this page. Begin by separating the constructs that examination questions often collapse. Then describe the major explanatory models, give Freud as a historical stage theory, outline expected sexual learning and boundary acquisition, and connect puberty and Tanner staging to adolescent identity. Finish with adolescent neurodevelopment, risk-taking and a developmentally informed clinical assessment. Throughout, hold **two** disciplines: Tanner stage is morphological rather than chronological, and gender expression or sexual behaviour cannot by itself establish gender identity, sexual orientation, abuse or psychopathology.

The must-memorise line: Separate body, identity, expression, attraction and behaviour, then interpret each against developmental context, consent, distress, impairment and safety.

19.1 The conceptual map: related domains that must not be collapsed

A high-scoring answer defines the constructs before explaining their development.

TERM	MEANING
Sex characteristics	include chromosomal, gonadal, hormonal and anatomical features; sex assignment at birth is a social and clinical classification usually made from observed anatomy.
Gender identity	is the person's internal sense of gender.
Gender expression	is the outward communication of gender through appearance, behaviour, name, language and social role.
gender role	is the culturally organised set of expectations attached to gender categories.

These domains interact, but none is a simple read-out of another.

Sexual orientation concerns patterns of romantic or sexual attraction. **Sexual behaviour** describes what a person does, while **sexual identity** is the label or self-understanding a person adopts. Attraction, behaviour and identity may not align, especially during development or where disclosure is unsafe. **Psychosexual development** is broader than genital maturation: it includes bodily awareness, pleasure, attachment, fantasy, attraction, gender, privacy, boundaries, consent, intimacy, values and the meaning assigned to relationships.

RULE **Ask five separate questions: body, identity, expression, attraction and behaviour.** Do not infer one from another. Tanner morphology does not determine psychological maturity; gender expression does not establish orientation; and a single behaviour does not establish a stable identity.

5
SEPARATE QUESTIONS

19.2 Development is transactional: biology, relationships and culture continually modify one another

No single-cause theory adequately explains gender identity or psychosexual development. Biological organisation supplies a sexed body and contributes hormonal and neurodevelopmental influences. The child experiences that body through touch, caregiving, language and other people's responses. Cognitive development permits classification, perspective-taking and an increasingly stable autobiographical self. Social learning supplies models, reinforcement and sanctions. Family, peers, school, religion, media and wider culture specify which expressions are encouraged, tolerated or punished. The child is active within this system, attending selectively, interpreting feedback and shaping the responses received from others.

A transactional model therefore replaces the false choice between nature and nurture. Bodily characteristics affect how others classify and treat a child; those responses influence opportunities and self-description; the child's preferences evoke further responses; and puberty

later changes both the body and its social meaning. Temperament, cognitive capacity, neurodevelopmental differences, family flexibility, peer acceptance and exposure to stigma alter the pathway. The same observable expression can consequently have different meanings in different children and settings.

Development also occurs within a hierarchy of contexts. Caregiver language and discipline operate at the immediate level; school rules and peer cultures organise daily belonging; media and institutions circulate ideals of masculinity, femininity and attractiveness; and legal, religious and economic conditions influence safety and disclosure. Culture is not an ornamental final paragraph. It helps determine which possibilities can be imagined, named and enacted.

19.3 Cognitive-developmental, social-learning and gender-schema accounts

The major theories differ in what they treat as the engine of development. In the cognitive-developmental account, the child actively constructs gender categories. The conceptual sequence is gender labelling, recognition that gender is stable across time, and gender constancy despite superficial changes in clothing, activity or appearance. Once the child regards a category as self-relevant, behaviour is organised toward consistency with it. This account explains active self-socialisation but may understate biological influence, early learning and the flexibility of real gender experience.

Social-learning theory emphasises observation, imitation, reinforcement and punishment. Children see which behaviours are rewarded in caregivers, siblings, peers and media figures; direct praise or ridicule then increases or suppresses expression. Social-cognitive theory adds expectations, self-efficacy and reciprocal influence, so the child is not merely a passive recipient of conditioning. These models explain how local gender conventions are acquired and why expression can change across settings, but learning a convention does not prove that the convention determines the child's internal identity.

Gender-schema theory links cognition and culture. Repeated cultural distinctions form organised schemas that guide attention, memory, interpretation and behaviour. Information marked as relevant to the self is noticed and remembered more readily, while schema-inconsistent examples may be overlooked or distorted. Schemas are efficient but revisable. Exposure to broader roles, flexible caregivers and counter-stereotypic models can enlarge the child's map of what is possible without dictating identity.

19.4 Freud's psychosexual theory: historically examinable, not a contemporary milestone schedule

Freud remains important for the history of developmental psychiatry and for examination essays, particularly his emphasis on early experience, conflict and unconscious meaning. His account is not a modern developmental surveillance tool. It gives neither a valid way to infer gender identity nor a clinical rule for deciding whether childhood sexual behaviour is expected. Contemporary formulation places the theory beside cognitive, learning, attachment, biological and sociocultural accounts rather than allowing it to stand as the sole explanation.

19.5 Sexual development in childhood: curiosity, privacy, boundaries and relationship learning

Childhood sexual development is broader than overt sexual behaviour. It includes learning the names and functions of body parts, recognising bodily differences, experiencing comfort and pleasure, asking questions, developing modesty, understanding private and public conduct, rehearsing family and relationship roles in play, and learning that bodies belong to their owners. Self-touch, curiosity and exploratory play can occur in development, but their meaning depends on context rather than on the behaviour label alone.

Assess behaviour along several dimensions: spontaneity, frequency, flexibility, mutuality, developmental similarity of the children involved, power difference, secrecy, coercion, emotional tone, explicitness, intrusiveness, response to calm redirection and effect on functioning. Developmentally understandable exploration is generally flexible, non-coercive and not organised around fear or a marked power imbalance. Concern rises with force, threats, injury, persistent distress, compulsive repetition, a substantial asymmetry in power or developmental capacity, explicit imitation beyond the child's likely experience, or behaviour that remains intrusive despite appropriate limits. No single sign proves abuse, but a concerning pattern requires careful safeguarding assessment.

Adults teach psychosexual safety through accurate language, matter-of-fact answers, respect for privacy, permission to refuse unwanted touch, distinction between safe privacy and unsafe secrecy, and consistent boundaries that do not shame the body. Excessive alarm can attach fear and guilt to ordinary curiosity; dismissiveness can leave the child without language for disclosure. The developmental aim is neither sexualisation nor silence, but embodied autonomy, appropriate privacy and the capacity to seek help.

19.6 Puberty and Tanner staging: physical maturation changes the developmental task

Secondary sexual characteristics make gender experience more immediate. See the Puberty topic.

19.7 Adolescence: identity formation, neurodevelopment and context-sensitive risk-taking

Normal adolescent development is asynchronous across body, brain and social role. Pubertal maturation increases the salience of body image, attraction, peer evaluation and belonging, while autonomy, intimacy, values and future roles are being renegotiated. In Erikson's account, the central conflict is identity versus role confusion. Identity integrates continuity across time with commitments in education, work, values, relationships, gender and sexuality. Ordinary uncertainty and exploration are not equivalent to role confusion.

19.8 Gender diversity, distress and contemporary classification

Variation in gender identity or expression is not itself evidence of mental disorder. A child may prefer activities, clothing, roles or companions that do not fit local stereotypes without experiencing incongruence or distress. Conversely, a child may experience a persistent difference between assigned sex and experienced gender even when expression is constrained. The clinician should explore the child's own account, consistency across contexts, bodily experience, family response, peer safety and functional impact without interrogating the child toward a predetermined conclusion.

WHO's ICD-11 places **gender incongruence** under conditions related to sexual health rather than mental and behavioural disorders, reflecting that transgender and gender-diverse identities are not conditions of mental ill-health. WHO also states that gender-variant behaviour and preferences alone are not a basis for assigning the diagnosis. The examinable distinction is therefore between identity diversity, incongruence and the presence of distress or clinical need. Distress may arise from bodily incongruence, but it may also arise from bullying, rejection, violence, shame or forced concealment; formulation must identify the source rather than attributing every symptom to identity.

TRAP **Do not diagnose from gender nonconformity.** Toys, clothing, mannerisms, friendships, fantasy play or one sexual experience do not by themselves establish gender identity, sexual orientation, abuse or disorder. The same rule prevents both pathologising diversity and missing genuine distress.

A developmentally competent interview uses the child's stated language where possible, avoids assumptions about heterosexuality or binary identity, and separates the young person's wishes from caregiver fears. Support does not mean forcing an identity label or predicting an adult outcome. It means maintaining safety, permitting honest exploration, reducing shame, treating co-occurring symptoms on their own merits and preserving access to appropriate specialist assessment when needed.

19.9 Clinical assessment, safeguarding and the Indian context

The assessment unit is the child within a developmental and relational system. Interview caregivers and the child, including time with the child separately when developmentally appropriate. Explain confidentiality and its safety limits. Establish the child's language for body and gender, pubertal status, body comfort, play and interests, attraction and relationships where relevant, family beliefs, peer response, school functioning, online exposure, privacy practices and sources of support. Ask what changed, when it changed, in which settings, what preceded it, how persistent and flexible it is, what meaning the child gives it, and whether distress belongs to the child, the family or both.

For sexual behaviour, reconstruct the event without repeated suggestive questioning. Assess the developmental capacities and power relationship of everyone involved, mutuality, coercion, threats, secrecy, explicitness, injury, emotional response, access to sexual material and the child's subsequent behaviour. Safeguarding concern requires a calm, child-centred response, careful documentation in the child's own words, attention to immediate safety and use of the appropriate multidisciplinary and statutory pathway. A behavioural sign neither proves nor excludes abuse.

INDIA

Gender and psychosexual development may be negotiated within joint or extended families, strong educational expectations, religious and linguistic communities, gendered household roles and unequal permission for autonomy. Ask who actually provides care, who controls disclosure and what consequences the child anticipates. Interviewing only the accompanying adult can erase the child's account; interviewing only the child can miss dependence and safety constraints. Use clear language in the family's preferred language, separate cultural meaning from coercion, and do not use "Indian culture" either to pathologise family interdependence or to excuse humiliation, violence or forced conformity. No Indian population-specific age sequence for gender labelling or identity consolidation is supplied, so none should be inferred.

Formulation should distinguish predisposing factors, current developmental tasks, precipitating events, maintaining responses and protective relationships. Screen for mood and anxiety symptoms, self-harm, trauma, bullying, family violence, neurodevelopmental differences, substance use and online exploitation when indicated. A sudden or episodic change, regression, pervasive impairment, marked distress, coercion, dangerous exposure or loss of previously stable functioning weighs against a purely normative explanation. Treatment targets the actual source of difficulty rather than trying to make identity or expression conform to a stereotype.

19.10 Examination synthesis: move from definitions to development, then to clinical discrimination

A complete long answer has a clear spine.

- Define sex characteristics, gender identity, gender expression, gender role, sexual orientation and psychosexual development.
- Explain transactional development through biological, cognitive, learning, family and cultural influences.
- Contrast cognitive-developmental, social-learning and gender-schema theories.
- Present Freud as a historical stage account with source-stated mappings, not as a milestone schedule. Describe childhood curiosity, privacy and boundary learning, then connect puberty and Tanner morphology to adolescent identity formation, dual systems, maturational imbalance and risk-taking. Finish by distinguishing diversity and exploration from distress, impairment, coercion, trauma and disorder.

MNEMONIC

"Body, self, signal, attraction, behaviour and safety"

Retrieval spine: *body, self, signal, attraction, behaviour and safety*. Body recalls sex characteristics, puberty and Tanner staging. Self recalls gender identity and identity formation. Signal recalls expression and gender roles. Attraction recalls orientation. Behaviour recalls what is enacted rather than assumed. Safety recalls consent, power, distress, impairment and safeguarding.

Final clinical synthesis. Gender identity and psychosexual development are developmental processes, not conclusions drawn from a single behaviour. Good psychiatry keeps constructs separate, respects bodily and identity diversity, reads puberty through morphology and source-stated ranges, and places every concern within relationships, culture, consent, distress, functioning and safety.

Development in context and clinical use

20 . Developmental red flags and warning signs

A developmental red flag is not simply a child who is slower than a remembered textbook average. It is a finding that raises the probability of a developmental disorder sufficiently to require prompt evaluation, or a pattern so biologically atypical that ordinary variation is an unsafe explanation. The examiner expects the resident to distinguish *variation* from *delay*, and delay from *deviance*, *dissociation*, *plateau* and *regression*. The central clinical question is therefore not, "Has the child crossed one age line?" but, "What is the trajectory, which domains are affected, and is the pattern compatible with normal variation?"

How to use this page. First learn the few findings that demand further evaluation, especially loss of acquired skills and the language-social warning signs. Then learn to recognise abnormal trajectories across gross motor, fine motor, language, social-adaptive and cognitive domains. Finally, separate **surveillance**, which is longitudinal and continuous, from **screening**, which applies a standardised tool, and from **diagnostic assessment**, which determines the developmental profile and cause. The milestone and primitive-reflex plates are memory maps; this page owns the clinical act of spotting deviation and deciding what happens next.

