Chapter 14 Biblical Aniconism? Representing the Gods of Ancient Israel and Judah



Thomas Römer

Abstract This paper argues that one should not speak of an "original aniconism" in the cult of Yhwh, the god of Israel. In the Northern kingdom and in the first temple of Jerusalem, this god was represented in a theriomorphic and anthropomorphic way. The prohibitions of images of the god of Israel in the Decalogue and other texts were written after the Babylonian exile and are related to the rise of monotheism. During the Persian period Yhwh became the "only" and transcendent god who could no longer be represented by statues or other symbols as were the Mesopotamian gods. However, the Menorah, the candelabra, which was placed in the Second Temple is, in a way, a representation of the divine presence. Aniconism is, however, not a pure invention of nascent Judaism. There are apparently in the Ancient Near East aniconic tendencies that are, nevertheless, compatible with iconic representations of the deities. This may be explained by the facts that ancient people were aware that statues and other images should not be identified with the deities.

Keywords Aniconism · Iconism · Israelite religion · Statues · Images · Yhwh

According to the Hebrew Bible, Yhwh, the god¹ of Israel, who is also confessed to be the god of the whole earth, cannot be represented by any statues or other images. The ban of images of Yhwh figures in a prominent way in the Decalogue and in many other texts. For this reason, many scholars have argued that in ancient Israel and Judah there was an original aniconism that would have distinguished the

T. Römer (🖂)

¹Why the term *god* begins sometimes with an uppercase letter G, sometimes with a lowercase letter g, and why it appears sometimes in the singular and sometimes in the plural, is explained in the introductive chapter of this book (Chap. 1, this volume).

Collège de France, PSL University, University of Lausanne, University of Pretoria, Pretoria, South Africa e-mail: thomas.romer@college-de-france.fr

Yahwistic religion, especially in Judah, from the surrounding religions (Mettinger, 1997).

Should One Set Aniconism and Iconism in Opposition?

Defenders of the idea that the yahwistic religion was an aniconic religion consider the so-called *massebôt*,² standing stones, as a sign of a worship of Yhwh without any images. Standing stones are well attested in the Levant since the Bronze Age. According to the Hebrew Bible they can have different functions: they can mark a tomb (cf. 1 Sam 18:18); they can commemorate the place of an important event from the past (Exod 24:4) or the conclusion of a treaty (Gen 31:43–45) and they can be used in a cultic context in worshipping a deity. This is clearly shown in the story of Gen 28:10–22 where the patriarch Jacob appears as the founder of the sanctuary of Bethel: "Jacob got up early and took the stone which he had used as his pillow and set it up as a *massebah* and poured some oil on its top. He called this place by the name of Beth-el [....] He said: 'This stone which I have set up as a stele shall be a house of god (*bet elohîm*)'" (Gen 28:18–19a and 22).

The Hebrew word *bet-'el* (House of El or of God) is often considered, but maybe wrongly, to be the origin, via Greek, of the term *betyle* (see the discussion in Durand, 2019, pp. 24–27), which designates stones used in religious rituals. The question of the function of these stones is disputed, and it is possible that they had more than just one meaning. Originally standing stones could have been used in fertility cults because they have often a phallic form. According to Gen 28, they could symbolise the idea that standing stones originated in the context of nomadic populations and reflect an aniconic religion in contrast to the sedentary religious population that represented their deities with theriomorphic or anthropomorphic images.

However, standing stones appear very often in a sedentary context. This is, for instance, the case for Mari, but also for the two *massebôt* that were discovered in the Judean sanctuary of Arad, which was probably a royal foundation.

Was the cult of standing stones really aniconic? At Mari, a standing stone has been discovered which is also sculpted in a rudimentary way to represent the features, and in particular, the sexual organs of a woman (for a picture see Margueron, 2004, p. 56).

