Serendipity

In the elusive role of serendipity and the field of observation, chance favours only the prepared mind.
(Pasteur in Woods, 2014, p. 176)

Serendipity is an unexpected encounter that leads to a useful outcome or new idea. In knowledge scholarship it is formalised as abduction (Foster & Ellis, 2014) and, of particular relevance to design knowledge, *creative abduction*, where an unexpected event leads to the creation of a new idea or new thinking (van Andel, 1994).

In practical terms, serendipity arises from the myriad chance interactions, discoveries, observations, encounters, discussions, and connections that routinely take place in studio, prompting a designer to have a new idea or act somehow in response. Serendipitous interactions are considered critical to creative activity in the design studio (Crowther, 2013), and the nature of the serendipitous encounter itself is assumed to be a learning opportunity (active teaching [→71]) for both practitioner and student alike (Goldschmidt, 2015).

Serendipity is more than chance

In all definitions of serendipity, both the chance component and some action or response are required. In other words, it is insufficient to simply observe a surprising encounter without acting on it in some way, whether physically or cognitively. The famous example often given is Alexander Flemming and the discovery of penicillin, where a chance observation was followed by action to inquire into the why of what happened. Whilst this is debatable as an example of *pure* serendipity, the ability to act on, or take advantage of, chance observations and encounters is a key design capacity, succinctly summarised by Redström (2020, p. 84) who describes 'design as an act of making things possible, and therefore as the opposite of taking things for granted'.

Serendipity requires preparedness

Young (2003) refers to the importance of preparing the creative mind to be ready for ideas to emerge. This idea of preparedness is reflected in the broader design literature (Florida, 2014), and Woods (2014) specifically argues that serendipity requires both preparation and insight to make new connections. Goldschmidt (2015) also refers to the *prepared eye* of the

designer as a mechanism for taking advantage of stimuli to support creative idea generation.

Such views of serendipity suggest that preparedness can be deliberately developed, whether by immersion [→118] in a subject area or particular studio (Woods, 2014), seeking different materials to enable varied cognitive engagement (extended and distributed cognition [→38]) (Jones, 2014a), or collecting artefacts [→151] to act as creative stimuli in studio (Goldschmidt, 2015). Each of these is an act of preparation with the intention of leading to some later undefined, unknowable outcome. These outcomes can be more than ideas or new thoughts; they can be new relationships, seeing and trying new techniques, expanding references, and collecting precedents.

Serendipity depends on chance but can be intentional or planned

Van Andel argues that designing intentionally for something based on chance can seem contradictory (Woods, 2014) – you depend on chance, but you cannot deliberately plan for it. However, the event of practical value is the designerly act of combining a random event with action and insight to make new connections. This is the active and intentional component to serendipity that can be influenced, supported, and even directed in learning (see informalities [→204]).

The physical spaces studio supports, such as the studio couch, water cooler (MacVean, 2014), and other informal settlements (Bostwick-Lorenzo Eiroa & Jones, 2014), offer immediate opportunities for serendipitous encounters and activity. It is these types of unplanned but deliberate (or semi-structured) preparations for serendipity that tend to be found in the design studio (Florida, 2014), notably in its informal learning spaces [→42].

Makri et al. (2014, p. 18) identify that serendipity can be a deliberate part of online practice in digital spaces. They note that instead of focusing on serendipitous events themselves, it is important to adopt and support strategies that can increase the likelihood of serendipitous encounters, analogous to the spatial opportunism of the physical studio. In addition, the social comparison [→172] observed by Jones et al. (2021) in virtual studios is, at its most basic, a serendipitous encounter.

Finally, serendipity can be a cognitive encounter. Amacker (2019, p. 1841) argues that surrendering to experience of designerly activity can be serendipitous in that it leads to creative thinking, or an 'imaginative sensing of possibilities'. Serendipity is thus framed as an intentional, or even deliberate, state that designers enter into in order to support their thinking. In studio this is often presented as part of the whole package of *being in*, or immersion [→118] in, studio.