Loss of previously acquired language or social skills at any age is a red flag and requires prompt developmental evaluation.

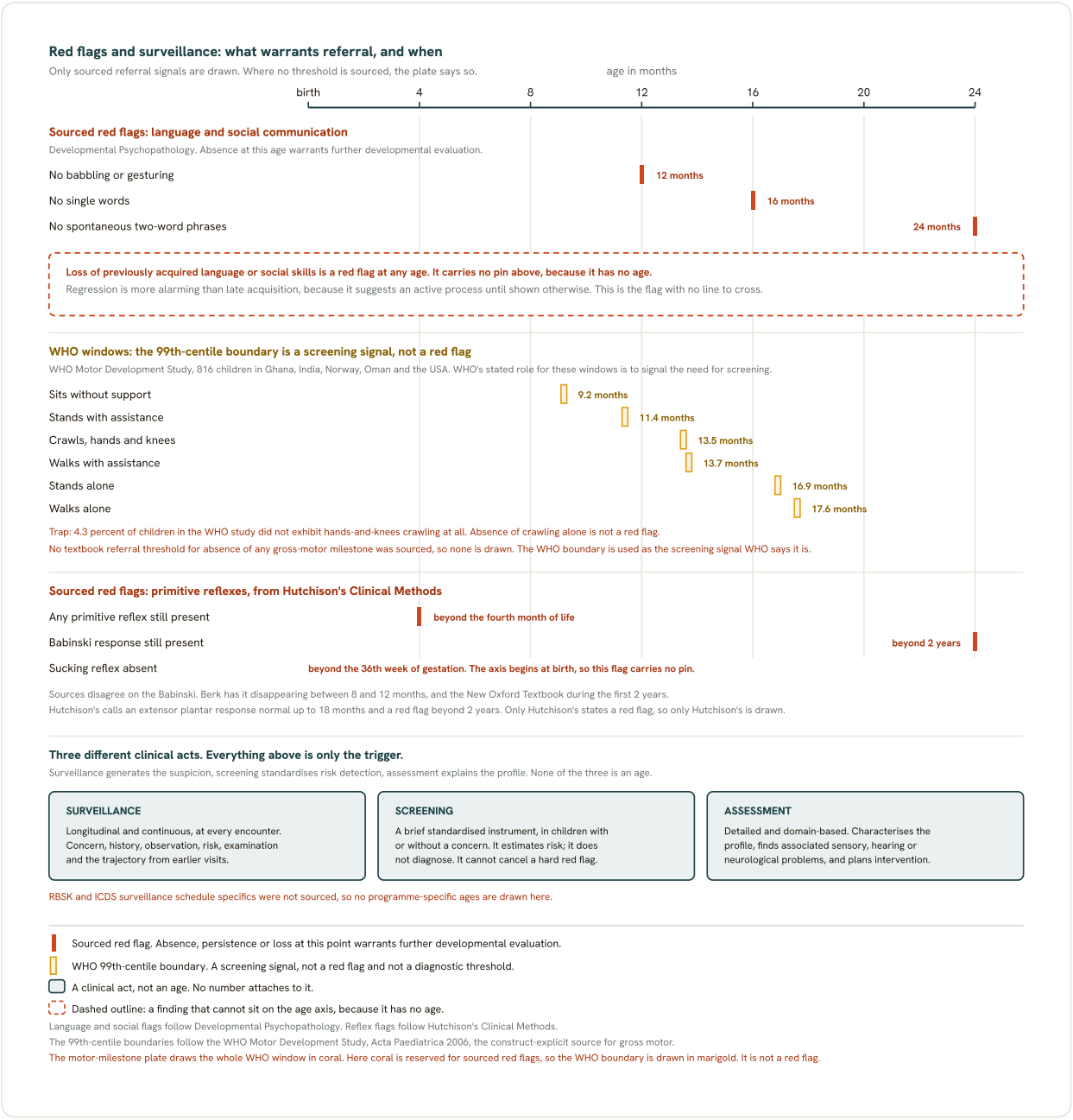


Fig 20.1 Red flags and surveillance, drawn so that only sourced referral signals appear. Coral pins are the language and social red flags from Developmental Psychopathology and the primitive-reflex red flags from Hutchison's Clinical Methods. Marigold markers are the 99th-centile boundaries of the WHO Motor Development Study windows, which WHO itself states are a signal to screen rather than a diagnostic threshold. No textbook referral threshold for absence of a gross-motor milestone was sourced, so none is drawn, and no surveillance schedule appears because RBSK and ICDS specifics were not sourced.

Developmental screening and assessment instruments: what is sourced, and what is not

One row carries real psychometrics. Three are almost empty. The empty cells are the finding, not an oversight: each property was searched for and no source states it.

Instrument	Age range	Items	Output and cut-off	Accuracy	Reliability
Trivandrum Development Screening Chart TDSC. A screening tool. Child Development Centre, Kerala.	Birth to 6 years	51	One item delay is a positive screen, called TDSC delay.	Sensitivity 84.62 percent Specificity 90.8 percent Negative predictive value 99.23 percent Negative likelihood ratio 0.17	Test-retest, intraclass correlation 0.77 Inter-rater, intraclass correlation 0.97
Developmental Assessment Scales for Indian Infants DASII. An assessment measure, not a screening test.	not sourced	not sourced	Two developmental quotients, Motor DQ and Mental DQ. A DQ below 85 is used as a delay marker.	not sourced	not sourced
Denver Developmental Screening Test II DDST-II. A screening test.	Birth to 72 months	not sourced	not sourced	not sourced	not sourced
Baroda Development Screening Test BDST. Introduced in 1991. India's first screening tool.	not sourced	not sourced	not sourced	not sourced	not sourced

The accuracy and reliability figures come from the chart's validation against the Denver Developmental Screening Test. The age range in the Denver row is sourced for the DDST-II.
No source states whether the version used as that reference standard and the DDST-II are the same. They are shown as two separate sourced facts rather than joined into one.

Named rather than hidden: what was searched for and is not sourced

DASII manual specifics. Administration age range, item count, norming sample, centiles, every cut-off other than the delay marker below 85, and all reliability and validity values.
TDSC item lines. The individual milestone items and their ages are not sourced. The psychometrics are; the contents are not, so the chart is described here and never reproduced.
The Denver test beyond its age range, and the Baroda test beyond its year and its primacy. Neither has a sourced item count, cut-off or accuracy figure.

not sourced. The property was searched for and no source states it. Nothing is supplied from memory to fill the cell.

Every other cell carries a value that appears in one of the sources named below. No instrument form is reproduced on this plate.

TDSC properties follow Nair and colleagues, Development and validation of the Trivandrum Development Screening Chart for children aged 0 to 6 years, Indian Journal of Pediatrics 2013.
The two DASII quotients follow Kadam and colleagues. The delay marker below 85 follows Shukla and colleagues. The Baroda test's year and primacy follow Shekhawat and colleagues.
The Denver age range follows Lewis, Child and Adolescent Psychiatry.

Screening estimates risk and does not diagnose. A negative screen does not overrule regression, an abnormal examination or persistent caregiver concern.

Fig 20.2 The developmental screening and assessment instruments compared by what is sourced. Only the Trivandrum chart carries validated psychometrics, from Nair and colleagues, and its accuracy is against the Denver Developmental Screening Test. The DASII contributes its two quotients and the delay marker below 85; the Denver test contributes only an age range; the Baroda test contributes only its year and its primacy. Dashed cells are properties that were searched for and are not sourced, left empty rather than filled from memory. No instrument form is reproduced.

20.1 Normal variation, delay and abnormal developmental trajectories

Development is a trajectory, not a checklist. A milestone age has meaning only when its construct is known.

MILESTONE CONSTRUCT	MEANING
A median	means that half of children have attained the skill by that age.
An expected range	describes a normal window.
An upper limit	is the outer bound regarded as normal.
A red-flag threshold	is an operational point at which further evaluation is warranted.

Converting an average or median into a referral threshold is a clinical error. Equally, being within an age window does not neutralise abnormal quality, asymmetry, regression or a concerning neurological examination.

Developmental delay is slower acquisition of skills in one or more domains while the usual sequence is broadly preserved. Global developmental delay describes substantial delay across multiple developmental domains in a young child, but the label does not state the cause.

Dissociation is unequal development between domains, such as relatively preserved motor ability with marked language-social delay. Deviance is an unusual sequence or quality of development rather than mere lateness. A plateau is failure to acquire new skills over time. Regression is loss of a skill that was convincingly acquired, and is more alarming than isolated late acquisition because it suggests an active or progressive process until shown otherwise.

RULE **Judge the child by trajectory, pattern and quality, not by one remembered average age.** A red flag can arise from absence, loss, asymmetry, abnormal sequence, abnormal movement quality or a widening gap between domains.

MNEMONIC

"Trajectory, pattern and quality"

Judge the child by trajectory, pattern and quality, not by one remembered average age. A red flag can arise from absence, loss, asymmetry, abnormal sequence, abnormal movement quality or a widening gap between domains.

20.2 Developmental surveillance, screening and assessment are different clinical acts

Developmental surveillance is the repeated, flexible clinical process conducted across encounters. It integrates parental concerns, developmental history, observation of the child, risk factors, physical and neurological examination, and the trajectory recorded at previous visits. Ask what the child can do spontaneously in daily life, not merely whether the child once performed a prompted task. Clarify onset, consistency, context, quality and whether any skill has been lost. Observe communication, play, reciprocity, posture, movement, hand use and problem-solving before directing the child, because spontaneous behaviour often contains the most valid developmental information.

Developmental screening is the use of a brief standardised instrument in children who may or may not already have an identified concern. It estimates risk; it does not diagnose. A negative screen does not overrule convincing regression, abnormal examination or persistent caregiver concern. Developmental assessment is the more detailed, domain-based evaluation used to characterise strengths and impairments, quantify development where appropriate, identify associated sensory or neurological problems, formulate differentials and plan intervention. Surveillance generates suspicion, screening standardises risk detection, and assessment explains the profile.

20.3 Spotting deviation: read the pattern before the individual milestone

Use five questions whenever development appears atypical.

1. Is this *absence* of a skill, *loss* of a skill, or merely inconsistent performance?
2. Is one domain affected or are multiple domains involved?
3. Is the sequence recognisable but slow, or qualitatively unusual?
4. Are there associated neurological signs, abnormal head growth, dysmorphism, feeding difficulty, poor vision or hearing, seizures, altered tone, weakness or asymmetry?

5. What is the functional consequence in communication, play, self-care, mobility, learning and participation?

Patterns narrow the differential. Predominantly motor delay with abnormal tone or reflexes points toward a motor-system disorder; language delay requires separation of hearing impairment, developmental language disorder, broader cognitive delay and autism-related social-communication difficulty; social-communication deviation with restricted or repetitive behaviour raises concern for autism; and global delay requires a broad biological and environmental assessment. In every pattern, check pregnancy and birth history, neonatal illness, seizures, infections, nutrition, medication or toxin exposure, family history, consanguinity, psychosocial deprivation and opportunities for learning. These factors modify interpretation but do not justify watchful waiting when a hard red flag is present.

Asymmetry is a warning sign even when an age threshold has not been crossed. Persistent one-sided hand use in infancy, unequal movement, early fixed hand preference, scissoring, persistent fisting, abnormal posturing or an abnormal gait directs attention to focal or motor-pathway pathology. Likewise, the manner of a skill matters: sitting with marked truncal instability and walking with an abnormal pattern are not made normal by timely onset.

20.4 Language and social-communication red flags: the hard thresholds

The most examinable age-linked warning signs are absence of early communication behaviours and loss of acquired social-communication skills. Developmental Psychopathology identifies the findings in the strip below as warranting further developmental evaluation. These are referral signals, not median attainment ages.

12 months	16 months	24 months	Any age
NO BABBLING OR GESTURING	NO SINGLE WORDS	NO SPONTANEOUS TWO-WORD PHRASES	LOSS OF LANGUAGE OR SOCIAL SKILLS

Interpret these against the quality of communication. Joint attention and pointing are expected around 12 months in most typically developing children according to the New Oxford Textbook of Psychiatry, and symbolic play is expected at 18 months in Dulcan's Textbook of Child and Adolescent Psychiatry. Concern rises when limited eye contact, poor response to name, absent sharing of interest, lack of communicative gesture, poor reciprocity or repetitive behaviour forms a coherent pattern. Do not diagnose autism from a single missed behaviour, but do not dismiss a convergent social-communication pattern because vocabulary appears adequate. The disorder itself, with its criteria and management, is developed in the Intellectual disability and autism spectrum disorder notes; this page owns only the act of noticing the pattern and referring.