The privileged locations for the cult of standing stones are the "high places", called in Hebrew *bamôt*. They were open-air sanctuaries, and the biblical authors often refer to steles and "sacred poles" (*maşşebôt wa'ašerîm*) that were standing in these sanctuaries. Since these *bamôt* are yahwistic sanctuaries, it is plausible to assume that the *maşşebôt* in these places represented the god Yhwh, accompanied

²The transliteration of the Hebrew terms as been done in a very simple way in order to restitute the pronunciation of the words. The sign s indicates the sound "ts", the sign \tilde{s} indicates the sound "sh". A circumflex indicates a long vowel.

by his paredra Asherah, represented by a stylized tree. The presence of standing stones is no evidence at all in favour of assuming that there was an aniconic cult of Yhwh, especially because when the prohibition of statues of Yhwh was formulated, it was also immediately applied to the *maşşebôt*. Thus, the book of Deuteronomy contains the following prohibition: "You shall not set up any *maşşeba*; Yhwh your god hates it." (16:22). Leviticus parallels sculpture and *maşşeba* in a text from the so-called Holiness Code (Lev 17–26), a document composed at the end of the sixth or the beginning of the fifth century BCE: "You shall not put up a sculpture (*pesel*) or a stele (*maşşeba*) ... to prostrate yourself in front of, for I am Yhwh, your god" (26:1). In this text a standing stone and a statue appear as parallels, just as in a passage from the Book of Micah: "I shall suppress from among you your sculptures (*pesilekâ*) and your standing stones (*maşşebôtekâ*) (5:12)".

According to these texts, a standing stone is considered illegitimate as a statue to represent Yhwh. Other passages are more tolerant towards the *massebôt*, as the narrative in Gen 28 already mentioned or a text from the Hellenistic period in Isa 19:19 which speaks of a *massebah* of Yhwh in Egypt, referring probably to the Jewish diaspora that was living there.

The example of the *massebôt* shows that the definition of aniconism is complicated and a strict opposition between aniconism and representations of the deity is not adapted to describe the Yahwistic religion.

One should not forget that the concept of aniconism is very much linked to the theological option that the "true God" cannot be represented in any way. The first attestation of the term seems to be found in the writings of Clement of Alexandria who used the term in his polemics against "pagan" religions by claiming that God cannot be represented by an image (Gaifman, 2012, pp. 18–20). This idea was taken over, also with theological motivations, in Classical Studies, which postulated for the Greek religion an original "anikonische Zeit" that underwent an evolution towards iconism (Gaifman, 2012, pp. 20–26). In Judeo-Christian Studies, Jewish and Christian theologians postulate an original aniconism that would have distinguished the worship of Yhwh from the worship of other gods.

If we define, following Doak, aniconism as "a representational style that systematically (i.e., not inadvertently) avoids specific kinds of figural representation, most specifically anthropomorphic images of the deity or deities" (Doak, 2015, p. 34), we cannot qualify the ancient Israelite and Judahite religion as aniconic.

Evidence for Images of Yhwh in Israel and Judah

Let us start with a very simple observation. If aniconism were the typical feature of the Yahwistic religion, why would the biblical authors and redactors constantly prohibit the making of all kinds of representation of the god of Israel? The insistence in many biblical texts not to produce statues and other images sounds like the attempt to introduce something new, probably in the context of the reconstruction of the Second Temple of Jerusalem around 520 BCE (Köckert, 2009; Kang, 2018). There

are indeed several biblical and extrabiblical indications of an iconic Yhwh cult in the North and in the South.

Representations of Yhwh in the North (Israel)

The books of the second part of the Hebrew Bible are written and revised in a Judean, Southern perspective according to which the inhabitants of the Northern kingdom and their kings were constantly unfaithful in regards to Yhwh's law.

Therefore, the redactors of the book of Kings have no problem admitting that Yhwh was worshipped in the North in the form of a young bull. According to 1 Kgs 12:28–30, Jeroboam, the first king of Israel, founded the sanctuaries of Bethel and Dan in which he placed golden statues of a young bull presenting Yhwh. However, the mention of Dan as the place where a sanctuary was supposedly set up at the end of the tenth century BCE is problematic because Dan probably did not become Israelite until the eighth century BCE (Arie 2008). If this view is adequate, the story about the founding of a sanctuary at Dan should be understood as a retrojection from the era of Jeroboam II, who, during his reign in the eighth century, may well have been able to annex Dan and establish a Yahwistic sanctuary there (Berlejung, 2009). The worship of a bovine statue is also attested for the capital of Israel, Samaria. There are several passages of the Book of Hosea, which condemn the bull of Samaria. Hos 8:5–6 in its present form reads, "He has rejected your calf, Samaria! I am angry with them. For how long still shall they remain incapable of attaining purity? (6) For it comes from Israel, an artisan has made it, it is not a god. Yes, the calf of Samaria shall be shattered". The underlined part is the original oracle. It is written in the third person, and contains a criticism of a divine statue in the form of a calf. The oracle announces that this calf will soon be destroyed, probably by the Assyrians. This text was then augmented by the addition of a divine speech in the first person, which attributes the destruction of the statue expressly to the wrath of god. Finally the passage was revised a last time (with the parts in italics added) and turned into a polemic against images, which is very close to those that we find in the second part of the Book of Isaiah, dating from the Persian period.