Serendipity in studio depends upon educators and structures that encourage and set the conditions for it to emerge, not necessarily making it happen in any predictable or deterministic way. The uncertainty and ambiguity [→209] this brings to studio is a deliberate outcome of such preparation.

Wellbeing

> [L]ooking after the health of the organs and systems our design thinking relies on seems like it should be just as important as taking care of any other tool [...] talking about, and taking seriously, topics such as cognitive stamina, mental health, embodied and affective states, should be something we do in any design curriculum.
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> (Jones, 2022c, p. 15)

For many students, studio is a place of safety, belonging [→189], and nurturing. Here, students have an opportunity to build and be supported by social networks [→185] with their peers. The transition to emergency online teaching during the Covid-19 pandemic showed that many students suddenly missed those conditions, reporting a consequential demise in mental and physical wellbeing and highlighting support systems previously taken for granted (Grover & Wright, 2023; Marshalsey & Sclater, 2020). For some students, however, studio is not always a nurturing environment that contributes positively to wellbeing. A culture of working long hours is integral to the experience of some studios, but can be detrimental to wellbeing, and in extreme cases even fatal (AIAS, 2002). The habitus [→265] of studio can establish unhealthy working practices that persist throughout the working lives of graduates. Troiani writes: 'the architectural design studio emerges as a critical site of analysis because of the way it consumes and demands of its labour force, affecting wellbeing...' (Troiani, 2021, p. 13).

Studio influences mental wellbeing

Stress is a major factor that may impact students in studio, as Gomez-Lanier (2018) notes: 'the perceived levels of student stress progressively increased and shifted during the research, exploration, refinement, and finalisation design phases of project solution' (p. 46). Stress is often associated with high-stakes assignments – like design projects – that develop a 'heightening consciousness and anxiety of failure' (Jones, Priestley, et al., 2021,

p. 441). The creative process (creativity [→222]) makes use of uncertainties or unknowns (see uncertainty and ambiguity [→209]) to progress design projects, but as Glăveanu (2022) argues, if we don't know for too long, anxieties emerge, and students feel more vulnerable and uncertain (affect [→200]).

In such situations, students may feel themselves becoming *stuck*. In her study of two design studios, Sachs (1999) explored design students' feelings of *stuckness*. They define *stuckness* as 'the culmination of an involuntary, unintentional process that begins with a breakdown in the student's capacity to respond to the studio requirements' (p. 209). Students were found to behave in particular ways, each of them affecting mental wellbeing: coming to a standstill, procrastinating, or becoming fixated on the problem.

Practically, educators can design curricular activity in ways that support mental wellbeing. Christian (2019), for example, found value in developing reflection [→83] with mindfulness and contemplative practices amongst interior design students, observing this helped students reduce stress, reflect on their work more critically, and empathise better with stakeholders in the design process.

Studio as a place [→198] can also support positive mental wellbeing and develop resilience in students. Campus closures during the COVID-19 pandemic prompted many students of studio disciplines to conceptualise and articulate the negative changes they perceived in their mental health and wellbeing as in Grover and Wright's (2020) survey of architecture students. They identified a sense among students that by not being in the studio in person, they were, in some way, missing out on a set of implicit and explicit frameworks that provided for their mental wellbeing. Students in online and distance design studios can follow different rhythms [→124] and can also rely much more on local social networks [→185] (such as family and friends) to construct their studio at home (Lotz & Sippel, 2024). In other words, there can be important differences in synchronicities and proximities [→128] between students in traditional studio spaces and those in online and distance settings (Jones, 2022a). Regardless of mode (online or proximate), mental wellbeing is supported by formal and informal (see informalities [→204]) interactions with staff and students, formal activities in the curriculum or informal activities organised by students themselves.

Studio influences physical wellbeing

The design studio demands presence, which places particular physical demands on the bodies of students. Many contemporary studio pedagogies are influenced by the Bauhaus curriculum, which promoted good health by starting studio sessions with physical and mental wellbeing