Speech clarity must also be interpreted by construct. Kaplan and Sadock describes speech as about **50 percent** intelligible at 24 months, about **75 percent** intelligible to strangers at 36 months, and nearly **100 percent** intelligible to strangers by 4 years. These are expected values, not automatic referral thresholds. A child who is difficult to understand requires assessment of hearing, oral-motor function, speech-sound production, receptive and expressive language, and the effect on participation.

20.5 Gross-motor warning signs: use WHO windows as screening signals

The WHO Motor Development Study provides construct-explicit windows of achievement bounded by the 1st and 99th centiles. It followed children in Ghana, India, Norway, Oman and the USA, so India was part of the source population. Sitting without support occurred from 3.8 to 9.2 months, standing alone from 6.9 to 16.9 months, and walking alone from 8.2 to 17.6 months. A child beyond the upper boundary signals the need for appropriate screening, which is the role WHO itself states for these windows. They are screening signals, not diagnostic cut-offs and not independently sourced referral thresholds.

Gross-motor concern is strengthened by an abnormal neurological examination, loss of motor skills, persistent asymmetry, abnormal tone, weakness, poor antigravity movement, abnormal movement quality, feeding or respiratory difficulty, or delay in other domains. Conversely, an isolated variation in sequence can be benign. The gross-motor plate should be read as a set of windows rather than as a ladder of compulsory achievements.

TRAP **Hands-and-knees crawling is not universal.** In the WHO study, 4.3 percent of children did not exhibit it at all. Absence of crawling alone is therefore not a developmental red flag; judge the overall trajectory, movement quality and neurological findings.

20.6 Primitive reflexes: persistence, asymmetry and re-emergence matter

Primitive reflexes are expected in the newborn period and are progressively integrated as cortical control matures. Their interpretation is not a memory contest about disappearance ages alone. A reflex that is unusually persistent, strongly asymmetric, absent when it should be present, or re-emerges after integration may indicate neurological dysfunction. The primitive-reflex plate provides the expected sequence; the clinical examination must compare the reflex response with tone, posture, spontaneous movement, symmetry and the child's functional motor repertoire.

Hutchison's Clinical Methods treats persistence of primitive reflexes beyond the fourth month of life as a general warning sign, persistence of the Babinski response beyond 2 years as a red flag, and absence of the sucking reflex beyond the 36th week of gestation as a red flag. These sourced warning signs should not be replaced by conflicting remembered averages. A reflex abnormality warrants a neurological and developmental assessment rather than an isolated label.

20.7 Indian screening instruments: TDSC and DASII

The Trivandrum Development Screening Chart (TDSC), developed at the Child Development Centre, Thiruvananthapuram Medical College, is an Indian screening instrument for children from birth to 6 years. The validated chart contains 51 items, and **one item delay** constitutes a positive screen termed "TDSC delay". In its validation against the Denver Developmental Screening Test, sensitivity was 84.62 percent, specificity 90.8 percent, negative predictive value 99.23 percent, test-retest reliability 0.77, and inter-rater reliability 0.97. These properties make it useful for screening, but a positive result is not a diagnosis and a negative result cannot cancel a hard clinical red flag; the underlying theory of sensitivity, specificity, predictive value and reliability belongs to the Psychometry, Assessment and Descriptive Psychopathology notes.

The Developmental Assessment Scales for Indian Infants (DASII) yields separate **Motor DQ** and **Mental DQ**. Indian follow-up studies use a DQ below 85 as a marker of delay. DASII is an assessment measure rather than a substitute for surveillance, and the two quotients help display dissociation between motor and mental development. The Baroda Development Screening Test, introduced in 1991, was India's first developmental screening tool according to Shekhawat and colleagues. Keep the categories clear in an answer: TDSC and the Baroda instrument are screening tools; DASII provides domain-based developmental quotients.

20.8 When to refer and what the first evaluation must contain

Refer promptly when there is regression, a hard red flag, abnormal neurological findings, marked asymmetry, a deviant developmental sequence, multi-domain delay, or persistent concern despite a reassuring screen. Do not use "wait and watch" as a substitute for surveillance. If observation is appropriate for a borderline concern, it requires a documented baseline, an explicit review plan and instructions to return earlier if skills are lost or new warning signs appear. Early referral is not overdiagnosis: it opens the route to hearing and vision assessment, developmental and neurological evaluation, aetiological investigation where indicated, and early intervention while diagnostic clarification continues.

The initial doctor-facing work-up begins by verifying the concern with caregiver examples and direct observation, mapping skills across all domains, and establishing whether the course is delayed, dissociated, deviant, plateauing or regressive. Examine growth, head size and trajectory, dysmorphic features, skin markers, vision, hearing, oral-motor function, tone, power, reflexes, coordination, gait and asymmetry. Review antenatal, perinatal, neonatal, medical, seizure, nutritional, family and psychosocial history. Select investigations from the phenotype rather than ordering an indiscriminate panel, and refer to the appropriate developmental paediatric, paediatric neurological, audiological, ophthalmological, speech-language, occupational or mental-health service.

The viva answer. Define the warning sign, state whether the quoted age is an expected value, a range, an upper limit or a red-flag threshold, describe the whole developmental pattern, and finish with action. The safest closing line is: *I would not diagnose from a missed milestone alone, but I would not delay evaluation when there is regression, a sourced red flag, abnormal quality or a convergent multi-domain concern.*

21 . Effects of deprivation, institutionalization and early adversity on development

Early development depends not only on freedom from injury, but on the reliable presence of expected experience: responsive caregiving, language, touch, play, nutrition, safety and opportunities to explore. **Deprivation** is the absence or marked reduction of these expected inputs. **Threat** is the presence of experiences that signal actual or possible harm, such as violence or abuse. **Early adversity** is the broader term, covering deprivation, threat, loss, instability, discrimination, displacement, severe family stress and other conditions that exceed the child's available supports. These exposures often co-occur, but they are not interchangeable. The

distinction matters because a child lacking cognitive and social input may follow a different developmental pathway from a child repeatedly learning that the environment is dangerous.

How to use this page. Build the answer around **five** propositions.

1. Effects depend on the nature, timing, duration and severity of the adversity, not merely its presence.
2. **Institutionalization** is not a single exposure: it may combine rotating caregivers, low responsiveness, sensory monotony, crowding, malnutrition, illness and repeated loss.
3. The classical studies by Spitz and Harlow established the developmental importance of relationship and contact, but have major methodological and ethical limits.
4. The Romanian natural experiments show both persistent deprivation-related difficulties and substantial recovery after family placement.
5. **Resilience** is an outcome produced by interacting systems, not a fixed trait that makes a child invulnerable.

MNEMONIC

"NTDS"

Effects depend on the **N**ature, **T**iming, **D**uration and **S**everity of the adversity, not merely its presence.

five
PROPOSITIONS

21.1 Concepts and causal framework: deprivation is not the same as separation, poverty or threat

Define the exposure before attributing an effect. **Neglect** is a failure to meet a child's physical, medical, educational, emotional or supervisory needs. **Psychosocial deprivation** refers particularly to insufficient responsive interaction, stable attachment opportunities, language and cognitive stimulation. **Maternal deprivation** is the older historical label, but it is too narrow when it implies that only a biological mother can provide the necessary relationship. The developmentally relevant issue is the availability of a small number of stable, sensitive and committed caregivers. **Separation** is an event; its effect depends on what relationship is lost, what care replaces it, how predictable the transition is and whether reunion and continuity are possible. **Privation**, used in older literature, means that a selective attachment relationship was never adequately established, whereas deprivation may refer to loss of, or insufficient access to, an expected input.

Poverty increases exposure to nutritional compromise, environmental hazards, caregiver stress, disrupted schooling and reduced access to care, but poverty itself is not proof of neglect or deficient attachment. Likewise, institutional residence does not make every child's experience identical. Quality varies with caregiver continuity, responsiveness, group size, opportunities for play and language, health care and contact with family. The causal formulation therefore asks:

what input was absent, what threat was present, when and for how long, through which mediators, and what protective relationships remained?

Sheridan and McLaughlin's dimensional model separates deprivation from threat.

DIMENSION	DEFINITION	DEVELOPMENTAL RELEVANCE
deprivation	the absence of expected social and cognitive inputs	Deprivation is especially relevant to language, executive function and higher-order cognitive development because the relevant circuits receive less patterned experience.
threat	experience involving harm or danger	Threat more directly calibrates fear learning, attention to danger and emotion-processing systems.

The model is not a claim of **one** exposure to one brain region. Real children commonly experience both dimensions, and development reflects their interaction with genes, prenatal conditions, nutrition, illness, relationships and later environments.

RULE **Exposure is not outcome.** Early adversity changes probabilities across several developmental domains; it does not establish inevitable damage, a particular diagnosis or poor parenting by inference.

21.2 Mechanisms: how early adversity becomes biologically and psychologically embedded

Adversity acts through repeated transactions between the child and the environment. A responsive caregiver ordinarily provides co-regulation: detecting the infant's state, reducing distress, organising sleep and feeding, sharing attention, naming experience and making exploration safe. When care is inconsistent or impersonal, arousal may remain poorly regulated and the child receives fewer contingent exchanges from which language, social prediction and self-regulation are learned. A threatening environment adds repeated detection of danger, narrowing attention toward immediate survival cues. The adaptations may be useful in the adverse setting while carrying costs in a safer one.

The stress-response system is one mediator. Repeated or uncontrollable stress can alter hypothalamic-pituitary-adrenal regulation, autonomic balance, immune and inflammatory signalling, sleep and metabolic function. The expected pattern is not simply "more cortisol": chronic exposure may produce elevation, flattening or blunted reactivity depending on timing, measurement and adaptation. At the neural level, studies report group differences in cortical and white-matter development, frontolimbic connectivity, reward learning and executive-control systems after severe deprivation. These are probabilistic associations, not a diagnostic brain signature. Prenatal risk, malnutrition, infection, genetic liability, placement selection and later experience can confound observed differences.

Learning mechanisms are equally important. Sparse language and play reduce opportunities to acquire vocabulary, causal models and executive strategies. Unpredictable care makes sustained

attention and delayed reward less useful than rapid switching. Repeated caregiver loss can make adults unreliable sources of safety. Harsh or frightening care may produce hypervigilance, avoidance, dissociation, aggression or compulsive compliance. Epigenetic findings offer plausible pathways by which experience can influence gene expression, but they do not justify claims that adversity permanently "rewrites" a child's genes. Biological embedding remains open to modification because the developing system continues to transact with later care.

21.3 Developmental phenotype: broad effects with marked individual variation

Severe deprivation can affect growth, cognition, language, motor development, attachment, emotion and behaviour at the same time. Physical findings include poor weight or linear growth, feeding and sleep disturbance, recurrent illness and stereotyped self-stimulation. Developmental effects may include delayed motor coordination, reduced language exposure and vocabulary, lower general cognitive performance, weak working memory, impaired sustained attention and executive dysfunction. School-age manifestations may include learning difficulty, inattention, impulsivity and problems with planning rather than a uniform global deficit.

Socioemotional development can follow more than one pattern. Some children are withdrawn, wary, emotionally constricted and do not reliably seek or accept comfort. Others show indiscriminate approach, reduced reticence with unfamiliar adults and poor checking back with a caregiver. In current classification these patterns are distinguished as reactive attachment disorder and disinhibited social engagement disorder, which are developed in the Child behavioural, emotional and other disorders notes. Both require a history of grossly insufficient care, but neither is diagnosed from that history alone. Assessment requires the child's actual pattern of behaviour, direct observation with current caregivers and exclusion of better explanations. Indiscriminate friendliness is not equivalent to secure attachment, and a child may develop a selective attachment to a new caregiver while disinhibited social behaviour persists.

Emotional and behavioural outcomes include anxiety, depressive symptoms, irritability, aggression, emotional dysregulation, dissociation, self-harm risk and later interpersonal difficulty. Early institutional deprivation has also been associated with a characteristic cluster involving inattention or overactivity, autistic-like social-communication features, disinhibited social behaviour and cognitive impairment. These are group-level patterns, not proof that every previously institutionalized child has a deprivation-specific syndrome. Development may show multifinality, in which the same adversity leads to different outcomes, and equifinality, in which a similar clinical presentation arises from different developmental routes.

21.4 Spitz: anaclitic depression and hospitalism

Spitz's observations made emotionally responsive care visible as a developmental necessity. René Spitz compared infants reared in different institutional settings and described deterioration after loss of a familiar caregiver despite provision of basic physical care. He used anaclitic depression for the syndrome following prolonged separation from an attachment figure: protest and weeping gave way to withdrawal, reduced responsiveness, disturbed feeding and sleep, developmental slowing and physical decline. Hospitalism described the more pervasive developmental deterioration seen with prolonged impersonal institutional care, including

passivity, failure to thrive, susceptibility to illness and high mortality in the historical settings he observed.

The enduring inference is not that separation from the biological mother mechanically causes depression. It is that food, cleanliness and medical custody are insufficient without stable, contingent and affectionate human interaction. Spitz also helped shift hospital and residential practice toward caregiver access and relational continuity. His terms are historically examinable, but anaclitic depression is not simply the infant form of a current major depressive episode, and hospitalism is not a modern diagnostic category.