Sometimes it is argued that the bulls in these texts are pedestals for an invisible god (Hendel, 1997; Lemaire, 2007, pp. 63–76). But this is a *petitio principii*. We do know of images of gods enthroned on bulls or other animals, but there is no clear evidence of the statue of an animal serving as pedestal of an invisible god (Schroer 1987, p. 101). So the conclusion to be drawn is that the bull in the sanctuaries of the North represented Yhwh, who, as a storm-god and chief god of the pantheon, is represented in the same way Baal or El are, namely as a bull.

An Assyrian inscription of Sargon II relating the destruction of Samaria mentions among the booty brought to Assyria "the gods in which they had put their trust". This can only refer to *visible* gods, to statues. The inscription also indicates that Yhwh was not the only god worshipped in Samaria. The representation of Yhwh as a bull fits well with his function as a storm- and a weather-god. This brings him close to the Ugaritic Baal, who in the is often characterized as a bull. But the same *baal* can also be depicted in an anthropomorphic way, as for instance in the famous stele *Baal au foudre* (Baal with thunderbolt). And this may also have been the case in Israel (Leuenberger, 2019).

Representations of Yhwh in the South (Judah)

Although there is no direct evidence, it seems plausible to assume that there was a statue of Yhwh in the temple of Jerusalem (Niehr, 1997; Uehlinger, 1997; Römer, 2019). Several indications support this assumption. The vision of the prophet Isaiah (Isa 6) who sees Yhwh in heaven sitting on his throne may have been inspired by a statue of Yhwh representing him, like a king, sitting on a throne.

Another indication is the frequent mention of "the face of Yhwh", especially in the book of Psalms. In the ancient Near East the expression "to see the face of God" had its roots in the royal ideology. To "see the face of the king" meant to be admitted into the royal presence; in a cultic context, then, the expression "see the face of a god" described the entrance into the sanctuary where the statue of the god was located. Thus Ps 17 describes the situation of the praying person from an initial suffering in the night to the certainty that God will reveal himself to him in the morning: "With justice I shall contemplate your face and when I wake I shall have my fill of your image (temunah)" (v.15). This psalm uses the term temunah for image, and this is precisely the word that is used in the Decalogue in the prohibition of representations of god, and also in chapter 4 of Deuteronomy (vv. 16, 23 and 25). So, the theophany in verse 15 of Psalm 17 takes the concrete form of a vision of the statue of Yhwh in the morning. Many psalms also refer to a procession of Yhwh (e.g., Pss 24 and 68), which can be best explained of moving a statue of Yhwh. Ps 24:7–8, "Gates, lift your head! Raise yourselves up, ancient portals! Let him enter the king of glory! Who is the king of glory? Yhwh, strong and mighty, Yhwh, mighty in war" would then describe the return of the divine statue after its procession.

Some drawings and other objects could indeed been understood as representations of Yhwh. In the Kingdom of Judah there are a significant number of representations of deities on all kinds of supports, but none is explicitly identified with Yhwh. However, one may ask the question whether deities represented on seals whose owners have Yahwistic names represent Yhwh who was the tutelary divinity of those owners (Sass, 1993, pp. 232–34).

In Kuntillet Ajrud, a caravanserai on the road leading from Gaza to Eilat several inscriptions and paintings have been discovered (Meshel & Freud, 2012). One of these inscriptions reads, "I bless you [or, have blessed you] by Yhwh of Samaria and his Ashera". This blessing that shows that Yhwh had a goddess as a consort is overlapping with a drawing showing two divine beings. Some scholars have identified the figure on the left (with a penis) to Yhwh, and the figure on the right to Ashera. Others have argued that the two figures, who seem to be entwined or in some way doubled, in fact represent the Egyptian god Bes, who often appears in the form of

twins. However, Bes is always male and the couple represented here is quite clearly male and female so that it cannot be excluded that we have here an attempt to represent Yhwh and his Ashera (for the discussion and the opinion of an existing link between the inscription and the representation cf. Schmidt, 2002, 2016).