The limitations are substantial. The studies were observational, the institutional groups differed in more than caregiver contact, physical illness and nutrition were incompletely controlled, assessment was not blinded, and the interpretation was shaped by contemporary psychoanalytic theory. These weaknesses prevent precise causal estimates. The observations remain influential because later attachment research, adoption studies and intervention trials converge on the importance of stable, responsive care.

21.5 Harlow: contact comfort, fear regulation and the limits of animal evidence

Harlow showed that feeding alone does not explain attachment behaviour. Infant rhesus macaques were reared with inanimate surrogate mothers, one made of bare wire and another covered with soft cloth. Even when the wire surrogate supplied milk, the infants spent much more time clinging to the cloth surrogate. Under fear, they sought the cloth surrogate, and its presence supported exploration of an unfamiliar setting. Harlow called the relevant property contact comfort. The experiment directly challenged drive-reduction accounts in which attachment was merely learned because the caregiver relieved hunger.

Later social-isolation work showed disturbed social interaction, fear, repetitive behaviour and impaired mating and parenting in monkeys deprived of normal peer and maternal experience. Partial improvement after later social contact demonstrated both the cost of early deprivation and some capacity for recovery. The broader lesson is that attachment is supported by comfort, safety, reciprocal interaction and species-typical social experience, not by calories alone.

The evidence cannot be translated literally from macaques to children. Human caregiving includes language, culture, symbolic meaning, multiple attachment figures and institutions that vary widely. Rearing conditions were artificial, outcomes were partly species-specific, and the procedures caused severe suffering that would not meet contemporary ethical standards. Harlow's work therefore supports a mechanism, the motivational importance of comfort and relationship, but does not define a human sensitive-period cutoff or prove a deterministic human outcome.

TRAP **Spitz did not prove that only mothers matter, and Harlow did not prove that feeding does not matter.** Both challenged custodial models of care by showing that stable, responsive relationship and comfort are independent developmental needs.

21.6 Romanian natural experiments: ERA and the Bucharest intervention

The Romanian studies provide the clearest human evidence that severe institutional deprivation has causal developmental effects and that family care can produce substantial recovery. After the fall of the Romanian regime, many children who had experienced profoundly understaffed, socially and cognitively sparse institutions entered adoptive families. The English and Romanian Adoptees study, or ERA study, followed Romanian adoptees placed in the United Kingdom and compared their development with adoptees who had not experienced the same severe deprivation. Because nutrition, prenatal risk and deprivation still varied, it was not a randomized experiment. Its strength was the unusual, time-limited exposure followed by generally well-resourced adoptive care and prolonged follow-up.

Many children showed striking catch-up in physical growth and cognitive performance after adoption, demonstrating that early effects were not fixed. A subgroup with more prolonged severe deprivation showed persistent or emerging difficulties in cognition, inattention or overactivity, disinhibited social engagement and autistic-like social communication. The ERA investigators described this as a deprivation-specific pattern. Some difficulties persisted into adult life even after years in supportive families, while emotional symptoms could become more apparent later. **Two** conclusions must be held together: recovery can be large, and residual vulnerability can remain.

The Bucharest Early Intervention Project added stronger causal evidence by randomly assigning institutionalized children to high-quality foster care or care as usual, with a never-institutionalized comparison group. Assignment to foster care produced better cognitive and physical outcomes and fewer attachment or social-relatedness difficulties and other psychopathology across follow-up. Studies also found more favourable trajectories in brain electrical activity and aspects of white-matter development. Placement timing and the subsequent quality and stability of care influenced some outcomes, but not every domain showed the same timing effect. It is therefore inaccurate to teach one universal age after which recovery is impossible.

The projects are complementary rather than interchangeable. ERA is an adoption-based longitudinal natural experiment with strong evidence of long-term developmental patterning. The Bucharest project is a randomized foster-care intervention that strengthens causal inference about the benefit of family placement. Ethical debate remains because the trial occurred in a setting where institutional care was still the prevailing care pathway, and researchers did not remove children assigned to care as usual. Its central clinical result is nevertheless clear: high-quality family care is an active developmental treatment, not merely a change of address.

21.7 Sensitive periods, cumulative risk and developmental timing

A sensitive period is a time of heightened plasticity, not an expiry date for recovery. During periods when attachment, language, sensory systems and stress regulation are being rapidly organised, expected input can have unusually strong effects. Earlier onset, greater severity, longer duration and involvement of multiple developmental systems generally increase risk. Yet the timing gradient differs by outcome: language, attachment behaviour, executive function, growth

and emotional symptoms do not share one timetable. A single global cutoff converts a graded and domain-specific finding into a false rule.

The cumulative-risk model predicts increasing difficulty as adversities accumulate. It is useful for public-health stratification but an unweighted count hides whether the exposures were deprivation, threat or instability, their severity and duration, and the protective systems surrounding the child. Adverse childhood experience scores similarly describe population-level dose-response associations; they are not diagnostic tests, causal explanations or individual prognoses. Two children with the same count may have very different exposures, meanings and outcomes.

Development also involves experience-expectant plasticity, in which the brain anticipates common inputs such as patterned language and responsive interaction, and experience-dependent plasticity, in which individual learning modifies circuits throughout life. Early deprivation can therefore constrain the architecture on which later learning builds, while later relationships, education and treatment can still reorganise function. Recovery may be domain-specific: physical catch-up can coexist with executive or relational difficulty, and secure attachment to a new caregiver can coexist with persistent social disinhibition.

Must remember: early adversity is probabilistic, timing is domain-specific, and stable responsive caregiving is both the principal protective factor and the core intervention.

21.8 Clinical assessment, prevention and management

The clinical task is to reconstruct the developmental ecology, identify current needs and change the caregiving environment. Establish immediate safety first. Take a chronological account of prenatal and birth risk, nutrition, illness, developmental opportunities, separations, caregiver changes, institutional conditions, abuse or threat, schooling and current placement. Record the source and certainty of each claim because records may be incomplete and narratives may conflict. Assess growth, hearing, vision, sleep, feeding, neurological status, language, cognition, adaptive function, attachment behaviour, attention, mood, trauma symptoms, self-harm and social functioning. Observe the child with the present caregiver and obtain collateral information from school and previous services when appropriate.

Do not repeatedly elicit graphic trauma details when they are not required for care. Ask what happened, what continues, what triggers current difficulty and what helps. Separate a child's adaptations from moral judgement: food hoarding, watchfulness, indiscriminate friendliness, lying, emotional shutdown or controlling behaviour may have been functional in an unpredictable setting. Also avoid diagnostic overshadowing. Developmental disability, autism, attention-deficit/hyperactivity disorder, post-traumatic symptoms, depression, anxiety, malnutrition and sensory impairment may coexist with, resemble or occur independently of deprivation-related problems.

Management begins with a safe, stable, responsive family environment and the smallest feasible number of consistent caregivers. Prevent further placement disruption, support the caregiver-

child relationship, coach caregivers in contingent responding and co-regulation, and establish predictable routines without punitive rigidity. Provide nutritional, medical, sensory, developmental, speech-language and educational interventions according to need. Use trauma-focused treatment for clinically significant trauma symptoms, not simply because adversity occurred. Parent-child and attachment-focused work must be evidence-based and non-coercive; forced holding, induced regression and "rebirthing" practices are unsafe.

INDIA

In Indian practice, distinguish poverty and family stress from wilful neglect, and assess the wider caregiving network rather than assuming a nuclear-family model. Kinship care may preserve language, culture and continuity, but safety and caregiver capacity still require direct assessment. When residential care cannot be avoided, the developmental targets are caregiver continuity, responsive interaction, play and language, schooling, nutrition, health care, sibling and safe family contact, and an active plan toward stable family-based care. Coordination among paediatrics, psychiatry, clinical psychology, social work, speech and language services, education and child-protection systems is usually more important than any single test.

For an examination answer, define deprivation and distinguish it from threat; describe the multi-domain phenotype and mechanisms; present Spitz and Harlow with their limitations; compare the ERA natural experiment with the Bucharest randomized foster-care intervention; explain sensitive periods without a rigid cutoff; and finish with resilience, protective systems and family-based intervention. The mature conclusion is neither pessimistic nor sentimental: early severe deprivation can leave enduring developmental effects, but the developing child remains plastic, and timely, stable, high-quality relationships materially alter the trajectory.

22 · Resilience and protective factors in child development

Resilience is positive adaptation despite exposure to significant adversity. It is not invulnerability, a fixed temperament, or proof that adversity was harmless. It is a **dynamic developmental process** produced by transactions between the child and changing caregiving, family, school, peer, cultural and social systems. The same child may function well in one domain and struggle in another, and may show competence at one point but difficulty after a later developmental demand. The useful clinical question is therefore not, "Is this child resilient?" but, "What risks, resources and adaptive processes are operating now, in which domain, and what can be changed?"

How to use this page. Build the answer in **three** moves. First, establish both sides of the definition: meaningful adversity and demonstrable adaptation. Second, distinguish a factor that generally promotes development from one that specifically buffers the effect of risk. Third, move across ecological levels, from child capacities to at least one stable caring adult, family organisation, school belonging and community resources. The classic deprivation literature supplies causal clues, but its most defensible lesson is neither determinism nor romantic recovery: early relationships and stimulation matter greatly, developmental plasticity remains real, and earlier restoration of family care generally permits broader recovery.

3	5	4	3
RESILIENCE MODELS	ECOLOGICAL LEVELS	INTERVENTION TASKS	PREVENTION LEVELS

Resilience is not a trait inside the child: it is positive adaptation arising from dynamic child-context processes despite significant adversity.

22.1 Core concepts: risk, promotive factors, protective factors and vulnerability

The work of Norman Garmezy, Michael Rutter and Emmy Werner redirected research from cataloguing damage toward studying variation in outcome and the processes that alter risk pathways. Ann Masten's phrase *ordinary magic* captures the mature position: resilience usually arises from ordinary adaptive systems, not rare heroic qualities. It also differs from post-traumatic growth, which denotes perceived or demonstrable positive change after struggle; a child can be resilient without reporting growth, and claimed growth does not exclude distress.

A **risk factor** raises the probability of an adverse outcome; it does not make that outcome inevitable. Risks may be biological, psychological or social, and their meaning depends on timing, duration, severity and developmental context. **Cumulative risk** is often more informative than a single exposure because poverty, caregiver illness, violence, maltreatment, discrimination, disrupted schooling and unsafe neighbourhoods cluster and transact. **Equifinality** means that different developmental pathways can lead to a similar outcome, whereas **multifinality** means that the same early adversity can lead to different outcomes.

A **promotive factor** predicts better functioning across levels of risk. A **protective factor**, in the stricter research sense, modifies the effect of adversity: its benefit is especially evident when risk is present. A **vulnerability factor** amplifies the effect of risk. A resource such as good schooling may be promotive in most children and protective under family adversity, depending on the hypothesis and data. This distinction matters in an examination answer because merely listing desirable characteristics does not explain resilience.

RULE **Demonstrate adversity and adaptation separately.** Resilience can be inferred only when significant risk has occurred and the child shows adequate functioning in a specified domain, judged against developmentally and culturally appropriate expectations.

22.2 Models of resilience: how protection changes a developmental pathway

MODEL	HOW PROTECTION CHANGES THE PATHWAY
compensatory model	A positive influence has a beneficial effect independent of risk, partly offsetting its burden.
protective or buffering model	An interaction: the association between adversity and poor outcome is weaker when the protective process is present.
challenge, steeling or inoculation model	Manageable stress, successfully negotiated with adequate support, may strengthen later coping. It must not be used to justify preventable adversity; overwhelming or uncontrollable stress is not therapeutic.

Differential susceptibility and biological-sensitivity models add a further correction. A highly reactive child may fare worse in an adverse environment yet gain more from a supportive one. The same characteristic is therefore not always a vulnerability. Contemporary developmental psychopathology treats resilience as a changing trajectory generated by person-context transactions, developmental cascades and feedback loops. Improved caregiver responsiveness may strengthen regulation, which improves school participation, which then enlarges peer support and competence. Conversely, one failure can spread across domains if no system interrupts it.

22.3 Early adversity: threat, deprivation and biological embedding

Early adversity is heterogeneous. Experiences dominated by threat, such as violence or abuse, make harm salient and may bias fear learning, vigilance and emotion processing. Experiences dominated by deprivation, such as severe neglect or understimulation, remove expected cognitive, linguistic and relational input and may particularly affect learning and executive development. Most real children experience mixtures of both, so the distinction is a formulation aid rather than a diagnostic partition.

Repeated activation of stress-response systems without adequate co-regulation can produce toxic stress and allostatic load. Candidate pathways include altered hypothalamic-pituitary-adrenal regulation, autonomic reactivity, sleep disturbance, inflammatory signalling and experience-dependent changes in neural networks supporting attention, reward, memory and affect regulation. These are probabilistic mechanisms, not permanent lesions. Genes influence sensitivity to environments; environments influence gene expression and neural development; later caregiving and learning can alter the trajectory. This is the biological basis for holding risk and plasticity together.