The best case for a representation of Yhwh is a Judean coin from the Persian period. The deity represented seated on a throne is probably Yhwh since the deity is identified by an inscription that reads yhw, $(Yah\hat{o})$, the short name of the god of Israel (Blum, 1997; Shenkar, 2007/2008).

This overview clearly indicates that Yhwh could be represented in ancient Judah in an anthropomorphic form. But this does not exclude that there were also possibilities to represent him in an "aniconic" way.

Iconism and Aniconism

Contrary to a quite common idea, there is no opposition between aniconism and anthropo- or theriomorphic representation of the deities in the Ancient Near East. First of all, in Mesopotamia the deities can be represented through a human figure but also by their symbols (sun, moon, star and others). Especially interesting is a tablet from the time of King Nabu-apal-iddin of Babylon (885–850).³ This tablet shows the king with two priests approaching the Sun-god Shamash (see Fig. 14.1). In the temple on earth Shamash is represented by a solar disk, but one can see him in anthropomorphic form seated on his throne in heaven. The inscription informs the reader that the statue of Shamash in the temple had been captured by enemies and since nobody was able to rebuilt it, it was replaced (in a provisory way) by an aniconic symbol.

A similar case can be made for the so-called empty thrones in Phoenicia, which are mostly flanked by sphinxes or cherubs (see Fig. 14.2).

Apparently these empty thrones from the first millennium BCE were used to worship different deities. In many cases, it is clear that the throne received a statue of a deity, which has now disappeared, but in other cases the empty throne as such was apparently conceived to represent the presence of an invisible deity. It is difficult to know how to understand the cohabitation of thrones conceived to host a divine statue or stele and the empty thrones. One may think of different deities (Doak, 2015, p. 111 suggests, "for deities associated with major natural phenomena, such as the sun or especially the sky, a throne may serve as a symbol of the deity without an anthropomorphic image"); one may also imagine that the Phoenicians were aware that divine statues were not identical with the deity so that they could also worship empty or "non-iconic" cultic objects.

A similar phenomenon may be observed in regards to the Yahwistic cult. We have already mentioned the *massebôt*, which were used in the "high places," but

³For a reproduction of this bas-relief see http://fr.wikipedia.org/wiki/Ban%C3%BB-apla-iddina



Fig. 14.1 https:// commons.wikimedia.org/ wiki/File:Tablet_of_ Shamash_relief.jpg

also in official sanctuaries such as Arad, where the two standing stones may represent Yhwh and his consort Ashera. It is, of course, a question of definition whether one should consider these steles as aniconic, since they may have been painted.

Another case of an aniconic representation of Yhwh may be found in the cultic stand from Taanakh (see Fig. 14.3), located in the southern part of the valley of Jisreel in Galilee. This object, which dates from the tenth or ninth century, has four levels.⁴

Several scholars have argued that these four levels represent twice the couple Yhwh and Ashera (Taylor, 1988; Hadley, 2000, pp. 173–80). The top two levels show a stylised tree and a solar disk with what seems to be an accompanying horse, the tree could refer to Ashera and the solar disk to Yhwh. On the bottom there is a naked goddess holding two lions who can be identified again with Ashera. Above the goddess there is an empty space, a hole, with two sphinxes on both sides

⁴For a photo of the object see http://members.bibarch.org/image.asp?PubID=BSBA&Volume=20 &Issue=03&ImageID=05200&SourcePage=publication.asp&UserID=0

Fig. 14.2 An empty throne, probably from Sidon, Hellenistic period, National Museum of Lebanon Beirut. Fragment[©] Thomas Römer. https://commons. wikimedia.org/w/index. php?curid=92684749 and https://commons. wikimedia.org/wiki/ File:National Museum of Beirut %E2%80%93 Thrones_of_Astarte_1. jpg#/media/File:National Museum_of_Beirut_-_ Thrones of Astarte 1.jpg



guarding it. This could be a way of symbolising the presence of Yhwh, not with an image, but by means of the smoke that was allowed to escape from the opening. This would be parallel to the literary references that speak of the "glory of Yhwh" which was conceived as a kind of cloud representing a manifestation of the god of Israel.