22.4 Romanian orphan studies: the abstracted lesson

Developmental plasticity is real. Timing and the quality and stability of placement matter. Catch-up is domain-specific: catch-up in height or IQ does not prove recovery in attachment, attention, social functioning or later mental health.

TRAP **Do not turn deprivation research into either determinism or "complete recovery".** Group-level persistence does not fix an individual child's destiny, and catch-up in height or IQ does not prove recovery in attachment, attention, social functioning or later mental health.

22.5 Sensitive periods, developmental timing and recovery

A **sensitive period** is a phase during which experience has an unusually strong influence on a developing system; learning may remain possible later, but often requires more input or follows a different route. A **critical period** is a narrower claim in which an experience is required within a restricted window for typical development. Human psychosocial development usually warrants the more cautious term *sensitive period*. The institutional studies support timing effects, but they do not justify one universal cut-off for every function.

Different systems have different windows and recovery curves. Attachment organisation, language, executive function, growth, peer reciprocity and stress regulation need not recover together. Outcome depends on the nature of deprivation, its duration and severity, the child's prior condition, biological susceptibility, the timing and stability of placement, and the quality of later caregiving and education. Developmental cascades explain why early intervention has broad value: restoring caregiver regulation can improve attention and exploration, which expands learning, competence and relationships. The converse is also true, so later transitions can reveal difficulties that seemed absent earlier.

22.6 Protective processes across the child's ecology

- **Child level.** Cognitive ability, language, flexible problem-solving, self-regulation, sociability, realistic self-efficacy and the capacity to seek help can support adaptation. These are partly shaped by experience and should not be moralized as willpower.
- **Caregiver level.** The most consistently useful process is at least one stable, committed and emotionally available adult who notices the child, provides co-regulation, sets predictable limits and repairs relational ruptures.
- **Family level.** Warmth, routines, low conflict, safe housing, adequate material resources, shared meaning and support for caregivers reduce chaos and preserve developmental opportunity.
- **School and peer level.** A safe school, teacher attunement, academic support, opportunities for mastery, inclusive peer relationships and protection from bullying create competence and belonging.
- **Community and cultural level.** Accessible health and social services, safe neighbourhoods, social cohesion, mentors, recreation, faith or cultural networks, and policies that reduce poverty and discrimination operate upstream. Culture shapes which outcomes count as competent adaptation and which supports are acceptable.

A protective process is strongest when it is developmentally matched, available in ordinary settings and sustained across transitions.

INDIA

Formulate the ecology, not merely the child. Ask about caregiver mental illness and substance use, domestic violence, migration, caste or minority stress, gendered restriction, disability, school exclusion, examination pressure, digital and peer environments, and material insecurity. Then map usable protection: an extended-family adult, teacher, peer, Anganwadi or school support, paediatric and mental-health services, child-protection mechanisms and local community networks. Extended family can be protective, neutral or harmful; do not assume that family presence equals emotional safety. When abuse, exploitation or neglect is ongoing, safeguarding and reduction of exposure come before teaching the child coping skills.

22.7 Assessment: a strengths-based formulation without minimizing harm

Assessment begins with a timeline of exposures, developmental transitions and changes in functioning. Specify the adversity by type, severity, duration, proximity and current status; separate threat from deprivation where useful; and identify mediators such as sleep, caregiver responsiveness, school attendance and peer exclusion. Examine adaptation in multiple domains: symptoms, attachment and relationships, learning, behaviour, physical health, self-care and age-appropriate participation. Obtain accounts from the child, caregivers and school because competence and distress are context-dependent.

Then construct a resilience map: risks and vulnerabilities; existing resources; mechanisms through which they help; inaccessible or unstable supports; and leverage points that can change the trajectory. A resilience questionnaire may organize information but cannot certify a resilient personality. Cross-sectional good functioning may conceal effort, dissociation, parentification or a later cost, while symptoms in one domain can coexist with genuine competence in another. Trauma-informed assessment therefore combines safety, curiosity and developmental formulation without forcing disclosure or demanding a narrative of growth.

22.8 Intervention: reduce adversity, restore relationships and build adaptive systems

Intervention is not "resilience training" alone. The **first** task is to stop or reduce the active adversity: ensure safety, treat caregiver illness, address violence and substance use, secure nutrition, housing and schooling, and prevent repeated placement disruption. The **second** is to strengthen caregiving through responsive parent work, co-regulation, predictable routines and support for caregiver stress. The **third** is to build the child's skills in a developmentally fitted way, including emotion identification, problem-solving, executive supports, social competence, mastery and help-seeking. The **fourth** is to enlarge the ecology through school accommodations, mentoring, peer connection and coordinated health, education and social care.

MNEMONIC

"Reduce - Restore - Build - Enlarge"

Reduce the active adversity; restore relationships through responsive parent work, co-regulation, predictable routines and support for caregiver stress; build the child's skills; enlarge the ecology through school accommodations, mentoring, peer connection and coordinated health, education and social care.

Effective prevention combines universal supports for all children, selective interventions for groups exposed to elevated risk and indicated treatment for children already showing difficulty. Review outcomes over time and across domains, especially at transitions. The ethical endpoint is not to make children tolerate unsafe systems. It is to reduce preventable exposure, increase dependable protection and restore the ordinary relationships and opportunities through which development proceeds.

22.9 Exam synthesis

A complete long answer opens with resilience as a dynamic process, distinguishes promotive from protective effects, and gives compensatory, buffering and challenge models. It then explains cumulative risk, equifinality, multifinality and developmental cascades; uses Spitz, Harlow and the Romanian orphan natural experiments with their limitations; and links the ERA findings to sensitive periods without claiming a universal cut-off. Finish with child, caregiver, family, school and community protective processes, followed by assessment and intervention. The single sentence that rescues the answer from a list is this: **resilience emerges when ordinary adaptive systems, especially stable caregiving, regulation, learning, belonging and social protection, remain available or are restored under adversity.**

Apply and consolidate

23 . Apply: worked cases

These cases close the developmental arc by making the resident perform the decisions that lists of theories and milestones are meant to support. The sequence is deliberate: date a milestone without turning a typical age into a deadline, recognise a genuine referral signal, identify an attachment strategy from reunion behaviour, formulate temperament as a person-environment fit, and apply a developmental theory without pretending that it is a screening instrument.

MNEMONIC

"Phenomenon - construct - comparison - clinical action"

Identify the phenomenon actually being tested, name the relevant construct, compare it only with an age or pattern that measures the same construct, and state what follows clinically.

How to use this page. In each case, take the steps in this order.

WHAT TO ESTABLISH	TASK
Phenomenon	Identify the phenomenon actually being tested.
Construct	Name the relevant construct.
Comparison	Compare it only with an age or pattern that measures the same construct.
Clinical implication	State what follows clinically.

The answer comes last. A correct label without the intervening reasoning is fragile in a viva and unsafe in practice.

23.1 Milestone dating: late against a typical age, still within the WHO window

Presentation. A child at 15 months of age pulls to stand, cruises along furniture, stands briefly without support and communicates socially, but has not yet walked alone. There has been steady acquisition of skills, no loss, no asymmetry and no abnormality of tone or movement quality. The caregiver has read that children usually walk independently by **12 months** and asks whether this proves **developmental delay**.

Reasoning. The first task is to name what the two ages mean. Kaplan and Sadock describes independent walking as expected at 12 months and gives an expected range of 9 to 15 months. An **expected age** describes typical attainment; it is not a **referral threshold**. The WHO Motor Development Study gives a different and more construct-explicit measure: its 1st-to-99th-centile window for walking alone is **8.2 to 17.6 months**. WHO states that its upper boundary is a signal for appropriate screening when a child appears late, not a diagnostic cut-off.

The child is later than the typical 12-month anchor but remains within the WHO achievement window and at the end of Kaplan and Sadock's expected range. The preserved progression toward independent gait and the absence of regression, asymmetry or abnormal motor quality further reduce the force of a single late-looking date. This does not mean that development is ignored. Surveillance continues, and examination still covers all domains, hearing, vision and neurology. It means only that the typical age cannot be promoted into a referral rule.

Answer. This is a late-normal gross-motor attainment on the information given, not developmental delay established by the 12-month expected age. Continue developmental surveillance and reassess the trajectory. Crossing the WHO **17.6-month** boundary would be a screening signal, while regression or abnormal neurological findings would change the action immediately.

23.2 Deviation call: a sourced communication red flag

Presentation. A child at 24 months of age uses several meaningful single words and obtains desired objects by pointing, but never produces spontaneous two-word phrases. Motor development has progressed, and the caregiver reports no loss of previously acquired skills.

Reasoning. The finding is not judged from vocabulary size alone. Berk gives 18 to 24 months as an expected range for combining two words, but the clinically decisive statement is separate:

Developmental Psychopathology identifies absence of spontaneous two-word phrases at **24 months** as a **red flag** warranting further developmental evaluation. Here the age is explicitly a referral signal, not merely an expected attainment or median.

The threshold does not diagnose a language disorder or autism. The next step is to define the profile.

- Confirm whether phrases are truly spontaneous rather than imitated.
- Assess receptive language, gesture, joint attention, reciprocity and symbolic play.
- Establish language exposure across all languages used by the child.
- Examine hearing and oral-motor function.

Map gross motor, fine motor, cognitive or adaptive, and social-emotional development rather than inferring global delay from one communication finding. The absence of regression is reassuring about the course but does not cancel the hard red flag.

Answer. This is a developmental red flag requiring prompt hearing and developmental evaluation. It is a referral decision, not a diagnosis, and a reassuring motor history or a negative brief screen would not overrule it.

23.3 Attachment-pattern identification: contact sought but not used effectively

Presentation. During a Strange Situation observation, a young child explores little, becomes intensely distressed when the caregiver leaves, and hurries toward the caregiver on reunion. Once picked up, the child arches away, pushes against the caregiver, continues crying and does not settle sufficiently to return to play.

Reasoning. Separation distress alone cannot classify attachment. The reunion is more informative because it shows whether renewed access to the caregiver restores regulation. A secure child can seek and use comfort, then resume exploration. An avoidant child minimises overt proximity-seeking and may turn away or ignore the caregiver. This child instead maximises attachment signals: proximity is urgently sought, yet contact is mixed with anger or resistance and does not readily produce settling.

The simultaneous approach and resistance form a coherent strategy and therefore differ from **disorganisation**, where behaviour lacks a stable strategy and may include contradictory, apprehensive, frozen or disoriented sequences. The observed pattern describes this child's relationship with this caregiver in this procedure. It is not a diagnosis, a fixed personality trait or proof of inconsistent caregiving.

Answer. The pattern is ambivalent or resistant attachment, pattern C. The decisive clues are intensified proximity-seeking, resistance during contact and failure to use reunion effectively for soothing and renewed exploration.

23.4 Temperament and goodness of fit: the setting creates the difficulty

Presentation. A child watches an unfamiliar classroom activity from the edge, declines the teacher's first invitation and speaks little while everyone is watching. With advance warning, time

to observe and a quiet invitation from a familiar teacher, the child joins, completes the task and later participates comfortably. At home and with familiar peers, communication and play are fluent. The school has responded by calling the child stubborn and demanding immediate public participation.

Reasoning. Thomas and Chess directs attention to behavioural style before disorder. The initial response to novelty is withdrawal; the later capacity to join after familiarisation concerns adaptability. Because the response is cautious, improves gradually and is not described as an intense, persistently negative or globally dysregulated pattern, it is closer to a slow-to-warm-up temperament than to the classic difficult constellation.

The impairment is transactional. Immediate public performance and criticism create a poor **goodness of fit** by punishing the child's characteristic entry into novelty. Preparation, observation, phased entry and a familiar adult improve the fit without declaring that the child can avoid every demand. The cross-setting strengths argue against treating silence in the unfamiliar classroom as proof of a fixed language deficit, but persistent distress or impairment would still require assessment for anxiety, communication difficulty and other alternatives.

Answer. This is a **slow-to-warm-up temperamental pattern** made problematic by poor goodness of fit. Management should alter the transaction through predictable preparation and graduated participation while separately assessing any sustained impairment.

23.5 Theory application: supported performance is not a new Vygotskian stage

Presentation. A child cannot independently sort a mixed set of objects by a changing rule. The examiner first restates the goal, then models the opening move and finally uses a visual cue. With that graduated help, the child completes the remaining items and applies the same strategy to a related task. A static score records only the initial failure.

Reasoning. Vygotsky asks how performance changes through social mediation. The lower boundary is what the child can do independently; the upper boundary is what becomes possible with appropriate assistance. The distance between them is the zone of proximal development. The examiner's calibrated prompts are scaffolding: support is increased only as needed, then should be faded as responsibility transfers to the learner. Improvement that generalises to a related task is stronger evidence of an emerging strategy than completion achieved by simply giving the answer.