The Rise of Judaism and the Rise of Aniconism

The prohibition on the use of graven and other images will become one of the most important features of nascent Judaism in the second half of the Persian era. This aniconism will later attract the interest, but also the contempt, of the Greeks and the Romans. However, the prohibition of images of the god of Israel was not immediately enforced in all Jewish circles. The Judean coin mentioned above, which probably bears an image of Yhwh, indicates that still in the Persian period this type of representation was possible. There are probably several reasons for the ban of images. It is even quite possible that there was a debate whether there should be a new statue of Yhwh in the Second temple of Jerusalem (Uehlinger, 2003, pp. 70–71). First of all, there was no longer a king (who had traditionally taken care of the divine statue in the royal temple). But more importantly, the idea that Yhwh is the only god who cannot be compared to the Babylonian gods and theirs statues triggered the idea that Yhwh cannot be represented in any way. This idea is the result of the polemics against the statues in Second Isaiah and shall become the distinctive sign of Judaism. After the prohibition of images was imposed by the intellectual

Fig. 14.3 Cult stand from Taanakh © The Israel Museum, Jerusalem. https://www.ancientpages. com/wp-content/ uploads/2017/04/ yahwehasherah3.jpg (Accessed on 3.11.2021)



elite substitutes were found for the statue of Yhwh; this is especially the case for the menorah, the seven-lamp lampstand which later was stolen by the Romans after the destruction of the Second temple in 70 BCE (see the depiction on the arch of Titus in Rome). The menorah was a way to indicate the presence of the god of Israel in the temple of Jerusalem. This shows that even a "strict aniconism" still needs some kind of representation.

To Conclude

One should not speak of an original aniconism in the cult of Yhwh. It is quite clear that in the Northern kingdom and in the first temple of Jerusalem, this god was represented in a theriomorphic and anthropomorphic way. The prohibitions of images of the god of Israel in the Decalogue and other texts were written after the Babylonian exile and are related to the rise of monotheism. During the Persian period Yhwh became the "only" and transcendent god who could no longer be represented by statues or other symbols as were the Mesopotamian gods. However, the Menorah, the candelabra, which was placed in the Second Temple is, in a way, a representation of the divine presence.

Aniconism is, however, not a pure invention of nascent Judaism. There are apparently in the Ancient near east aniconic tendencies that are nevertheless compatible with iconic representations of the deities. This may be explained by the facts that ancient people were aware that statues and other images should not be identified with the deities.