Piaget would ask what structure of classification or rule use the task requires, and a static assessment would describe unaided performance. Those are different questions. The assisted success must not be reported as independent mastery, but neither should the unaided failure be treated as the child's full learning capacity. Most importantly, Vygotsky proposed no age-linked stages, so the case cannot be labelled as entry into a new Vygotskian stage.

Answer. The case demonstrates performance within the **zone of proximal development**, revealed through **scaffolding** and dynamic assessment. Record independent and assisted

performance separately, fade help, test transfer and investigate language, attention, memory or task mismatch if well-calibrated support does not unlock performance.

RULE **An expected age describes typical attainment; it is not a referral threshold.** A typical age cannot be promoted into a referral rule.

TRAP **Do not report assisted success as independent mastery.** The assisted success must not be reported as independent mastery, but neither should the unaided failure be treated as the child's full learning capacity.

12 months	9 to 15 months	8.2 to 17.6 months	24 months
TYPICAL INDEPENDENT WALKING AGE	KAPLAN AND SADOCK EXPECTED RANGE	WHO WALKING WINDOW (1ST TO 99TH CENTILE)	TWO-WORD-PHRASE RED FLAG

HOLD THIS

A correct label without the intervening reasoning is fragile in a viva and unsafe in practice.

24 . Consolidation

This closing topic turns developmental psychiatry into a retrievable clinical map. The aim is not to recite every date in isolation. It is to recover **three** linked structures under examination pressure: which question each **developmental theory** asks, which observable functions belong to each **developmental domain**, and how the meaning of an age determines whether the doctor continues surveillance, screens or refers.

How to use this page. Learn the master mnemonic, cover the page and work through the answer-free prompts, then redraw the theory and milestone tracks from memory. On checking the redraw, be strict about construct.

TRAP **A typical age is not a deadline.** A WHO **99th-centile** boundary is a screening signal rather than a diagnosis, and only an explicitly sourced red flag supports an age-linked referral call.

three	five	1st-to-99th-centile
LINKED STRUCTURES	DEVELOPMENTAL DOMAINS	WHO GROSS-MOTOR CONSTRUCT

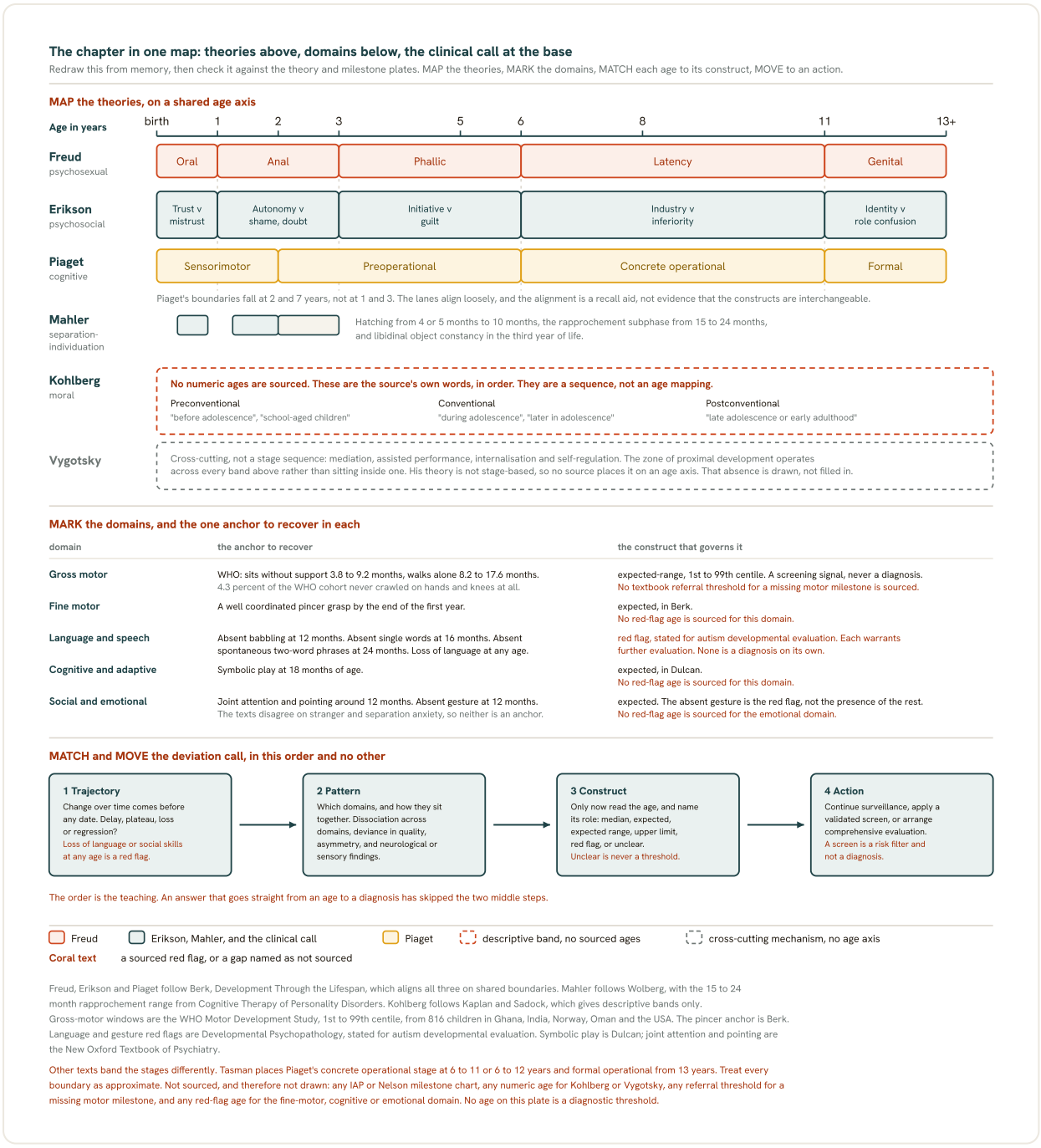


Fig 24.1 The whole-chapter synthesis map, drawn to be redrawn from memory. Theory lanes follow Berk, Mahler follows Wolberg, and Kohlberg sits in descriptive bands because no numeric ages are sourced for him. Vygotsky is drawn across the axis rather than on it, since his theory is not stage-based. Gross-motor windows are the WHO Motor Development Study, 1st to 99th centile; the language and gesture red flags are Developmental Psychopathology, stated for autism developmental evaluation. The plate carries one anchor per domain rather than the milestone tables, and names the domains for which no red-flag age is sourced.

24.1 The retrieval method: rebuild relationships, not isolated lists

Retrieve the map in a fixed clinical order. Start with the explanatory theories, move to observable development across domains, attach every age to its normative construct, and finish with the clinical action. This order prevents three common collapses: a theory stage becoming a milestone, an expected attainment becoming a referral threshold, and a positive screen becoming a diagnosis.

The theories answer different questions about the same developing person.

THEORY	QUESTION
Piaget	how cognition is organised
Erikson	which psychosocial conflict is foregrounded
Freud	how drive and conflict are organised
Mahler	how psychological separateness develops within relationship
Kohlberg	how moral decisions are justified
Vygotsky	what learning becomes possible through social mediation

HOLD THIS

Their temporal alignment is a recall aid, not evidence that the constructs are interchangeable.

24.2 Master mnemonic: MAP, MARK, MATCH, MOVE

MNEMONIC

MAP - MARK - MATCH - MOVE

MAP the theory lanes: cognition, psychosocial conflict, psychosexual organisation, separation-individuation and moral reasoning, with sociocultural mediation running across them. **MARK** observable development in the **five** domains: gross motor, fine motor, language and speech, cognitive or adaptive, and social and emotional. **MATCH** each age to its **normative construct**: median, expected attainment, expected range, upper limit, red flag or a source-stated age whose normative role remains unclear. **MOVE** from observation to action: describe the trajectory and quality, look for loss, asymmetry and multi-domain involvement, use screening as a risk filter, and refer for regression, a sourced red flag or a concerning neurological or sensory pattern.

The mnemonic contains the chapter's division of labour. The theory map explains; the milestone map describes; the construct check interprets; and the final verb commits the doctor to an action. If the answer jumps directly from an age to a diagnosis, one of the middle steps has been skipped.

24.3 Answer-free active recall

Cover the rest of the page and answer each prompt aloud or on paper. Check only after completing the retrieval attempt.

1. What distinct developmental question is asked by Piaget, Erikson, Freud, Mahler, Kohlberg and Vygotsky?
   How would you reconstruct the source-stated age lanes for Piaget, Erikson and Freud without turning theoretical brackets into clinical thresholds?
   What is the sequence of Mahler's separation-individuation account, and which two similarly named cognitive and relational constructs must not be confused?
   How are Kohlberg's levels and stages ordered, and what exactly is scored in a moral dilemma?

Where should Kohlberg and Vygotsky sit on a theories-by-age map, and why must neither be given an invented numeric row?

2. Name the five developmental domains and describe how a limitation in one can alter performance in the others.
   What do cephalocaudal and proximodistal organisation explain, and what do they not date?
   Reproduce the WHO gross-motor achievement windows from the milestone plate and state the clinical meaning of the upper boundary.
   Why is absence of hands-and-knees crawling alone an unsafe referral rule?
   Trace the communication sequence from prelinguistic exchange through words, combinations, grammar and intelligibility, preserving the construct attached to each anchor.
   Which communication findings are explicit age-linked red flags, and how would you evaluate a child who meets one?
3. How do **developmental delay**, **dissociation**, **deviance**, **plateau** and **regression** differ?
   How do **surveillance**, **screening** and **formal developmental assessment** differ in purpose and output?
   Which reunion behaviours distinguish secure, avoidant, ambivalent or resistant, and disorganised attachment?
   Name the Thomas-and-Chess dimensions, distinguish their three constellations, and formulate one example of goodness of fit.
   How do responsiveness and demandingness generate the parenting-style patterns, and why are outcome associations not deterministic?
4. How would you separate gender identity, gender expression, sexual orientation and sexual behaviour in a developmental assessment?
   Why must Tanner stage be assigned from morphology rather than chronological age or psychological maturity?
   How do dual-systems and maturational-imbalance accounts explain a difference between calm reasoning and behaviour in a highly charged peer context?
   Which features of deprivation, later care and protective relationships determine whether risk becomes persistent impairment or recovery?

24.4 The synthesis redraw: theories above, milestones below, action at the base

Redraw the synthesis as aligned horizontal tracks. Across the top, place the age axis from infancy through adulthood. Give Piaget, Erikson and Freud separate lanes using the source-stated stage bands, and give Mahler a shorter early relational lane using only its sourced phase timings. Place Kohlberg in ordered descriptive bands rather than numeric ages. Draw Vygotsky beside the entire axis as a cross-cutting process of mediation, assisted performance, internalisation and self-regulation. The alignment should make temporal overlap visible while keeping each theory's explanatory target separate.

Below the theory lanes, draw the five developmental domains. In the gross-motor lane, reconstruct the WHO windows from sitting without support through walking alone and label the **1st-to-99th-centile** construct. In the fine-motor lane, recover the sequence from grasp and

transfer through pincer control, construction, scribbling and copied forms. In the language lane, move from vocalisation and gesture through meaningful words, combinations, grammar and intelligibility. In the cognitive or adaptive lane, place symbolic representation, problem-solving and theory-of-mind anchors. In the social and emotional lane, move from reciprocity and selective attachment through shared attention, symbolic play, peer engagement and regulation. Use the existing milestone and reflex plates to check the redraw rather than recreating their source-labelled tables in prose.

Add a separate pubertal branch rather than forcing it onto the childhood milestone ladder. Record Tanner morphology by component, not by age, and place identity formation, relationships, gender and psychosexual development beside the adolescent body and brain changes. This preserves the central distinction: physical maturation, cognitive capacity, moral reasoning, identity and consent are related but are not interchangeable measures.

Finally, draw the clinical action rail beneath every domain. Its sequence is *trajectory, pattern, construct, action*. Mark regression, plateau, asymmetry, abnormal quality, sensory or neurological findings and unevenness across domains before checking a date. Then label the date honestly as expected, a range, an upper limit, a red flag or unclear. End with the appropriate move:

- continue surveillance or apply a validated screen
- arrange comprehensive developmental evaluation

RULE **Developmental psychiatry is not the memorisation of ages, but the disciplined interpretation of change over time.** The completed redraw should make one principle unavoidable.

Previously asked

This chapter is the one place in the series where the honest answer about past questions is that the examiner has not asked them here. Normal development is examined, and examined often, but it is examined as *psychology* under Paper I rather than as child psychiatry under Paper III. Every developmental question on record in the catalogue sits in the basic sciences and psychology section: Erikson's psychosocial stages has appeared four times, most recently in 2021 and before that in 2017 and twice in 2012, always as a ten-mark question; Jean Piaget was asked in 2011; and psychological development in adolescence, paired with its relation to psychiatric disorders in adolescence, came up in 2018 and again in 2020. Those questions and their model answers live where they were asked, in the General and Developmental Psychology notes, and they are not repeated here.

That distribution is worth reading rather than shrugging at, because it tells you how the material is tested. The theories are examined as theories, on their own terms, in a psychology paper: name the stages, get the order right, get the count right, say what each stage is *for*. What this chapter adds is the part the examiner does not ask directly and the clinic asks constantly, which is the deviation call. No question on record asks for a milestone table. Plenty of clinical practice asks

whether this particular child, at this particular age, is outside the normal window, and that judgement rests on knowing which of the ages you memorised is a typical attainment and which is a screening boundary. A candidate who can recite Piaget's four stages and still cannot say whether a fourteen-month-old who is not walking needs referring has learned the examinable half and missed the useful half.

ON THE THEORIES, EXAMINED UNDER PAPER I PSYCHOLOGY

Erikson and his psychosocial stages is the highest-yield developmental question in the catalogue, at four appearances for ten marks. Piaget follows. Both reward the same discipline: the stages in order, at their exact count, each with its central conflict or operation and its one clinical use. The age bands are the least reliable part of both answers and should be given as the approximate, source-dependent ranges they are. MUHS 2011, 2012, 2017, 2021

ON ADOLESCENCE, EXAMINED UNDER PAPER I PSYCHOLOGY

Psychological development in adolescence is asked with its psychiatric relation attached, which is the examiner signalling that normal adolescent development is the setup and the disorders are the payoff. The normal half is owned here: identity formation, the neurodevelopment of adolescence, the imbalance between a fast-maturing reward system and a slow-maturing control system, and why risk-taking is developmentally expected rather than pathological. The disorder half belongs to the disorder chapters. MUHS 2018, 2020

WHAT HAS NEVER BEEN ASKED, AND WHAT TO DO ABOUT IT

There is no question on record on the milestone tables, on the primitive reflexes, on attachment classification, on temperament, or on the developmental screening instruments. Two readings are available and both are worth holding. The first is that these are low-yield for the written paper and should be learned to a clinical rather than an examination standard. The second is that they are exactly the material a viva or a clinical case can turn on without warning, because they are what a child psychiatrist is assumed to know rather than asked to prove. Prepare the theories for the paper. Prepare the deviation call for the patient.

Quick review

DEVELOPMENTAL PSYCHIATRY: THEORIES, MILESTONES AND THE DEVIATION CALL	
THE INTERPRETIVE RULE	
CONSTRUCT BEFORE ACTION	**Median** means half have attained the skill; **expected** means usually attained; **expected range** is a normal window; **upper limit** is the outer normal bound; and **red flag** warrants further evaluation. If the source leaves the construct unclear, repeat only its own wording. Never turn it into a referral threshold.
WHAT EACH THEORY ASKS	
PIAGET	**How is cognition organised?** Sensorimotor action becomes preoperational representation, concrete operations bring reversible logic for tangible material, and formal operations extend reasoning to propositions and possibilities. The stage bands are theoretical descriptions, not milestone norms or referral ages.
ERIKSON	**Which psychosocial conflict is foregrounded?** Trust versus mistrust, autonomy versus shame and doubt, initiative versus guilt, industry versus inferiority, identity versus role confusion, intimacy versus isolation, generativity versus stagnation, and integrity versus despair. Use the conflict and strength for formulation, not diagnosis.
FREUD	**How are drive, bodily focus and conflict organised?** Oral, anal, phallic, latency and genital. Fixation is an enduring investment in an earlier mode; regression is movement back toward it under stress. These are historical psychosexual mappings, not developmental screening stages or Tanner stages.
MAHLER	**How does psychological separateness develop within relationship?** Distinguish separation, "I am not you," from individuation, "I am me." Object constancy is the affective capacity to retain a whole loved person across absence and frustration; it is not Piagetian object permanence.
KOHLBERG	**How is a moral judgement justified?** Preconventional reasoning moves from punishment to exchange; conventional reasoning from approval to social order; postconventional reasoning evaluates law through rights and principles. Score the reason, not the verdict. Kaplan and Sadock gives only descriptive bands: before adolescence, school-aged children, some young adolescents, during adolescence, later in adolescence, and late adolescence or early adulthood. There are no sourced numeric ages.

DEVELOPMENTAL PSYCHIATRY: THEORIES, MILESTONES AND THE DEVIATION CALL	
VYGOTSKY	**What becomes possible through social mediation?** The zone of proximal development lies between independent and assisted performance; scaffolding is contingent support that is faded; social speech becomes private and inner speech. Vygotsky proposed **no stages**, so he belongs beside an age axis as a cross-cutting mechanism.
LANGUAGE ACQUISITION	**Skinner**: operant contingencies shape verbal behaviour. **Chomsky**: innate grammatical preparedness supports generative language. **Vygotsky**: shared speech is socially mediated and internalised. Consequence, grammar and mediation answer different parts of the same problem.
ATTACHMENT	**Bowlby** asks how proximity to a familiar caregiver provides safe haven and secure base; internal working models carry expectations of self, others and help. In **Ainsworth's Strange Situation**, reunion distinguishes secure use of comfort, avoidant minimisation, ambivalent or resistant approach with resistance, and disorganised absence of a coherent strategy. These are relationship patterns, not diagnoses.
TEMPERAMENT AND PARENTING	**Thomas and Chess** ask how activity, rhythmicity, approach or withdrawal, adaptability, threshold, intensity, mood, distractibility, and attention span or persistence fit the environment. Easy, difficult and slow-to-warm-up are constellations; outcome depends on goodness of fit. **Baumrind** maps responsiveness and demandingness: authoritative is high-high, authoritarian low-high, permissive high-low, and uninvolved low-low.
ADOLESCENCE AND ADVERSITY	Adolescence is asynchronous change in body, reward, control, identity and relationships. Dual-systems and maturational-imbalance models explain context-sensitive risk, not global irrationality. Marcia separates exploration from commitment. Deprivation removes expected input; threat adds danger. Resilience is better-than-expected adaptation produced by dynamic child-context processes, especially stable responsive care, not an invulnerable trait.
SOURCED MILESTONE ANCHORS	
WHO GROSS MOTOR WINDOWS	The WHO 1st-to-99th-centile windows are: sitting without support **3.8 to 9.2 months**; standing with assistance **4.8 to 11.4 months**; hands-and-knees crawling **5.2 to 13.5 months**; walking with assistance **5.9 to 13.7 months**; standing alone **6.9 to 16.9 months**; walking alone **8.2 to 17.6 months**. Beyond an upper boundary signals the need for appropriate screening. It is not a diagnosis or an independently sourced referral threshold.

DEVELOPMENTAL PSYCHIATRY: THEORIES, MILESTONES AND THE DEVIATION CALL	
FINE MOTOR	Berk expects a well-coordinated pincer grasp **by the end of the first year**, vigorous scribbling between **10 and 21 months**, and a tower of two cubes between **10 and 19 months**. These are expected attainments or ranges, not referral thresholds. Observe vision, posture, symmetry, tone, comprehension and opportunity.
LANGUAGE AND SPEECH	Kaplan and Sadock expects cooing at about **3 to 4 months**, meaningful words at about **12 months**, and word combinations at **18 months**. Speech is expected to be about **25 percent** intelligible to strangers at **18 months**, **50 percent** at **24 months**, **75 percent** at **36 months**, and nearly **100 percent** by **4 years**. These are expected values, not referral cuts.
SOCIAL AND COGNITIVE	Berk gives the social-smile window as **6 to 10 weeks**. Joint attention and pointing are expected around **12 months** in the New Oxford Textbook of Psychiatry; Dulcan expects symbolic play at **18 months**; explicit false-belief performance is expected at **4 or 5 years** in the cited account. None is an automatic referral threshold.
PUBERTY AND TANNER	Tanner stage is morphological: record breast or genital development and pubic hair separately, never infer stage from age or psychological maturity. Berk's expected ranges include breast budding at **8 to 13 years**, testicular enlargement at **9 to 13.5 years**, menarche at **10.5 to 14 years**, and spermarche at **12 to 16 years**. These are expected ranges, not clinical cut-offs.
SCREENING SIGNALS, RED FLAGS AND REFLEXES	
WHO SCREENING SIGNAL	The gross-motor windows describe variation and signal screening when a child appears late. About **4.3 percent** of children in the WHO study never exhibited hands-and-knees crawling, so absence of crawling alone is not a red flag. Judge progression, transitions, symmetry, tone and movement quality.
COMMUNICATION RED FLAGS	Arrange prompt developmental evaluation for no babbling or gesturing at **12 months**, no single words at **16 months**, no spontaneous two-word phrases at **24 months**, or loss of language or social skills at **any age**. These Developmental Psychopathology thresholds are referral signals, not diagnoses.
EXPECTED REFLEX DISAPPEARANCE	Keep the source attached: rooting at **3 weeks** in Berk; sucking after **4 months** in Berk; palmar grasp at **3 to 4 months** in Berk; stepping at **2 months** in Hutchison's Clinical Methods; asymmetric tonic neck reflex at **4 months** in Berk; Moro at **12 weeks** in Tasman but **6 months** in Berk and Hutchison. Do not average disagreement.

DEVELOPMENTAL PSYCHIATRY: THEORIES, MILESTONES AND THE DEVIATION CALL	
BABINSKI AND REFLEX RED FLAGS	Berk gives Babinski disappearance at **8 to 12 months**; Hutchison gives the extensor plantar response an upper limit of **18 months** and calls persistence beyond **2 years** a red flag. Hutchison also flags absence of sucking beyond the **36th week of gestation** and gives persistence of primitive reflexes beyond the **fourth month of life** as a general warning. Reflex-specific expectations, symmetry, tone and the neurological examination still govern interpretation.
THE DEVIATION CALL	
NAME THE TRAJECTORY	**Delay** is slow acquisition with broadly preserved sequence; **dissociation** is uneven development between domains; **deviance** is an unusual sequence or quality; **plateau** is failure to acquire new skills; **regression** is loss of a convincingly acquired skill. Also act on marked asymmetry, abnormal tone or movement, sensory concern, neurological findings and convergent multi-domain difficulty.
SURVEILLANCE TO ASSESSMENT	**Surveillance** repeatedly integrates concerns, history, observation, examination and trajectory. **Screening** applies a standardised risk filter and does not diagnose. **Assessment** characterises strengths and impairments across domains and investigates cause. A negative screen never overrules regression, a sourced red flag, abnormal examination or persistent concern.
INDIAN PATHWAY	The Trivandrum Development Screening Chart covers birth to **6 years**; **one item delay** is the positive screen termed TDSC delay. DASII yields Motor DQ and Mental DQ; Indian follow-up practice uses **DQ below 85** as a delay marker. A positive screen or quotient is not a diagnosis.
FINAL ACTION	Use **trajectory, pattern, construct, action**. Continue surveillance for a coherent progressing course within an expected window; screen when a WHO upper boundary is crossed; arrange comprehensive evaluation for regression, an explicit red flag, marked asymmetry, abnormal quality, neurological or sensory findings, multi-domain delay, or persistent clinical concern.

References

Normal development is a chapter where the sources disagree with each other more than they admit, and the reference list is built to show that rather than hide it. Every age, stage boundary, reflex age and instrument property in these notes was taken from a named source and checked against it; where two standard texts give different bands for the same stage, both are reported and neither is presented as the answer. The depth bar for the theories is Berk's *Development Through the Lifespan*, which is the source that aligns Freud, Erikson and Piaget on shared boundaries and therefore the source the alignment plate follows. Tasman and Kaplan and Sadock carry the

psychiatric framing, Lewis and Cicchetti's *Developmental Psychopathology* the child-psychiatry depth and the language red flags, Wolberg the Mahler subphases, Hutchison's *Clinical Methods* the primitive reflexes and their persistence, Schunk's *Learning Theories* the Vygotskian material, and Kaufman's *Clinical Neurology for Psychiatrists* the early-handedness sign. The Indian frame comes from the Indian Psychiatric Society child and adolescent guideline and from the primary validation literature for the Indian instruments.

Two sources carry more weight than the rest and deserve naming for what they are. The WHO Motor Development Study is the only source in this chapter that states the normative role of its own numbers: its windows are bounded by the 1st and 99th centiles, it followed children in Ghana, India, Norway, Oman and the USA, and it says in its own words that the windows exist to signal the need for screening rather than to diagnose. Every gross-motor boundary taught here comes from it, and comes labelled as what it is. The Trivandrum validation is the only Indian screening instrument in this chapter with published psychometrics, and its sensitivity, specificity and predictive values are reported from the primary paper rather than from a secondary summary.

Three absences are load-bearing and are stated rather than papered over. Nelson's *Textbook of Pediatrics*, the source a paediatric milestone chapter would normally lean on, was not available; the milestone ages here come from the developmental psychology and psychiatry texts instead. No Indian Academy of Pediatrics milestone chart was available, so no IAP milestone age is stated anywhere in this chapter. The DASII manual was not available, so its administration range, item structure and norming sample are not stated; only its two developmental quotients and the delay marker used in Indian follow-up practice are given, from the applied literature. Where a value could not be sourced, it was left out.