References

- Berlejung, A. (2009). Twisting traditions: Programmatic absence-theology for the Northern Kingdom in 1 Kgs 12:26-33* (the "Sin of Jeroboam"). Journal of Northwest Semitic Languages, 35, 1–42.
- Blum, E. (1997). Der "Schiqquz Schomem" und die Jehud Drachme BMC Palestine S. 181, Nr. 29. *BN*, 90, 13–27.
- Doak, B. R. (2015). Phoenician aniconism in its Mediterranean and ancient Near Eastern contexts (Archaeology and Biblical Studies 21). SBL Press.
- Durand, J.-M. (2019). Le culte des bétyles dans la documentation cunéiforme de l'époque amorite. In T. Römer, H. Gonzalez, & L. Marti (Eds.), *Représenter dieux et les hommes dans le Proche* Orient ancien et dans la Bible. Actes du colloque organisé par le Collège de France, Paris, les 5 et 6 mai 2015 (OBO 287, pp. 15–37). Peeters.
- Gaifman, M. (2012). Aniconism in Greek antiquity (Oxford Studies in Ancient Culture and Representation). Oxford University Press.
- Hadley, J. M. (2000). The cult of Asherah in Ancient Israel and Judah: Evidence for a Hebrew goddess (University of Cambridge Oriental Publications 57). Cambridge University Press.
- Hendel, R. S. (1997). Aniconism and anthropomorphism in ancient Israel. In K. van der Toorn (Ed.), *The image and the book: Iconic cults, aniconism, and the rise of the book religion in Israel and the ancient Near East* (CBET 21, pp. 205–228). Peeters.
- Kang, S. I. (2018). In search of Israelite aniconism. Acta Theologica, 38, 84–98.
- Köckert, M. (2009). Vom Kultbild Jahwes zum Bilderverbot. Oder: Vom Nutzen der Religionsgeschichte f
 ür die Theologie. Zeitschrift f
 ür Theologie und Kirche, 106, 371–406.
- Lemaire, A. (2007). *The birth of monotheism: The rise and disappearance of Yahwism*. Biblical Archaeology Society.
- Leuenberger, M. (2019). "Voici tes dieux, Israël, qui t'ont fait monter du pays d'Égypte" (1 R 12,28): représentations matérielles de Yahvé dans le culte officiel du royaume d'Israël. In T. Römer, H. Gonzalez, & L. Marti (Eds.), Représenter dieux et les hommes dans le Proche Orient ancien et dans la Bible. Actes du colloque organisé par le Collège de France, Paris, les 5 et 6 mai 2015 (OBO 287, pp. 174–196). Peeters.
- Margueron, J.-C. (2004). Mari : métropole de l'Euphrate au IIIe et au début du IIe millénaire avant J.-C. Picard.
- Meshel, Z., & Freud, L. (2012). Kuntillet 'Ajrud (Horvat Teman): An Iron Age II religious site on the Judah-Sinai border. Israel Exploration Society.
- Mettinger, T. N. D. (1997). Israelite aniconism: Developments and origins. In K. van der Toorn (Ed.), The image and the book: Iconic cults, aniconism, and the rise of the book religion in Israel and the ancient Near East (CBET 21, pp. 173–204). Peeters.
- Niehr, H. (1997). In search of YHWH's cult statue in the First Temple. In K. van der Toorn (Ed.), The image and the book: Iconic cults, aniconism, and the rise of the book religion in Israel and the ancient Near East (CBET 21, pp. 73–95). Peeters.

- Römer, T. (2019). Pourquoi faut-il interdire les images divines? Les origines et fondements idéologiques de l'interdiction des images de Yhwh dans le judaïsme naissant. In T. Römer, H. Gonzalez, & L. Marti (Eds.), *Représenter dieux et les hommes dans le Proche Orient ancien et dans la Bible. Actes du colloque organisé par le Collège de France, Paris, les 5 et 6 mai 2015* (OBO 287, pp. 197–211). Peeters.
- Sass, B. (1993). The pre-exilic Hebrew seals: Iconism vs. aniconism. In B. Sass & C. Uehlinger (Eds.), *Studies in the Iconography of Northwest Semitic Inscribed Seals* (OBO 125, pp. 194–256). University Press—Vandenhoeck & Ruprecht.
- Schmidt, B. (2002). The Iron Age *Pithoi* drawings from Horvat Teman or Kuntillet 'Ajrud: Some new proposals. *JANES*, 21, 91–125.
- Schmidt, B. (2016). Gender marking, overlapping and the identity of the Bes-like figures at Kuntillet 'Ajrud. In I. Hjelm & T. L. Thompson (Eds.), *History, archaeology and the bible* forty years after "historicity" (Copenhagen International Seminar—Changing Perspectives, 6) (pp. 85–111). Routledge.
- Shenkar, M. (2007/2008). The coin of "God on the Winged Wheel". Boreas 30/31, 13-25.
- Taylor, J. G. (1988). The two earliest known representations of Yahweh. In L. Eslinger (Ed.), Ascribe to the Lord: Biblical and other studies in memory of C. Craigie (JSOTSup. 67, pp. 557–566). Sheffield Academic Press.
- Uehlinger, C. (1997). Anthropomorphic cult statuary in Iron Age Palestine and the search for Yahweh's cult images. In K. van der Toorn (Ed.), *The image and the book: Iconic cults, aniconism, and the rise of the book religion in Israel and the ancient Near East* (CBET 21, pp. 97–156). Peeters.
- Uehlinger, C. (2003). Exodus, Stierbild und biblisches Kultverbot. Religionsgeschichtliche Voraussetzungen eines biblisch-theologischen Spezifikums. In R. Kessler & A. Ruwe (Eds.), Freiheit und Recht. Festschrift für Frank Crüsemann zum 65. Geburtstag (pp. 42–77). Mohn.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