SOURCE HIERARCHY

1. Berk LE. *Development Through the Lifespan*. The alignment of Freud, Erikson and Piaget on shared age boundaries, the milestone ages, the pubertal windows and the social-emotional sequence.
2. Berk LE. *Child Development*, 8th edition. Supporting developmental detail.
3. Tasman A, et al. *Psychiatry*. The psychiatric framing of the theories, the Tanner staging tables and the alternative stage bands that disagree with Berk.
4. Sadock BJ, Sadock VA, Ruiz P. *Kaplan and Sadock's Comprehensive Textbook of Psychiatry*, 2024. Kohlberg's levels as descriptive bands, Mahler, the intelligibility gradient and the motor-delay allowance.
5. Cicchetti D, ed. *Developmental Psychopathology*. The sourced language and social red flags and their referral ages.
6. Martin A, Volkmar FR, Bloch M, eds. *Lewis's Child and Adolescent Psychiatry*. Child-psychiatric development and the separation-anxiety window.
7. Dulcan MK, ed. *Dulcan's Textbook of Child and Adolescent Psychiatry*. Developmental surveillance framing.
8. Rutter M, et al. *Rutter's Child and Adolescent Psychiatry*, 6th edition.
9. Wolberg LR. *The Technique of Psychotherapy*. Mahler's separation-individuation subphases and their ages.
10. Schunk DH. *Learning Theories: An Educational Perspective*, 6th edition, 2011. Vygotsky's sociocultural theory, the zone of proximal development, scaffolding and private speech.
11. Hutchison R, Glynn M, eds. *Hutchison's Clinical Methods*. The primitive reflexes and the ages beyond which persistence is a warning sign.
12. Kaufman DM, Milstein MJ. *Kaufman's Clinical Neurology for Psychiatrists*. Early unequivocal handedness as a warning sign in infancy.
13. American Psychiatric Association. *DSM-5-TR*, 2022. Speech intelligibility and the late-acquired sound allowance.

14. Indian Psychiatric Society. *Clinical Practice Guidelines for Child and Adolescent Psychiatry*. The Indian assessment and screening landscape.
15. Ciccarelli SK, White JN. *Psychology*, 5th edition. Supporting developmental psychology.
16. Gelder M, Andreasen N, Lopez-Ibor J, Geddes J, eds. *New Oxford Textbook of Psychiatry*.

PRIMARY PAPERS, EVERY IDENTIFIER VERIFIED

1. WHO Multicentre Growth Reference Study Group. WHO Motor Development Study: windows of achievement for six gross motor development milestones. *Acta Paediatr Suppl* 2006;450:86-95. PMID 16817682. The 1st and 99th centile windows for the six gross motor milestones, from 816 children in Ghana, India, Norway, Oman and the USA. The only construct-explicit motor source in this chapter.
2. Nair MKC, Harikumaran Nair GS, George B, Suma N, Neethu C, Leena ML, Russell PSS. Development and validation of Trivandrum Development Screening Chart for children aged 0-6 years. *Indian J Pediatr* 2013;80(Suppl 2):S248-55. PMID 24014206. Fifty-one items, validated against the Denver test in 1,183 children, with its sensitivity, specificity, predictive values and reliability.
3. Shekhawat DS, Gupta T, Singh P, Sharma P, Singh K. Monitoring tools for early identification of children with developmental delay in India: an update. *Child Neuropsychol* 2022;28(6):814-830. PMID 35722754. The Indian screening landscape, the Baroda test as the first Indian tool in 1991, and the estimated prevalence of developmental delay in India.
4. Kadam AS, Nayyar SA, Kadam SS, Patni BC, Khole MC, Pandit AN, Kabra NS. General Movement Assessment in babies born preterm: Motor Optimality Score-Revised, trajectory, and neurodevelopmental outcomes at one year. *J Pediatr X* 2022;8:100084. PMID 37334030. The DASII motor and mental developmental quotients in Indian preterm follow-up.
5. Shukla A, Bandyopadhyay T, Vallamkonda N, Maria A. Long-term neurodevelopmental outcomes of neonatal chikungunya: follow-up of a series of cases till one year. *J Trop Pediatr* 2021;67(3). PMID 32756979. The DASII delay marker in Indian practice.

Index

a-not-b error 4
accommodation 5
adaptability 46
adaptation 5
adolescence 4
adolescent development 40
adolescent neurodevelopment 110
adrenarche 106
adverse childhood experience 135
affective theory of mind 54
ainsworth 17
ainsworth's strange situation 17
allostatic load 138
ambitendency 32
ambivalent 40
ambivalent or resistant attachment 143
anaclitic depression 132
anal stage 9
anal-expulsive 20
anal-retentive 20
animism 6
ann masten 137
appearance 6
artificialism 6
assimilation 5
assisted performance 36
asymmetric tonic neck reflex 83
asymmetry 72
attachment 13
attachment behavioural system 40
attachment-pattern 13
authoritarian parenting 65
authoritative parenting 64
autism spectrum disorder 31
autoclitic 60
autonomy versus shame and doubt 9
avoidant 40
b. f. skinner 59
babinski reflex 100
basic trust versus mistrust 12
baumrind 34
baumrind parenting styles 34
behavioural control 65
biopsychosocial 63
borderline personality organisation 33
bowlby 40
bucharest early intervention project 134
care 9
caregiver sensitivity 42
castration anxiety 20
centration 4
cephalocaudal 73
challenge 33
change-of-location task 55
chomsky 34
chomsky's nativist theory 61
class-inclusion task 8
classification 4
co-regulation 68
cognitive development 26
cognitive theory of mind 54
cognitive-developmental 25
cold cognition 105
combinatorial reasoning 7
commitment 14
compensatory model 138
competence 8
concrete operational 4
concrete operational stage 4
conservation 4
conservation task 8
contact comfort 133
context-sensitive risk-taking 104
conventional level 25
cooperative play 92
critical period 139
cumulative risk 134
cumulative-risk model 135
DASII 23
DDST-II 125
decentration 4
demandingness 19
deprivation 41
deprivation-specific pattern 134
developmental assessment 97
developmental assessment scales for indian infants 125
developmental cascades 138
developmental delay 18
developmental history 9

developmental red flag 23
developmental red flags 23
developmental screening 29
developmental surveillance 23
developmental-theory alignment 79
deviance 123
deviation from normal 23
dialectical 36
diana baumrind 65
differential susceptibility 138
differentiation subphase 31
disappearance 20
disinhibited social engagement 41
disinhibited social engagement disorder 41
disorganised 40
dissociation 123
domain-specific 8
domains of child development 9
domains-and-milestones framework 79
dual-systems 17
dynamic assessment 22
dystonic 11
early adversity 129
echoic 60
ego integrity 15
ego strength 11
egocentrism 4
electra complex 20
elicited 50
emmy werner 137
emotional refuelling 32
empathy 28
english and romanian adoptees study 134
epigenetic principle 11
equifinality 132
equilibration 5
era study 134
erik erikson 10
erikson 4
ethic of care 28
executive-function accounts 57
expected range 26
experience-expectant plasticity 135
exploration 7
expressive language 58
fading 37
false-belief 34
false-belief task 34
family systems theory 69
fidelity 10
fine motor 72
first-order false belief 55
fixation 18
foreclosure 14
formal operational 4
formal operational stage 7
formal operational thought 22
freud 4
freud's psychosexual theory 18
frontal release sign 103
gender expression 14
gender identity 14
gender incongruence 109
gender role 68
gender-schema theory 119
generativity 10
generativity versus stagnation 12
genital stage 15
global developmental delay 125
gonadarche 110
good fit 46
goodness of fit 45
goodness-of-fit 16
gross motor 23
hatching 4
heinz dilemma 25
higher mental functions 35
hope 10
hospitalism 132
hot cognition 105
hypermentalizing 58
hypomentalizing 58
hypothetico-deductive reasoning 4
identity achievement 15
identity diffusion 107
identity formation 14
identity statuses 14
identity versus role confusion 11
imaginary audience 106
impulsivity 105
independent performance 16
indicated 23
individuation 4
industry versus inferiority 9
initiative versus guilt 9
inner speech 36

institutionalization 129
integrity versus despair 12
internal working models 42
internalisation 20
intimacy 10
intimacy versus isolation 12
intraverbal 60
irreversibility 4
james marcia 107
jean piaget 149
joint attention 53
kohlberg 4
kohlberg's moral development 80
language acquisition 34
language acquisition device 61
language and sociocultural accounts 57
language and speech 72
latency stage 20
lawrence kohlberg's theory of moral development 24
learning leads development 38
lev vygotsky 35
lev vygotsky's sociocultural theory 35
libidinal object constancy 9
libido 9
love 10
mahler 4
mand 7
margaret mahler's separation-individuation theory 29
maternal deprivation 41
maturational imbalance 17
maturational-imbalance model 105
median 4
mediation 29
mental dq 23
mentalizing 53
metacognition 7
michael rutter 137
milestones by age 74
modular or domain-specific accounts 57
monotropy 41
moral development 9
moral judgement 9
moratorium 14
moro reflex 102
motor dq 23
multifinality 132
nativist theory 61
neglect 6
neurodevelopment of adolescence 89
new york longitudinal study 46
noam chomsky 59
normal autistic phase 30
normal symbiotic phase 30
norman garmezy 137
object 4
object permanence 4
object-permanence task 8
oedipus complex 20
operant account 60
operation 4
oral stage 19
organisation 5
overgeneralisation 61
palmar grasp 78
parallel play 92
parenting style 34
performance 5
permissive parenting 64
persistence 13
personal fable 106
perspective-taking task 8
phallic stage 9
piaget 4
plantar grasp 100
plateau 78
pointing 54
poor fit 46
positive reinforcement 60
postconventional level 27
poverty-of-the-stimulus argument 61
practising subphase 31
pragmatics 63
preconventional level 25
prefrontal cortex 105
preoperational 4
preoperational stage 4
primitive reflexes 78
private speech 22
privation 41
productivity 59
promotive factor 137
propositional thought 4
protective factor 50
protective factors 116
protective or buffering model 138

proximodistal 73
psychological control 65
psychosexual development 14
psychosexual stages 9
psychosocial crisis 10
psychosocial deprivation 127
psychosocial development 110
psychosocial moratorium 14
psychosocial stages 9
puberty 14
purpose 6
rapprochement crisis 9
rapprochement subphase 32
re-emergence 100
reactive attachment disorder 41
receptive language 75
red-flag 9
red-flag threshold 30
reflex table 78
regression 17
rené spitz 132
resilience 130
resilience map 140
resistant 40
responsiveness 34
retrieval spine: 122
risk factor 50
risk-taking 17
role confusion 4
rooting 100
scaffolding 9
scheme 5
second-order false belief 55
secure 5
secure base 17
selective 40
self-recognition 54
sensation seeking 115
sensitive period 110
sensitive periods 134
sensorimotor 4
sensorimotor stage 5
separation 4
separation anxiety 73
separation-individuation 9
sequence 4
seriation 4
sex characteristics 115
sexual behaviour 14
sexual identity 118
sexual orientation 14
simulation account 57
skinner 34
slow-to-warm-up temperament 49
social and emotional 72
social and emotional development 72
social smile 73
social speech 37
social-cognitive theory 119
social-interactionist 63
social-learning theory 119
sociocultural theory 4
speech 22
spotting deviation 23
statistical learning 63
steeling 138
stepping 100
strange situation 17
strange situation procedure 43
stranger anxiety 73
sublimation 20
sucking 19
superego 20
symbiosis 29
symbolic play 13
synthesis map 22
synthesis map: 90
syntonic 11
tact 17
tanner staging 20
temperament 13
temperamental guidance 51
tempo 8
theory of mind 34
theory-alignment map 33
theory-theory account 57
thomas and chess 45
threat 15
timing 24
toxic stress 138
transactional 46
transactional model 47
transductive reasoning 6
transitive inference 4
trivandrum 23
trivandrum development screening chart 23

unexpected-contents task 55
uninvolved 34
uninvolved or neglectful parenting 34
universal 16
universal grammar 61
upper limit 19
usage-based 61
ventral striatum 114
vulnerability factor 137
vygotsky 4
warning signs 23
when to refer 19
will 10
windows of achievement 81
wisdom 10
withdrawal 15
zone of proximal development 4

PRINTING AND DISTRIBUTION

Notes Next Door (NND), Delhi is the official printing and distribution partner for Weave Sprint. The soft-copy PDFs and the complete print-ready set are always available at weave.clinic/sprint, should you prefer to print the notes yourself. Weave Sprint is open source and free, and as part of Weave's commitment to residents it will stay that way, forever. We do, however, strongly recommend a printed set from Notes Next Door: in our experience, they have been the most reliable printing partner we have worked with.